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Appendix D

Technical Advisory Committee and Stakeholder Advisory Committee Meeting Minutes

Accessible formats and communication supports are available upon request:

York Region Transportation, Public Works
Phone: 1-877-464-9675 ext. 75000
TTY: 1-866-512-6228
Email: Transportation@york.ca

From: Sylvia Waters <Sylvia.Waters@rjburnside.com>
Sent: December 9, 2021 4:01 PM
To: Lee, Erinn (MECP) <Erinn.Lee2@ontario.ca>; Heeney, Paul (MECP) <Paul.Heeney@ontario.ca>; Andersen, Jeff (MECP) <Jeff.Andersen@ontario.ca>; Jawaid, Maria (NDMNRF) <Maria.Jawaid@ontario.ca>; Barboza, Karla (MHSTCI) <Karla.Barboza@ontario.ca>; milic@markham.ca; msiu@markham.ca; ACrickmay@markham.ca; HGammanpila@trca.ca; jscovell@markham.ca; christa.haring@bell.ca; scott.moon@bell.ca; Kevin.Schimus@enbridge.com; vince.cina@enbridge.com; Darlene Presley <dpresley@mhbcplan.com>; Dan.Thomson@rci.rogers.com; christine.barnes@allstream.com; aphillips@alectrautilities.com; gbarclay@corporate.fcibroadband.com
Cc: Deanna De Forest <Deanna.DeForest@rjburnside.com>; Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Chiu, Edward <Edward.Chiu@york.ca>
Subject: 052314-MCEA Schedule C Warden Avenue and Kennedy Road between Major Mackenzie Drive to Elgin Mills Road, in the City of Markham Technical Advisory Committee

Good morning,

The Regional Municipality of York (Region) is initiated Schedule C Municipal Class Environmental Assessment (EA) Studies for improvements to Warden Avenue and Kennedy Road between Major Mackenzie Drive and Elgin Mills Road, in the City of Markham.

These studies will build on the recommendations of the approved 2016 York Region Transportation Master Plan.

The Region would like to invite agencies and organizations with a potential interest in these studies to elect a representative to participate in a Technical Advisory Committee (TAC) for the EA studies. The TAC will provide input into the planning and design process for the studies. There are three TAC meetings planned over the next several months, with the first planned for late January 2022 to review the findings of the approved 2016 Transportation Master Plan and preferred solution, scope of the projects and possible design solutions.

As a member of the TAC, your contribution to the planning process for the EAs is anticipated to include review and discussion of results of field investigations and studies assessing the existing conditions in the study area, input into alternative design solutions for improvements, and review of the evaluation of alternative design solutions including discussion of possible impacts and mitigation measures.

1. Please respond through reply email by **January 7, 2022** whether you are the appropriate contact for your organization or department
2. If your organization does not wish to participate in the TAC

Following your reply, we will confirm the meeting date for the first meeting and send an invitation and agenda by email to TAC participants.

At this time, the meetings are anticipated to be held in a virtual environment.

Should you have any questions, please contact:

Edward Chiu
Senior Project Manager
York Region
Edward.Chiu@york.ca

Regards,

Sylvia Waters, R.J. Burnside & Assoc. on behalf of York Region, Warden Avenue and Kennedy Road Environmental Assessments

BURNSIDE
Sylvia Waters
Technical Administrator, EPA

R.J. Burnside & Associates Limited
128 Wellington Street West, Suite 301, Barrie, Ontario L4N 8J6
Office: +1 800-265-9662 Direct Line: +1 705-797-4379
www.rjburnside.com

COVID 19: We remain open for business

The health and safety of our employees and clients is of paramount importance. For our full COVID 19 response please click here.

Sylvia Waters

From: Kevin Schimus <Kevin.Schimus@enbridge.com>
Sent: Thursday, December 09, 2021 4:02 PM
To: Sylvia Waters
Subject: Automatic reply: 052314-MCEA Schedule C Warden Avenue and Kennedy Road between Major Mackenzie Drive to Elgin Mills Road, in the City of Markham Technical Advisory Committee

Thank you for your email. I will be out of the office until Tuesday December 14 with limited access to email. For any urgent matters please contact Adam.Collier@enbridge.com

Regards,

Kevin

Sylvia Waters

From: Microsoft Outlook
To: gbarclay@corporate.fcibroadband.com
Sent: Friday, December 10, 2021 4:07 PM
Subject: Undeliverable: 052314-MCEA Schedule C Warden Avenue and Kennedy Road between Major Mackenzie Drive to Elgin Mills Road, in the City of Markham Technical Advisory Committee

Delivery has failed to these recipients or groups:

gbarclay@corporate.fcibroadband.com (gbarclay@corporate.fcibroadband.com)
Your message couldn't be delivered. Despite repeated attempts to deliver your message, querying the Domain Name System (DNS) for the recipient's domain location information failed.

For more information and tips to fix this issue see this article: https://go.microsoft.com/fwlink/?LinkId=389361.

Diagnostic information for administrators:

Generating server: YT1PR01MB2651.CANPRD01.PROD.OUTLOOK.COM
Receiving server: YT1PR01MB2651.CANPRD01.PROD.OUTLOOK.COM

gbarclay@corporate.fcibroadband.com
12/10/2021 9:07:06 PM - Server at YT1PR01MB2651.CANPRD01.PROD.OUTLOOK.COM returned '550 5.4.312 Message expired, DNS query failed(InfoNoRecords)'
12/10/2021 8:57:06 PM - Server at corporate.fcibroadband.com (0.0.0.0) returned '450 4.4.312 DNS query failed [Message=InfoNoRecords] [LastAttemptedServerName=corporate.fcibroadband.com] [TO1CAN01FT010.eop-CAN01.prod.protection.outlook.com](InfoNoRecords)'

Original message headers:

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 h=From:Date:Subject:Message-ID:Content-Type:MIME-Version:X-MS-Exchange-SenderADCheck;
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 by YT1PR01MB2651.CANPRD01.PROD.OUTLOOK.COM (2603:10b6:b01:d::26) with
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 (2603:10b6:610:e5:cafe::a2) by CH0PR03CA0243.outlook.office365.com
 (2603:10b6:610:e5::8) with Microsoft SMTP Server (version=TLS1_2,
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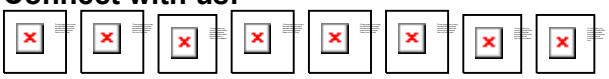
Sylvia Waters

From: Scovell, Jason <JScovell@markham.ca>
Sent: Thursday, December 09, 2021 4:02 PM
To: Sylvia Waters
Subject: Automatic reply: 052314-MCEA Schedule C Warden Avenue and Kennedy Road between Major Mackenzie Drive to Elgin Mills Road, in the City of Markham Technical Advisory Committee

Thank you for your message. I am away from the office until Tuesday, January 04, 2022. I will reply when I return. If you require immediate assistance you may contact Acting Divison Chief Joe Lanni at x.2663, or jlanni@markham.ca.

Connect with us:



Sylvia Waters

From: Siu, Mark <MSiu@markham.ca>
Sent: Thursday, December 09, 2021 4:06 PM
To: Sylvia Waters
Cc: Chiu, Edward; Ilic, Marija; Crickmay, Andrew
Subject: RE: 052314-MCEA Schedule C Warden Avenue and Kennedy Road between Major Mackenzie Drive to Elgin Mills Road, in the City of Markham Technical Advisory Committee

Thank you Sylvia,

Please continue to send invites to the following Markham Staff:

Mark Siu, Marija Ilic, and Andrew Crickmay.

Thanks,

Mark Siu, M.Eng., P.Eng.
Senior Engineer – Major Infrastructure Lead

Infrastructure and Capital Works
Engineering Department
Anthony Roman Centre | City of Markham
T: 905.477.7000 Ext. 2625
E: MSiu@markham.ca

Sylvia Waters

From: Lee, Erinn (MECP) <Erinn.Lee2@ontario.ca>
Sent: Wednesday, December 15, 2021 4:57 PM
To: Sylvia Waters
Cc: Chiu, Edward
Subject: RE: 052314-MCEA Schedule C Warden Avenue and Kennedy Road between Major Mackenzie Drive to Elgin Mills Road, in the City of Markham Technical Advisory Committee

Hi Sylvia and Edward,

MECP will not be participating in the TAC. Please ensure that the TAC activities are documented in the ESR.

I will be the MECP point of contact for any questions and for reviewing the Class EA. As previously suggested, we encourage you to provide MECP and other agencies with a copy of the draft report prior to filing the final report.

Thank you,

Erinn Lee
Regional Environmental Planner | Ministry of the Environment, Conservation and Parks
Project Review Unit, Environmental Assessment Branch
135 St. Clair Ave W, Toronto, ON M4V 1P5
P : 1 (416) 357-1511 E: Erinn.Lee2@ontario.ca

Sylvia Waters

From: Sylvia Waters
Sent: Wednesday, December 15, 2021 2:53 PM
To: Harsimrat Pruthi
Cc: Deanna De Forest; Jennifer Vandermeer; Chiu, Edward; Harsha Gammanpila
Subject: RE: 052314-MCEA Schedule C Warden Avenue and Kennedy Road between Major Mackenzie Drive to Elgin Mills Road, in the City of Markham Technical Advisory Committee

Thank you Harsimrat,

I have had a bounce back of Harsha's email as seen below in the first email sent out. I will update the email for future use.

I appreciate you forwarding this invitation to Harsha.

From: Harsimrat Pruthi <Harsimrat.Pruthi@trca.ca>
Sent: Wednesday, December 15, 2021 2:44 PM
To: Sylvia Waters <Sylvia.Waters@rjburnside.com>
Cc: Deanna De Forest <Deanna.DeForest@rjburnside.com>; Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Chiu, Edward <Edward.Chiu@york.ca>; Harsha Gammanpila <Harsha.Gammanpila@trca.ca>
Subject: RE: 052314-MCEA Schedule C Warden Avenue and Kennedy Road between Major Mackenzie Drive to Elgin Mills Road, in the City of Markham Technical Advisory Committee

Hi Sylvia,

Please note that TRCA has interest in this EA. Please send correspondence to Harsha Gammanpila (Planner) and to me on the EA.

Thank you.

Harsimrat Pruthi, M.A., M.Pl. (she, her, hers)
Senior Planner
Infrastructure Planning and Permits | Development and Engineering Services

T: (416) 661-6600 ext. 5744
C: (416) 628-7745
E: harsimrat.pruthi@trca.ca
A: 101 Exchange Avenue, Vaughan, ON, L4K 5R6 | trca.ca

From: Sylvia Waters <Sylvia.Waters@rjburnside.com>
Sent: Wednesday, December 15, 2021 1:42 PM

Sylvia Waters

From: Microsoft Outlook
To: HGammanpila@trca.ca
Sent: Thursday, December 09, 2021 4:02 PM
Subject: Undeliverable: 052314-MCEA Schedule C Warden Avenue and Kennedy Road between Major Mackenzie Drive to Elgin Mills Road, in the City of Markham Technical Advisory Committee

Office 365

Your message to HGammanpila@trca.ca couldn't be delivered.

HGammanpila wasn't found at trca.ca.

Sylvia.Waters	Office 365	HGammanpila
Action Required		Recipient

Unknown To address

How to Fix It

The address might be misspelled or might not exist. Try one or more of the following:

- **Retype the recipient's address, then resend the message -** If you're using Outlook, open this non-delivery report message and click **Send Again** from the menu or ribbon. In Outlook on the web, select this message, and then click the "**To send this message again, click here.**" link located just above the message preview window. In the To or Cc line, delete and then retype the entire recipient's address (ignore any address suggestions). After typing the complete address, click **Send** to resend the message. If you're using an email program other than Outlook or Outlook on the web, follow its standard way for resending a message. Just be sure to delete and retype the recipient's entire address before resending it.
- **Remove the recipient from the recipient Auto-Complete List, then resend the message -** If you're using Outlook or Outlook on the web, follow the steps in the "Remove the recipient from the recipient Auto-Complete List" section of this article. Then resend the message. Be sure to delete and retype the recipient's entire address before clicking **Send**.
- **Contact the recipient by some other means,** (by phone, for example) to confirm you're using the right address. Ask them

Sylvia Waters

From: Kevin Schimus <Kevin.Schimus@enbridge.com>
Sent: Monday, January 17, 2022 4:47 PM
To: Sylvia Waters
Subject: Declined: Warden Avenue and Kennedy Road EAs Technical Advisory Committee (TAC)

Good afternoon, please remove me from this distribution list.

I don’t manage work in this area, I cover Waterloo area in Southeast Region.

Regards,
Kevin

R.J. Burnside & Associates Limited 292 Speedvale Ave W #20, Guelph, ON N1H 1C4 CANADA
telephone (519) 823-4995 fax (519) 836-547 **web** www.rjburnside.com

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Agenda

Date and Time:	January 25, 2022 2:00 pm to 4:00 pm	**Project No.:**	300052314.0000
Project Name:	Warden Avenue and Kennedy Road EAs		
Meeting Subject:	Technical Advisory Committee Meeting #1		
Meeting Location:	Microsoft Teams		

Items

1. Introductions
2. Purpose of Technical Advisory Committee (TAC)
3. Review the findings from the approved York Region 2016 Transportation Master Plan, (Phase 1 and 2 recommendations for preferred solution to widen both roads)
4. Overview of the development plan of the Markham Future Urban Area (FUA)
5. Overview of investigations in the Study Area, including the Elgin Mills Municipal Class Environmental Assessment, City of Markham
6. Review preliminary alternative design concepts
7. Discuss issues / opportunities in Study Area
8. Next Steps/Schedule
9. Questions

220125_Agenda-TAC1
1/17/2022 2:54 PM

R.J. Burnside & Associates Limited 6990 Creditview Road, Unit 2 Mississauga ON L5N 8R9 CANADA
telephone (905) 821-1800 **fax** (519) 941-8120 **web** www.rjburnside.com

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Minutes of Meeting

Meeting Date:	January 25, 2022	**Project No.:**	300052314.0000
Project Name:	Warden Ave. and Kennedy Rd. EA Studies between Major Mackenzie Drive and Elgin Mills Road		
Meeting Subject:	Technical Advisory Committee #1		
Meeting Location:	Microsoft Teams Meeting		
Date Prepared:	February 1, 2022		

Those in attendance were:

Edward Chiu	York Region (Region)	Edward.Chiu@york.ca
Tanin Alemi-Baygy	Region	Tanin.Alemi-Baygy@york.ca
Jessica Lee	Region	Jessica.Lee@york.ca
Mark Siu	City of Markham	msiu@markham.ca
Jason Scovell	City of Markham Fire and Emergency Services	jscovell@markham.ca
Joe Lanni	City of Markham Fire and Emergency Services	jlanni@markham.ca
Harsimarat Pruthi	Toronto and Region Conservation Authority (TRCA)	Harsimrat.Pruthi@trca.ca
Harsha Gammanpila	TRCA	Harsha.Gammanpila@trca.ca;
Jennifer Vandermeer	R.J. Burnside & Associates Limited (Burnside)	Jennifer.Vandermeer@rjburnside.com
Ray Bacquie	Burnside	Ray.Bacquie@rjburnside.com
Gordon Hui	Burnside	Gordon.Hui@rjburnside.com
Deanna De Forest	Burnside	Deanna.Deforest@rjburnside.com
Sylvia Waters	Burnside	Sylvia.Waters@rjburnside.com

Those accepted, but unable to attend:

Andrew Crickmay	City of Markham	ACrickmay@markham.ca

The following items were discussed | **Action by**

1. Introductions

1.1 The project team was introduced followed by roundtable introductions of the Technical Advisory Committee (TAC) participants. TRCA noted that Harsha Gammanpila (HG) would be the point of contact for TRCA.

2. Purpose of the Technical Advisory Committee (TAC)

2.1 It was noted that the TAC participants would provide input on technical details and discuss issues and concerns at various decision-making points throughout the project including today's meeting and TAC meeting #2 (tentatively set for May 2022).

3. Project Overview

3.1 Project information was presented as per attached material comprised of an overview of the existing conditions in the study corridors and results of previous investigations, including existing and future traffic volumes, the City of Markham's Elgin Mills Municipal Class Environmental Assessment (MCEA), the development plan of the Markham Future Urban Area and the preferred solution from approved York Region 2016 Transportation Master Plan to widen both Warden Avenue and Kennedy Road to 4-lanes. It was noted the current Environmental Assessment (EA) studies have confirmed the recommended solutions identified in the approved 2016 TMP are still valid for the Study Areas.

4. Review of preliminary alternative design concepts

4.1 An illustration was provided for the three preliminary alternative design concepts for the 4-lane road widening in the study corridors as well as several Low Impact Development (LID) measures being assessed.

It was noted that there are variations in the preliminary alternative design concepts related to the width of the boulevard space. The details of the features within the boulevard will be further developed with the finalization of the concepts.

It was noted the evaluation of alternative design concepts will be supported by several studies, which were listed. Preliminary evaluation criteria were presented.

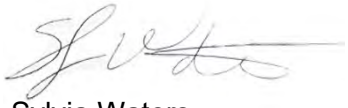
The following items were discussed		Action by
5.	**Discussion of Issues/opportunities in Study Areas**	
5.1	City of Markham noted if the road profile should increase, backflow condition should be considered. The Region noted they are working with developers of the Future Urban Area to consider divert stormwater from the road into the stormwater management pond as part of the development stormwater infrastructure.	
5.2	City of Markham Fire and Emergency Services staff noted that the road width was good. Centre medians could be an issue during a call as the fire trucks must go over median into other lanes at times.	
6.	**Next Steps/Schedule**	
6.1	TRCA inquired whether presentation will be circulated for TRCA Tech staff to review, prior to Open House (OH). It was noted TAC attendees will be sent the presentation at the end of the meeting, allowing attendees to review material in more detail, with meeting minutes to follow. Feedback was requested by February 1, 2022, as the online OH is anticipated to launch February 21, 2022.	Burnside
6.2	TRCA noted they had no further questions at this time, until Tech staff have reviewed. A follow-up meeting between the TRCA and the Region is to be coordinated to discuss review requirements.	TRCA/Region
6.3	The Region confirmed that presentation and reports, will be distributed for review, and requested that TRCA to provide dates and times of availability to meet with TRCA technical staff. It was confirmed that the Warden Avenue and Kennedy Road EAs would be reviewed as one project.	TRCA
6.4	City of Markham will be unable to provide comments on material prior to the OH. Region acknowledged comment and requested if the City could confirm there is no conflicting information with the current City EAs.	City of Markham

The following items were discussed	Action by
6.5 The City inquired about the timing for completion date for the project The Region noted the second OH is tentatively scheduled before the summer, however this will depend on the when the evaluation and all supporting documentation will be completed, as well as approvals from York Region management to allow the OH to proceed. The completion of the Environmental Study Report (ESR) is targeted for November 2022. Warden Avenue is scheduled for construction in 2027 and Kennedy Road for construction in 2028, however developers are requesting this timing be accelerated, if possible.	

The preceding are the minutes of the meeting as observed by the undersigned. Should there be a need for revision, please advise Burnside within seven days of issuance. In the absence of notification to the contrary, these minutes will be deemed to be an accurate record of the meeting.

Minutes prepared by:

R.J. Burnside and Associates Limited



Sylvia Waters

SW:js

Distribution:

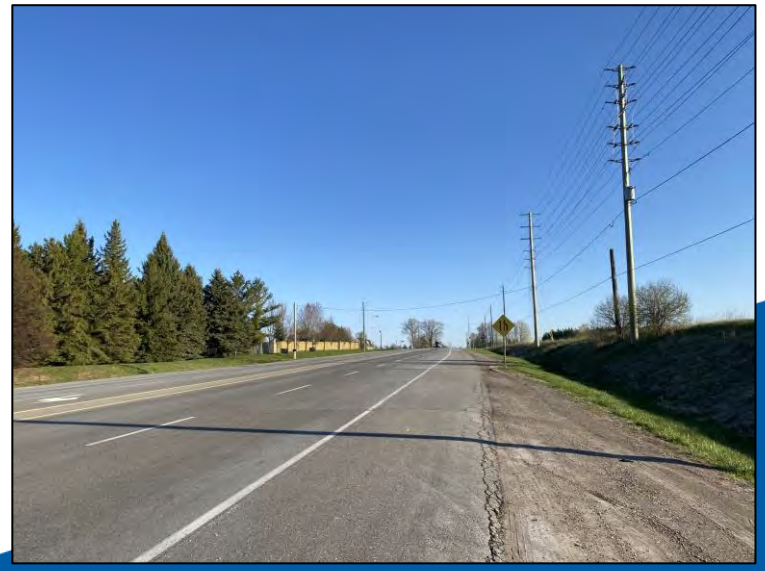
All Attendees via Email

Municipal Class Environmental Assessment Study

Warden Avenue and Kennedy Road from Major Mackenzie Drive to Elgin Mills Road

TAC Meeting #1

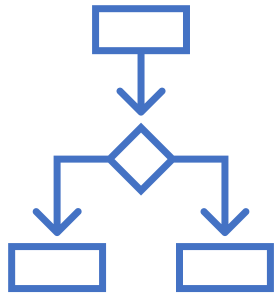
January 25, 2022

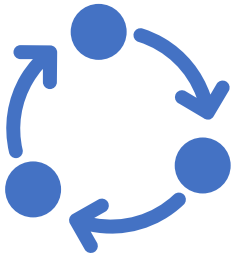


York Region

WELCOME

- **Introductions**
- **Purpose of Technical Advisory Committee (TAC)**
  - Discuss input, concerns, and technical details at various decision-making points throughout the study
  - Provide feedback and guidance to the Project Team.





TAC Meeting Objectives

Meeting # 1 (today):

- Review findings of the approved 2016 Transportation Master Plan (TMP) including Phases 1 and 2 recommendations.
- Review/discuss supporting studies and results of field investigations.
- Review preliminary alternative design concepts.
- Discuss issues / challenges in Study Areas.

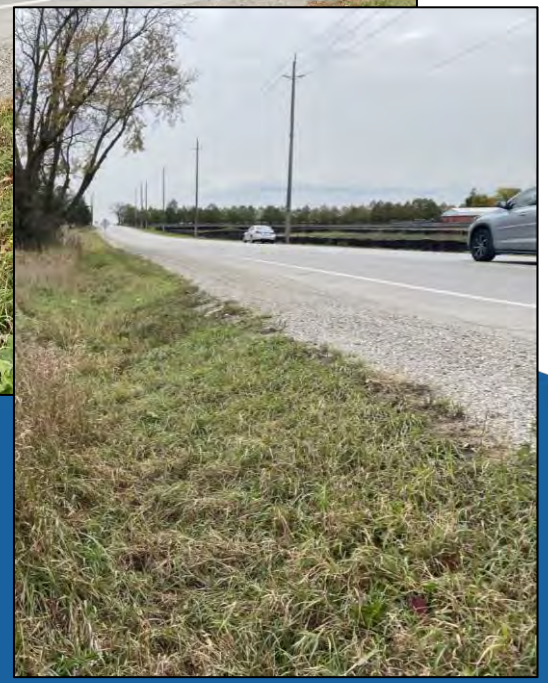
Meeting # 2 (tentatively May 2022):

- Review results of MCEA Phase 3, specifically the evaluation of alternative design concepts and Preliminary Preferred Design Concept.

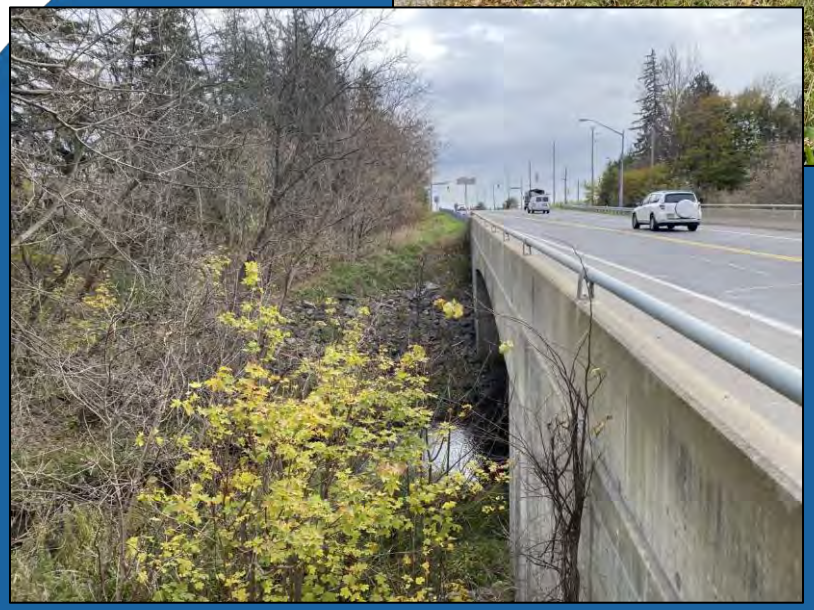
Project Overview

- Study Areas and Objectives
- Study Process and Planning Context
- Land Use and Future Development
- Existing Conditions
- Problem/Opportunity Statement
- Preferred Solution
- Preliminary Alternative Design Concepts
- Next steps
- Q&A

Warden North



Warden South



Kennedy Bridge

York Region

Study Areas and Objectives

The Regional Municipality of York is undertaking Schedule C Municipal Class Environmental Assessment (MCEA) Studies for improvements to Warden Avenue and Kennedy Road, between Major Mackenzie Drive East and Elgin Mills Road East, in the City of Markham.

- These studies build on the recommendations from the approved 2016 York Region Transportation Master Plan (TMP).
- Through the MCEA studies, York Region is examining how to complete the identified infrastructure and active transportation improvements, and to mitigate environmental impacts.

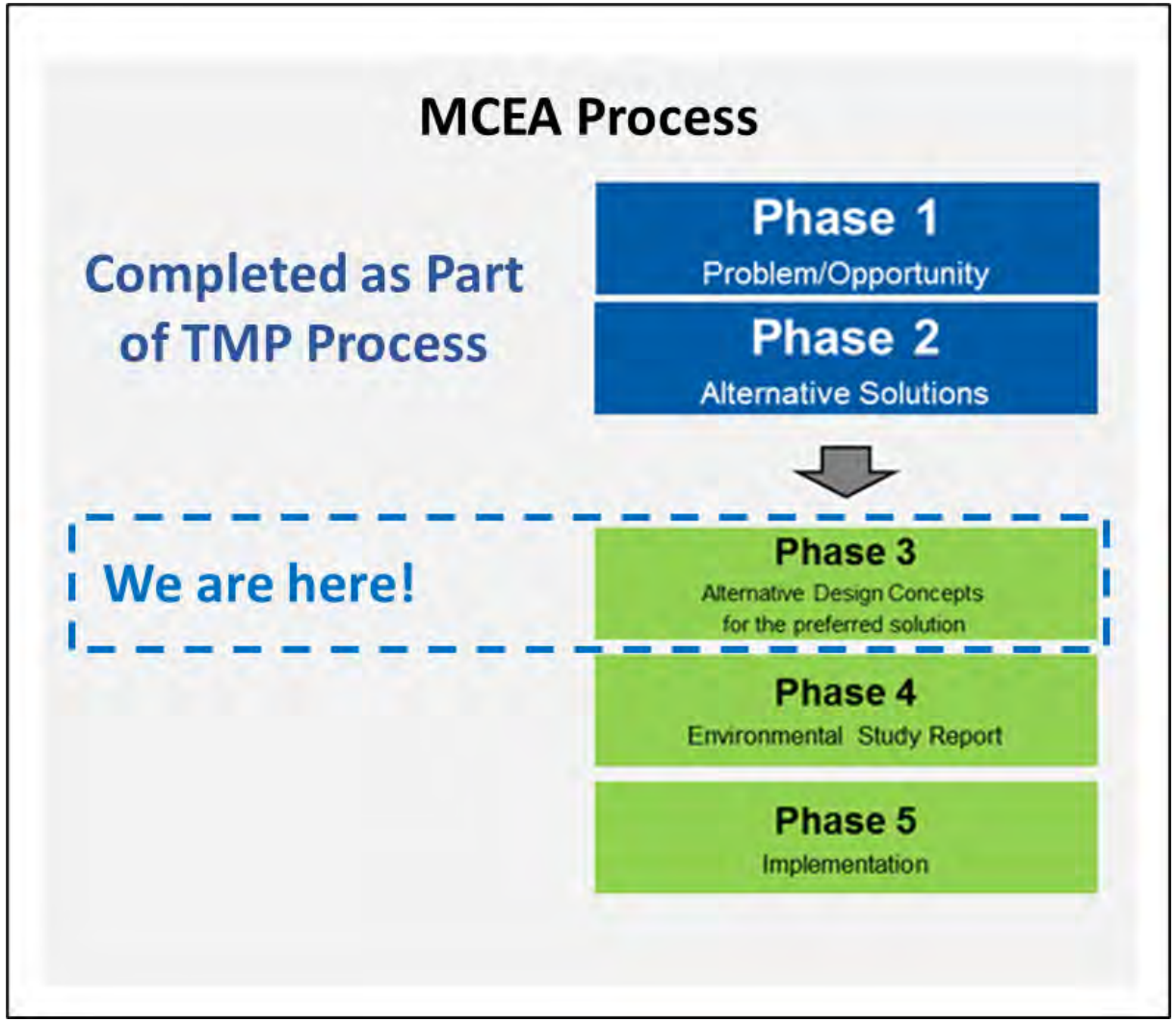
Municipal Class Environmental Assessment Process

Approved 2016 TMP

- Road needs and justifications established for the two study corridors.
- Completed to a level of detail that meets the requirements for Phase 1 and 2.

Current Studies

- Identify and evaluate Alternative Design Concepts for Preferred Solutions (Phase 3).
- Complete Environment Study Report (Phase 4).



Provincial Planning Policy Context

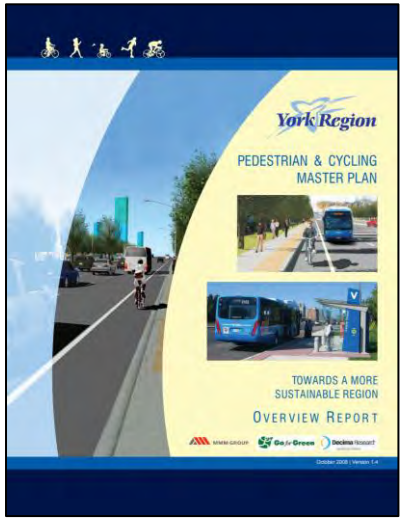
The following key provincial planning documents set the framework for these Studies:

- Provincial Policy Statement, 2020
- Provincial Growth Plan, 2020
- Greenbelt Plan, 2017

Regional Planning Policy Context

The following key Regional planning documents set the framework for these Studies:

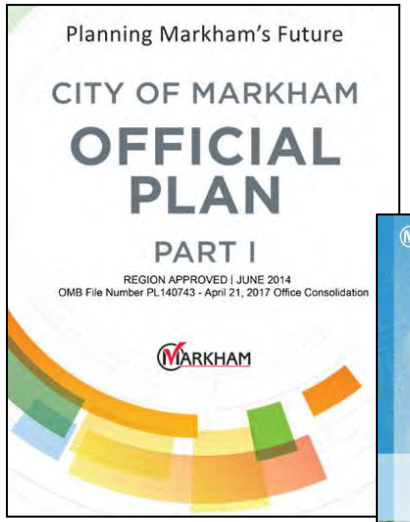
- York Region Official Plan, 2016
- York Region Vision 2051, 2011
- York Region's Sustainability Strategy, 2007
- York Region Transportation Master Plan, 2016
- York Region's Pedestrian and Cycling Master Plan, 2007
- York Region Transit Business Plan for 2021 – 2025

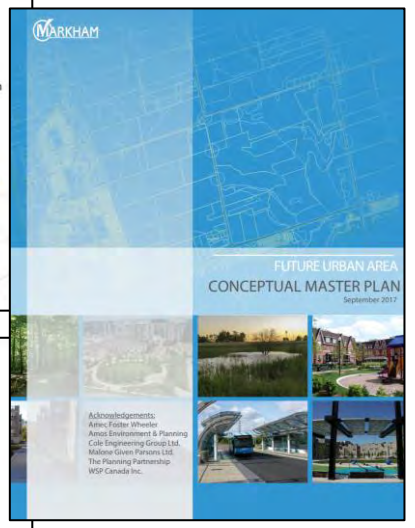


Municipal Planning Policy Context

The following key Municipal planning documents set the framework for these Studies:

- City of Markham Official Plan, 2014
- City of Markham's Future Urban Area Conceptual Master Plan, 2017
- City of Markham Active Transportation Master Plan, 2020
- Elgin Mills Road Municipal Class EA (in progress)





The York Region of Tomorrow

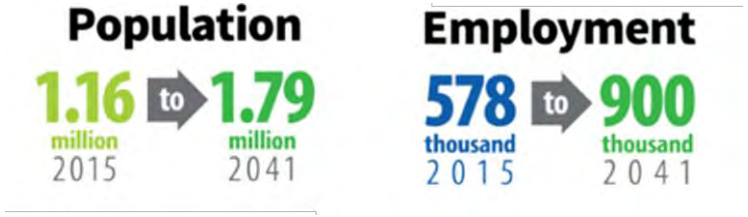
Historical Growth

Since 1971, York Region's population has increased nearly seven-fold.

Planned Growth

50% Increase in population between 2015 and 2041

55% Increase in employment between 2015 and 2041

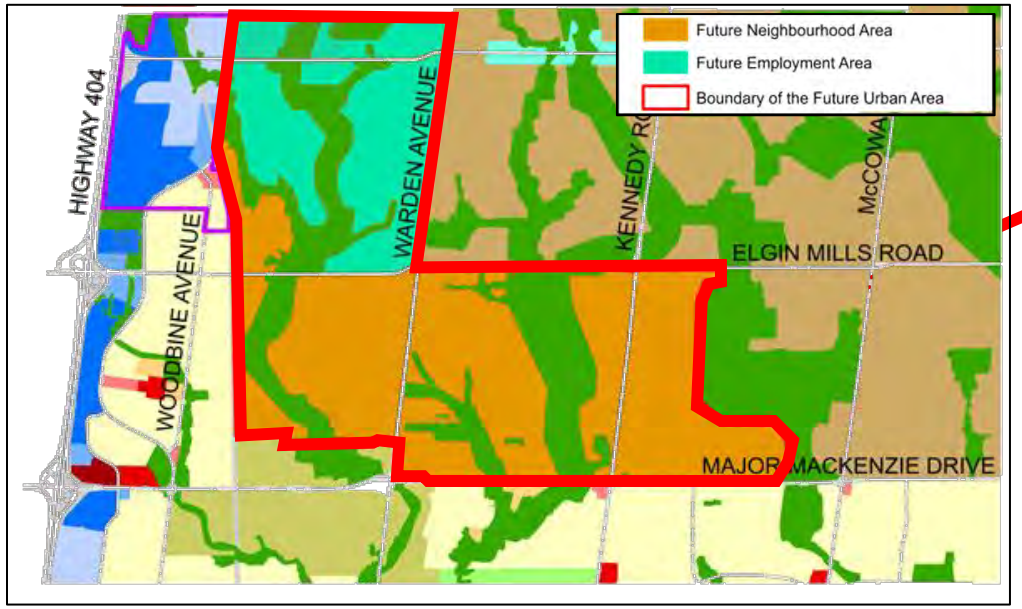


Improvements to the Warden Avenue and Kennedy Road corridors will be necessary to support the growth in the community.

Existing Land Use and Future Development

The Study Areas are mostly undeveloped agricultural lands with some commercial and residential properties.

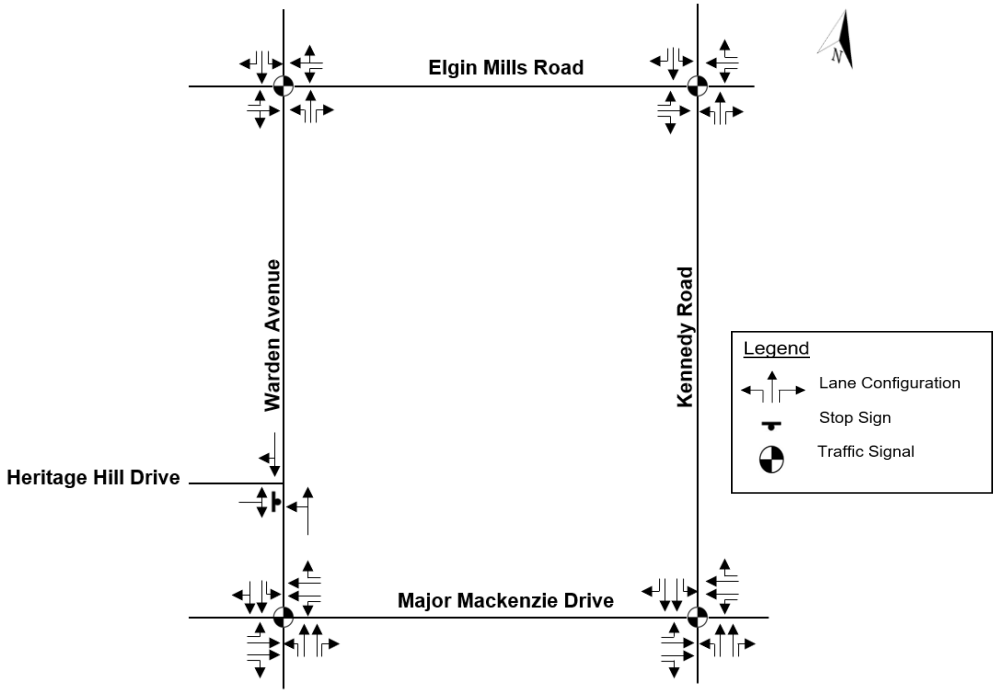
- Located within the City of Markham Future Urban Area (FUA).
- Development blocks proposed west and east of both Warden Avenue and Kennedy Road.



Existing Road Network

- Warden Avenue is a north-south, two-lane rural arterial road with posted speed limits of 60 km/hr from Major Mackenzie Drive to Heritage Hill Drive and 80 km/hr from Heritage Hill Drive to Elgin Mills Road.

- Kennedy Road is a north-south, two-lane rural arterial road with posted speed limits of 60 km/hr from Major Mackenzie Drive to 300 m north of the intersection and 80 km/hr for the remainder.



Study Corridors

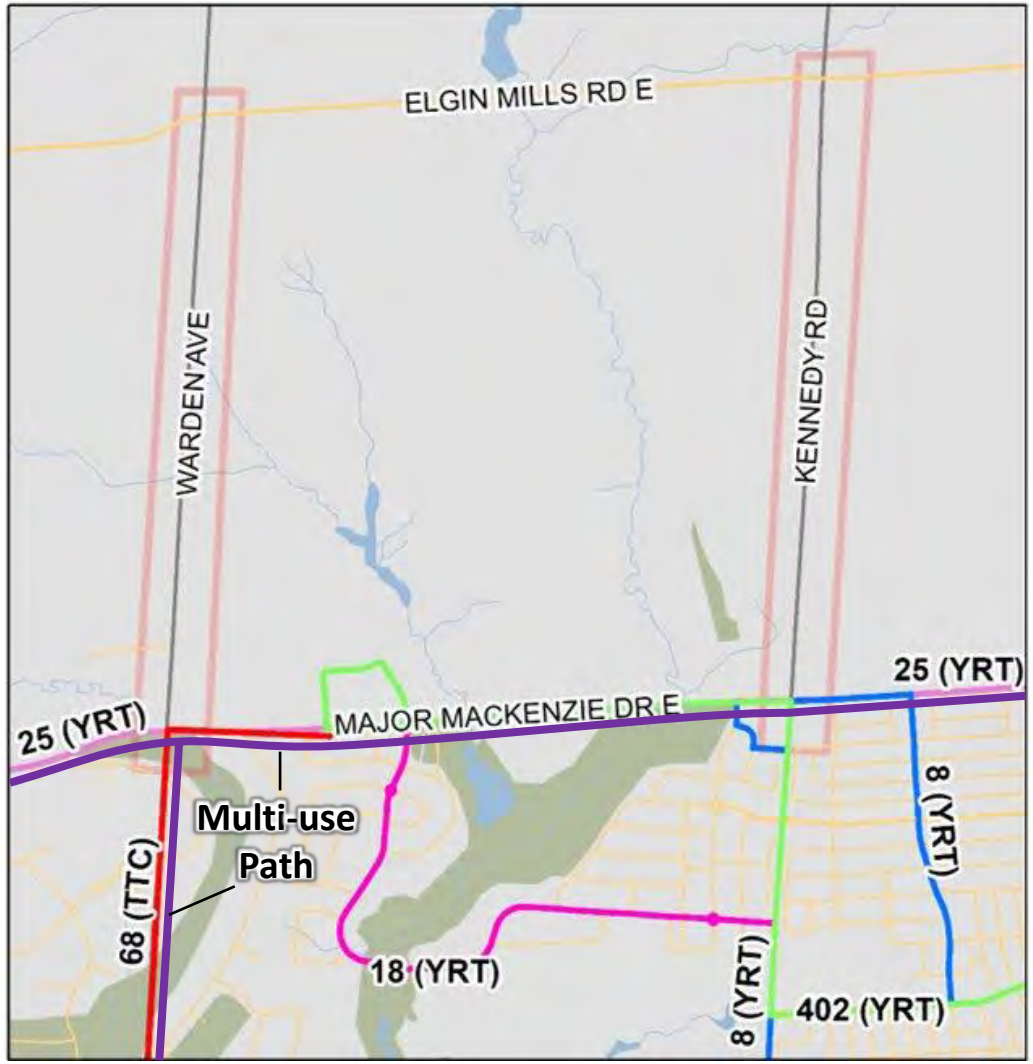
Name (Approximate Length)	Jurisdiction	Classification	Number of Through Lanes in Each Direction	Posted Speed Limit
Kennedy Road (2.0 km)	York Region	Regional Arterial Road	1	60 - 80 km/hr
Warden Avenue (2.1 km)	York Region	Regional Arterial Road	1	60 - 80 km/hr

Intersecting Roads

Name (Approximate Length)	Jurisdiction	Classification	Number of Through Lanes in Each Direction	Posted Speed Limit
Major Mackenzie Drive East (2.1 km)	York Region	Regional Arterial Road	2	70 km/hr
Elgin Mills Road East (2.0 km)	City of Markham	City Arterial Road	1	60 km/hr

Existing Transit and Active Transportation Network

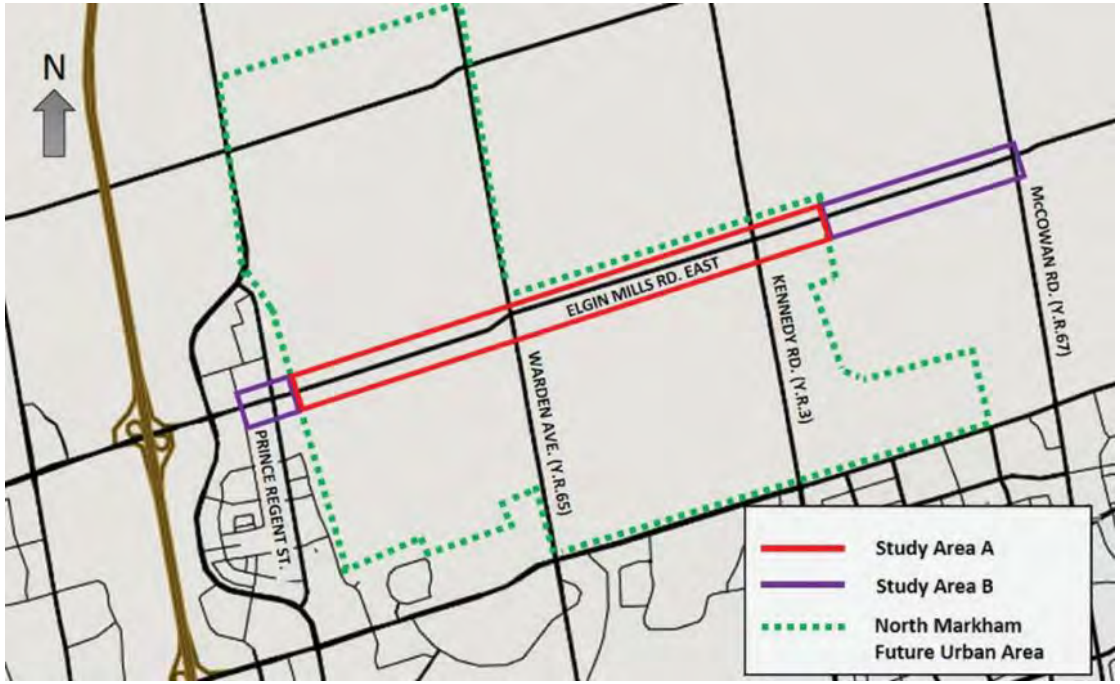
- 1.0 m to 3.0 m wide paved shoulders along Warden Avenue and Kennedy Road.
- Multi-use paths along Major Mackenzie Drive East and south of Major Mackenzie Drive on Warden Avenue.
- Opportunity to improve Active Transportation connectivity as part of improvements.
- No transit service along the two study corridors.
- YRT and TTC bus services south of Major Mackenzie Drive East.



TTC, YRT Bus Routes, and multi-use paths near the Study Areas

Elgin Mills Road East Class Environmental Assessment

The City of Markham is conducting an EA to provide transportation improvements along Elgin Mills Rd.



The City's EA intersects the study area of the EAs being conducted by the Region at the intersections of Kennedy Rd. and Warden Ave. along Elgin Mills Rd. E.

The City's traffic analysis for the **Elgin Mills Rd. E. and Kennedy Rd. intersection** recommended to:

- Provide additional eastbound and westbound through lanes, and
- Improve signal timings

The traffic analysis for the **Elgin Mills Rd. and Warden Ave. intersection** recommended to:

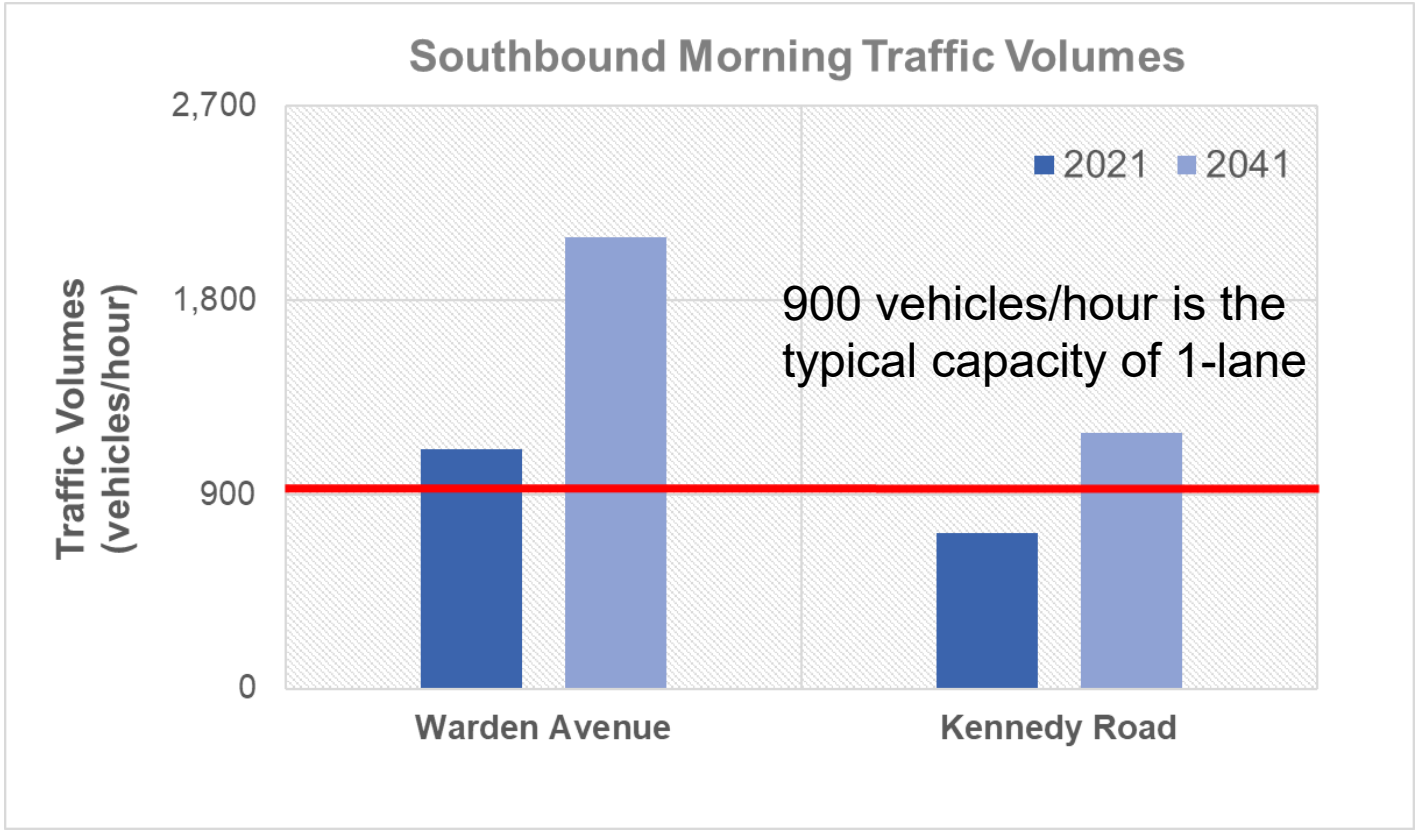
- Provide additional eastbound and westbound through lanes,
- Provide exclusive eastbound and westbound right-turning lanes, and
- Improve signal timings

Existing and Future Traffic Volumes (AM Southbound Direction)

Existing and future road traffic capacity constraints were identified

2021- Southbound morning traffic volumes along Warden Avenue are congested.

2041- Southbound morning traffic volumes along Kennedy Road and Warden Avenue are forecasted to be considerably higher than the existing road capacity by 2041.

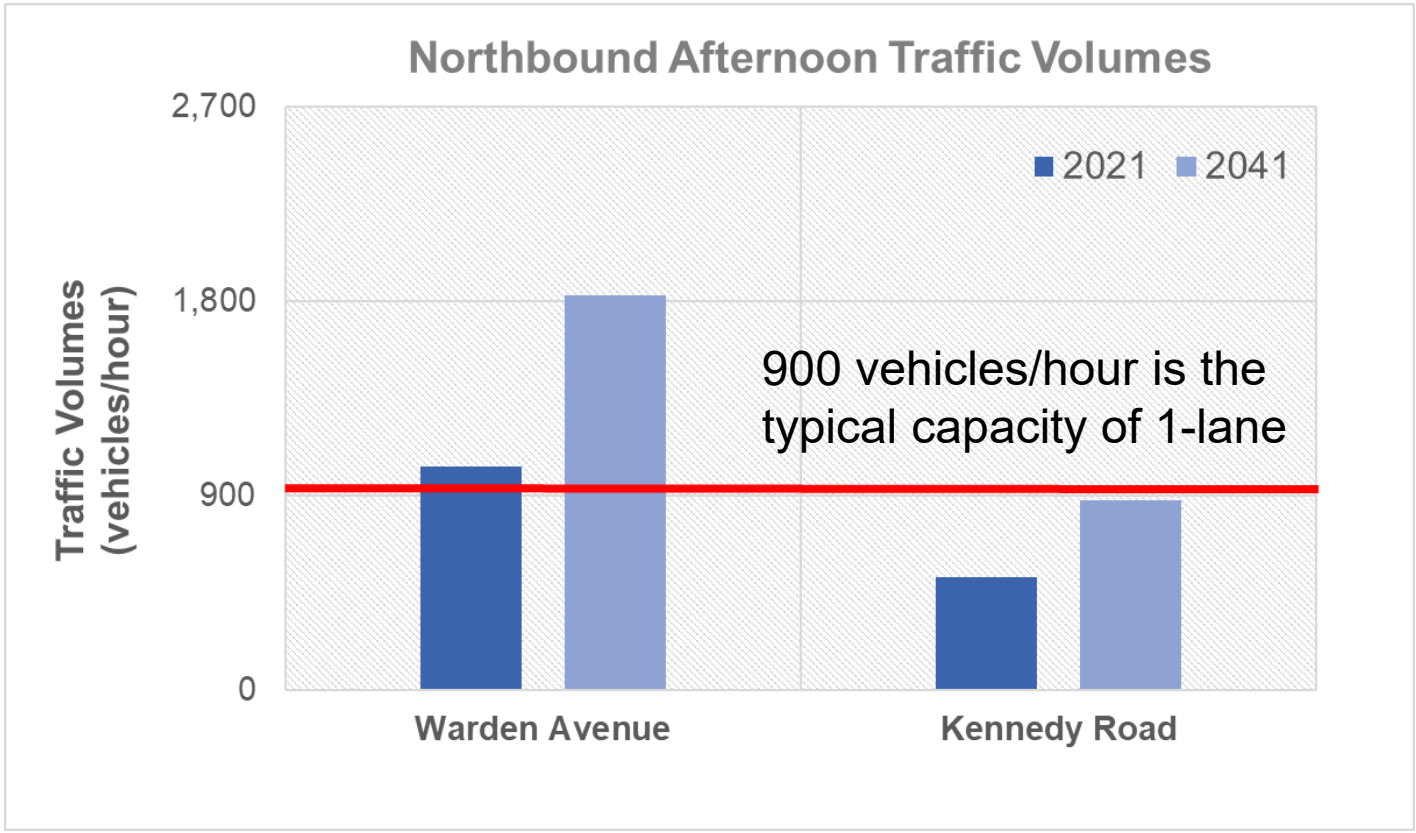


Existing and Future Traffic Volumes (PM Northbound Direction)

Existing and future road traffic capacity constraints were identified

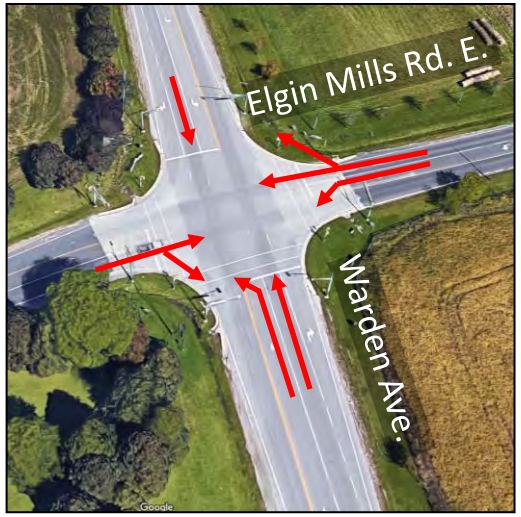
2021- Northbound afternoon traffic volumes along Warden Avenue are congested.

2041- Northbound afternoon traffic volumes along Warden Avenue are forecasted to be considerably higher than the existing road capacity by 2041.
Northbound afternoon traffic volumes along Kennedy Road are approaching road capacity.

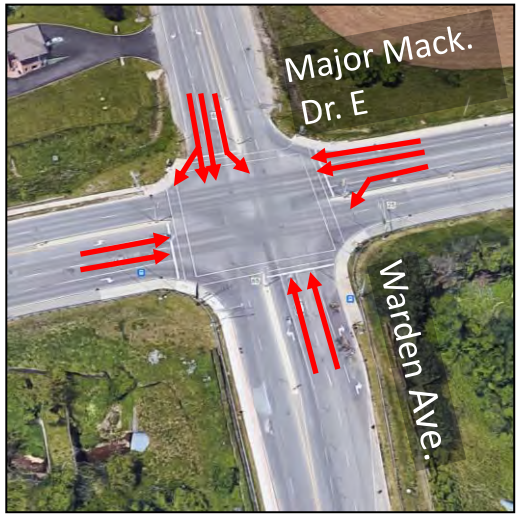


Existing Road Network with Future Traffic Demand

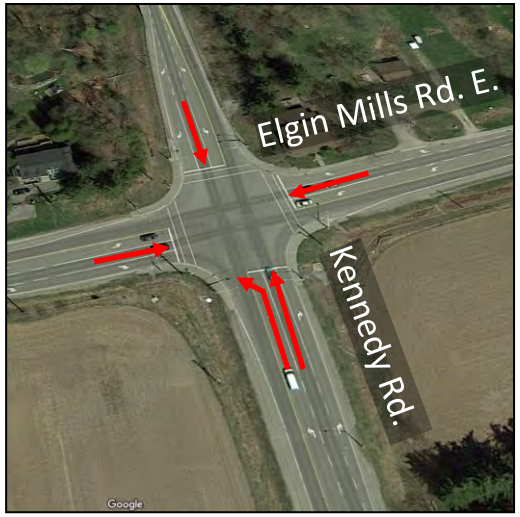
Delays at intersections are predicted to worsen if no improvements are undertaken



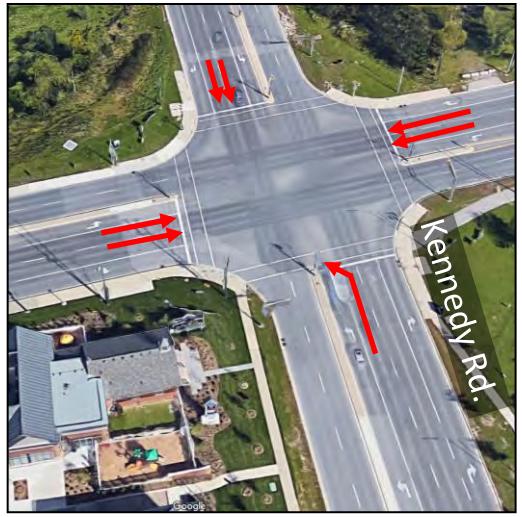
Warden Ave. and Elgin Mills Rd. E.



Warden Ave. and Major Mackenzie Dr. E.



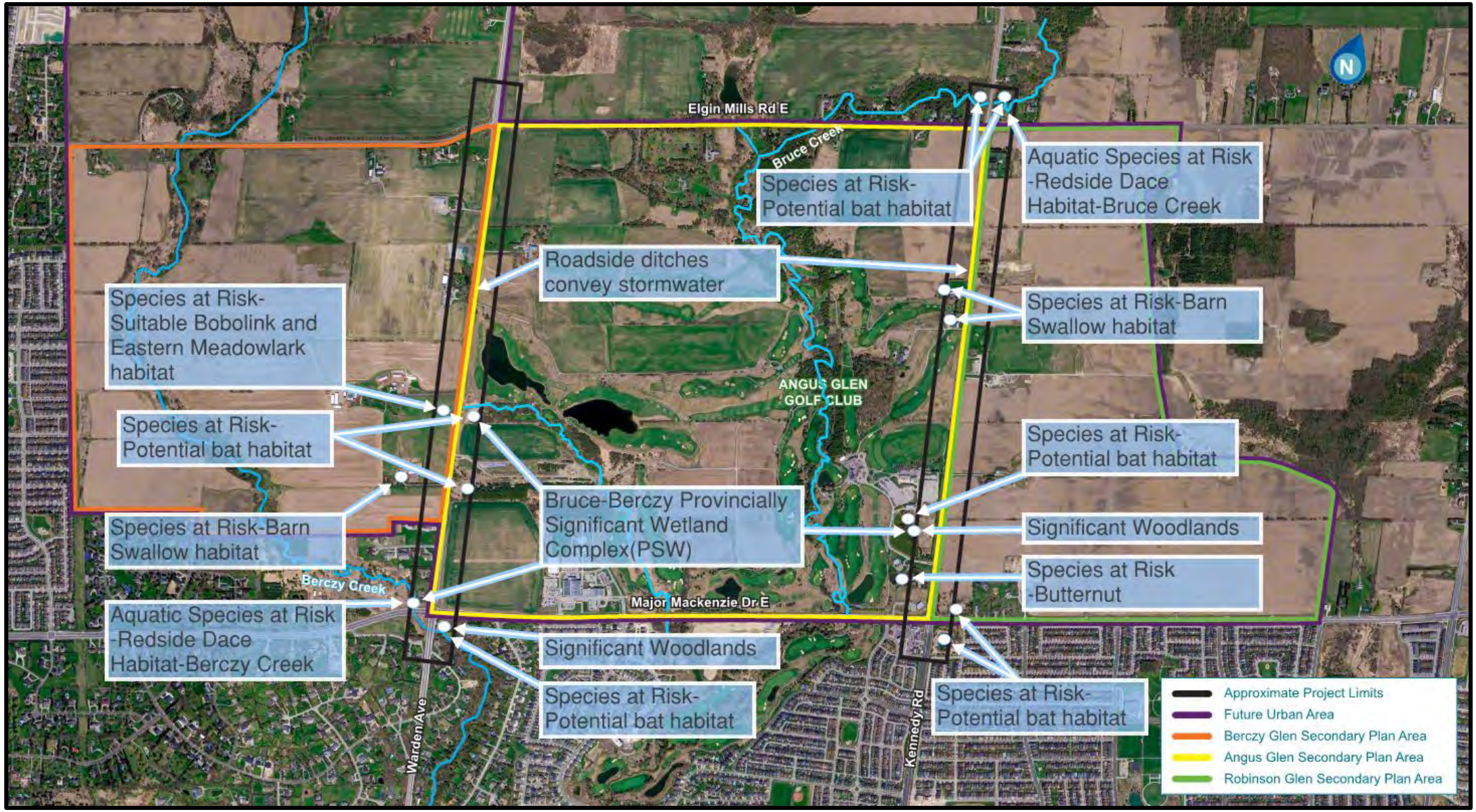
Kennedy Rd. and Elgin Mills Rd. E.



Kennedy Rd. and Major Mackenzie Dr. E.

Arrows in red indicate the anticipated intersection movements that will experience significant delays by 2041 if no improvements are made

Existing Natural Heritage Features



Existing Cultural Heritage

The Warden Avenue and Kennedy Road Study Areas are a mixture of residential, agricultural, and recreational properties with rural land use history dating back to the early nineteenth century.

The Study Areas are within the traditional territory of the Michi Saagiig and Chippewa Nations, collectively known as the Williams Treaties First Nations.

Warden Avenue

- Six features of cultural heritage value consisting of a barn and farmscapes.

Kennedy Road

- Sixteen features of cultural heritage value consisting of a barn, schoolhouse, residences and farmscapes and agricultural field.
- Pingle Farm Cemetery - small family cemetery that dates to prior to 1866.

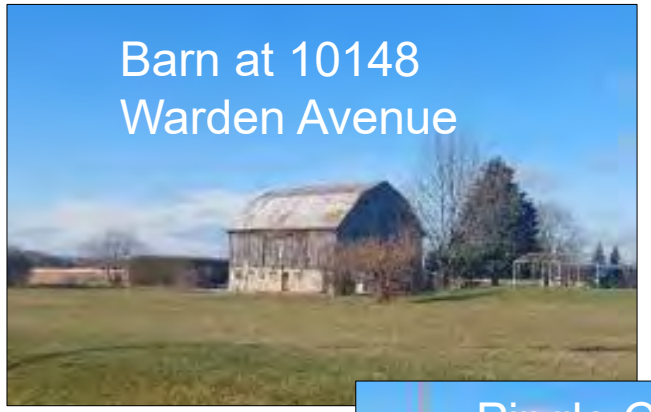


Image Source: Cultural Heritage Report, ASI

Existing Hydrogeological Environment

- Groundwater in the Study Areas is contained within an upper, middle and lower aquifer below the ground surface.
- Depth to groundwater ranges from 1 m to 9 m below ground surface.
- Seasonal groundwater discharge to wetlands and watercourses has been observed in previous studies.
- Individual private water wells supply the area north of Major Mackenzie Drive and within 500 m of the Study Area corridors.

Source Water Protection

Significant Groundwater Recharge Areas (SGRAs)

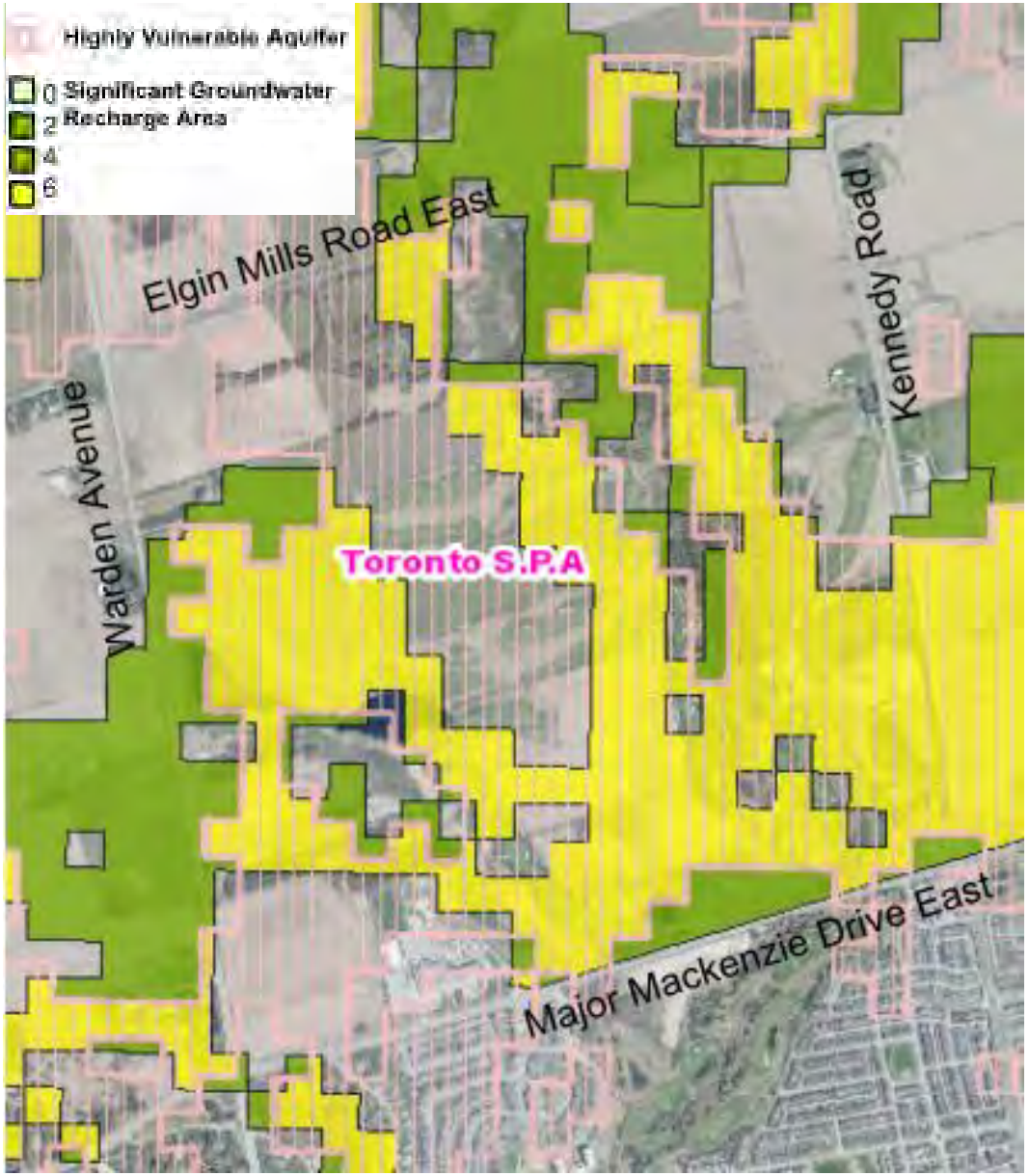
The Study Areas fall within an SGRA with vulnerability scores 4 (medium) and 6 (high).

Highly Vulnerable Aquifers (HVAs)

The Study Areas fall within an HVA area with vulnerability score of 6.

Groundwater Vulnerability	Vulnerability Score
High	6
Medium	4
Low	2

Source: Toronto and Region Source Protection Area Assessment Report, July 2015



Source: Source Protection Information Atlas, MECP

Approved 2016 Transportation Master Plan

Approved 2016 Transportation Master Plan

The approved 2016 TMP documented broader, Region-wide problems and opportunities, including:

- Creating a road network 'Fit for the Future'.
- Integration of active transportation in urban areas.

Problem and opportunities identified in the 2016 TMP for Warden Avenue and Kennedy Road Study Areas:

- Transportation network improvements are needed to accommodate expansion of the designated Urban Area and future travel demands.
- Capacity improvements are needed to accommodate future travel demands.
- Corridor improvements to support walking, cycling and transit access.

Current analysis of existing and future traffic and development in the Study Area corridors have confirmed the Problem/Opportunities identified in the approved 2016 TMP.

Summary of Alternative Solutions Considered for Warden Avenue in the 2016 TMP

	Alternative Solution	Evaluation
1	Do Nothing	Did not address the problem or opportunity statement.
2	Optimize existing facility with intersection improvements only.	Provided minor improvements to traffic flow. Did not address overall traffic congestion.
3	Urbanize corridor but maintain 2-lane cross-section.	Did not address traffic congestion. Addressed opportunity to improve walking and cycling facilities.
4	Widen corridor to 4 lanes and maintain rural cross-section.	Addressed traffic capacity. Did not address. opportunity to improve walking and cycling facilities.
5	Widen corridor to 4 lanes and construct to urban cross-section.	Addressed traffic capacity. Addressed opportunity to improve walking, cycling, and transit facilities.
6	Widen parallel/adjacent corridor.	Potential to divert some traffic to other corridors. Did not address corridor congestion and provided no improvements to walking and cycling facilities.

The 2016 TMP recommended to widen Warden Avenue to 4 lanes and construct to urban arterial standard. The justification provided was that the forecasted traffic volume meets the threshold for a 4-lane widening. This recommendation provides an opportunity to improve walking, cycling and transit facilities.

Summary of Alternative Solutions Considered for Kennedy Road in the 2016 TMP

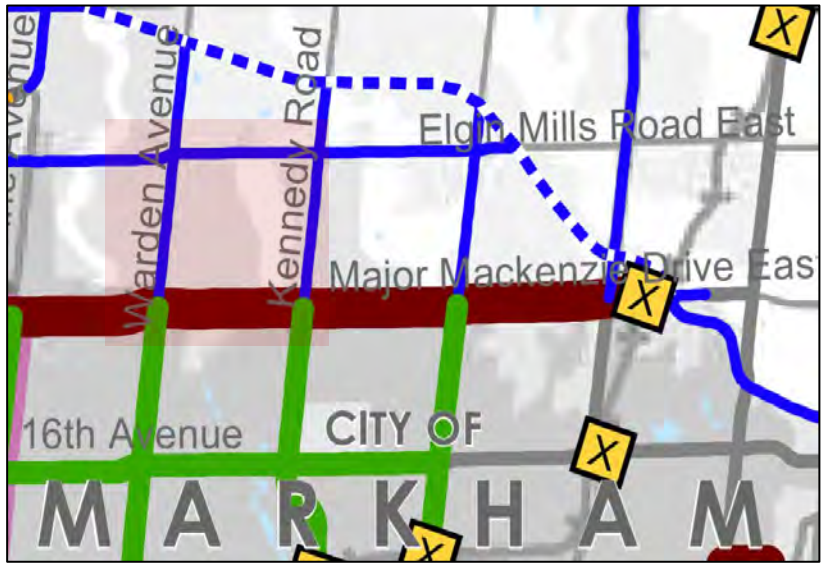
	Alternative Solution	Evaluation
1	Do Nothing	Did not address the problem or opportunity statement.
2	Optimize existing facility with intersection improvements only.	Provided minor improvements to traffic flow. Did not address overall traffic congestion.
3	Urbanize corridor but maintain 2-lane cross-section.	Did not address traffic congestion. Addressed opportunity to improve walking and cycling facilities.
4	Widen corridor to 4 lanes and construct to urban arterial standard.	Addressed traffic capacity. Addressed opportunity to improve walking, cycling, and transit facilities.
5	Widen parallel/adjacent corridor.	Potential to divert some traffic to other corridors. Did not address corridor congestion and provided no improvements to walking and cycling facilities.

The 2016 TMP recommended to widen Kennedy Road corridor to 4 lanes and construct to urban arterial standard. The justification provided was that the forecasted traffic volume meets the threshold for a 4-lane widening. This recommendation provides an opportunity to improve walking, cycling and transit facilities.

Preferred Solutions (Approved 2016 TMP)

- Widen to two lanes in each direction and construct to urban arterial standard.
- Provide opportunity to improve transit network.
- Provide opportunity to improve walking and cycling facilities.

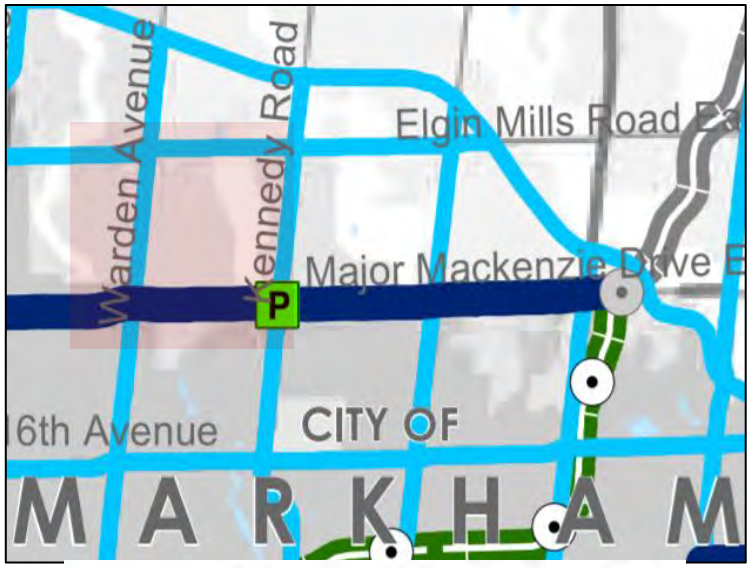
Lane improvement



Proposed Future 4 Lane Widening

Source: Map 8, Proposed 2041 Road Network (2016 TMP)

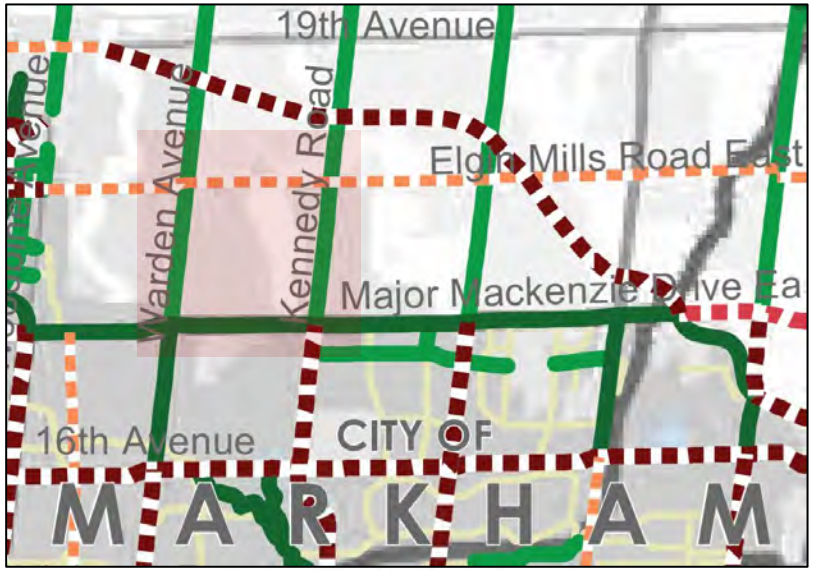
Transit improvement



Frequent Transit Network

Source: Map 7, Proposed 2041 Road Network (2016 TMP)

Active transportation improvement



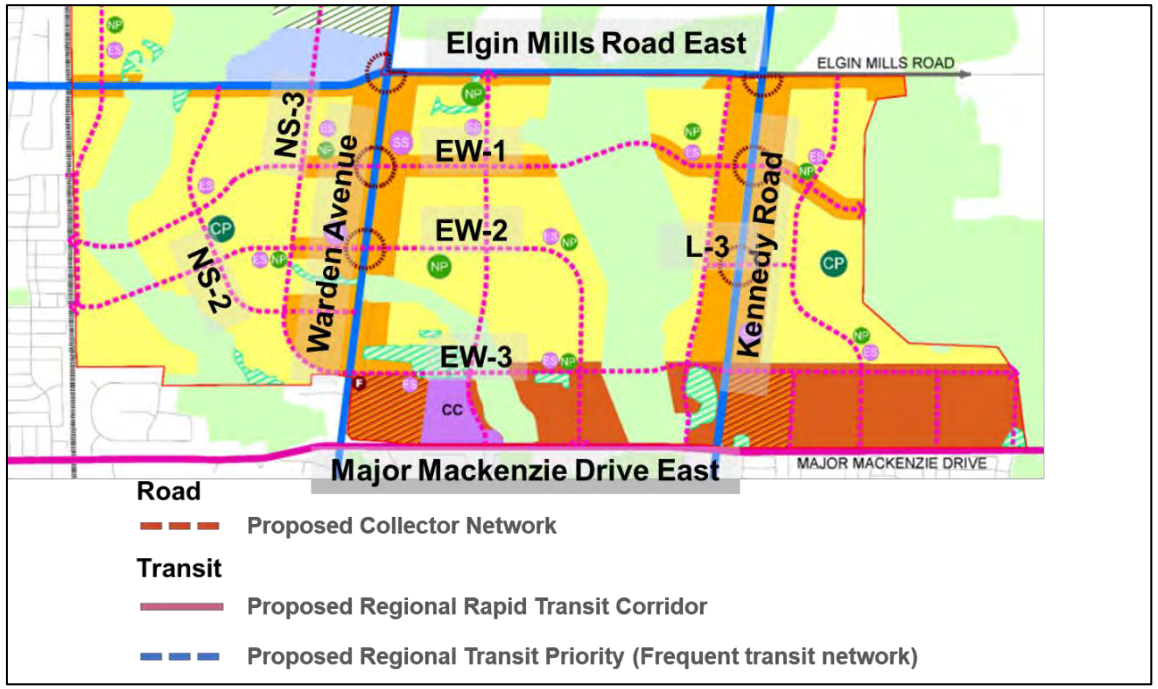
Dedicated Facility

Source: Map 9, Proposed 2041 Cycling Network (2016 TMP)

Additional Recommendations for Warden Avenue and Kennedy Road

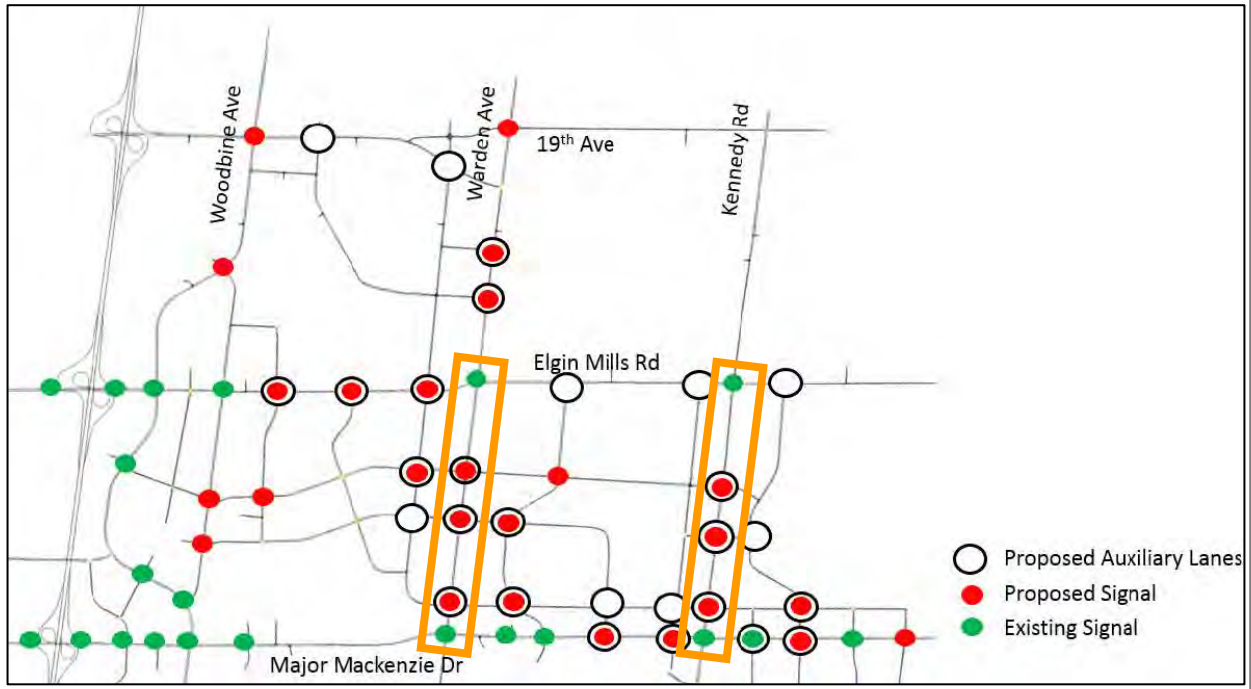
The City of Markham's Future Urban Area Conceptual Master Plan

Recommended comprehensive collector road network of roads and active transportation infrastructure



Proposed Community Structure Plan (Conceptual Master Plan)
Adapted from: Future Urban Area Conceptual Master Plan Volume 2 (October 2018)

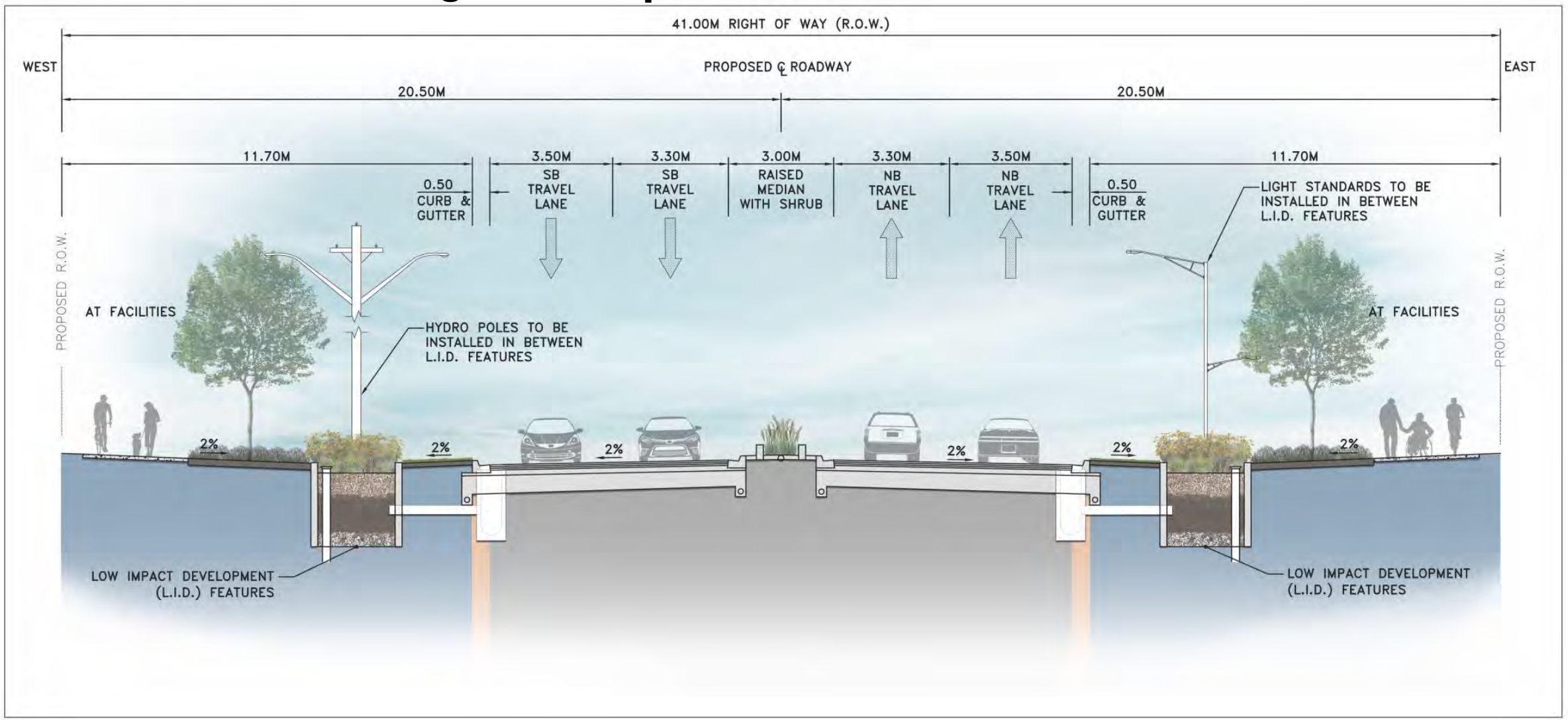
Anticipated signals in support of the future development and travel demands



Proposed Signal and Intersection Configuration
Source: Future Urban Area Conceptual Master Plan Volume 2 (October 2018)

Preliminary Alternative Design Concepts

Alternative Design Concept 1

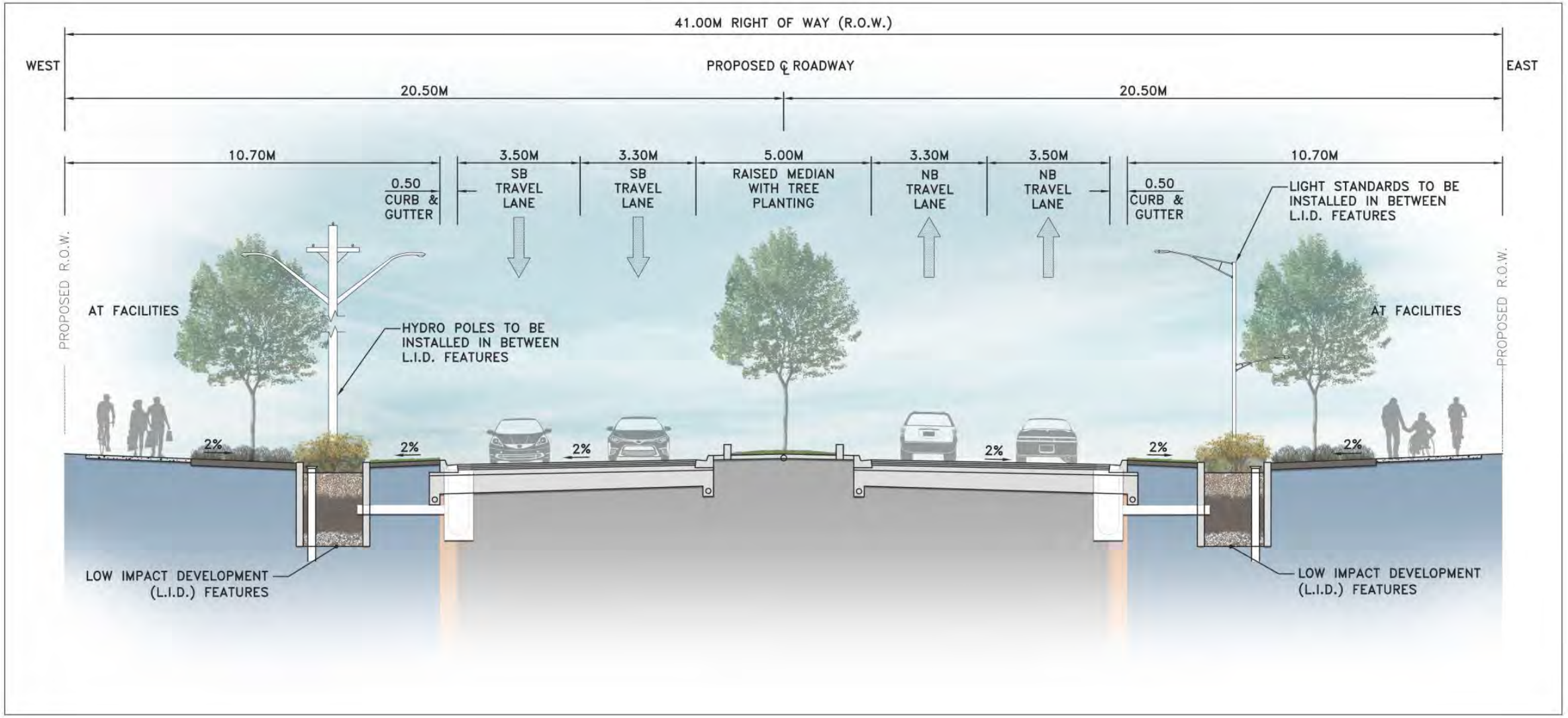


WARDEN AVENUE AND KENNEDY ROAD

TYPICAL 4-LANE CROSS SECTION | WITH 3.0M MEDIAN ISLAND

BURNSIDE

Alternative Design Concept 2

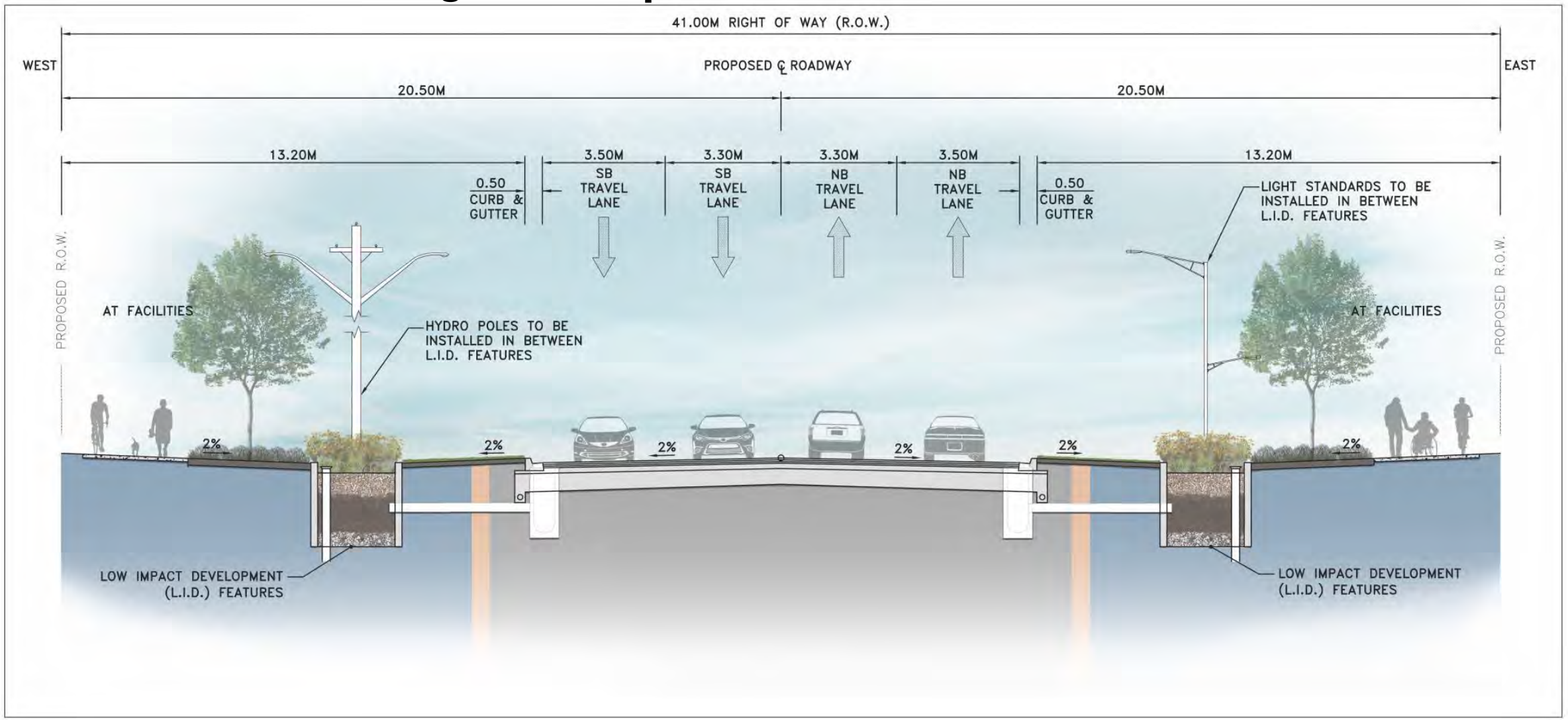


WARDEN AVENUE AND KENNEDY ROAD

TYPICAL 4-LANE CROSS SECTION | WITH 5.0M MEDIAN ISLAND

BURNSIDE

Alternative Design Concept 3



WARDEN AVENUE AND KENNEDY ROAD

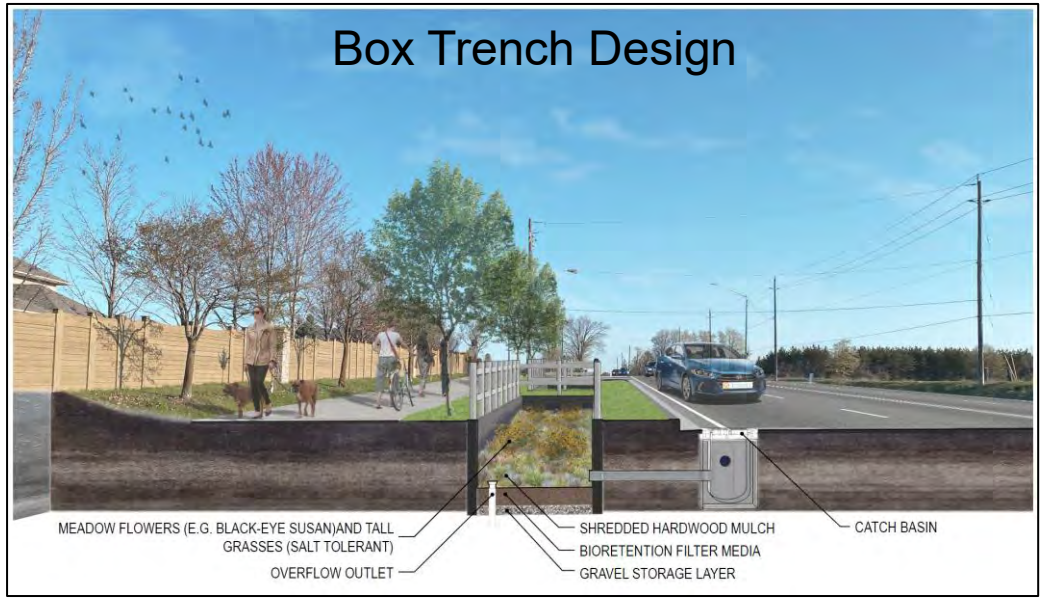
TYPICAL 4-LANE CROSS SECTION | WITHOUT MEDIAN ISLAND

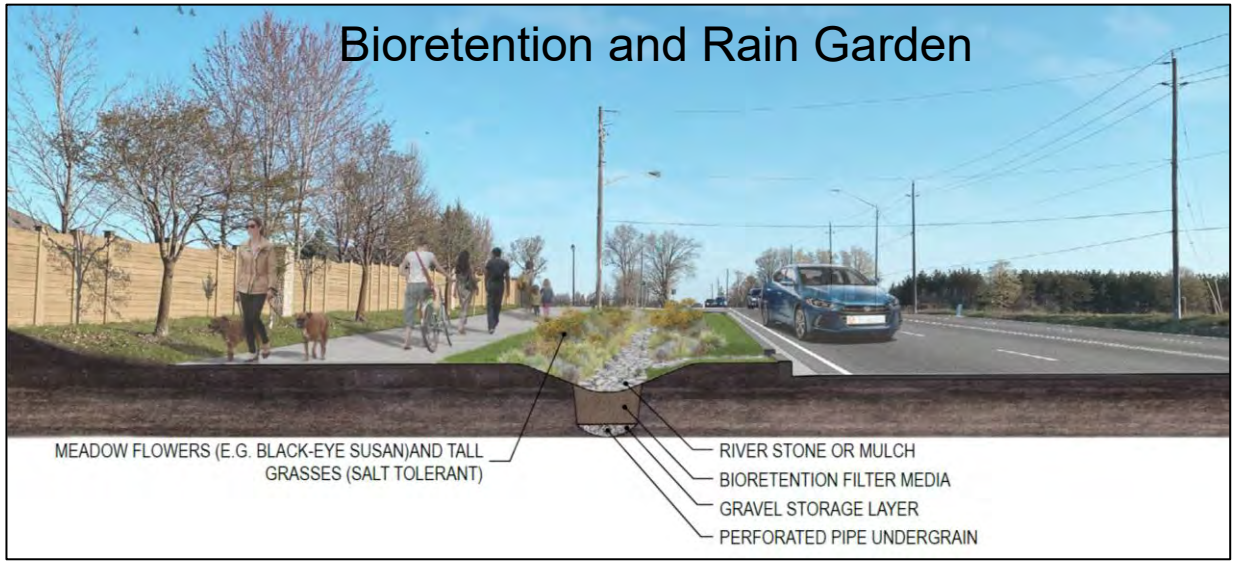
BURNSIDE

Low Impact Development (LID) Measures

LID uses cost-effective construction and building methods to store, filter and infiltrate rainwater and snow melt into the ground. LID measures are necessary to consider for all road widening projects to address increased impervious surfaces and improve sustainable and climate adaptive solutions. Some example designs that are feasible for road improvement projects and are being considered for Warden Avenue and Kennedy Road include:

- Box Trench Design
- Underground storage tanks
- Vegetated/Bio Swale Design
- Bioretention and Rain Garden Design
- Infiltration trenches and soak-aways
- Permeable pavement
- Above-ground rainwater harvesting tanks





Studies to Support Evaluation of Alternative Design Concepts

- Traffic and Safety Assessment
- Stormwater Management, Drainage and Hydrology Assessment
- Foundation Design
- Hydrogeological Assessment
- Noise Impact Assessment
- Air Quality Impact Assessment
- Natural Heritage Impact Assessment
- Fluvial Geomorphological Assessment
- Archaeological and Cultural Heritage Assessments
- Contamination Overview Study
- Low Impact Development Assessment and Benefit-Cost Analysis

Preliminary Evaluation Criteria

The Alternative Design Concepts in the Study Areas will be evaluated relative to each other against a set of criteria. Preliminary criteria are provided below under each of the project environments:

Natural Environment

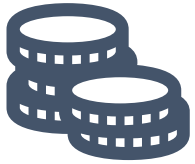
- Potential impact to vegetation
- Potential impact to wildlife habitat and habitat of species at risk
- Potential impact to water resources and drainage
- Potential climate change impact and resilience

Engineering Environment

- Level of service / traffic congestion
- Operational safety / roadside safety
- Design constraints
- Utility impacts
- Constructability

Socio-Cultural Environment

- Potential impact to heritage resources (e.g., archaeology, cultural heritage)
- Nuisance impacts (e.g., noise, visual, or construction impacts)
- Land acquisition needs, impacts to driveway access
- Conformity to municipal and agency policy
- Level of service for local residents and business, impact to municipal services
- Connectivity and safety



Financial Environment

- Estimated capital costs
- Estimate operation and maintenance costs
- Property acquisition costs

Next Steps

- Review public feedback on Study Area concerns and Design Concepts
- Refine and Evaluate the Alternative Design Concepts
- Select and Develop Preferred Design
- Present the Preliminary Preferred Design at Public Open House 2

York Region

TAC Feedback

From the information presented today, the Study Team is looking for feedback from the TAC on:

- Issues or Constraints in the Study Area
- Preliminary Alternative Design Concept Cross-Sections

Please provide any additional feedback by **February 1, 2022**

York Region

Questions

We are happy to answer your questions.

For more information, visit us at:
www.york.ca/WardenKennedyStudy

During the Studies, please connect with the Study Team by sending us an email to:
Jennifer.Vandermeer@rjburnside.com

York Region

Sylvia Waters

From: Jennifer Vandermeer
Sent: Tuesday, January 25, 2022 4:53 PM
To: Chiu, Edward; Lee, Jessica; Alemi- Baygy, Tanin; harsimrat.pruthi@trca.ca; Harsha.Gammanpila@trca.ca; Siu, Mark; jscovell@markham.ca; jlanni@markham.ca
Cc: Deanna De Forest; Ray Bacquie; Gordon Hui; Sylvia Waters
Subject: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting Presentation
Attachments: 052314 Warden Kennedy EAs - TAC_220125.pdf

Good afternoon,

Thank-you for attending the TAC meeting today and for your preliminary feedback on the study. We look forward to continuing to consult with you as part of these studies. As discussed at the meeting, if you could please provide us with any additional feedback you may have on the information shared at today's meeting, please kindly respond back by **February 1, 2022** as we prepare for the upcoming Public Open House #1.

Harsha, please let us know if TRCA technical staff are available on Thursday January 27 from 9:30am-11am for a meeting. If this time doesn't work, please let us know if something can be accommodated with your technical staff early next week.

Best regards,
Jennifer

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Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Unit 20, Guelph, ON N1H 1C4
Office: 800-265-9662 Direct: 226-486-1559
www.rjburnside.com

Sylvia Waters

From: Sylvia Waters
Sent: Wednesday, April 06, 2022 1:45 PM
To: harsimrat.pruthi@trca.ca; Harsha Gammanpila; Emily.Markovic@trca.ca; Matthew.Kuyntjes@trca.ca; Elyse.Dickson@trca.ca; Chiu, Edward; Alemi- Baygy, Tanin; Deanna De Forest; Jennifer Vandermeer
Subject: RE: 052314-Warden - Kennedy Presentation January 27, 2022
Attachments: 052314 Warden Kennedy EAs - TRCA Mtg 220127.pdf

Good afternoon,
In addition to the email below sent on April 4, 2022 with attached minutes of the January 27, 2022 meeting, please find the attached the presentation given at that meeting.

We look forward to continuing to consult with you as part of these studies.

From: Sylvia Waters
Sent: Monday, April 04, 2022 1:59 PM
To: harsimrat.pruthi@trca.ca; Harsha Gammanpila <Harsha.Gammanpila@trca.ca>; Emily.Markovic@trca.ca; Matthew.Kuyntjes@trca.ca; Elyse.Dickson@trca.ca; Chiu, Edward <Edward.Chiu@york.ca>; Alemi- Baygy, Tanin <Tanin.Alemi-Baygy@york.ca>; Deanna De Forest <Deanna.DeForest@rjburnside.com>; Jennifer.Vandermeer@rjburnside.com
Subject: 052314-Warden - Kennedy EA Minutes January 27, 2022

Hello
Please find attached minutes of the January 27, 2022 meeting, regarding Warden Avenue and Kennedy Road EA Studies between Major Mackenzie Drive and Elgin Mills Road.

R.J. Burnside & Associates Limited 6990 Creditview Road, Unit 2 Mississauga ON L5N 8R9 CANADA
telephone (905) 821-1800 **fax** (519) 941-8120 **web** www.rjburnside.com

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[THE DIFFERENCE IS OUR PEOPLE]

Minutes of Meeting

Meeting Date:	January 27, 2022	**Project No.:**	300052314.0000
Project Name:	Warden Ave. and Kennedy Rd. EA Studies between Major Mackenzie Drive and Elgin Mills Road		
Meeting Subject:	TRCA Meeting		
Meeting Location:	Microsoft Teams Meeting		
Date Prepared:	February 3, 2022		

Those in attendance were:

Edward Chiu	York Region (Region)	Edward.Chiu@york.ca
Tanin Alemi-Baygy	Region	Tanin.Alemi-Baygy@york.ca
Harsimarat Pruthi	Toronto and Region Conservation Authority (TRCA)	harsimrat.pruthi@trca.ca
Harsha Gammanpila	TRCA	Harsha.Gammanpila@trca.ca; HGammanpila@trca.ca
Emily Markovic	TRCA	Emily.Markovic@trca.ca;
Matthew Kuyntjes	TRCA	Matthew.Kuyntjes@trca.ca;
Elyse Dickson	TRCA	Elyse.Dickson@trca.ca;
Jennifer Vandermeer	R.J. Burnside & Associates Limited (Burnside)	Jennifer.vandermeer@rjburnside.com
Deanna De Forest	Burnside	Deanna.Deforest@rjburnside.com
Sylvia Waters	Burnside	Sylvia.Waters@rjburnside.com

Those unable to attend:

The following items were discussed		**Action by**
1.	**Introductions**	
1.1	The project team was introduced followed by roundtable introductions of Toronto and Region Conservation Authority (TRCA) staff participants.	

The following items were discussed		Action by
2.	**Project Overview**	
2.1	Project information was presented as per attached material comprised of an overview of the study process and list of studies to be completed as part of the Municipal Class Environmental Assessment (MCEA), the findings from the approved York Region 2016 Transportation Master Plan (TMP) to widen both Warden Avenue and Kennedy Road to 4-lanes, Alternative Design Concepts.	
2.2	TRCA suggested geotechnical investigation should be added to the list of studies. TRCA inquired about including an assessment of drainage hydrology within the Study Area. Burnside noted it would be considered as part of the stormwater management assessment.	
2.3	Burnside requested what the TRCA's expectations for the project were in terms of the review of technical studies and draft reports. TRCA responded that the list of studies provided are appropriate and consistent with what TRCA would be required to review. TRCA also noted that TRCA staff will want to review the options for the road right-of-way (ROW).	
2.4	TRCA inquired if changes to any road crossings (culverts, bridges) are anticipated. Burnside responded that there are two main structures in the Study Area. One bridge, which has been investigated structurally and may not need to be widened. The other crossing is a CSP culvert. TRCA inquired whether the culvert crossing of Berczy Creek on Warden Avenue, south of Major Mackenzie would be replaced. It was noted the culvert was scheduled for rehabilitation by the Region within the next 5 years. Burnside noted that it would be considered in the capacity analysis, completed by others. The EA studies will also consider the watercourse on Warden Avenue, north of Heritage Hill Drive. TRCA recommended that the project team consult with the City of Markham regarding the culvert crossing north of Major MacKenzie.	

	The following items were discussed	Action by
	The Region responded that Region staff have been working closely with development groups in and around the Study Area regarding out-letting road run-off into storm sewers before directing water into creeks. The Region also noted the ditches in the Study Area are very shallow (flat), therefore the project team will be reviewing options to raise the road profile. TRCA recommended that the project team investigate the Study Areas hydraulics when revising the road profile; and ensure that staff have thoroughly reviewed the Markham FUA for sizing of storm water ponds, etc. The Region also noted that the project team has been working with the groundwater staff to decrease any impacts to groundwater.	
2.5	TRCA inquired about ecological studies, noting that Endangered Species Habitat for Redside Dace is present in Berczy Creek and efforts should be made to reduce the road-right-of-way where possible to limit impact to habitat. The Region noted ecological study previously completed has noted the presence of Redside Dace habitat, in the Berczy Creek crossing south of Major Mackenzie. Redside Dace habitat is also identified in the Bruce Creek crossing of Kennedy Road, north of Elgin Mills Road.	
2.6	TRCA inquired whether this project will be reported and written as one or two separate EA reports. TRCA recommended that the project team ensure these two studies and their documentation are made clear regarding this approach. The Region confirmed that the projects will have two separate EA reports.	
2.7	The Region noted that construction for Warden Avenue is scheduled for 2027 and Kennedy Road for 2028.	
2.8	TRCA noted staff is always available for a quick meeting to discuss the project. TRCA submission requirements were discussed. TRCA referred to their Service Level Agreement with the Region, which outlines the list of reports and project materials needed to facilitate their review of the project.	
2.9	Burnside inquired whether TRCA would expect the Study Team to submit Phase 1 - Existing Conditions, Problem / Opportunity Statement for review or if a combined Phase 1/2 Report could	

The following items were discussed	Action by
instead be circulated. TRCA responded that staff would rather have a complete Phase 1/2 document to review. It was noted that the online Open House (OH) to be held in late February and will not present evaluation of the design concepts. The Study Team would present a Memo to TRCA of this for review. It was also noted that the Study Team may receive feedback from the public on the evaluation criteria.	

The preceding are the minutes of the meeting as observed by the undersigned. Should there be a need for revision, please advise Burnside within seven days of issuance. In the absence of notification to the contrary, these minutes will be deemed to be an accurate record of the meeting.

Minutes prepared by:

R.J. Burnside International Limited

Sylvia Waters

SW:jm

Distribution:

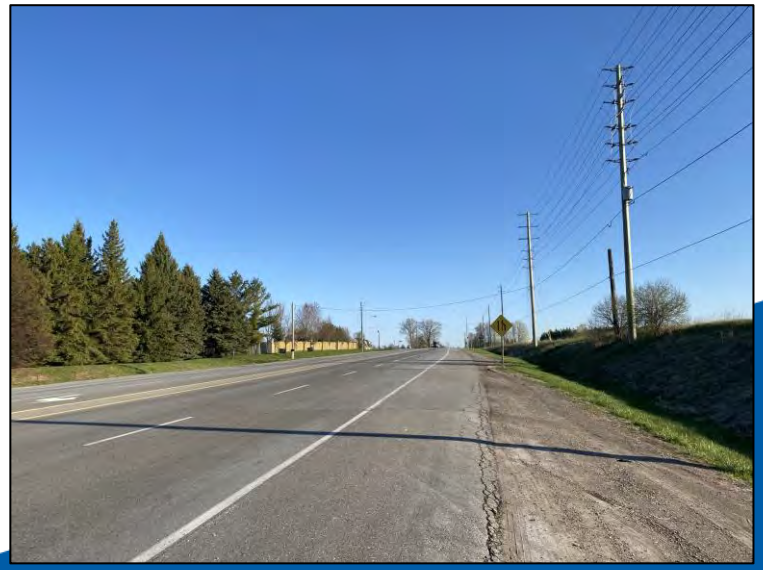
All Attendees via Email

Municipal Class Environmental Assessment Study

Warden Avenue and Kennedy Road from Major Mackenzie Drive to Elgin Mills Road

TRCA Meeting #1

January 27, 2022



York Region

Agenda

- Study Overview and Process
- Findings of Approved 2016 TMP
- Alternative Design Concepts
- List of Supporting Studies
- Discussion of TRCA requirements

York Region

Study Areas and Objectives

The Regional Municipality of York is undertaking Schedule C Municipal Class Environmental Assessment (MCEA) Studies for improvements to Warden Avenue and Kennedy Road, between Major Mackenzie Drive East and Elgin Mills Road East, in the City of Markham.

- These studies build on the recommendations from the approved 2016 York Region Transportation Master Plan (TMP).
- Through the MCEA studies, York Region is examining how to complete the identified infrastructure and active transportation improvements, and to mitigate environmental impacts.

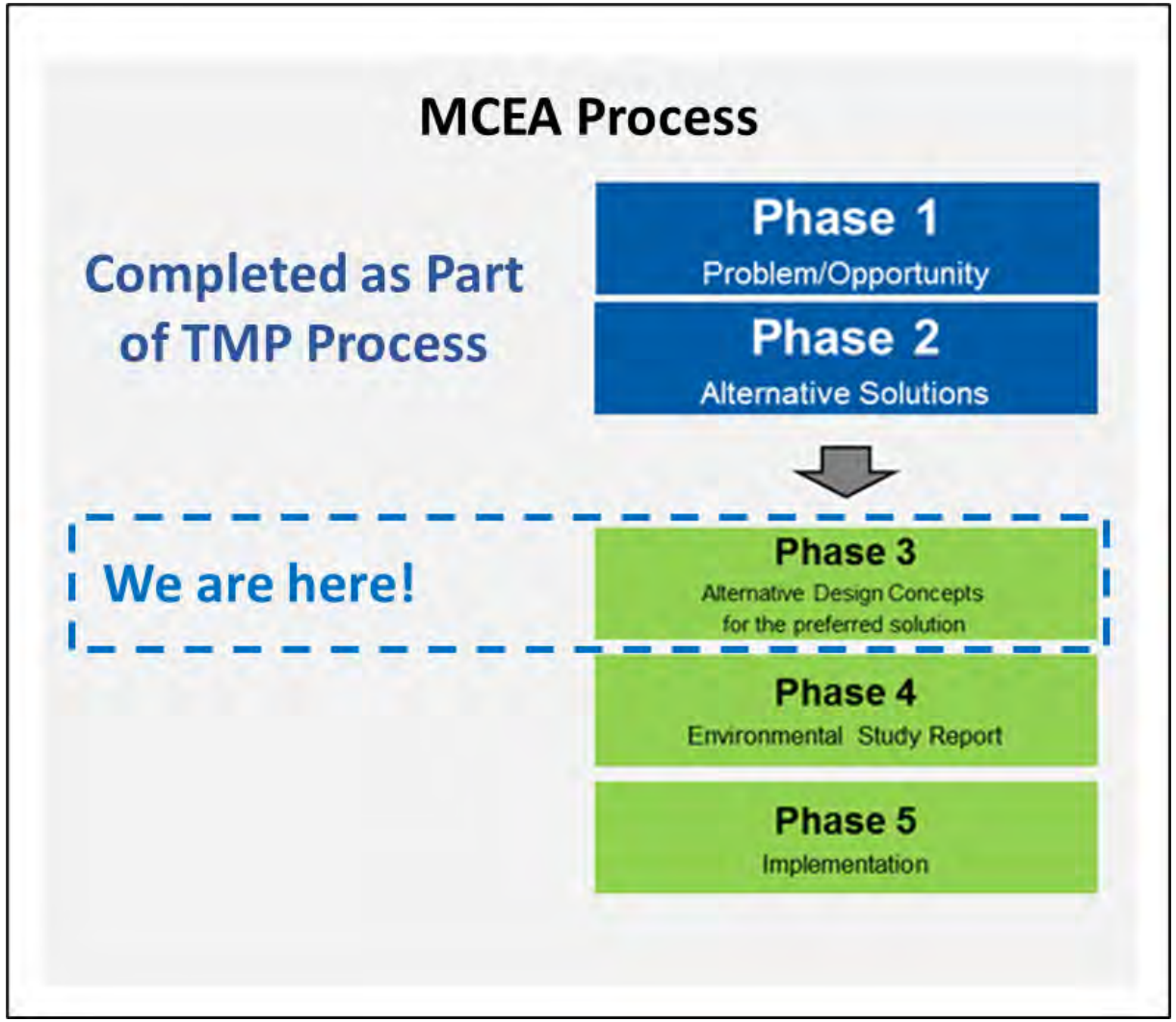
Municipal Class Environmental Assessment Process

Approved 2016 TMP

- Road needs and justifications established for the two study corridors.
- Completed to a level of detail that meets the requirements for Phase 1 and 2.

Current Studies

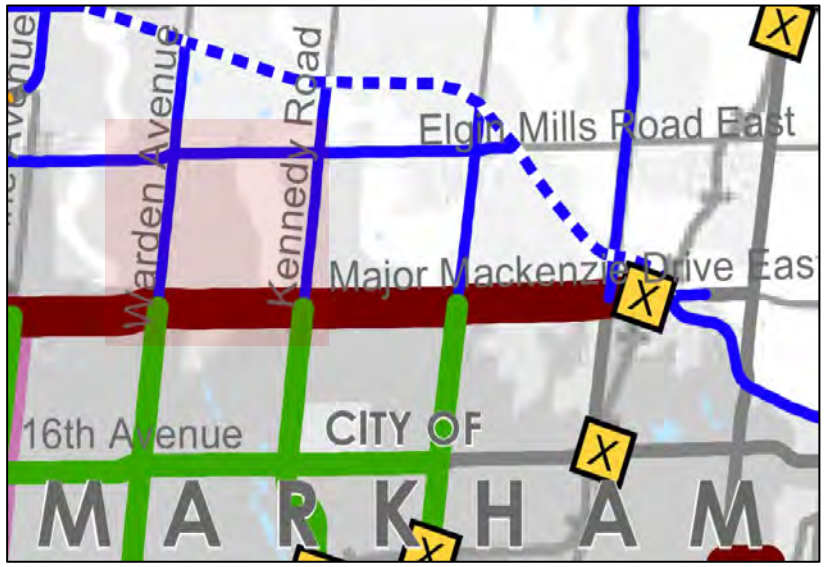
- Identify and evaluate Alternative Design Concepts for Preferred Solutions (Phase 3).
- Complete Environment Study Report (Phase 4).



Preferred Solutions (Approved 2016 TMP)

- Widen to two lanes in each direction and construct to urban arterial standard.
- Provide opportunity to improve transit network.
- Provide opportunity to improve walking and cycling facilities.

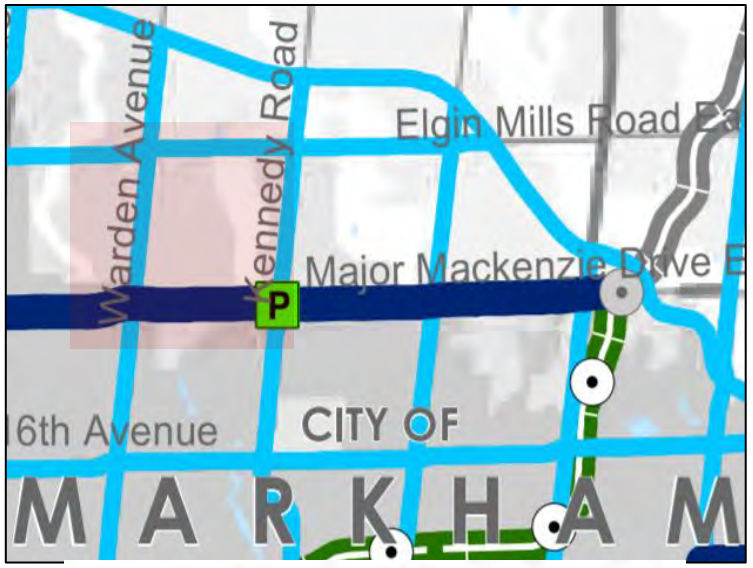
Lane improvement



Proposed Future 4 Lane Widening

Source: Map 8, Proposed 2041 Road Network (2016 TMP)

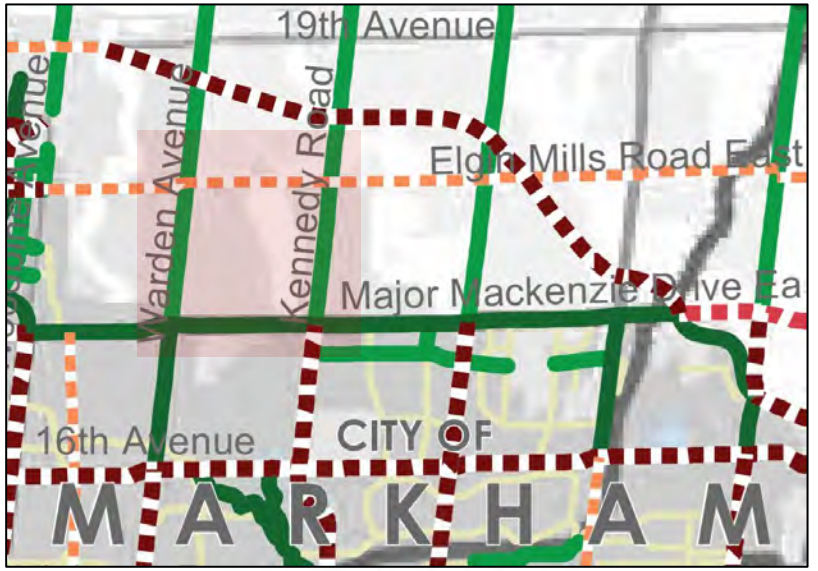
Transit improvement



Frequent Transit Network

Source: Map 7, Proposed 2041 Road Network (2016 TMP)

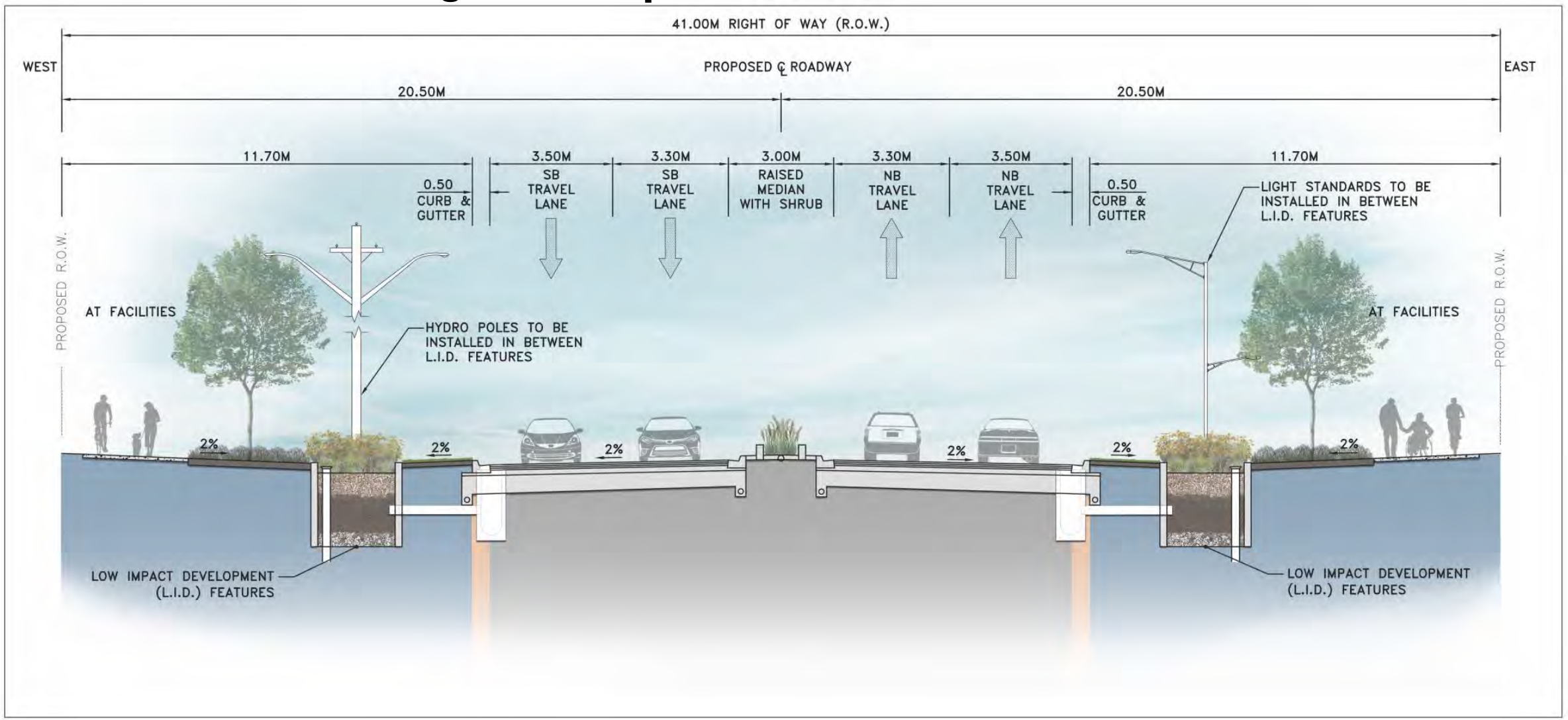
Active transportation improvement



Dedicated Facility

Source: Map 9, Proposed 2041 Cycling Network (2016 TMP)

Alternative Design Concept 1

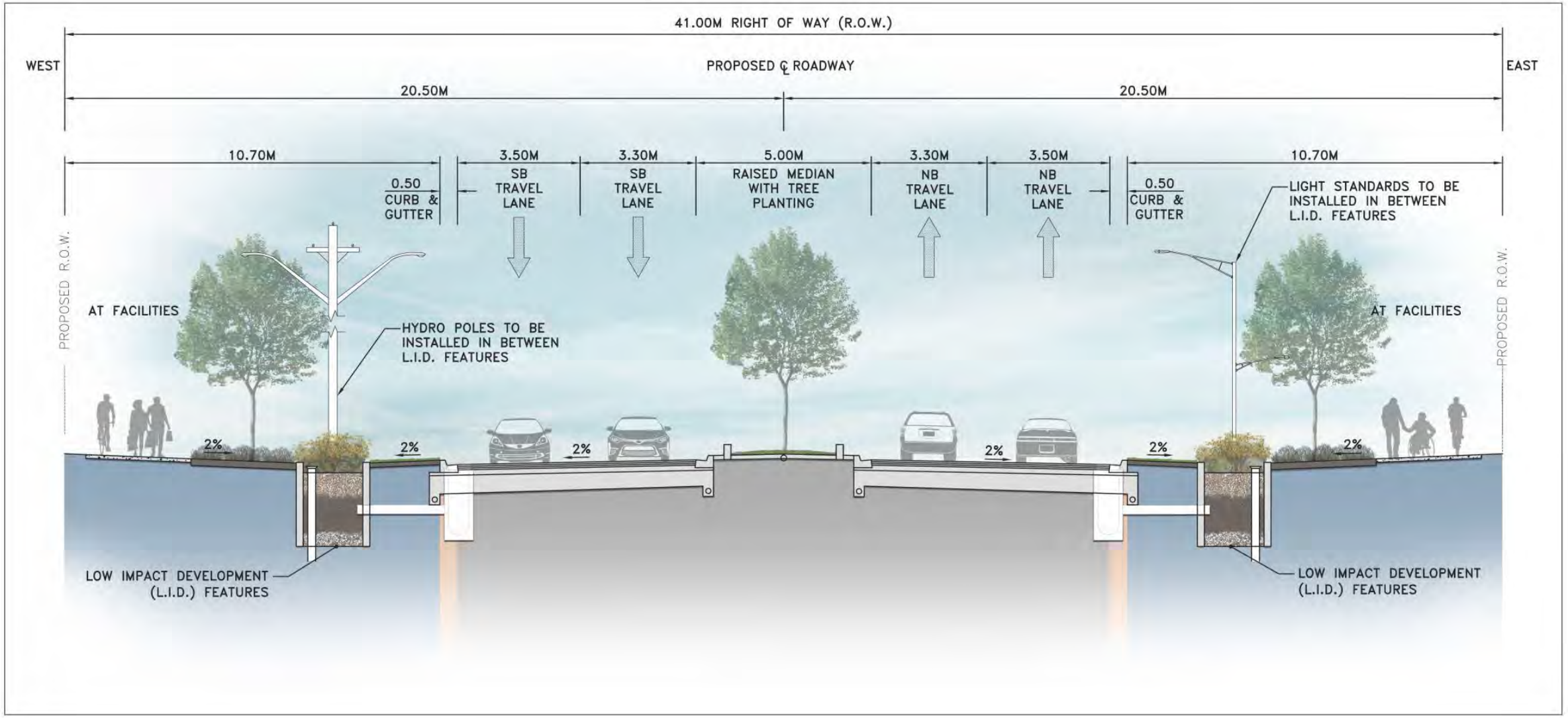


WARDEN AVENUE AND KENNEDY ROAD

TYPICAL 4-LANE CROSS SECTION | WITH 3.0M MEDIAN ISLAND

BURNSIDE

Alternative Design Concept 2

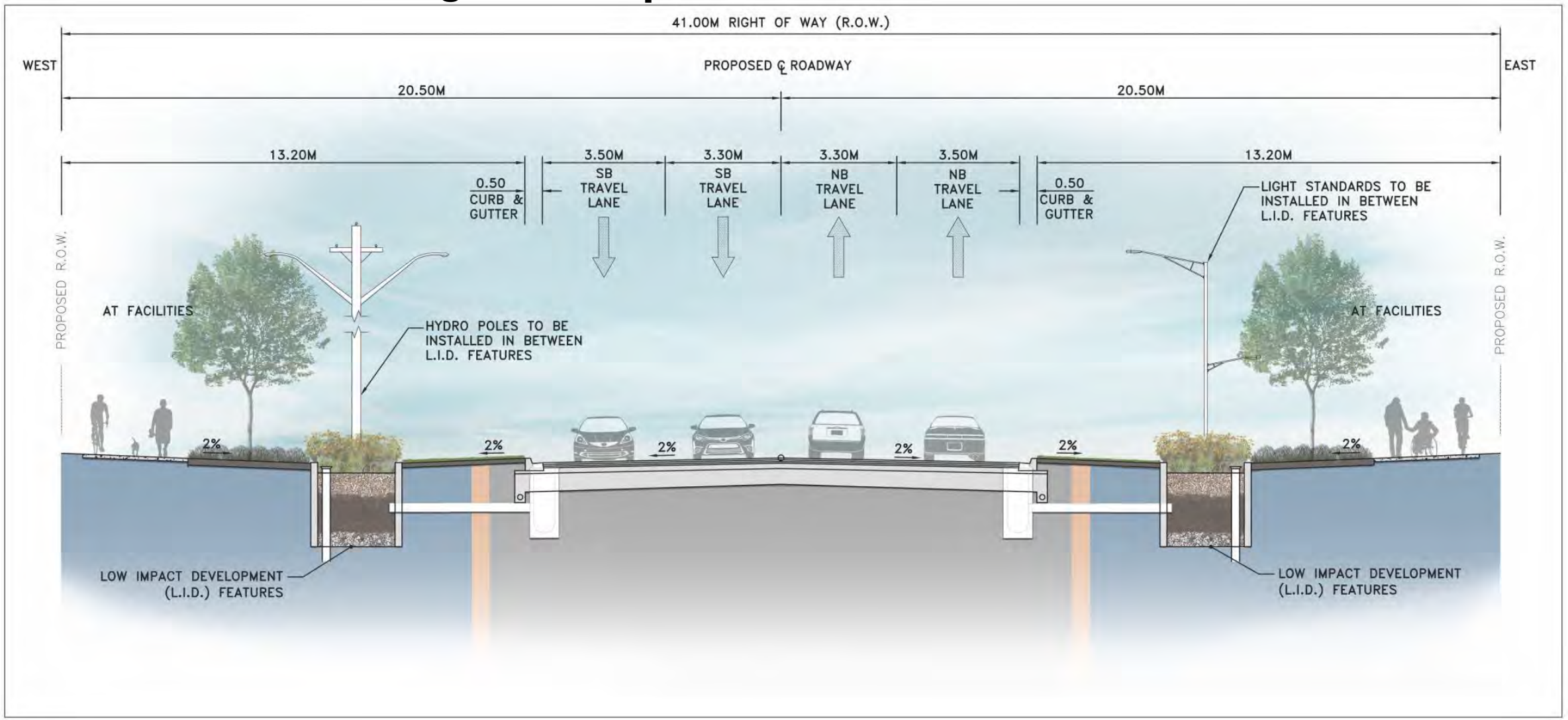


WARDEN AVENUE AND KENNEDY ROAD

TYPICAL 4-LANE CROSS SECTION | WITH 5.0M MEDIAN ISLAND

BURNSIDE

Alternative Design Concept 3



WARDEN AVENUE AND KENNEDY ROAD

TYPICAL 4-LANE CROSS SECTION | WITHOUT MEDIAN ISLAND

BURNSIDE

Low Impact Development (LID) Measures

LID uses cost-effective construction and building methods to store, filter and infiltrate rainwater and snow melt into the ground. LID measures are necessary to consider for all road widening projects to address increased impervious surfaces and improve sustainable and climate adaptive solutions. Some example designs that are feasible for road improvement projects and are being considered for Warden Avenue and Kennedy Road include:

- Box Trench Design
- Vegetated/Bio Swale Design
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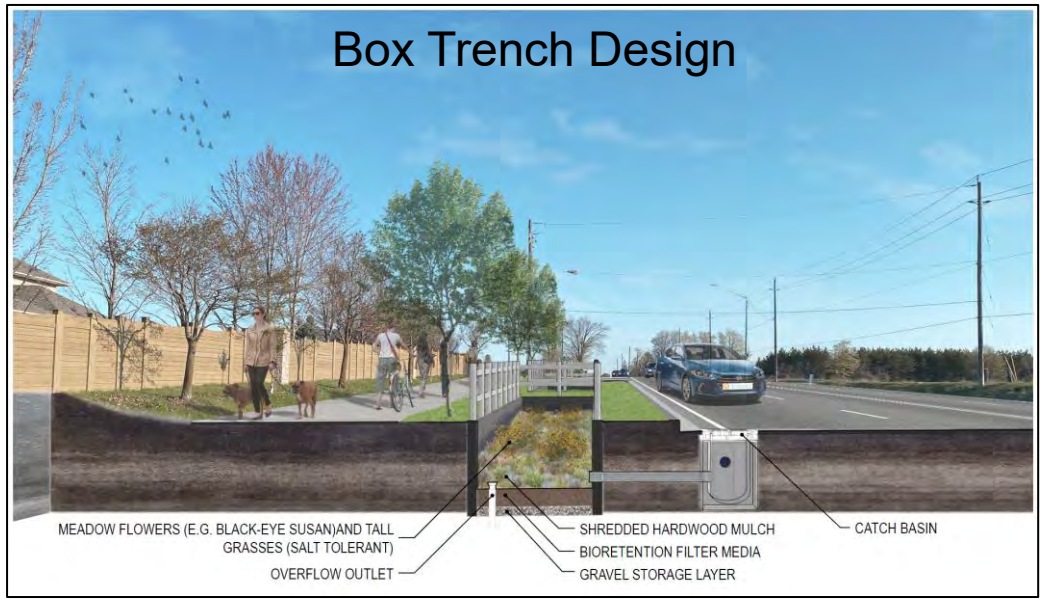

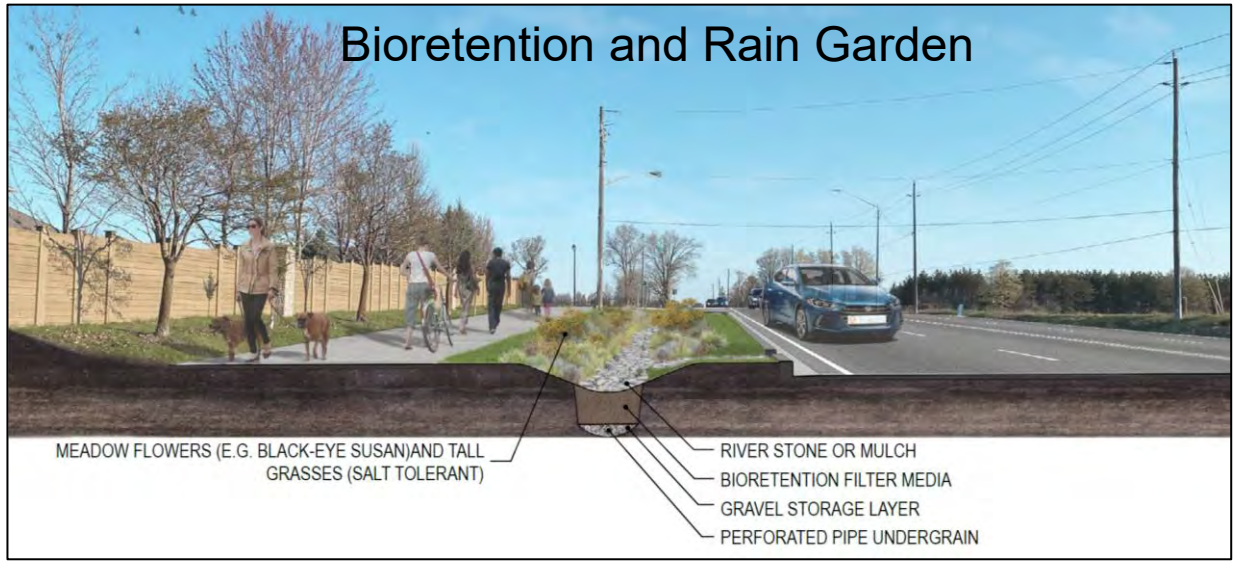

Studies to Support Evaluation of Alternative Design Concepts

- Traffic and Safety Assessment
- Stormwater Management, Drainage and Hydrology Assessment
- Foundation Design
- Hydrogeological Assessment
- Noise Impact Assessment
- Air Quality Impact Assessment
- Natural Heritage Impact Assessment
- Fluvial Geomorphological Assessment
- Archaeological and Cultural Heritage Assessments
- Contamination Overview Study
- Low Impact Development Assessment and Benefit-Cost Analysis

Discussion

- Confirm TRCA submission requirements
- Meeting schedule

Sylvia Waters

From: Sylvia Waters
Sent: Tuesday, October 18, 2022 2:57 PM
To: paul.heeney@ontario.ca; jeff.anderssen@ontario.ca; Maria Jawaid (Maria.Jawaid@ontario.ca); laura.e.hatcher@ontario.ca; 'acachola@markham.ca'; jlanni@markham.ca; Scovell, Jason; Crickmay, Andrew; harsimrat.pruthi@trca.ca; 'Harsha.Gammanpila@trca.ca'; 'Matthew.Kuyntjes@trca.ca'; Dan.Thomson@rci.rogers.com; vince.cina@enbridge.com; Darlene Presley; 'aphillips@alectrautilities.com'; christine.barnes@allstream.com
Cc: Deanna De Forest; Jennifer Vandermeer; Chiu, Edward; Lee, Jessica
Subject: 052314-Warden Avenue and Kennedy Road EA Technical Advisory Committee (TAC) November 8, 2022 from 2:00 P.M. to 4:00 P.M.

Hello,

The Regional Municipality of York (Region) is completing Schedule C Municipal Class Environmental Assessment (EA) Studies for improvements to Warden Avenue and Kennedy Road between Major Mackenzie Drive and Elgin Mills Road, in the City of Markham.

As a member of the Technical Advisory (TAC) for these EA studies, the second TAC meeting is planned for **November 8, 2022 from 2:00 P.M. to 4:00 P.M.**

The second TAC meeting will discuss the evaluation of the design concepts and the recommended design concept for the Warden Avenue and Kennedy Road study corridors.

The meeting will be held in a virtual environment.

Based on your feedback, we will confirm the meeting date and time for this second TAC meeting and send an invitation and agenda in early November by email to TAC participants.

Should you have any questions, or if you are unable to attend, please contact:
Jennifer Vandermeer
Project Manager
R.J. Burnside & Associates Limited
jennifer.vandermeer@rjburnside.com

Regards,

Sylvia Waters on behalf of the Warden Avenue and Kennedy Road EA Study Team

Sylvia Waters

From: Sylvia Waters
Sent: Tuesday, October 18, 2022 3:58 PM
To: jeff.andersen@ontario.ca
Cc: Deanna De Forest; 052314 Warden Ave and Kennedy Rd EA Studies
Subject: FW: 052314-Warden Avenue and Kennedy Road EA Technical Advisory Committee (TAC) November 8, 2022 from 2:00 P.M. to 4:00 P.M.

Hello Jeff
Please see email below regarding Warden Avenue and Kennedy Road EA Technical Advisory Committee (TAC) November 8, 2022 from 2:00 P.M. to 4:00 P.M., it would seem your email contact was incorrect.

From: Sylvia Waters
Sent: Tuesday, October 18, 2022 2:57 PM
To: paul.heeney@ontario.ca; jeff.anderssen@ontario.ca; Maria Jawaid (Maria.Jawaid@ontario.ca) <maria.jawaid@ontario.ca>; laura.e.hatcher@ontario.ca; acachola@markham.ca; jlanni@markham.ca; Scovell, Jason <jscovell@markham.ca>; Crickmay, Andrew <ACrickmay@markham.ca>; harsimrat.pruthi@trca.ca; Harsha.Gammanpila@trca.ca; Matthew.Kuyntjes@trca.ca; Dan.Thomson@rci.rogers.com; vince.cina@enbridge.com; Darlene Presley <dpresley@mhbcplan.com>; aphillips@alectrautilities.com; christine.barnes@allstream.com
Cc: Deanna De Forest <Deanna.DeForest@rjburnside.com>; Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Chiu, Edward <Edward.Chiu@york.ca>; Lee, Jessica <Jessica.Lee@york.ca>
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Jennifer Vandermeer
Project Manager
R.J. Burnside & Associates Limited
jennifer.vandermeer@rjburnside.com

Regards,

Sylvia Waters on behalf of the Warden Avenue and Kennedy Road EA Study Team

Sylvia Waters

From: Matthew Kuyntjes <Matthew.Kuyntjes@trca.ca>
Sent: Wednesday, October 26, 2022 4:28 PM
To: Sylvia Waters
Cc: Eric Wang
Subject: RE: 052314-Warden Avenue and Kennedy Road EA Technical Advisory Committee (TAC) November 8, 2022 from 2:00 P.M. to 4:00 P.M.

Hi Sylvia,

When you send out the invitation and agenda for the TAC meeting, can you please also include Eric Wang (cc'd) at: Eric.Wang@trca.ca

Thanks,

Matt Kuyntjes, P.Eng
Engineer, Water Resources
Engineering Services | Development and Engineering Services

T: (437) 880-1983
E: matthew.kuyntjes@trca.ca
A: 101 Exchange Avenue, Vaughan, ON, L4K 5R6 | trca.ca

Sylvia Waters

From: Jennifer Vandermeer
Sent: Friday, October 28, 2022 11:30 AM
To: Andersen, Jeff (MECP)
Cc: Deanna De Forest; Sylvia Waters
Subject: RE: York Warden Avenue and Kennedy Road EA Studies - TAC2 Invite

Hi Jeff,
Thanks for the confirmation.
Best regards,
Jennifer

BURNSIDE
Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Unit 20, Guelph, ON N1H 1C4
Office: 800-265-9662 Direct: 226-486-1559
www.rjburnside.com

From: Andersen, Jeff (MECP) <Jeff.Andersen@ontario.ca>
Sent: Friday, October 28, 2022 11:29 AM
To: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Subject: RE: York Warden Avenue and Kennedy Road EA Studies - TAC2 Invite

Jennifer;

I did indeed get the invite, however, we will decline at this stage. Looking froward to a review of species at risk specific documentation.

Regards;
JJA

JEFF J. ANDERSEN

MANAGEMENT BIOLOGIST
PERMISSIONS SECTION, SPECIES AT RISK BRANCH
LAND AND WATER DIVISION
ONTARIO MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

50 Bloomington Road, Aurora ON L4G 0L8 | jeff.andersen@ontario.ca | 289-221-1705

Ontario

From: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Sent: October 28, 2022 10:46 AM
To: Andersen, Jeff (MECP) <Jeff.Andersen@ontario.ca>
Subject: York Warden Avenue and Kennedy Road EA Studies - TAC2 Invite

Hi Jeff,
Hope this message finds you well.
I'm just double checking that you received the invitation for the Technical Advisory Committee Meeting 2 for these EA studies. I had mistakenly spelled your surname with two s's and so had to resend it.
Best regards,
Jennifer

BURNSIDE

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

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R.J. Burnside & Associates Limited 17345 Leslie Street, Suite 303 Newmarket ON L3Y 0A4 CANADA
telephone (905) 953-8967 **fax** (519) 941-8120 **web** www.rjburnside.com

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[THE DIFFERENCE IS OUR PEOPLE]

Agenda

Date and Time:	November 8, 2022: 2:00 P.M. - 4:00 P.M.	**Project No.:**	300052314.0000
Project Name:	Warden Avenue and Kennedy Road Environmental Assessment Studies		
Meeting Subject:	Technical Advisory Committee Meeting #2		
Meeting Location:	Microsoft Teams Meeting		

Items

1. Introductions
2. Review the alternative design concepts
3. Review of Low Impact Development (LID) options
4. Review of evaluation criteria
5. Discussion of evaluation of alternative design concepts and alternative LID options
6. Discussion of Preferred Design Concept
   - Typical cross-section
   - Plan views
   - Intersections
7. Discussion of constraints and proposed mitigation relating to Preferred Design Concept
8. Review of TAC comments and how they have been addressed
9. Project Timeline
10. Questions

Sylvia Waters

From: Jennifer Vandermeer
Sent: Wednesday, November 16, 2022 11:54 AM
To: paul.heeney@ontario.ca; Andersen, Jeff (MECP); Maria Jawaid (Maria.Jawaid@ontario.ca); laura.e.hatcher@ontario.ca; mriad@markham.ca; acachola@markham.ca; jlanni@markham.ca; Scovell, Jason; Crickmay, Andrew; Harsimrat Pruthi; Harsha Gammanpila; Matthew Kuyntjes; eric.wang@trca.ca; emily.markovic@trca.ca; Dan.Thomson@rci.rogers.com; vince.cina@enbridge.com; Darlene Presley; aphillips@alectrautilities.com; christine.barnes@allstream.com; Chiu, Edward; Lee, Jessica; Nurani, Kadin; Ray Bacquie; Deanna De Forest; Harold Faulkner
Cc: Sylvia Waters; Barboza, Karla (MCM); Suzanne Bevan; Mishaal Rizwan
Subject: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2
Attachments: 052314 Warden Kennedy EAs - TAC2 presentation.pdf; 052314_Warden EA Alt Design Evaluation Matrix_221115.pdf; 052314_Kennedy EA Alt Design Evaluation Matrix_221115.pdf; 052314_York Warden Avenue EA LID Options Evaluation Matrix_220825.pdf; 052314_York Kennedy Road EA LID Options Evaluation Matrix_220825.pdf

Good afternoon,

As promised at the TAC2 Meeting last week, we are circulating a copy of the presentation and the detailed evaluation matrices for your information (see attached). One important note about the presentation slides is that the study team are in the process of fine tuning the preferred design concept roll plans to include some additional details at the future collector road intersections (namely for Warden Avenue) and a few adjustments around some existing driveways. To this end, the content on Slides 17-20 of the attached presentation will be amended for the upcoming Online Open House#2 (OOH#2) presentation, set to launch on November 25, 2022. Should you have any comments on the attached information or the OOH#2 presentation materials once released, please provide us with feedback by January 6, 2023.

We are in the process of preparing minutes from the TAC2 Meeting and will circulate those separately.

Best regards,
Jennifer

BURNSIDE

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

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GREAT | STREETS
Building Roads that Build Community 2022

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDIES

Warden Avenue and Kennedy Road from Major Mackenzie Drive to Elgin Mills Road

Technical Advisory Committee Meeting #2
November 8, 2022

York Region

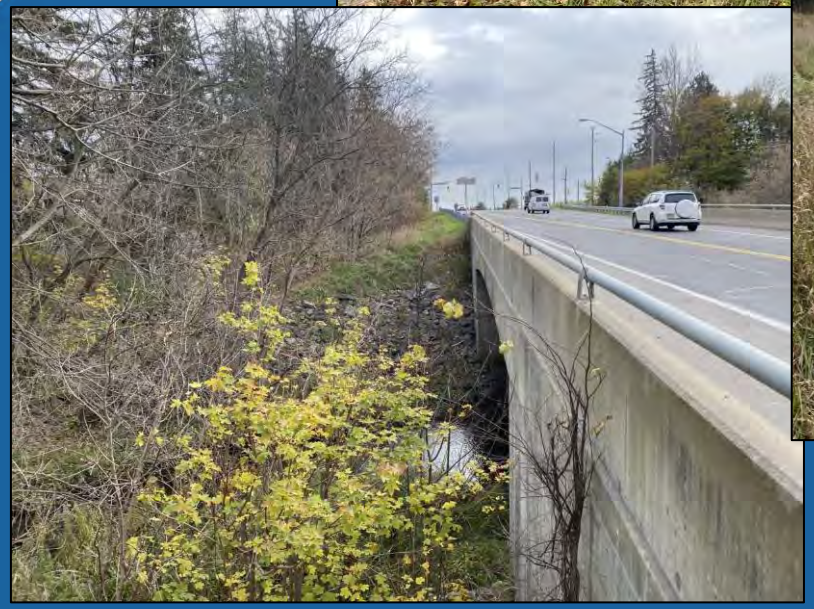
GREAT STREETS
Building Roads that Build Community 2022

TAC Meeting #2 Overview

- Municipal Class EA process
- Alternative Design Concepts
- Feedback from TAC #1
- Evaluation of Alternative Design Concepts
- Preferred Design Concept
- Next Steps
- Question and Answer Session

Warden North

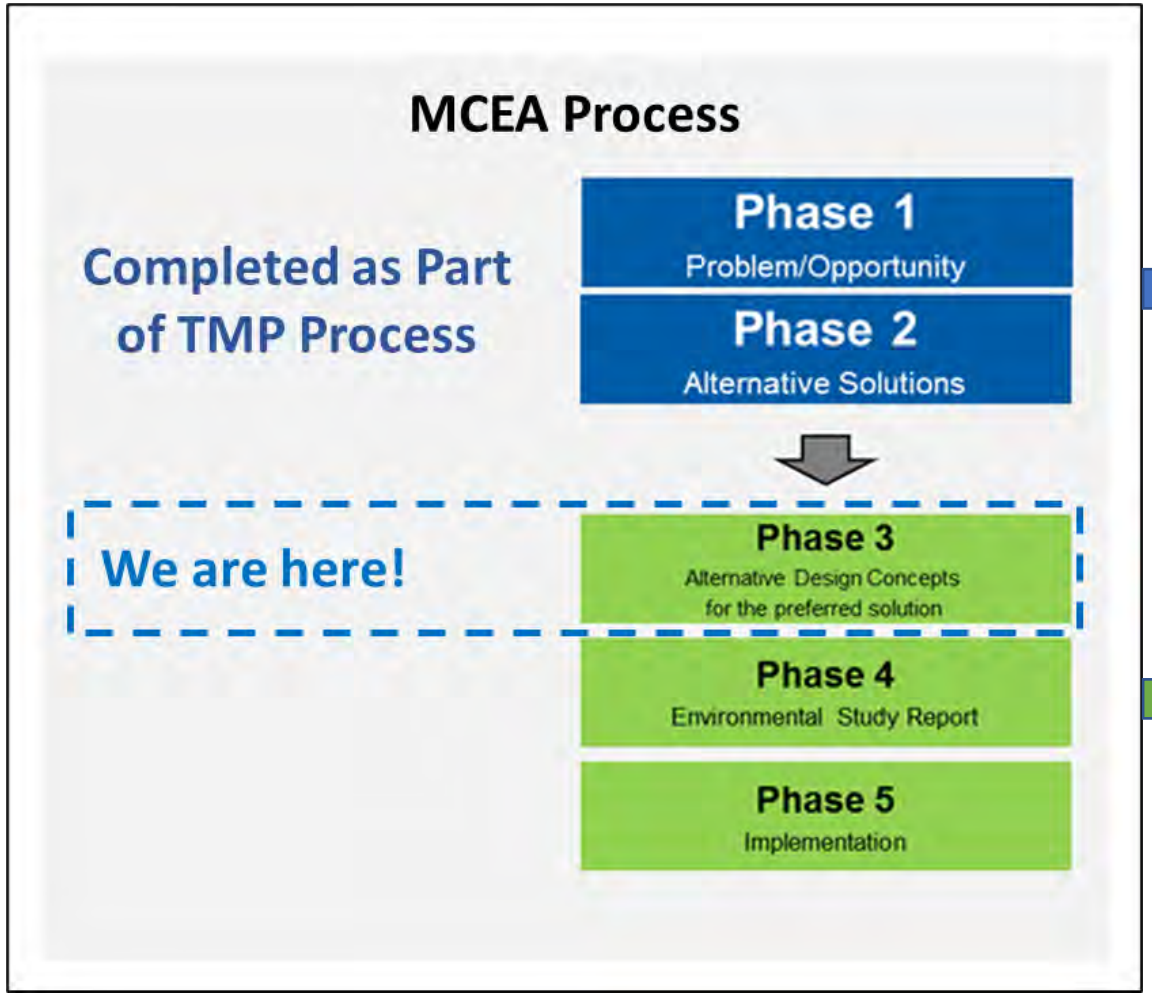
Warden South



Kennedy Bridge

York Region

Municipal Class Environmental Assessment Process



Approved 2016 TMP

- Established road needs and justifications for the two study corridors
- Completed to a level of detail that meets the requirements for Phases 1 and 2 of the MCEA process

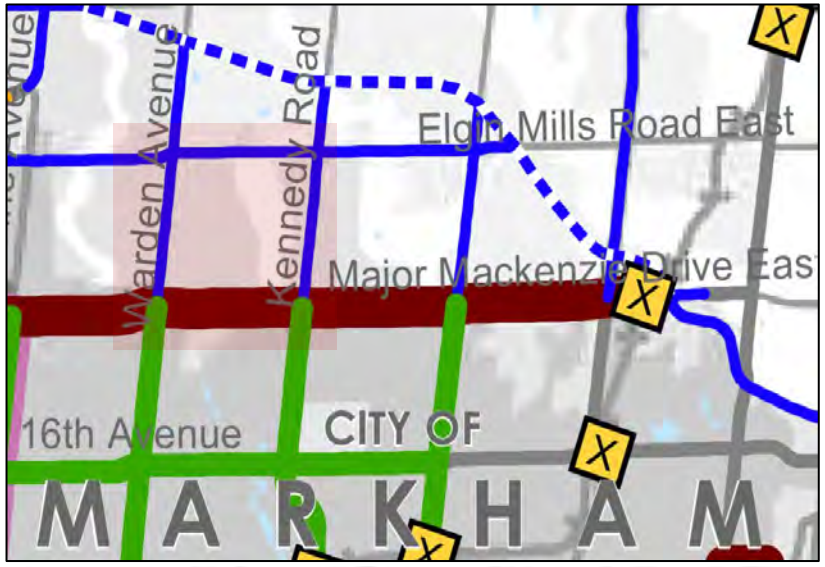
Current Studies

- Identify and evaluate Alternative Design Concepts for Preferred Solutions (Phase 3)
- Complete Environment Study Report (Phase 4)

Preferred Solutions (Approved 2016 TMP)

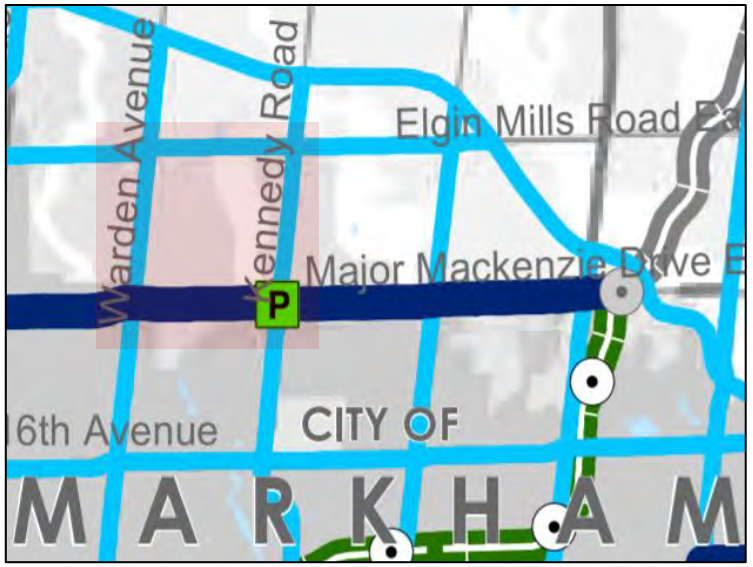
- Widen to two lanes in each direction and construct to urban arterial standard
- Opportunity to improve transit network
- Opportunity to improve walking and cycling facilities

Lane improvement



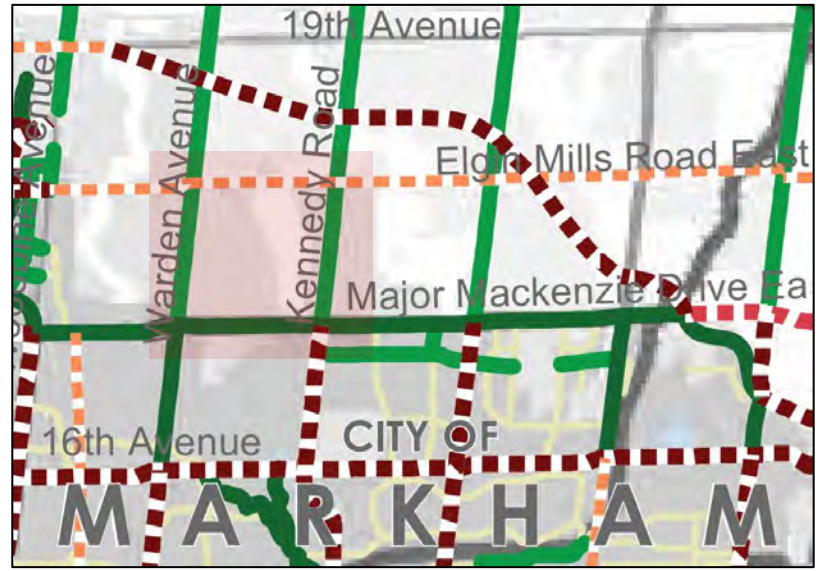
Source: Map 8, Proposed 2041 Road Network (2016 TMP)

Transit improvement



Source: Map 7, Proposed 2041 Road Network (2016 TMP)

Active transportation improvement

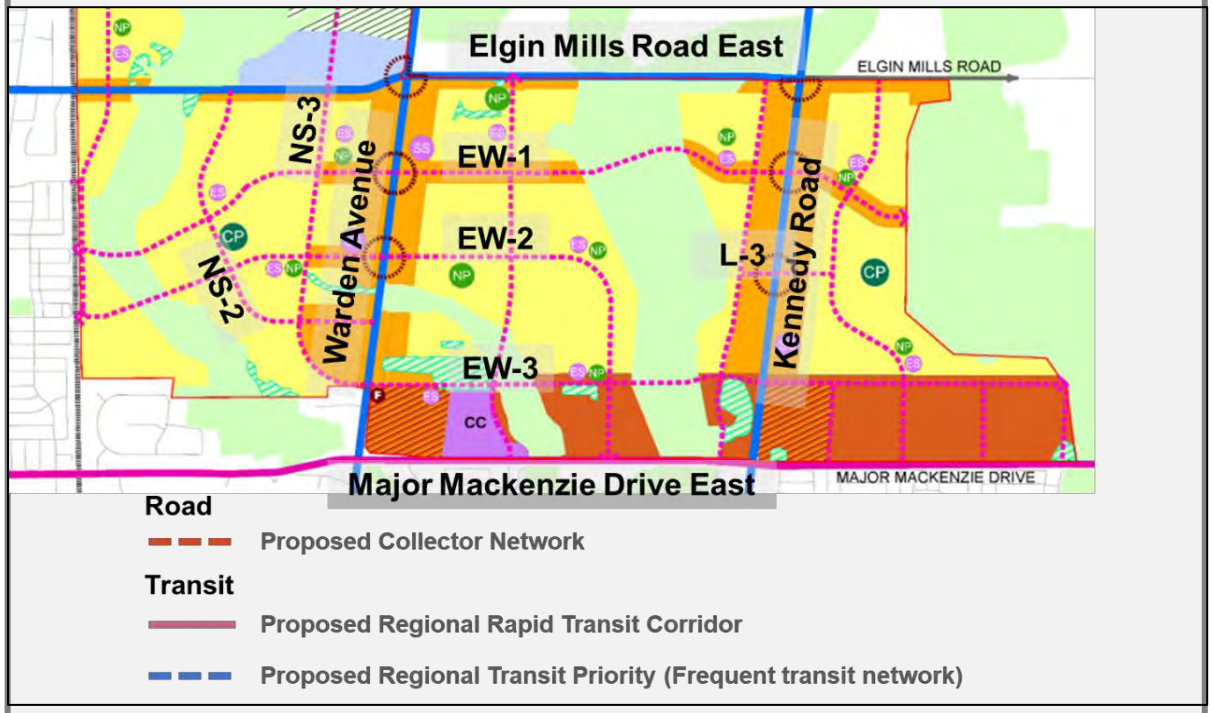


Source: Map 9, Proposed 2041 Cycling Network (2016 TMP)

Additional Recommendations for Warden Avenue and Kennedy Road

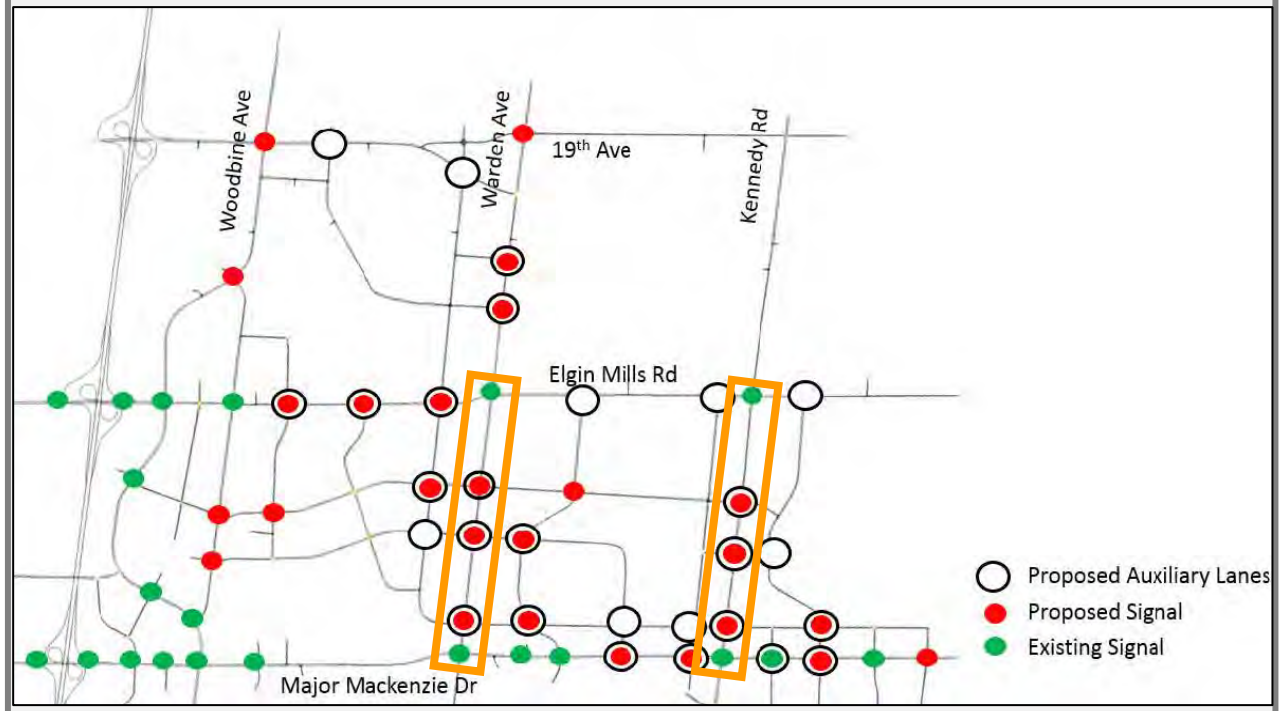
The City of Markham's Future Urban Area Conceptual Master Plan

Recommended comprehensive collector road network of roads and active transportation infrastructure



Proposed Community Structure Plan (Conceptual Master Plan)
Adapted from: Future Urban Area Conceptual Master Plan Volume 2 (October 2018)

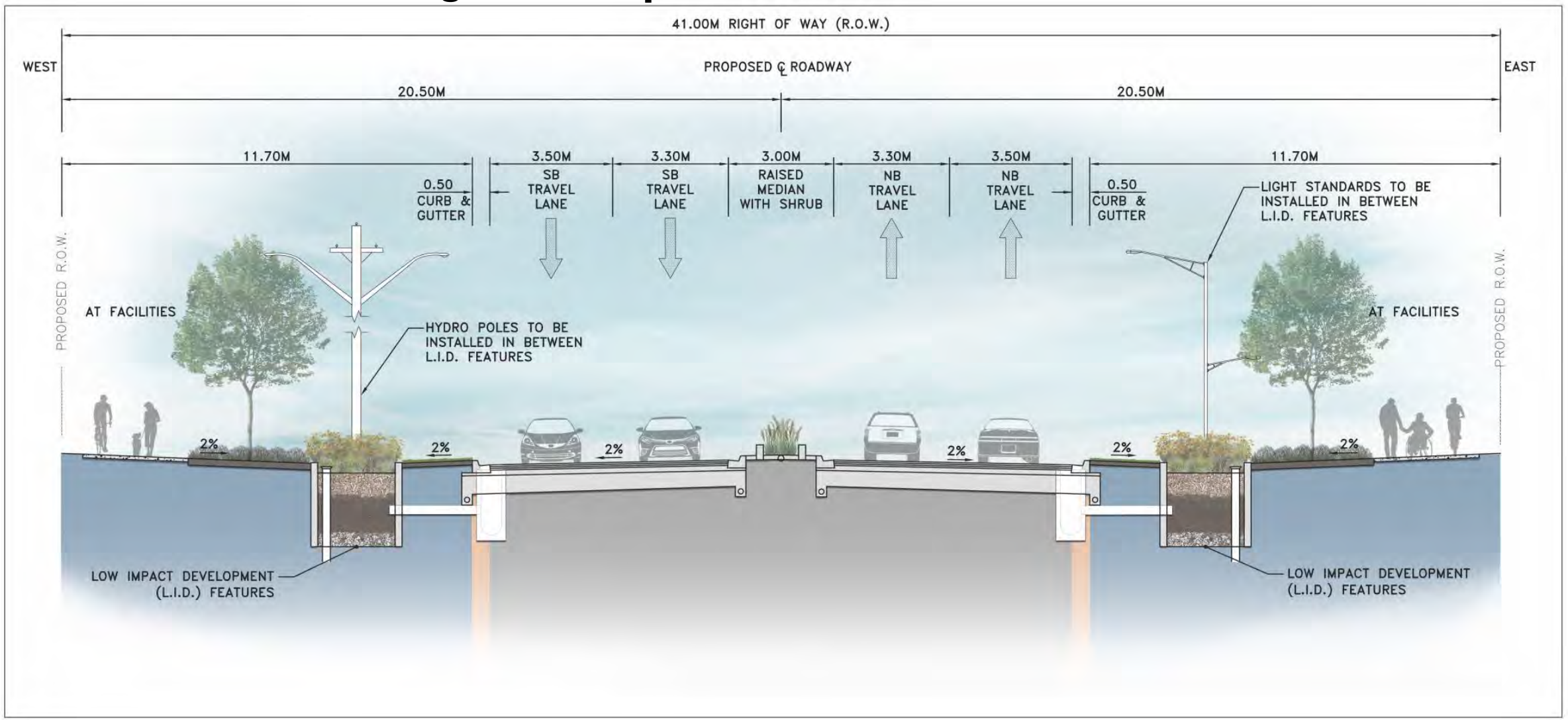
Anticipated signals in support of the future development and travel demands



Proposed Signal and Intersection Configuration
Source: Future Urban Area Conceptual Master Plan Volume 2 (October 2018)

ALTERNATIVE DESIGN CONCEPTS

Alternative Design Concept 1

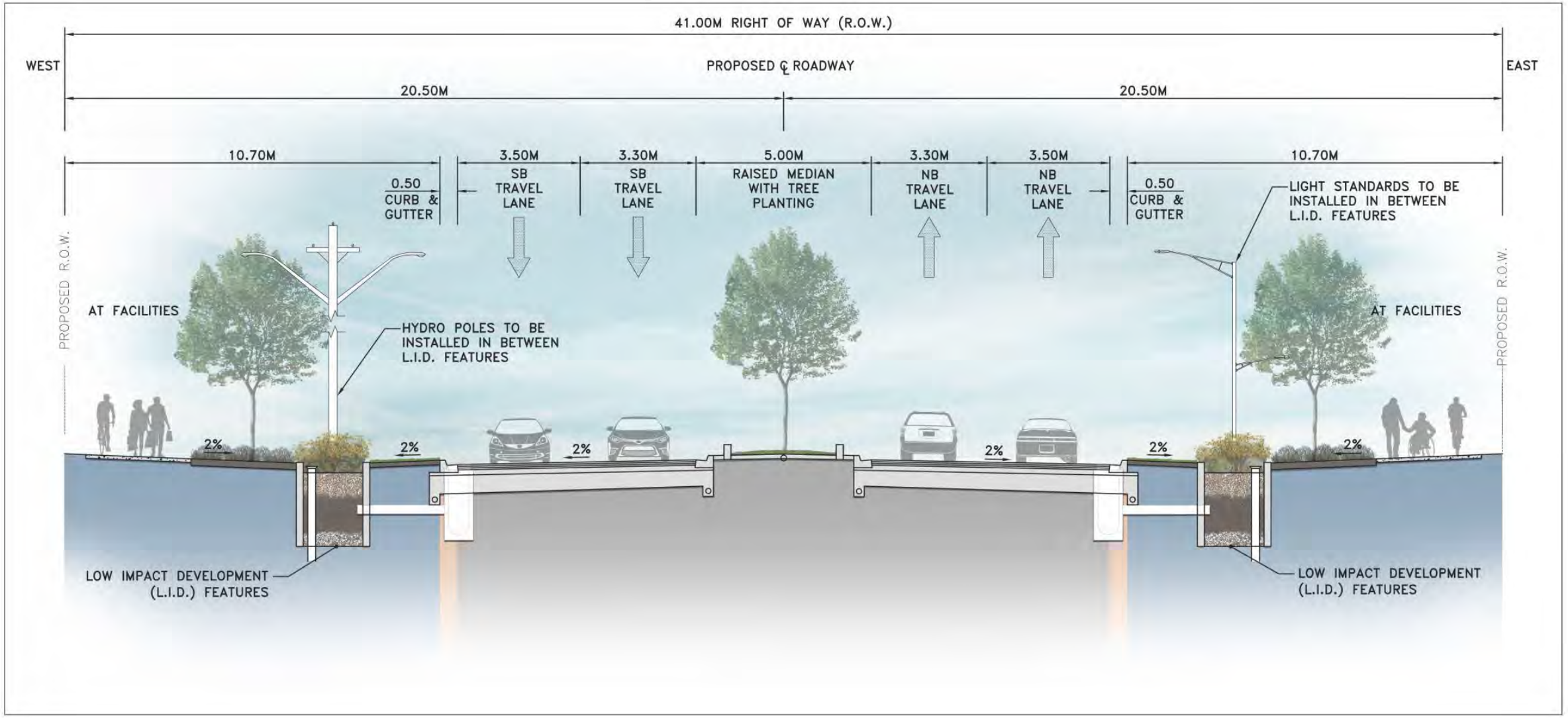


WARDEN AVENUE AND KENNEDY ROAD

TYPICAL 4-LANE CROSS SECTION | WITH 3.0M MEDIAN ISLAND

BURNSIDE

Alternative Design Concept 2

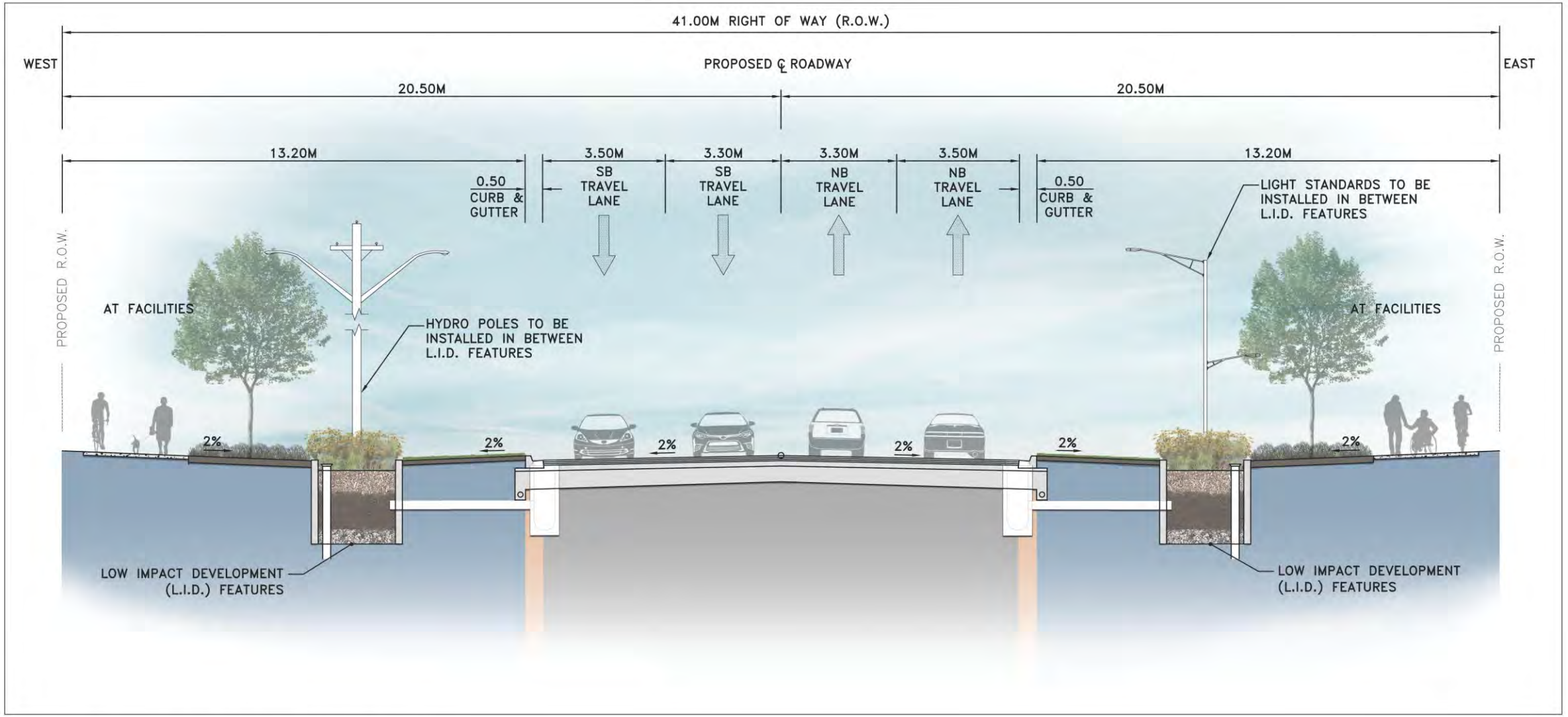


WARDEN AVENUE AND KENNEDY ROAD

TYPICAL 4-LANE CROSS SECTION | WITH 5.0M MEDIAN ISLAND

BURNSIDE

Alternative Design Concept 3



WARDEN AVENUE AND KENNEDY ROAD

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BURNSIDE

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LID uses cost-effective construction and building methods to store, filter and infiltrate rainwater and snow melt into the ground. LID measures are necessary to consider for all road widening projects to address increased impervious (does not allow water to pass through) surfaces and improve sustainable and climate adaptive solutions. Some example designs that are feasible for road improvement projects and are being considered for Warden Avenue and Kennedy Road include:

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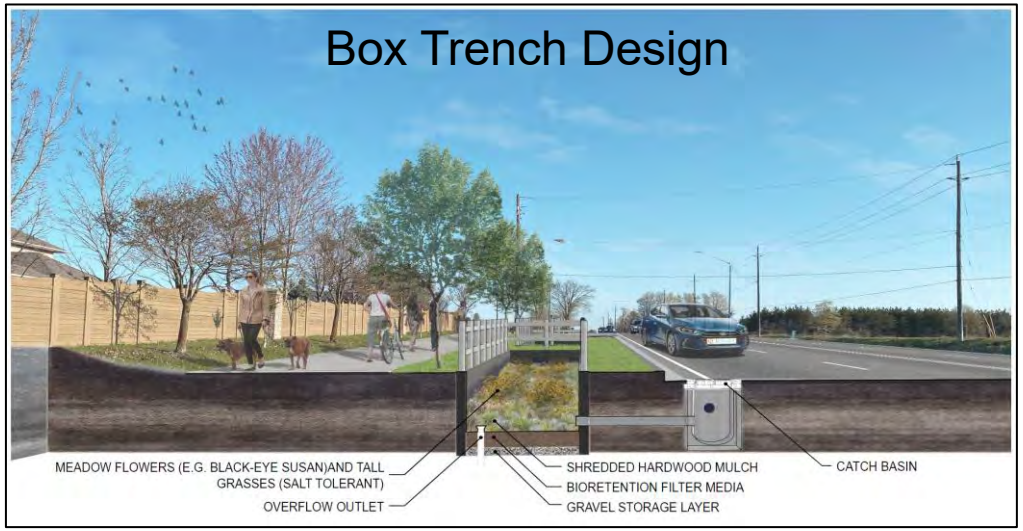
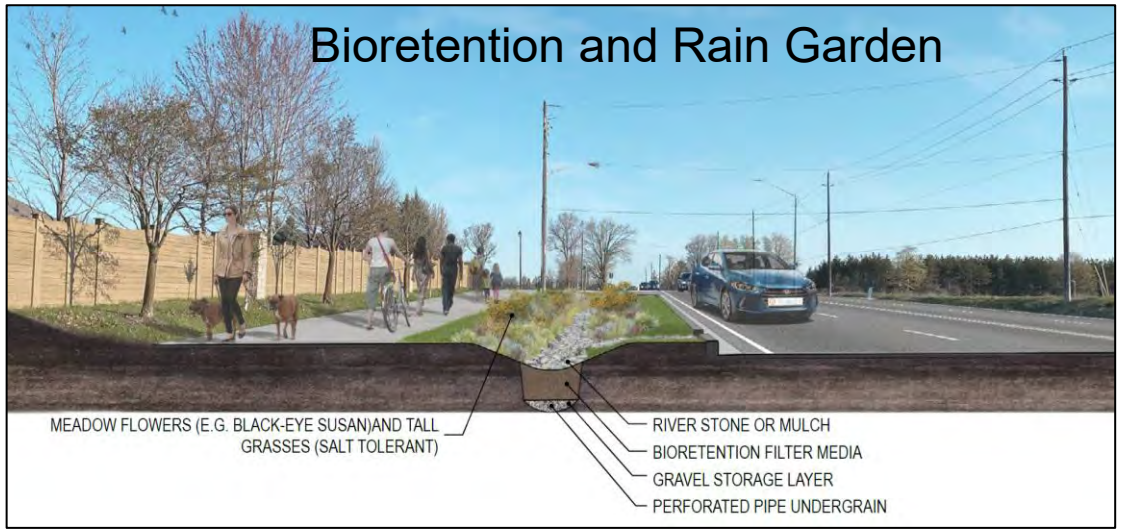
- Above-ground rainwater harvesting tanks
- Underground storage tanks





TAC Feedback

Feedback from TAC Meeting 1 (Jan 25, 2022)	How Feedback addressed
If the road profile is raised, a backflow condition for stormwater should be considered	As part of the stormwater management plan being prepared for these studies, a backflow condition will be considered.
Impact of centre median on access for emergency service vehicles	The Study Team is moving forward with a preferred design concept that includes a 1.0m marked centre median. This would be a painted feature, not raised.
Feedback from TRCA Meeting (Jan 27, 2022)	**How Feedback addressed**
Suggested geotechnical investigation be included in EAs.	A geotechnical investigation was completed in support of the two EAs.
Inquiry if drainage hydrology would be assessed.	Clarification provided in Meeting Minutes: drainage hydrology will be included in the stormwater management assessment.
Ensure that hydraulics of the study area are investigated when proposing to revise (raise) road profile. Ensure that staff have thoroughly reviewed the Markham FUA for sizing of storm water ponds, etc.	The Study Team will incorporate this feedback into the stormwater management assessment.
Feedback from City Meeting (Sep 6, 2022)	**How Feedback addressed**
Preference for separation of sidewalk and cycle track and preferred width of 1.8m cycle track.	A minimum 1.5m cycle track is provided in the preferred design concept plans.

Evaluation criteria

The Alternative Design Concepts in the study areas were evaluated relative to each other against a set of criteria. Evaluation criteria are provided below under each of the project environments:

Natural Environment

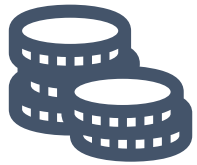
- Potential impact to vegetation and designated natural features
- Potential impact to wildlife, aquatic habitat and habitat of species at risk
- Potential impact to water resources and drainage
- Potential climate change impact and resilience
- Potential impact from contaminated sites

Socio-Cultural Environment

- Potential impact to heritage resources (e.g., archaeology, cultural heritage)
- Nuisance impacts (e.g., noise, visual, or construction impacts)
- Land acquisition needs, impacts to driveway access
- Conformity to municipal and agency policy
- Connectivity and safety

Engineering Environment

- Level of service / traffic congestion
- Speed Management
- Traffic safety
- Design constraints
- Utility impacts
- Constructability



Financial Environment

- Estimated capital costs
- Estimate operation and maintenance costs
- Property acquisition costs

Evaluation of Alternative Design Concepts- Warden Avenue

Complete evaluation available on project webpage: www.york.ca/WardenKennedyStudy

Criteria for Evaluating Alternatives	Alternative Design Concept 1 Construction of typical 4-lane road with 3.0 m median island.	Alternative Design Concept 2 Construction of typical 4-lane road with 5.0 m median island.	Alternative Design Concept 3 Construction of typical 4-lane road with narrow marked median.
Natural Environment			
Socio-Cultural Environment			
Engineering Environment			
Financial Environment			
Overall Summary	**More Preferred**	**Least Preferred**	**Most Preferred**

Order of Preference

Most Preferred  More Preferred  Somewhat Preferred  Less Preferred  Least Preferred 

Evaluation of Alternative Design Concepts- Kennedy Road

Complete evaluation available on project webpage: www.york.ca/WardenKennedyStudy

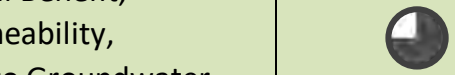
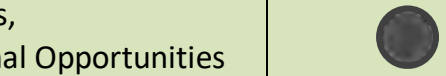
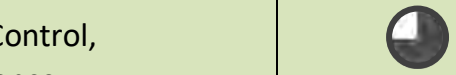
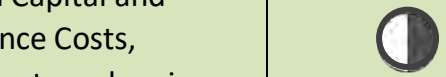
Criteria for Evaluating Alternatives	Alternative Design Concept 1 Construction of typical 4-lane road with 3.0 m median island.	Alternative Design Concept 2 Construction of typical 4-lane road with 5.0 m median island.	Alternative Design Concept 3 Construction of typical 4-lane road with narrow marked median.
Natural Environment			
Socio-Cultural Environment			
Engineering Environment			
Financial Environment			
Overall Summary	**More Preferred**	**Least Preferred**	**Most Preferred**

Order of Preference

Most Preferred  More Preferred  Somewhat Preferred  Less Preferred  Least Preferred 

Evaluation of Alternative LID Design Concepts

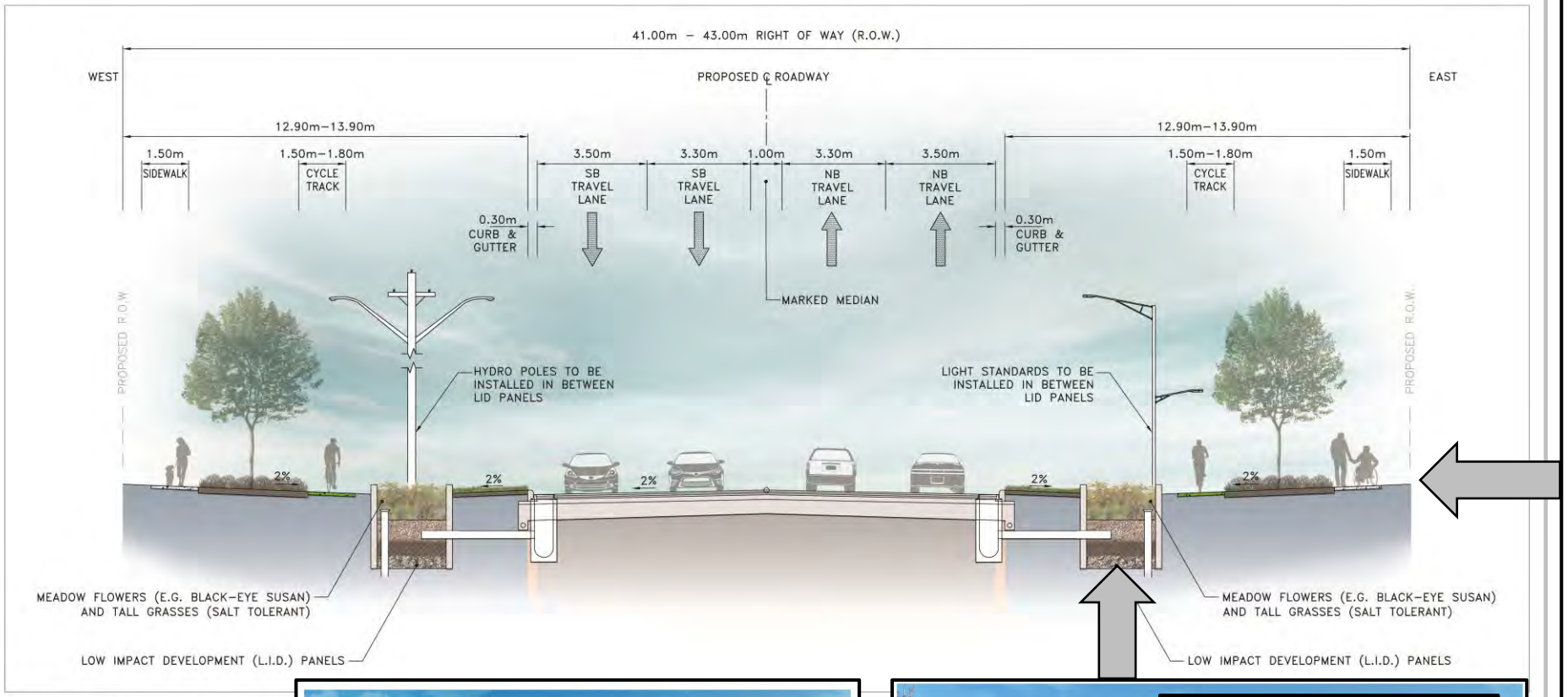
Complete evaluation available on project webpage: www.york.ca/WardenKennedyStudy

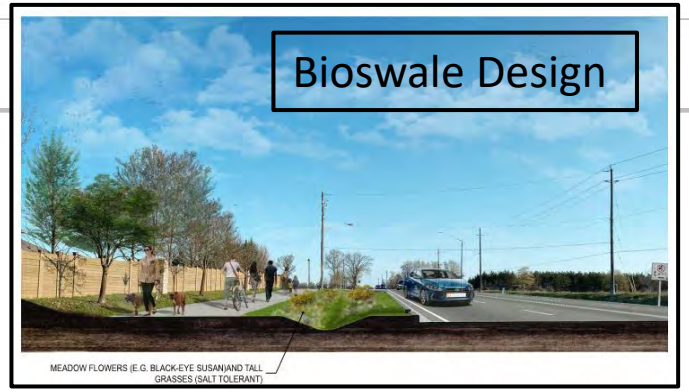
Criteria for Evaluating Alternatives	Indicators	Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
Natural Environment	Ecological Benefit, Soil Permeability, Impacts to Groundwater					
Socio-Cultural Environment	Aesthetics, Educational Opportunities					
Technical Factors	Quality and Quantity Control, Erosion Control, Maintenance, Surface footprint					
Financial Factors	Estimated Capital and Maintenance Costs, Life-cyle costs and savings					
Overall Summary		**Most Preferred**	**Most Preferred**	**More Preferred**	**Least Preferred**	**Somewhat Preferred**

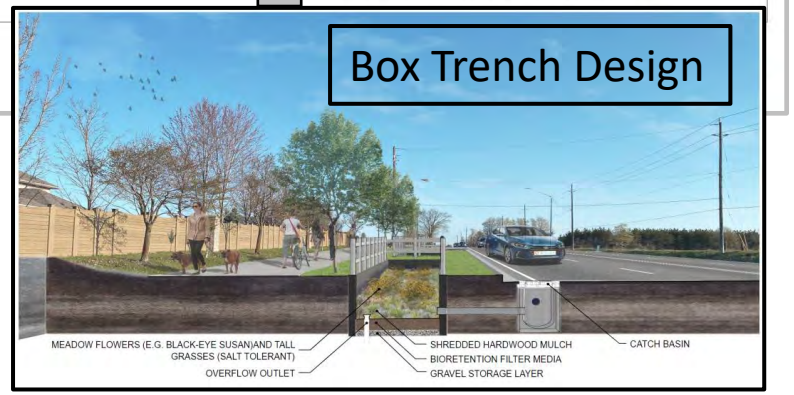
Order of Preference

Most Preferred  More Preferred  Somewhat Preferred  Less Preferred  Least Preferred 

Preferred Design Concept





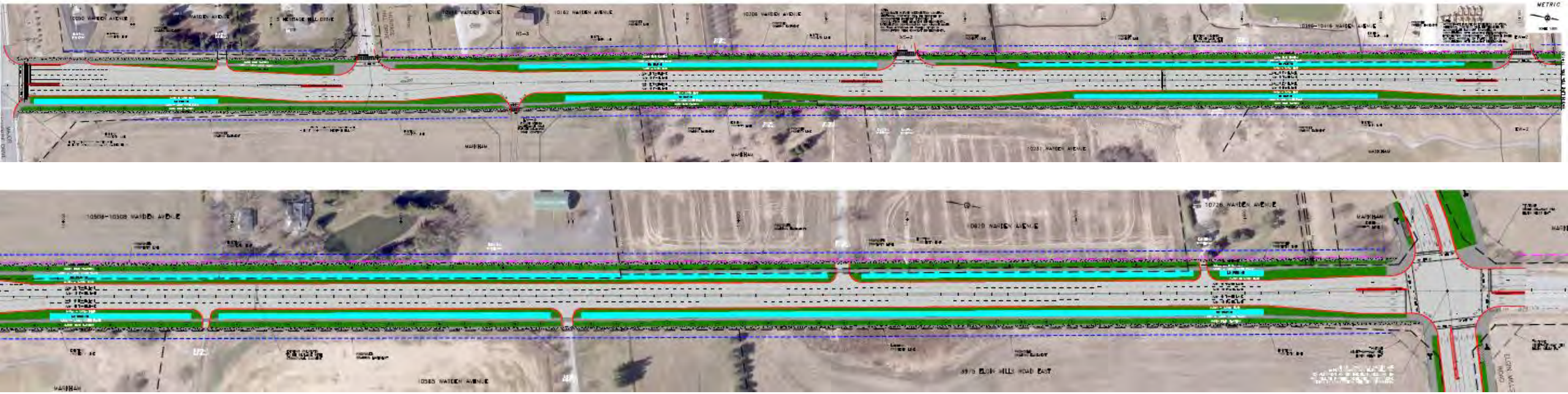


Possible Examples for Separated Sidewalk and Cycle Track

Source: Alta. https://altago.com/separated-bike-lanes/

Source: York Region Millway Avenue

Preferred Design Concept - Warden Avenue - Plan View

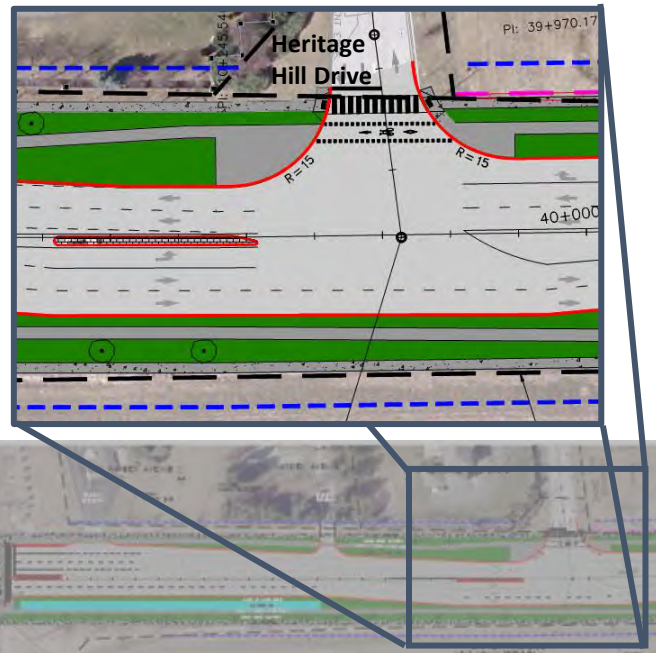


LEGEND

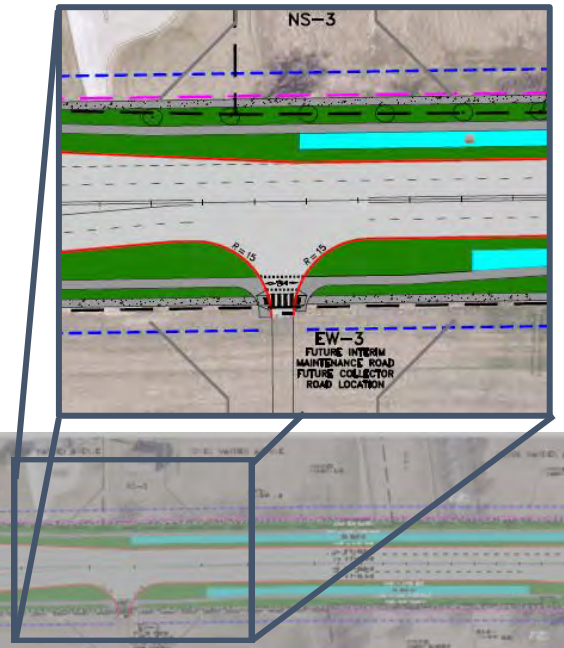
- PROPOSED SIDEWALK
- PROPOSED CYCLE TRACK
- PROPOSED BLVD / PLANTING
- PROPOSED LOW IMPACT DEVELOPMENT
- PROPOSED ASPHALT

- PROPOSED BOULEVARD TREE
- PROPOSED CURBLINE
- PROPOSED GRADING EASEMENT
- PROPOSED PROPERTY LINE
- EXISTING PROPERTY LINE
- FUTURE RIGHT-OF-WAY

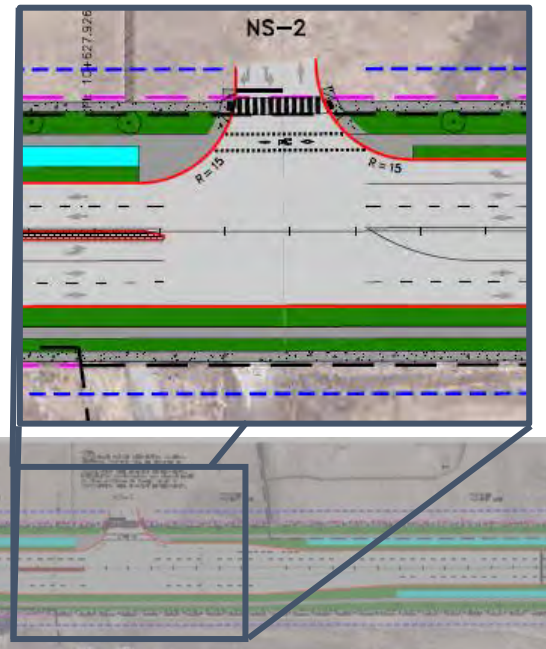
Preferred Design Concept - Warden Avenue - Intersections



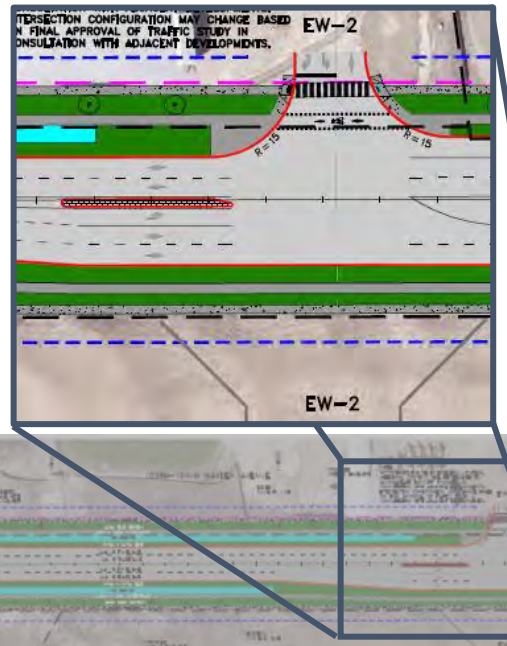
Improved Intersection



Future Intersection



Future Intersection



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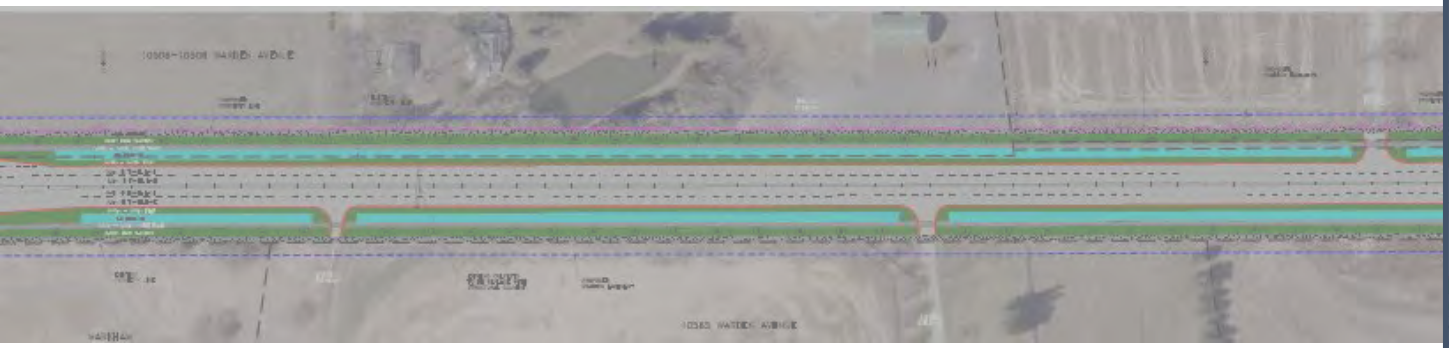
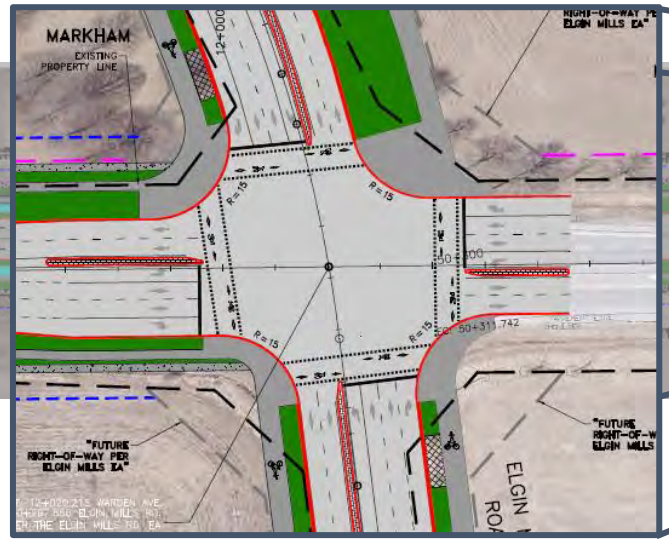
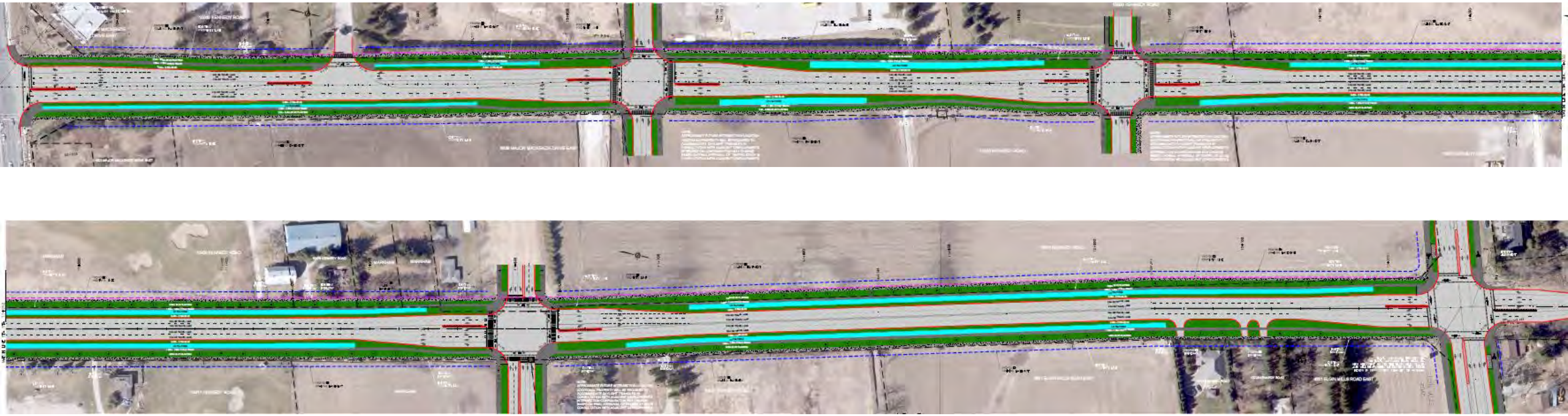




Improved Intersection

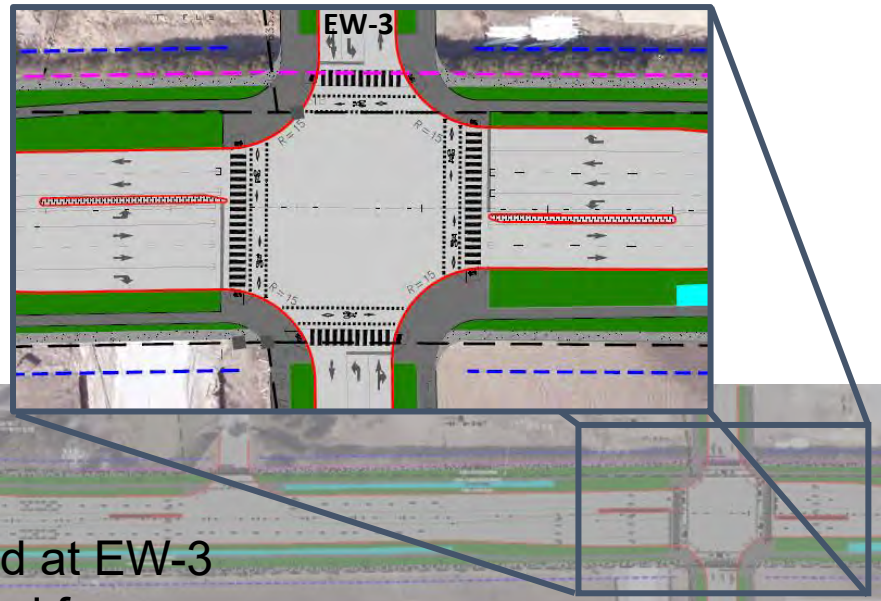
Preferred Design Concept - Kennedy Road - Plan View



LEGEND

- PROPOSED SIDEWALK
- PROPOSED CYCLE TRACK
- PROPOSED BLVD / PLANTING
- PROPOSED LOW IMPACT DEVELOPMENT
- PROPOSED ASPHALT
- PROPOSED BOULEVARD TREE
- PROPOSED CURBLINE
- PROPOSED GRADING EASEMENT
- PROPOSED PROPERTY LINE
- EXISTING PROPERTY LINE

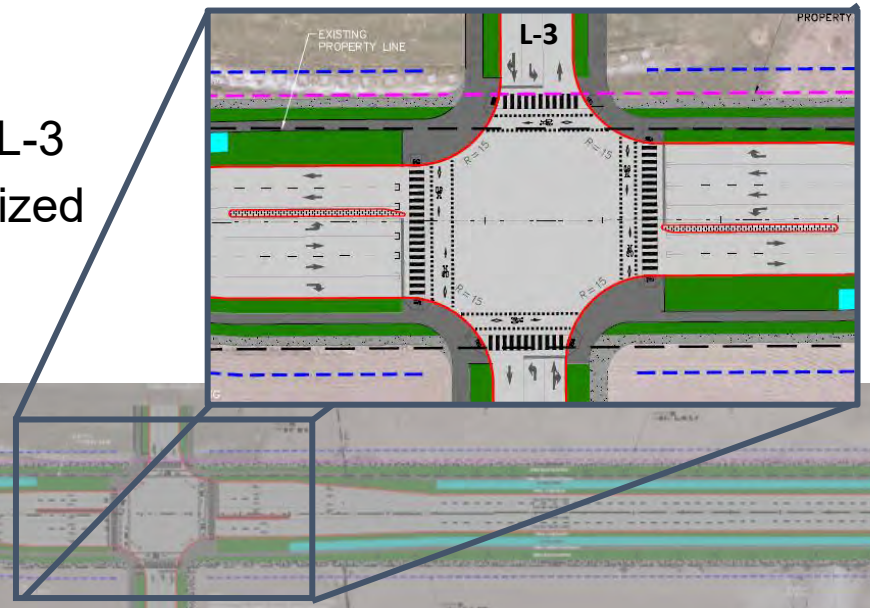
Preferred Design Concept - Kennedy Road - Intersections



Kennedy Road at EW-3 and EW-1 need for traffic signals by year 2031

Future Intersection

Kennedy Road at L-3 assumed unsignalized

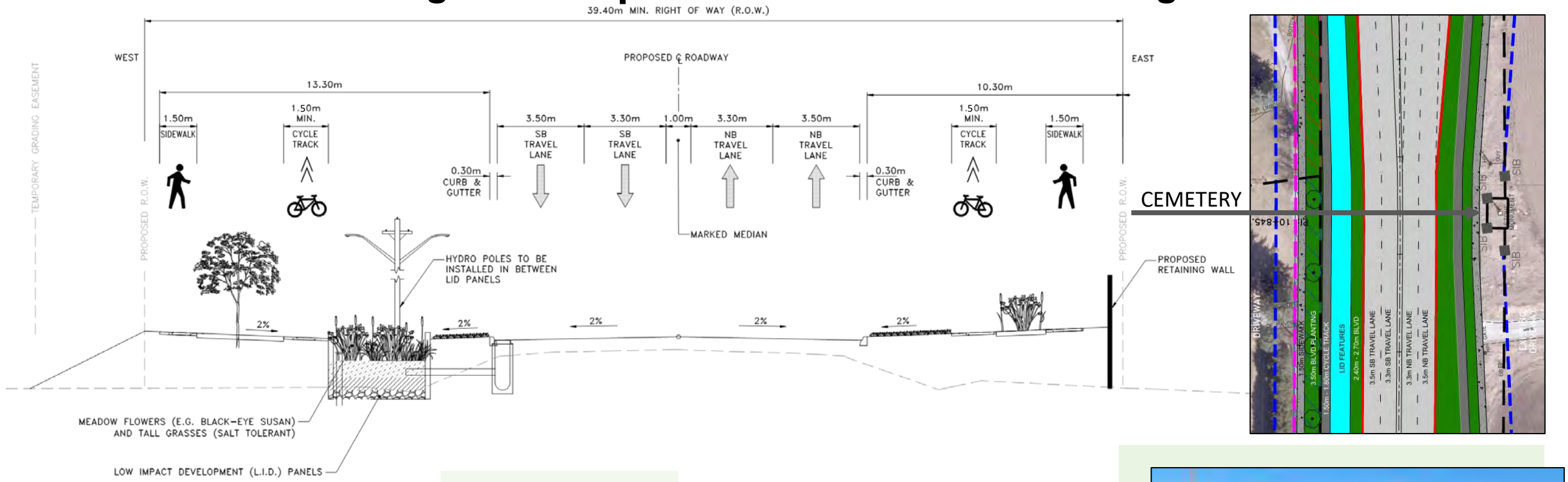


Future Intersection

Future Intersection

Improved Intersection

Preferred Design Concept – Constraints and Mitigation



Project Timeline

Municipal Class Environmental Assessment Process

Next Steps

Phase 3
Alternative Design Concepts for the Preferred Solution

- **December 2022 to January 2023**
  - Review public feedback regarding recommended Design Concepts
- **January 2023**
  - Confirm the Preferred Design Concept

Phase 4
Environmental Study Report

- **January to April 2023**
  - Complete Environmental Study Report
- **May 2023**
  - 30 Day Review period with **Notice of Completion**

Phase 5
Implementation

- **April to December 2023**
  - Complete Detailed Design
- **2027***
  - Construction – Warden Avenue
- **2028***
  - Construction – Kennedy Road

*The year of construction is based on York Region's 2022 10-year Roads and Transit Capital Construction Program.

GREAT | STREETS
Building Roads that Build Community 2022

We are happy to answer your questions

For more information, visit us at:
www.york.ca/WardenKennedyStudy

During the Studies, please connect with the Study Team by sending us an email to
Jennifer.Vandermeer@rjburnside.com

York Region

Kennedy Road EA Study - Evaluation of Alternative Design Concepts

	Criteria for Evaluating Alternatives	Indicators	Alternative Design Concept 1 Construction of typical 4-lane road with 3.0 m median island.	Alternative Design Concept 2 Construction of typical 4-lane road with 5.0 m median island.	Alternative Design Concept 3 Construction of typical 4-lane road with narrow marked median.
A	**Natural Environment**				
1	**Potential impact to vegetation and designated natural features**	- Removal of existing trees and vegetation. - Disturbance to significant woodlands and wetlands. - Opportunities to improve canopy within ROW through Regional street trees.	Potential impact to lands in the Protected Countryside designation of the Greenbelt Plan and within the NHS area as defined by the Greenbelt Plan, located in northern portion of the corridor, north of Elgin Mills Road. Potential impact to the edge of a wooded area located within the central portion of the study area. Impact to vegetation adjacent to the existing road and within the expanded right-of-way. Full form trees can be provided in boulevard.	Potential impact to lands in the Protected Countryside designation of the Greenbelt Plan and within the NHS area as defined by the Greenbelt Plan, located in northern portion of the corridor, north of Elgin Mills Road. Potential impact to the edge of a wooded area located within the central portion of the study area. Impact to vegetation adjacent to the existing road and within the expanded right-of-way. Full form trees can be provided in boulevard. Opportunities to provide additional tree canopy cover from the tree median.	Potential impact to lands in the Protected Countryside designation of the Greenbelt Plan and within the NHS area as defined by the Greenbelt Plan, located in northern portion of the corridor, north of Elgin Mills Road. Potential impact to the edge of a wooded area located within the central portion of the study area. Impact to vegetation adjacent to the existing road and within the expanded right-of-way. Full form trees can be provided in boulevard.
	Rating		◑	◕	◑
2	**Potential impact to wildlife**	- Effect on wildlife and habitat. - Changes to habitat connectivity.	A wider corridor may impact general connectivity of wildlife habitat. Impact not anticipated to be significantly greater than existing conditions.	A wider corridor may impact general connectivity of wildlife habitat. Impact not anticipated to be significantly greater than existing conditions.	A wider corridor may impact general connectivity of wildlife habitat. Impact not anticipated to be significantly greater than existing conditions.
	Rating		◑	◑	◑
3	**Potential impact to aquatic habitat**	- Change or removal of existing aquatic habitat.	With appropriate mitigation measures, minimal impact to aquatic habitat in Bruce Creek is anticipated.	With appropriate mitigation measures, minimal impact to aquatic habitat in Bruce Creek is anticipated.	With appropriate mitigation measures, minimal impact to aquatic habitat in Bruce Creek is anticipated.
	Rating		◕	◕	◕
4	**Potential impact to species at risk**	- Effects on SAR habitat.	Potential for indirect impact to Redside Dace habitat (sedimentation) within Bruce Creek, adjacent to the corridor, north of Elgin Mills Road. Impact to potential individual SAR bat habitat trees located within the Study Area corridor. However, potentially preferred habitat for bats located adjacent to the corridor in larger wooded areas will not be impacted. Potential indirect impact to Butternut tree within protection zone.	Potential for indirect impact to Redside Dace habitat (sedimentation) within Bruce Creek, adjacent to the corridor, north of Elgin Mills Road. Impact to potential individual SAR bat habitat trees located within the Study Area corridor. However, potentially preferred habitat for bats located adjacent to the corridor in larger wooded areas will not be impacted. Potential indirect impact to Butternut tree within protection zone.	Potential for indirect impact to Redside Dace habitat (sedimentation) within Bruce Creek, adjacent to the corridor, north of Elgin Mills Road. Impact to potential individual SAR bat habitat trees located within the Study Area corridor. However, potentially preferred habitat for bats located adjacent to the corridor in larger wooded areas will not be impacted. Potential indirect impact to Butternut tree within protection zone.
	Rating		◑	◑	◑
5	**Potential impact to water resources and drainage**	- Decreased/increased infiltration. - Effects on floodplains. - Disruption of natural drainage. - Increased sedimentation to watercourses due to construction activities. - Impact to aquifers and groundwater (considering mitigation provided by LID facilities). - Fluvial geomorphological impacts.	Provides moderate capacity for LID treatment within the boulevards, which will provide moderate reduction of impacts. Mitigation includes ability for maintaining area for infiltration.	Less capacity for LID treatment within the boulevards, capacity for LID to mitigate impacts is reduced.	Provides a wider boulevard with opportunity for increased LID treatment capacity and greater reduction of impacts. Mitigation includes ability for maintaining area for infiltration.
	Rating		◑	◔	◕

Kennedy Road EA Study - Evaluation of Alternative Design Concepts

6	**Potential climate change impact and resilience**	- Impact to carbon sinks (impact to wetland/vegetation removal). - Snow accumulation. - Potential for greenhouse gas emissions. - Resilience or vulnerability. - Change in air quality.	Moderate capacity to mitigate climate change impacts. Space is available for LID treatment within the road cross-section providing stormwater detention and treatment to support climate resiliency. Vegetation clearing associated with a wider road footprint is not anticipated to significantly impact the availability of carbon sinks. Vegetation removal will be somewhat off-set by opportunity to include a vegetated median and vegetated area adjacent to the road surface between the curb and active transportation facilities. Increase in traffic over time may result in an increase in associated greenhouse gas emissions over existing conditions. Additional lanes are anticipated to reduce traffic congestion/delay. Provision of active transportation option is anticipated to reduce traffic congestion.	Less space is available for LID treatment within the road cross-section to provide stormwater detention and treatment in support of climate resiliency. Vegetation clearing associated with a wider road footprint is not anticipated to significantly impact the availability of carbon sinks. Opportunity to include a wider vegetated median and a vegetated area adjacent to the road surface between the curb and active transportation facilities will help to off-set impact of vegetation removal. Increase in traffic over time may result in an increase in associated greenhouse gas emissions over existing conditions. Additional lanes are anticipated to reduce traffic congestion/delay. Provision of active transportation option is anticipated to reduce traffic congestion.	Moderate capacity to mitigate climate change impacts. Space is available for LID treatment within the road cross-section, providing stormwater detention and treatment to support climate resiliency. Vegetation clearing associated with a wider road footprint is not anticipated to significantly impact the availability of carbon sinks. Vegetation removal will be somewhat off-set by opportunity to include a wider vegetated area adjacent to the road surface between the curb and active transportation facilities. Increase in traffic over time may result in an increase in associated greenhouse gas emissions over existing conditions. Additional lanes are anticipated to reduce traffic congestion/delay. Provision of active transportation option is anticipated to reduce traffic congestion.
	Rating		◑	◑	◑
7	**Potential impact from contaminated sites**	- Level of contamination risk based on Contamination Overview Study.	Potential for contaminated soil and groundwater in areas of expanded right-of-way as a result of adjacent property activities. Further assessment may be required.	Potential for contaminated soil and groundwater in areas of expanded right-of-way as a result of adjacent property activities.Futher assessment may be required.	Potential for contaminated soil and groundwater in areas of expanded right-of-way as a result of adjacent property activities. Further assessment may be required.
	Rating		◑	◑	◑
	Summary Natural Environment		◑	◑	◑

Kennedy Road EA Study - Evaluation of Alternative Design Concepts

	Criteria for Evaluating Alternatives	Indicators	Alternative Design Concept 1	Alternative Design Concept 2	Alternative Design Concept 3
B	**Socio-Cultural Environment**				
1	**Potential impact to heritage resources**	- Potential to impact cultural heritage features. - Potential to impact archaeological resources.	There are sixteen features of cultural heritage value within the Study Area. An impact assessment will be required to confirm impacts as a result of the road widening. There are lands within the study area corridor that have potential for archaeological resources and will require further Archaeological Assessment if impacted. The Pingle Farm Cemetery located at 10225 Kennedy Road is within the Study Area limits. The portion of the Study Area within the legal limits of the Pingle Farm Cemetery must be avoided by project designs.	There are sixteen features of cultural heritage value within the Study Area. An impact assessment will be required to confirm impacts as a result of the road widening. There are lands within the study area corridor that have potential for archaeological resources and will require further Archaeological Assessment if impacted. The Pingle Farm Cemetery located at 10225 Kennedy Road is within the Study Area limits. The portion of the Study Area within the legal limits of the Pingle Farm Cemetery must be avoided by project designs.	There are sixteen features of cultural heritage value within the Study Area. An impact assessment will be required to confirm impacts as a result of the road widening. There are lands within the study area corridor that have potential for archaeological resources and will require further Archaeological Assessment if impacted. The Pingle Farm Cemetery located at 10225 Kennedy Road is within the Study Area limits. The portion of the Study Area within the legal limits of the Pingle Farm Cemetery must be avoided by project designs.
	Rating		◕	◕	◕
2	**Nuisance impacts**	- Perceivable changes to existing noise levels. - Visual impacts/aesthetics. - Temporary disruption to residents during construction.	Perceived increase in noise levels. No significant increases to traffic noise are expected as a result of the project. Construction will result in a temporary disruption to residents.	Perceived increase in noise levels. No significant increases to traffic noise are expected as a result of the project. Construction will result in a temporary disruption to residents.	Perceived increase in noise levels. No significant increases to traffic noise are expected as a result of the project. Construction will result in a temporary disruption to residents.
	Rating		◑	◑	◑
3	**Land acquisition needs/Impacts to driveway access**	- Financial and social effects of relocation or removal of homes or businesses. - Change in use or layout due to property loss. - Temporary changes to driveway access during construction.	Potential for land acquisition to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.	Potential for land acquisition to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.	Potential for land acquisition to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.
	Rating		◕	◕	◕
4	**Conformity to municipal and agency policy**	- Ability to conform to federal, provincial, and local policy.	Conforms to municipal policy of road network connectivity. Conforms to intention of connectivity of active transportation network. Possible impact to fish and fish habitat through sediment mobilization. DFO review is required. Road improvements within the TRCA regulated limit will require permits. SAR permits may be required if potential impacts to Redside Dace habitat can't be avoided. The project will need to consider protection of natural features.	Conforms to municipal policy of road network connectivity. Conforms to intention of connectivity of active transportation network. Possible impact to fish and fish habitat through sediment mobilization. DFO review is required. Road improvements within the TRCA regulated limit will require permits. SAR permits may be required if potential impacts to Redside Dace habitat can't be avoided. The project will need to consider protection of natural features.	Conforms to municipal policy of road network connectivity. Conforms to intention of connectivity of active transportation network. Possible impact to fish and fish habitat through sediment mobilization. DFO review is required. Road improvements within the TRCA regulated limit will require permits. SAR permits may be required if potential impacts to Redside Dace habitat can't be avoided. The project will need to consider protection of natural features.
	Rating		◕	◕	◕
5	**Connectivity**	- Ability of the Alternative to increase connectivity by facilitating transit service and active transportation along the corridor. - Ability of Alternatives to create pedestrian and cyclist friendly environment.	Provides increased connectivity by protecting for future transit service and integrating active transportation facilities within the boulevards. A moderate setback from traffic provides a comfortable pedestrian environment. Tree canopy from street trees provides shade to create pedestrian and cyclist friendly environment.	Provides increased connectivity by protecting for future transit service and integrating active transportation facilities within the boulevards. The smallest setback from traffic provides the least comfortable pedestrian environment. Tree canopy from street trees provides shade to create pedestrian and cyclist friendly environment.	Provides increased connectivity by protecting for future transit service and integrating active transportation facilities within the boulevards. The greatest setback from traffic provides the most comfortable pedestrian environment. Tree canopy from street trees provides shade to create pedestrian and cyclist friendly environment.
	Rating		◑	◔	◕
	Summary Socio-Cultural Environment		◕	◑	◕

Kennedy Road EA Study - Evaluation of Alternative Design Concepts

	Criteria for Evaluating Alternatives	Indicators	Alternative Design Concept 1	Alternative Design Concept 2	Alternative Design Concept 3
C	**Engineering Environment**				
1	**Level of service/traffic congestion**	- Anticipated intersection traffic and delays at intersections in 2041.	Alternative will prevent and minimize traffic and delays at intersections in 2041.	Alternative will prevent and minimize traffic and delays at intersections in 2041.	Alternative will prevent and minimize traffic and delays at intersections in 2041.
	Rating		●	●	●
2	**Speed management**	- Ability of Alternative to facilitate speed management along corridor.	Provides moderate speed management along the corridor. Narrower roads with less lateral clearance generally contribute to more cautious driving and slower speeds. Alternative 1 will be more constrained than Alternative 2 but less constrained than Alternative 3.	Provides the least ability for speed management. Narrower roads with less lateral clearance generally contribute to more cautious driving and slower speeds. Alternative 2 with the largest median will be a less constrained space with inside lanes bordered by a median separating from opposing traffic.	Provides optimal speed management along the corridor. Narrower roads with less lateral clearance generally contributes to more cautious driving and slower speeds. Alternative 3 with limited marked median will be a more constrained space with inside lanes immediately adjacent to opposing traffic.
	Rating		◕	◑	●
3	**Traffic safety**	- Effects on layout or operations of intersections and roadways. - Ability address roadside safety requirements. - Roadway alignment implications on positive guidance.	Adequate separation of north-bound and south-bound traffic. Roadside safety requirements will be met.	Provides consistent alignment and positive guidance throughout the corridor. Roadside safety requirements will be met.	Limited marked median can provide some separation between north-bound and south-bound traffic. Roadside safety requirements will be met.
	Rating		◕	●	◑
4	**Design constraints**	- Professional opinion on the design limitations and restrictions. - Conformance to York Region Streetscaping Policy and Design Elements (e.g. Median design, boulevards, lane widths, landscaping). - Conformance to York Region's Street Tree and Horticultural Design Guidelines (e.g. offset and spacing for street trees, minimum planting width for median)	No anticipated design limitations or restrictions. Conforms to Region Streetscaping Policy and Design Elements. Conforms to Region's Street Tree and Horticultural Design Guidelines. Centre median can result in constraints to access for emergency services vehicles.	No anticipated design limitations or restrictions. Conforms to Region Streetscaping Policy and Design Elements. Conforms to Region's Street Tree and Horticultural Design Guidelines. Centre median can result in constraints to access for emergency services vehicles.	No anticipated design limitations or restrictions. Conforms to Region Streetscaping Policy and Design Elements. Conforms to Region's Street Tree and Horticultural Design Guidelines.
	Rating		◕	◕	●
5	**Utility impacts**	- Effects on utilities (e.g. relocations)	Utilities impacts will be similar for all alternatives.	Utilities impacts will be similar for all alternatives.	Utilities impacts will be similar for all alternatives.
	Rating		◑	◑	◑
6	**Constructability**	- Professional opinion on the ease and efficiency of construction of the project, including ease of construction staging and relative construction traffic management. - Disruption to municipal services during construction (snow removal, garbage pick-up). - Levels of disruption to road users (automobiles and cyclists) due to construction.	With median, construction staging and traffic management are relatively more complex than Alternative 3.	With median, construction staging and traffic management are relatively more complex than Alternative 3.	With limited marked median, construction staging and traffic management are relatively less complex than other alternatives.
	Rating		◑	◑	◕
	Summary Engineering Environment		◕	◕	◕

Kennedy Road EA Study - Evaluation of Alternative Design Concepts

	Criteria for Evaluating Alternatives	Indicators	Alternative Design Concept 1	Alternative Design Concept 2	Alternative Design Concept 3
D	**Financial Environment**				
1	**Estimated capital costs**	- Cost of the materials for road construction. - Cost of the installation of irrigation system for tree planting.	Capital costs are relatively lower than Alternative 2 due to narrower median.	Capital costs are relatively higher than other alternatives due to wider median and installation of irrigation system for tree planting.	Capital costs are relatively lower than Alternative 2 as there is a limited marked median.
	Rating		◕	◑	●
2	**Estimated operation and maintenance costs**	- Costs associated with typical operation and maintenance of the road. - Increased operation and maintenance costs associated due to planted median (tree or shrub).	Operation and maintenance costs are relatively lower than Alternative 2 due to the narrower median and only shrub planting.	Operation and maintenance costs are relatively higher than other alternative due wider median, tree planting and irrigation system.	Operation and maintenance costs are relatively lower than Alternative 1 and 2 as there is a limited marked median, no vegetation.
	Rating		◕	◑	●
3	**Property acquisition costs**	- Costs associated with private property requirements, including easements, land purchases, restoration of private lands.	Potential for land acquisition costs to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.	Potential for land acquisition costs to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.	Potential for land acquisition costs to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.
	Rating		◕	◕	◕
	Summary Financial Environment		◕	◑	●

Criteria for Evaluating Alternatives		Alternative Design Concept 1	Alternative Design Concept 2	Alternative Design Concept 3
Overall Summary		**More Preferred**	**Least Preferred**	**Most Preferred**

Order of Preference

Most Preferred ●
More Preferred ◕
Somewhat Preferred ◑
Less Preferred ◔
Least Preferred ○

Warden Avenue EA Study - Evaluation of Alternative Design Concepts

	Criteria for Evaluating Alternatives	Indicators	Alternative Design Concept 1 Construction of typical 4-lane road with 3.0 m median island.	Alternative Design Concept 2 Construction of typical 4-lane road with 5.0 m median island.	Alternative Design Concept 3 Construction of typical 4-lane road with narrow marked median.
A	**Natural Environment**				
1	**Potential impact to vegetation and designated natural features**	- Removal of existing trees and vegetation. - Disturbance to significant woodlands and wetlands. - Opportunities to improve canopy within ROW through Regional street trees.	Potential impact to lands in the Protected Countryside designation of the Greenbelt Plan and within the NHS area as defined by the Greenbelt Plan, located in northern portion of the corridor, north of Elgin Mills Road. Potential impact to the edge of a wooded area located within the central portion of the study area. Impact to vegetation adjacent to the existing road and within the expanded right-of-way. Full form trees can be provided in boulevard.	Potential impact to lands in the Protected Countryside designation of the Greenbelt Plan and within the NHS area as defined by the Greenbelt Plan, located in northern portion of the corridor, north of Elgin Mills Road. Potential impact to the edge of a wooded area located within the central portion of the study area. Impact to vegetation adjacent to the existing road and within the expanded right-of-way. Full form trees can be provided in boulevard. Opportunities to provide additional tree canopy cover from the tree median.	Potential impact to lands in the Protected Countryside designation of the Greenbelt Plan and within the NHS area as defined by the Greenbelt Plan, located in northern portion of the corridor, north of Elgin Mills Road. Potential impact to the edge of a wooded area located within the central portion of the study area. Impact to vegetation adjacent to the existing road and within the expanded right-of-way. Full form trees can be provided in boulevard.
	Rating		◑	◕	◑
2	**Potential impact to wildlife**	- Effect on wildlife and habitat. - Changes to habitat connectivity.	A wider corridor may impact general connectivity of wildlife habitat. Impact not anticipated to be significantly greater than existing conditions.	A wider corridor may impact general connectivity of wildlife habitat. Impact not anticipated to be significantly greater than existing conditions.	A wider corridor may impact general connectivity of wildlife habitat. Impact not anticipated to be significantly greater than existing conditions.
	Rating		◑	◑	◑
3	**Potential impact to aquatic habitat**	- Change or removal of existing aquatic habitat.	With appropriate mitigation measures, minimal impact to aquatic habitat in the Bruce Creek tributary is anticipated.	With appropriate mitigation measures, minimal impact to aquatic habitat in the Bruce Creek tributary is anticipated.	With appropriate mitigation measures, minimal impact to aquatic habitat in the Bruce Creek tributary is anticipated.
	Rating		◕	◕	◕
4	**Potential impact to species at risk**	- Effects on SAR habitat.	Impact to previously identified potential Bobolink, Eastern Meadowlark habitat not anticipated-habitat not observed within the study area corridor. Potential for indirect impact to Redside Dace habitat (sedimentation) adjacent to the corridor. Impact to potential individual SAR bat habitat trees located within the Study Area corridor. However, potentially preferred habitat for bats located adjacent to the corridor in larger wooded areas will not be impacted.	Impact to previously identified potential Bobolink, Eastern Meadowlark habitat not anticipated-habitat not observed within the study area corridor. Potential for indirect impact to Redside Dace habitat (sedimentation) adjacent to the corridor. Impact to potential individual SAR bat habitat trees located within the Study Area corridor. However, potentially preferred habitat for bats located adjacent to the corridor in larger wooded areas will not be impacted.	Impact to previously identified potential Bobolink, Eastern Meadowlark habitat not anticipated-habitat not observed within the study area corridor. Potential for indirect impact to Redside Dace habitat (sedimentation) adjacent to the corridor. Impact to potential individual SAR bat habitat trees located within the Study Area corridor. However, potentially preferred habitat for bats located adjacent to the corridor in larger wooded areas will not be impacted.
	Rating		◑	◑	◑
5	**Potential impact to water resources and drainage**	- Decreased/increased infiltration. - Effects on floodplains. - Disruption of natural drainage. - Increased sedimentation to watercourses due to construction activities. - Impact to aquifers and groundwater (considering mitigation provided by LID facilities). - Fluvial geomorphological impacts.	Provides moderate capacity for LID treatment within the boulevards, which will provide moderate reduction of impacts. Mitigation includes ability for maintaining area for infiltration. Existing fluvial geomorphological conditions of watercourse crossing (mid block) anticipated to be maintained through appropriate design of new crossing.	Less capacity for LID treatment within the boulevards, capacity for LID to mitigate impacts is reduced. Existing fluvial geomorphological conditions of watercourse crossing (mid block) anticipated to be maintained through appropriate design of new crossing.	Provides a wider boulevard with opportunity for increased LID treatment capacity and greater reduction of impacts. Mitigation includes ability for maintaining area for infiltration. Existing fluvial geomorphological conditions of watercourse crossing (mid block) anticipated to be maintained through appropriate design of new crossing.
	Rating		◑	◔	◕

Warden Avenue EA Study - Evaluation of Alternative Design Concepts

6	**Potential climate change impact and resilience**	- Impact to carbon sinks (impact to wetland/vegetation removal). - Snow accumulation. - Potential for greenhouse gas emissions. - Resilience or vulnerability. - Change in air quality.	Moderate capacity to mitigate climate change impacts. Space is available for LID treatment within the road cross-section, providing stormwater detention and treatment to support climate resiliency. Vegetation clearing associated with a wider road footprint is not anticipated to significantly impact the availability of carbon sinks. Vegetation removal will be somewhat off-set by opportunity to include a vegetated median and vegetated area adjacent to the road surface between the curb and active transportation facility. Increase in traffic over time may result in an increase in associated greenhouse gas emissions over existing conditions. Additional lanes are anticipated to reduce traffic congestion/delay. Provision of active transportation option is anticipated to reduce traffic congestion.	Less space is available for LID treatment within the road cross-section to provide stormwater detention and treatment in support of climate resiliency. Vegetation clearing associated with a wider road footprint is not anticipated to significantly impact the availability of carbon sinks. Opportunity to include a wider vegetated median and a vegetated area adjacent to the road surface between the curb and active transportation facility will help to off-set impact of vegetation removal. Increase in traffic over time may result in an increase in associated greenhouse gas emissions over existing conditions. Additional lanes are anticipated to reduce traffic congestion/delay. Provision of active transportation option is anticipated to reduce traffic congestion.	Moderate capacity to mitigate climate change impacts. Space is available for LID treatment within the road cross-section, providing stormwater detention and treatment to support climate resiliency. Vegetation clearing associated with a wider road footprint is not anticipated to significantly impact the availability of carbon sinks. Vegetation removal will be somewhat off-set by opportunity to include a wider vegetated area adjacent to the road surface between the curb and active transportation facility. Increase in traffic over time may result in an increase in associated greenhouse gas emissions over existing conditions. Additional lanes are anticipated to reduce traffic congestion/delay. Provision of active transportation option is anticipated to reduce traffic congestion.
	Rating		◑	◑	◑
7	**Potential impact from contaminated sites**	- Level of contamination risk based on Contamination Overview Study.	Potential for contaminated soil and groundwater in areas of expanded right-of-way as a result of adjacent property activities. Further assessment may be required.	Potential for contaminated soil and groundwater in areas of expanded right-of-way as a result of adjacent property activities. Further assessment may be required.	Potential for contaminated soil and groundwater in areas of expanded right-of-way as a result of adjacent property activities. Further assessment may be required.
	Rating		◕	◕	◕
	Summary Natural Environment		◑	◑	◑

Warden Avenue EA Study - Evaluation of Alternative Design Concepts

	Criteria for Evaluating Alternatives	Indicators	Alternative Design Concept 1	Alternative Design Concept 2	Alternative Design Concept 3
B	**Socio-Cultural Environment**				
1	**Potential impact to heritage resources**	- Potential to impact cultural heritage features. - Potential to impact archaeological resources.	There are six features of cultural heritage value within the Study Area. An impact assessment will be required to confirm impacts as a result of the road widening. There are lands within the study area corridor that have potential for archaeological resources and will require further Archaeological Assessment if impacted.	There are six features of cultural heritage value within the Study Area. An impact assessment will be required to confirm impacts as a result of the road widening. There are lands within the study area corridor that have potential for archaeological resources and will require further Archaeological Assessment if impacted.	There are six features of cultural heritage value within the Study Area. An impact assessment will be required to confirm impacts as a result of the road widening. There are lands within the study area corridor that have potential for archaeological resources and will require further Archaeological Assessment if impacted.
	Rating		◕	◕	◕
2	**Nuisance impacts**	- Perceivable changes to existing noise levels. - Visual impacts/aesthetics. - Temporary disruption to residents during construction.	Perceived increase in noise levels. No significant increases to traffic noise are expected as a result of the project. Construction will result in a temporary disruption to residents.	Perceived increase in noise levels. No significant increases to traffic noise are expected as a result of the project. Construction will result in a temporary disruption to residents.	Perceived increase in noise levels. No significant increases to traffic noise are expected as a result of the project. Construction will result in a temporary disruption to residents.
	Rating		◑	◑	◑
3	**Land acquisition needs/Impacts to driveway access**	- Financial and social effects of relocation or removal of homes or businesses. - Change in use or layout due to property loss. - Temporary changes to driveway access during construction.	Potential for land acquisition to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.	Potential for land acquisition to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.	Potential for land acquisition to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.
	Rating		◕	◕	◕
4	**Conformity to municipal and agency policy**	- Ability to conform to federal, provincial, and local policy.	Conforms to municipal policy of road network connectivity. Conforms to intention of connectivity of active transportation network. Possible impact to fish and fish habitat through sediment mobilization. DFO review is required. Road improvements within the TRCA regulated limit will require permits. SAR permits may be required if potential impacts to Redside Dace habitat can't be avoided. The project will need to consider protection of natural features.	Conforms to municipal policy of road network connectivity. Conforms to intention of connectivity of active transportation network. Possible impact to fish and fish habitat through sediment mobilization. DFO review is required. Road improvements within the TRCA regulated limit will require permits. SAR permits may be required if potential impacts to Redside Dace habitat can't be avoided. The project will need to consider protection of natural features.	Conforms to municipal policy of road network connectivity. Conforms to intention of connectivity of active transportation network. Possible impact to fish and fish habitat through sediment mobilization. DFO review is required. Road improvements within the TRCA regulated limit will require permits. SAR permits may be required if potential impacts to Redside Dace habitat can't be avoided. The project will need to consider protection of natural features.
	Rating		◕	◕	◕
5	**Connectivity**	- Ability of the Alternative to increase connectivity by facilitating transit service and active transportation along the corridor. - Ability of Alternatives to create pedestrian and cyclist friendly environment.	Provides increased connectivity by protecting for future transit service and integrating active transportation facilities within the boulevards. A moderate setback from traffic provides a comfortable pedestrian environment. Tree canopy from street trees provides shade to create pedestrian and cyclist friendly environment.	Provides increased connectivity by protecting for future transit service and integrating active transportation facilities within the boulevards. The smallest setback from traffic provides the least comfortable pedestrian environment. Tree canopy from street trees provides shade to create pedestrian and cyclist friendly environment.	Provides increased connectivity by protecting for future transit service and integrating active transportation facilities within the boulevards. The greater setback from traffic provides the most comfortable pedestrian environment. Tree canopy from street trees provides shade to create pedestrian and cyclist friendly environment.
	Rating		◑	◔	◕
	Summary Socio-Cultural Environment		◕	◑	◕

Warden Avenue EA Study - Evaluation of Alternative Design Concepts

	Criteria for Evaluating Alternatives	Indicators	Alternative Design Concept 1	Alternative Design Concept 2	Alternative Design Concept 3
C	**Engineering Environment**				
1	**Level of service/traffic congestion**	- Anticipated intersection traffic and delays at intersections in 2041.	Alternative will prevent and minimize traffic and delays at intersections in 2041.	Alternative will prevent and minimize traffic and delays at intersections in 2041.	Alternative will prevent and minimize traffic and delays at intersections in 2041.
	Rating		●	●	●
2	**Speed management**	- Ability of Alternative to facilitate speed management along corridor.	Provides moderate speed management along the corridor. Narrower roads with less lateral clearance generally contribute to more cautious driving and slower speeds. Alternative 1 will be more constrained than Alternative 2 but less constrained than Alternative 3.	Provides the least ability for speed management. Narrower roads with less lateral clearance generally contribute to more cautious driving and slower speeds. Alternative 2 with the largest median will be a less constrained space with inside lanes bordered by a median separating from opposing traffic.	Provides optimal speed management along the corridor. Narrower roads with less lateral clearance generally contributes to more cautious driving and slower speeds. Alternative 3 with limited marked median will be a more constrained space with inside lanes immediately adjacent to opposing traffic.
	Rating		◕	◑	●
3	**Traffic safety**	- Effects on layout or operations of intersections and roadways. - Ability address roadside safety requirements. - Roadway alignment implications on positive guidance.	Adequate separation of north-bound and south-bound traffic. Roadside safety requirements will be met.	Provides consistent alignment and positive guidance throughout the corridor. Roadside safety requirements will be met.	Limited marked median can provide some separation between north-bound and south-bound traffic. Roadside safety requirements will be met.
	Rating		◕	●	◑
4	**Design constraints**	- Professional opinion on the design limitations and restrictions. - Conformance to York Region Streetscaping Policy and Design Elements (e.g. Median design, boulevards, lane widths, landscaping). - Conformance to York Region's Street Tree and Horticultural Design Guidelines (e.g. offset and spacing for street trees, minimum planting width for median)	No anticipated design limitations or restrictions. Conforms to Region Streetscaping Policy and Design Elements. Conforms to Region's Street Tree and Horticultural Design Guidelines. Centre median can result in constraints to access for emergency services vehicles.	No anticipated design limitations or restrictions. Conforms to Region Streetscaping Policy and Design Elements. Conforms to Region's Street Tree and Horticultural Design Guidelines. Centre median can result in constraints to access for emergency services vehicles.	No anticipated design limitations or restrictions. Conforms to Region Streetscaping Policy and Design Elements. Conforms to Region's Street Tree and Horticultural Design Guidelines.
	Rating		◕	◕	●
5	**Utility impacts**	- Effects on utilities (e.g. relocations)	Utilities impacts will be similar for all alternatives.	Utilities impacts will be similar for all alternatives.	Utilities impacts will be similar for all alternatives.
	Rating		◑	◑	◑
6	**Constructability**	- Professional opinion on the ease and efficiency of construction of the project, including ease of construction staging and relative construction traffic management. - Disruption to municipal services during construction (snow removal, garbage pick-up). - Levels of disruption to road users (automobiles and cyclists) due to construction.	With median, construction staging and traffic management are relatively more complex than Alternative 3.	With median, construction staging and traffic management are relatively more complex than Alternative 3.	With limited marked median, construction staging and traffic management are relatively less complex than other alternatives.
	Rating		◑	◑	◕
	Summary Engineering Environment		◕	◕	◕

Warden Avenue EA Study - Evaluation of Alternative Design Concepts

	Criteria for Evaluating Alternatives	Indicators	Alternative Design Concept 1	Alternative Design Concept 2	Alternative Design Concept 3
D	**Financial Environment**				
1	**Estimated capital costs**	- Cost of the materials for road construction. - Cost of the installation of irrigation system for tree planting.	Capital costs of are relatively lower than Alternative 2 due to narrower median.	Capital costs are relatively higher than other alternatives due to wider median and installation of irrigation system for tree planting.	Capital costs are relatively lower than Alternative 2 as there is a limited marked median.
	Rating		◕	◑	●
2	**Estimated operation and maintenance costs**	- Costs associated with typical operation and maintenance of the road. - Increased operation and maintenance costs associated due to planted median (tree or shrub).	Operation and maintenance costs are relatively lower than Alternative 2 due to the narrower median and only shrub planting.	Operation and maintenance costs are relatively higher than other alternative due wider median, tree planting and irrigation system.	Operation and maintenance costs are relatively lower than Alternative 1 and 2 as there is a limited marked median.
	Rating		◕	◑	●
3	**Property acquisition costs**	- Costs associated with private property requirements, including easements, land purchases, restoration of private lands.	Potential for land acquisition costs to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.	Potential for land acquisition costs to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.	Potential for land acquisition costs to accommodate road improvements within future road right-of-way from non-participating landowners to adjacent developments.
	Rating		◕	◕	◕
	Summary Financial Environment		◕	◑	●

Criteria for Evaluating Alternatives	Alternative Design Concept 1	Alternative Design Concept 2	Alternative Design Concept 3
Overall Summary	**More Preferred**	**Least Preferred**	**Most Preferred**

Order of Preference

Most Preferred ●
More Preferred ◕
Somewhat Preferred ◑
Less Preferred ◔
Least Preferred ○

Kennedy Road Environmental Assessment Study - Evaluation of Low Impact Development Options

	Criteria for Evaluating Alternatives	Indicators	Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
					- provides partial infiltration		
A	**Natural Environment**						
1	**Ecological benefit**	- provision of pollinator food resource and habitat. - adaptation to variable temperature and moisture conditions. - ability to reduce local air temperature. - ability to improve local air quality. - enhance urban biodiversity.	- planted with salt, water and pollution tolerant native flowering species. - vegetation has ability to reduce local air temperature and improve local air quality in vicinity of LID. - urban biodiversity is enhanced by species planted in LID.	- planted with salt, water and pollution tolerant native flowering species. - vegetation has ability to reduce local air temperature and improve local air quality in vicinity of LID. - urban biodiversity is enhanced by species planted in LID.	- planted with salt, water and pollution tolerant native flowering species. - vegetation has ability to reduce local air temperature and improve local air quality in vicinity of LID. - urban biodiversity is enhanced by species planted in LID.	- no planting opportunities. - no reduction of local air temperatures and air quality. - no enhancements to urban biodiversity.	- no planting opportunities. - no reduction of local air temperatures and air quality. - no enhancements to urban biodiversity.
	Rating		●	●	●	○	○
2	**Soil Permeability**	- compatibility (partial or complete) with existing soil permeability conditions.	- reliant on insitu sub-soil condition for infiltration.	- reliant on insitu sub-soil condition for infiltration.	- reliant on insitu sub-soil condition for infiltration.	- reliant on insitu sub-soil condition for infiltration.	- no reliance on insitu sub-soil condition for infiltration.
	Rating		◑	◑	◑	◑	●
3	**Impacts to groundwater**	- provides sufficient separation between infiltration surface (absorption media) and groundwater level. - compatibility (partial or complete) with existing groundwater levels. - ability to remove pollutants (e.g. salt, oil) from water runoff.	- feature extends from surface to below-ground resulting in moderate separation from groundwater level. - vegetation plantings can provide nutrient uptake and filtering of pollutants from runoff. - capacity to reduce volume of events up to the 25 mm storm, which cumulatively are responsible for majority of annual pollutant load. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake.	- feature extends from surface to below-ground resulting in moderate separation from groundwater level. - vegetation plantings can provide nutrient uptake and filtering of pollutants from runoff. - capacity to reduce volume of events up to the 25 mm storm, which cumulatively are responsible for majority of annual pollutant load. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake. - media is thinner than in Option 1 and Option 3 and as such has less potential to capture contaminants.	- feature extends from surface to below-ground resulting in moderate separation from groundwater level. - vegetation plantings can provide nutrient uptake and filtering of pollutants from runoff. - capacity to reduce volume of events up to the 25 mm storm, which cumulatively are responsible for majority of annual pollutant load. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake.	- top of features is below the surface, and extends further below-ground resulting in less separation from groundwater level. - no planting opportunities to provide nutrient uptake and filtering of pollutants from runoff. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake.	- deepest feature resulting in least separation from groundwater level. - no planting opportunities, however quality control isolator row can be incorporated into the storage design to remove pollutants. - capacity to reduce volume of events up to the 25 mm storm, which cumulatively are responsible for majority of annual pollutant load. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake.
	Rating		●	◕	●	◔	◑
	Rating		●	◕	●	◔	◑
	Summary Natural Environment		◕	◕	◕	◔	◑

	Criteria for Evaluating Alternatives	Indicators	Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
B	**Socio-Cultural Environment**						
1	**Aesthetics**	- potential to enhance aesthetics of road corridor. - provision of year-round seasonal interest.	- a well defined space with flowering plants to enhance the streetscape aesthetics with a mix of perennial and woody species. - provides three-season plantings that enhance seasonal interest in area.	- a less defined space with flowering plants to enhance the streetscape aesthetics with perennial species. - provides three-season plantings that enhance seasonal interest in area.	- a less defined space with flowering plants to enhance the streetscape aesthetics with perennial and woody species. - provides three-season plantings that enhance seasonal interest in area.	- Minimal opportunity to enhance aesthetics of road corridor as LID is only marginally visible and has no planting opportunities. - does not provide seasonal interest.	- No opportunity to enhance aesthetics of the road corridor as LID is not visible. - does not provide seasonal interest.
	Rating		●	◕	◕	◔	○
2	**Education Opportunities**	- potential to educate public about stormwater management.	- good opportunities to educate public on function and benefits of LID to support stormwater management as LID is very visible and there is adequate space for educational information boards onsite.	- good opportunities to educate public on function and benefits of LID to support stormwater management as LID is very visible; although space for educational information boards onsite is more limited than other options.	- good opportunities to educate public on function and benefits of LID to support stormwater management as LID is very visible and there is adequate space for educational information boards onsite.	-marginal visibility of LID limits educational opportunities.	- no educational opportunities.
	Rating		●	◕	●	◔	○
	Summary Socio-Cultural Environment		●	◕	●	◔	○

Kennedy Road Environmental Assessment Study - Evaluation of Low Impact Development Options

	Criteria for Evaluating Alternatives	Indicators	Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
C	**Technical Factors**						
1	**Quality control**	- ability to meet quality control criteria. - ability to contribute to quality control along with other treatment train options.	- planted vegetation media offers pretreatment filtration of undissolved solids. Primary filtration by engineered soil and absorption media. - runoff enters via street storm sewer, which could easily allow for upstream treatment features such as oil/grit separators, catch basin inserts, etc.	- planted vegetation media offers pretreatment filtration of undissolved solids. Primary filtration by engineered soil and absorption media. - runoff enters via overland flow/curb cuts, which does not easily allow for upstream treatment features.	- planted vegetation media offers pretreatment filtration of undissolved solids. Primary filtration by engineered soil and absorption media. - runoff enters via overland flow/curb cuts, which does not easily allow for upstream treatment features.	- grass/sod surface offers pretreatment filtration before infiltrating engineered trenches and soak-aways. - runoff can enter or discharge via street storm sewer, which could easily allow for upstream or downstream treatment features such as oil/grit separators, catch basin inserts, etc.	- quality control can be incorporated into the storage design, less effective than filtration. - runoff can enter or discharge via street storm sewer, which could easily allow for upstream or downstream treatment features such as oil/grit separators, catch basin inserts, etc.
	Rating		●	◕	◕	◕	◑
2	**Quantity control**	- ability to control peak flows.	- gravel storage layer provides some storage volume. - discharges only through infiltration, not suitable for control of higher peak flows.	- gravel storage layer provides some storage volume. - discharges only through infiltration, not suitable for control of higher peak flows.	- gravel storage layer provides some storage volume. - discharges only through infiltration, not suitable for control of higher peak flows.	- stone void area provides moderate storage volume. - can discharge to street storm sewer, suitable for control of higher peak flows.	- large void space provides most storage volume. - can discharge to street storm sewer, suitable for control of higher peak flows.
	Rating		◑	◑	◑	◕	●
3	**Erosion control**	- volumetric retention capacity.	- gravel storage layer provides some storage volume.	- gravel storage layer provides some storage volume.	- gravel storage layer provides some storage volume.	- stone void area provides moderate storage volume.	- large void space provides most storage volume.
	Rating		◑	◑	◑	◕	●
4	**Maintenance requirements**	- ease and frequency of maintenance.	- a well defined footprint will improve lifecycle and performance maintenance. Vegetation and filter media add to maintenance frequency and duration.	- less defined footprint and may hinder maintenance of adjacent grass and/or planting. Vegetation and filter media add to maintenance frequency and duration.	- less defined footprint and may hinder maintenance of adjacent grass and/or planting. Vegetation and filter media add to maintenance frequency and duration.	- less defined footprint and may hinder maintenance of adjacent grass and/or planting. Lack of vegetation and filter media reduce maintenance frequency and duration.	- a well defined footprint to facilitate lifecycle and performance maintenance; however, excavations for extensive repair may impact adjacent spaces.
	Rating		◕	◑	◑	◑	◔
5	**Surface footprint**	- size of surface footprint. - ability to accommodate surface footprint.	- surface footprint is lower relative to Option 2 and 3 due to well defined box trench. - linear, narrow footprint can be easily accommodated in boulevard.	- requires highest surface area relative to other options. - linear, but wider footprint not easily accommodated in boulevard.	- surface footprint is lower relative to Option 2, but somewhat higher than Option 1 since overall footprint of LID is less defined than Option 1. - linear footprint, wider than Option 1, narrower than Option 2. Footprint can be accommodated in boulevard.	- minimal surface footprint required compared to other options. - linear, narrow footprint can be easily accommodated in boulevard.	- minimal surface footprint impacts.
	Rating		◕	◔	◑	●	●
	Summary Technical Factors		◕	◑	◑	◕	◕

	Criteria for Evaluating Alternatives	Indicators	Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
D	**Financial Factors**						
1	**Estimated capital costs**	- Relative cost of the materials for LID construction.	$ 25,000.00 per 100m.sq. Drainage Area	$ 11,000.00 per 100m.sq. Drainage Area	$ 23,000.00 per 100m.sq. Drainage Area	$ 24,000.00 per 100m.sq. Drainage Area	$ 14,000.00 per 100m.sq. Drainage Area
	Rating		◑	●	◑	◑	◕
2	**Estimated maintenance costs**	- Relative costs associated with typical maintenance of the LIDs (includes monitoring, inspection, material and parts replacement).	Average Annual Maintenance Cost: 50 Years Evaluation Period: $140.00 per 100m.sq. Drainage Area	Average Annual Maintenance Cost: 50 Years Evaluation Period: $90.00 per 100m.sq. Drainage Area	Average Annual Maintenance Cost: 50 Years Evaluation Period: $140.00 per 100m.sq. Drainage Area	Average Annual Maintenance Cost: 50 Years Evaluation Period: $1,600.00 per 100m.sq. Drainage Area	Average Annual Maintenance Cost: 50 Years Evaluation Period: $33.00 per 100m.sq. Drainage Area
	Rating		◑	◕	◑	◔	●
3	**Life-cycle costs and savings**	- Relative comparison of life-cycle costs and savings of each option.	Present Value Life Cycle Cost for 50 Years Evaluation Period: $27,000.00 per 100m.sq. Drainage Area	Present Value Life Cycle Cost for 50 Years Evaluation Period: $14,000.00 per 100m.sq. Drainage Area	Present Value Life Cycle Cost for 50 Years Evaluation Period: $27,000.00 per 100m.sq. Drainage Area	Present Value Life Cycle Cost for 50 Years Evaluation Period: $75,000.00 per 100m.sq. Drainage Area	Present Value Life Cycle Cost for 50 Years Evaluation Period: $14,000.00 per 100m.sq. Drainage Area
	Rating		◕	●	◕	◔	●
	Summary Financial Factors		◑	●	◑	◔	●

Kennedy Road Environmental Assessment Study - Evaluation of Low Impact Development Options

Criteria for Evaluating Alternatives		Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
Overall Summary		**Most Preferred**	**Most Preferred**	**More Preferred**	**Least Preferred**	**Somewhat Preferred**
RECOMMENDATION		**Option 1: Box Trench Design will be carried forward as the preferred LID concept for Warden Avenue.** Although ranked the same as Option 2 overall, Option 1 is preferred over Option 2 as it can achieve a greater degree of pollutant removal, which will reduce impacts to groundwater. In areas with higher groundwater table, Option 2 will be considered as a viable preferred LID concept to Option 1.	Although ranked the same as Option 1 overall, Option 2 cannot achieve the same degree of pollutant removal as Option 1. However, since Option 2 does not require the same design depth as Option 1, **Option 2 will be considered as a viable preferred LID concept for areas with higher groundwater table**.			

Order of Preference

Most Preferred ●
More Preferred ◕
Somewhat Preferred ◑
Less Preferred ◔
Least Preferred ○

Warden Avenue Environmental Assessment Study - Evaluation of Low Impact Development Options

	Criteria for Evaluating Alternatives	Indicators	Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
					- provides partial infiltration		
A	**Natural Environment**						
1	**Ecological benefit**	- provision of pollinator food resource and habitat. - adaptation to variable temperature and moisture conditions. - ability to reduce local air temperature. - ability to improve local air quality. - enhance urban biodiversity.	- planted with salt, water and pollution tolerant native flowering species. - vegetation has ability to reduce local air temperature and improve local air quality in vicinity of LID. - urban biodiversity is enhanced by species planted in LID.	- planted with salt, water and pollution tolerant native flowering species. - vegetation has ability to reduce local air temperature and improve local air quality in vicinity of LID. - urban biodiversity is enhanced by species planted in LID.	- planted with salt, water and pollution tolerant native flowering species. - vegetation has ability to reduce local air temperature and improve local air quality in vicinity of LID. - urban biodiversity is enhanced by species planted in LID.	- no planting opportunities. - no reduction of local air temperatures and air quality. - no enhancements to urban biodiversity.	- no planting opportunities. - no reduction of local air temperatures and air quality. - no enhancements to urban biodiversity.
	Rating		●	●	●	○	○
2	**Soil Permeability**	- compatibility (partial or complete) with existing soil permeability conditions.	- reliant on insitu sub-soil condition for infiltration.	- reliant on insitu sub-soil condition for infiltration.	- reliant on insitu sub-soil condition for infiltration.	- reliant on insitu sub-soil condition for infiltration.	- no reliance on insitu sub-soil condition for infiltration.
	Rating		◑	◑	◑	◑	●
3	**Impacts to groundwater**	- provides sufficient separation between infiltration surface (absorption media) and groundwater level. - compatibility (partial or complete) with existing groundwater levels. - ability to remove pollutants (e.g. salt, oil) from water runoff.	- feature extends from surface to below-ground resulting in moderate separation from groundwater level. - vegetation plantings can provide nutrient uptake and filtering of pollutants from runoff. - capacity to reduce volume of events up to the 25 mm storm, which cumulatively are responsible for majority of annual pollutant load. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake.	- feature extends from surface to below-ground resulting in moderate separation from groundwater level. - vegetation plantings can provide nutrient uptake and filtering of pollutants from runoff. - capacity to reduce volume of events up to the 25 mm storm, which cumulatively are responsible for majority of annual pollutant load. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake. - media is thinner than in Option 1 and Option 3 and as such has less potential to capture contaminants.	- feature extends from surface to below-ground resulting in moderate separation from groundwater level. - vegetation plantings can provide nutrient uptake and filtering of pollutants from runoff. - capacity to reduce volume of events up to the 25 mm storm, which cumulatively are responsible for majority of annual pollutant load. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake.	- top of features is below the surface, and extends further below-ground resulting in less separation from groundwater level. - no planting opportunities to provide nutrient uptake and filtering of pollutants from runoff. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake.	- deepest feature resulting in least separation from groundwater level. - no direct planting opportunities, however quality control isolator row can be incorporated into the storage design to remove pollutants. - capacity to reduce volume of events up to the 25 mm storm, which cumulatively are responsible for majority of annual pollutant load. - this LID can be used in combination with an adjacent Silva Cell system (for tree planting separate from the LID) to increase contaminant reduction through filtering particulate, biotic activity, and tree uptake.
	Rating		●	◕	●	◔	◑
	Summary Natural Environment		◕	◕	◕	◔	◑

	Criteria for Evaluating Alternatives	Indicators	Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
B	**Socio-Cultural Environment**						
1	**Aesthetics**	- potential to enhance aesthetics of road corridor. - provision of year-round seasonal interest.	- a well defined space with flowering plants to enhance the streetscape aesthetics with a mix of perennial and woody species. - provides three-season plantings that enhance seasonal interest in area.	- a less defined space with flowering plants to enhance the streetscape aesthetics with perennial species. - provides three-season plantings that enhance seasonal interest in area.	- a less defined space with flowering plants to enhance the streetscape aesthetics with perennial and woody species. - provides three-season plantings that enhance seasonal interest in area.	- Minimal opportunity to enhance aesthetics of road corridor as LID is only marginally visible and has no planting opportunities. - does not provide seasonal interest.	- No opportunity to enhance aesthetics of the road corridor as LID is not visible. - does not provide seasonal interest.
	Rating		●	◕	◕	◔	○
2	**Education Opportunities**	- potential to educate public about stormwater management.	- good opportunities to educate public on function and benefits of LID to support stormwater management as LID is very visible and there is adequate space for educational information boards onsite.	- good opportunities to educate public on function and benefits of LID to support stormwater management as LID is very visible; although space for educational information boards onsite is more limited than other options.	- good opportunities to educate public on function and benefits of LID to support stormwater management as LID is very visible and there is adequate space for educational information boards onsite.	-marginal visibility of LID limits educational opportunities.	- no educational opportunities.
	Rating		●	◕	●	◔	○
	Summary Socio-Cultural Environment		●	◕	●	◔	○

Warden Avenue Environmental Assessment Study - Evaluation of Low Impact Development Options

	Criteria for Evaluating Alternatives	Indicators	Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
C	**Technical Factors**						
1	**Quality control**	- ability to meet quality control criteria. - ability to contribute to quality control along with other treatment train options.	- planted vegetation media offers pretreatment filtration of undissolved solids. Primary filtration by engineered soil and absorption media. - runoff enters via street storm sewer, which could easily allow for upstream treatment features such as oil/grit separators, catch basin inserts, etc.	- planted vegetation media offers pretreatment filtration of undissolved solids. Primary filtration by engineered soil and absorption media. - runoff enters via overland flow/curb cuts, which does not easily allow for upstream treatment features.	- planted vegetation media offers pretreatment filtration of undissolved solids. Primary filtration by engineered soil and absorption media. - runoff enters via overland flow/curb cuts, which does not easily allow for upstream treatment features.	- grass/sod surface offers pretreatment filtration before infiltrating engineered trenches and soak-aways. - runoff can enter or discharge via street storm sewer, which could easily allow for upstream or downstream treatment features such as oil/grit separators, catch basin inserts, etc.	- quality control can be incorporated into the storage design, less effective than filtration. - runoff can enter or discharge via street storm sewer, which could easily allow for upstream or downstream treatment features such as oil/grit separators, catch basin inserts, etc.
	Rating		●	◕	◕	◕	◑
2	**Quantity control**	- ability to control peak flows.	- gravel storage layer provides some storage volume. - discharges only through infiltration, not suitable for control of higher peak flows.	- gravel storage layer provides some storage volume. - discharges only through infiltration, not suitable for control of higher peak flows.	- gravel storage layer provides some storage volume. - discharges only through infiltration, not suitable for control of higher peak flows.	- stone void area provides moderate storage volume. - can discharge to street storm sewer, suitable for control of higher peak flows.	- large void space provides most storage volume. - can discharge to street storm sewer, suitable for control of higher peak flows.
	Rating		◑	◑	◑	◕	●
3	**Erosion control**	- volumetric retention capacity.	- gravel storage layer provides some storage volume.	- gravel storage layer provides some storage volume.	- gravel storage layer provides some storage volume.	- stone void area provides moderate storage volume.	- large void space provides most storage volume.
	Rating		◑	◑	◑	◕	●
4	**Maintenance requirements**	- ease and frequency of maintenance.	- a well defined footprint will improve lifecycle and performance maintenance. Vegetation and filter media add to maintenance frequency and duration.	- less defined footprint and may hinder maintenance of adjacent grass and/or planting. Vegetation and filter media add to maintenance frequency and duration.	- less defined footprint and may hinder maintenance of adjacent grass and/or planting. Vegetation and filter media add to maintenance frequency and duration.	- less defined footprint and may hinder maintenance of adjacent grass and/or planting. Lack of vegetation and filter media reduce maintenance frequency and duration.	- a well defined footprint to facilitate lifecycle and performance maintenance; however, excavations for extensive repair may impact adjacent spaces.
	Rating		◕	◑	◑	◑	◔
5	**Surface footprint**	- size of surface footprint. - ability to accommodate surface footprint.	- surface footprint is lower relative to Option 2 and 3 due to well defined box trench. - linear, narrow footprint can be easily accommodated in boulevard.	- requires highest surface area relative to other options. - linear, but wider footprint not easily accommodated in boulevard.	- surface footprint is lower relative to Option 2, but somewhat higher than Option 1 since overall footprint of LID is less defined than Option 1. - linear footprint, wider than Option 1, narrower than Option 2. Footprint can be accommodated in boulevard.	- minimal surface footprint required compared to other options. - linear, narrow footprint can be easily accommodated in boulevard.	- minimal surface footprint impacts.
	Rating		◕	◔	◑	●	●
	Summary Technical Factors		◕	◑	◑	◕	◕

	Criteria for Evaluating Alternatives	Indicators	Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
D	**Financial Factors**						
1	**Estimated capital costs**	- Relative cost of the materials for LID construction.	$ 25,000.00 per 100m.sq. Drainage Area	$ 11,000.00 per 100m.sq. Drainage Area	$ 23,000.00 per 100m.sq. Drainage Area	$ 24,000.00 per 100m.sq. Drainage Area	$ 14,000.00 per 100m.sq. Drainage Area
	Rating		◑	●	◑	◑	◕
2	**Estimated maintenance costs**	- Relative costs associated with typical maintenance of the LIDs (includes monitoring, inspection, material and parts replacement).	Average Annual Maintenance Cost: 50 Years Evaluation Period: $140.00 per 100m.sq. Drainage Area	Average Annual Maintenance Cost: 50 Years Evaluation Period: $90.00 per 100m.sq. Drainage Area	Average Annual Maintenance Cost: 50 Years Evaluation Period: $140.00 per 100m.sq. Drainage Area	Average Annual Maintenance Cost: 50 Years Evaluation Period: $1,600.00 per 100m.sq. Drainage Area	Average Annual Maintenance Cost: 50 Years Evaluation Period: $33.00 per 100m.sq. Drainage Area
	Rating		◑	◕	◑	◔	●
3	**Life-cycle costs and savings**	- Relative comparison of life-cycle costs and savings of each option.	Present Value Life Cycle Cost for 50 Years Evaluation Period: $27,000.00 per 100m.sq. Drainage Area	Present Value Life Cycle Cost for 50 Years Evaluation Period: : $14,000.00 per 100m.sq. Drainage Area	Present Value Life Cycle Cost for 50 Years Evaluation Period: $27,000.00 per 100m.sq. Drainage Area	Present Value Life Cycle Cost for 50 Years Evaluation Period: $75,000.00 per 100m.sq. Drainage Area	Present Value Life Cycle Cost for 50 Years Evaluation Period: $14,000.00 per 100m.sq. Drainage Area
	Rating		◕	●	◕	◔	●
	Summary Financial Factors		◑	●	◑	◔	●

Warden Avenue Environmental Assessment Study - Evaluation of Low Impact Development Options

Criteria for Evaluating Alternatives		Option 1: Box Trench Design	Option 2: Vegetated / Bio Swale Design	Option 3: Bioretention and Rain Garden Design	Option 4: Infiltration trenches and soak-aways	Option 5: Underground storage tanks
Overall Summary		**Most Preferred**	**Most Preferred**	**More Preferred**	**Least Preferred**	**Somewhat Preferred**
RECOMMENDATION		**Option 1: Box Trench Design will be carried forward as the preferred LID concept for Warden Avenue.** Although ranked the same as Option 2 overall, Option 1 is preferred over Option 2 as it can achieve a greater degree of pollutant removal, which will reduce impacts to groundwater. In areas with higher groundwater table, Option 2 will be considered as a viable preferred LID concept to Option 1.	Although ranked the same as Option 1 overall, Option 2 cannot achieve the same degree of pollutant removal as Option 1. However, since Option 2 does not require the same design depth as Option 1, **Option 2 will be considered as a viable preferred LID concept for areas with higher groundwater table**.			

Order of Preference

Most Preferred ●
More Preferred ◕
Somewhat Preferred ◑
Less Preferred ◔
Least Preferred ○

From:	Jennifer Vandermeer
To:	Barboza, Karla (MCM)
Cc:	Suzanne Bevan; Minkin, Dan (MCM); Chiu, Edward; Lee, Jessica; Li, Vince; Nurani, Kadin; Deanna De Forest; Mishaal Rizwan; Ray Bacquie
Subject:	RE: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2 [MCM File 0014749]
Date:	Monday, February 06, 2023 1:52:38 PM

Good afternoon, Karla,

Thank-you for your email.

Per your email direction, we have removed Laura Hatcher from the contact list.

We're happy to provide you with the following status update on the technical cultural heritage assessments for the Warden Avenue and Kennedy Road EA Studies:

A Cultural Heritage Report: Existing Conditions was completed April 2022 for Warden Avenue and Kennedy Road EA Studies. The existing conditions report will be updated once the detailed design of the preferred solution is available.
A Stage 1 Archaeological Assessment was also completed for both EA study corridors. A Stage 2 will be completed for each study corridor during detailed design if identified areas with potential for heritage resources may be impacted.

We have your contact information as well as Dan's contact information on our contact list to receive notices about these projects.

Should you have any further questions, please let us know.

Best regards,
Jennifer

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Unit 20, Guelph, ON N1H 1C4
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From: Barboza, Karla (MCM) <Karla.Barboza@ontario.ca>
Sent: Friday, January 20, 2023 10:53 AM
To: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Cc: Sylvia Waters <Sylvia.Waters@rjburnside.com>; Suzanne Bevan <Suzanne.Bevan@trca.ca>; Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>; Minkin, Dan (MCM) <Dan.Minkin@ontario.ca>

Subject: FW: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2 [MCM File 0014749]

Hi Jennifer,

Thanks for sending the presentation and the detailed evaluation matrices related to the above reference project to the Ministry of Citizenship and Multiculturalism (MCM).

There has also been some changes in the office. Could you please include both Dan Minkin, MCM Heritage Planner, and me on this project's contact list?

- Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | Karla.Barboza@ontario.ca
- Dan Minkin, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-786-7553 | Dan.Minkin@ontario.ca

You can remove Laura Hatcher from the list.

In the meantime, could you please advise what is the status of the technical cultural heritage studies?

Thanks in advance,
Karla

Karla Barboza, RPP, MCIP, CAHP
Team Lead, Heritage | Heritage Planning Unit | **Ministry of Citizenship and Multiculturalism** | 416-660-1027
karla.barboza@ontario.ca

From: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Sent: November-16-22 11:54 AM
To: Heeney, Paul (MECP) <Paul.Heeney@ontario.ca>; Andersen, Jeff (MECP) <Jeff.Andersen@ontario.ca>; Maria Jawaid (Maria.Jawaid@ontario.ca) <maria.jawaid@ontario.ca>; Hatcher, Laura (MCM) <Laura.E.Hatcher@ontario.ca>; mriad@markham.ca; acachola@markham.ca; jlanni@markham.ca; jscovell@markham.ca; Crickmay, Andrew <ACrickmay@markham.ca>; Harsimrat Pruthi <Harsimrat.Pruthi@trca.ca>; Harsha Gammanpila <Harsha.Gammanpila@trca.ca>; Matthew Kuyntjes <Matthew.Kuyntjes@trca.ca>; eric.wang@trca.ca; emily.markovic@trca.ca; Dan.Thomson@rci.rogers.com; vince.cina@enbridge.com; Darlene Presley <dpresley@mhbcplan.com>; aphillips@alectrautilities.com; christine.barnes@allstream.com; Chiu, Edward <Edward.Chiu@york.ca>; Lee, Jessica <Jessica.Lee@york.ca>; Nurani, Kadin <Kadin.Nurani@york.ca>; Ray Bacquie <Ray.Bacquie@rjburnside.com>; Deanna De Forest <Deanna.DeForest@rjburnside.com>; Harold Faulkner <Harold.Faulkner@rjburnside.com>
Cc: Sylvia Waters <Sylvia.Waters@rjburnside.com>; Barboza, Karla (MCM) <Karla.Barboza@ontario.ca>; Suzanne Bevan <Suzanne.Bevan@trca.ca>; Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>

Subject: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2

Good afternoon,

As promised at the TAC2 Meeting last week, we are circulating a copy of the presentation and the detailed evaluation matrices for your information (see attached). One important note about the presentation slides is that the study team are in the process of fine tuning the preferred design concept roll plans to include some additional details at the future collector road intersections (namely for Warden Avenue) and a few adjustments around some existing driveways. To this end, the content on Slides 17-20 of the attached presentation will be amended for the upcoming Online Open House#2 (OOH#2) presentation, set to launch on November 25, 2022. Should you have any comments on the attached information or the OOH#2 presentation materials once released, please provide us with feedback by January 6, 2023.

We are in the process of preparing minutes from the TAC2 Meeting and will circulate those separately.

Best regards,
Jennifer

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

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292 Speedvale Avenue West, Unit 20, Guelph, ON N1H 1C4
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Sylvia Waters

From: Jennifer Vandermeer
Sent: Tuesday, December 06, 2022 3:19 PM
To: Chiu, Edward; Lee, Jessica; mriad@markham.ca; jlanni@markham.ca; Harsha Gammanpila; eric.wang@trca.ca; Emily.Markovic@trca.ca; Ray Bacquie; Harold Faulkner; Deanna De Forest; Sylvia Waters
Cc: Nurani, Kadin; Crickmay, Andrew; Scovell, Jason
Subject: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting #2
Attachments: 221108_Minutes TAC2.pdf

Good afternoon,
Please find attached a copy of the minutes from the Technical Advisory Committee Meeting #2 held on November 8, 2022.
Should you have any questions or comments on the minutes, please let us know.
Best regards,
Jennifer

BURNSIDE

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

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telephone (905) 821-1800 **fax** (905) 821-1809 **web** www.rjburnside.com

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Minutes of Meeting

Meeting Date:	November 8, 2022	**Project No.:**	300052314.0000
Project Name:	Warden Ave. and Kennedy Rd. EA Studies between Major Mackenzie Drive and Elgin Mills Road		
Meeting Subject:	Technical Advisory Committee Meeting #2		
Meeting Location:	Microsoft Teams Meeting		
Date Prepared:	November 10, 2022		

Those in attendance were:

Edward Chiu	York Region	Edward.Chiu@york.ca
Jessica Lee	York Region	Jessica.Lee@york.ca
Marina Riad	City of Markham	mriad@markham.ca
Joe Lanni	City of Markham Fire and Emergency Services	jlanni@markham.ca
Harsha Gammanpila	Toronto and Region Conservation Authority (TRCA)	Harsha.Gammanpila@trca.ca
Eric Wang	TRCA	Eric.Wang@trca.ca
Emily Markovic	TRCA	Emily.Markovic@trca.ca
Jennifer Vandermeer	R.J. Burnside & Associates Limited (Burnside)	Jennifer.Vandermeer@rjburnside.com
Ray Bacquie	Burnside	Ray.Bacquie@rjburnside.com
Harold Faulkner	Burnside	Harold.Faulkner@rjburnside.com
Deanna De Forest	Burnside	Deanna.Deforest@rjburnside.com
Sylvia Waters	Burnside	Sylvia.Waters@rjburnside.com

Those unable to attend:

Kadin Nurani	York Region (student)	Kadin.Nurani@york.ca
Andrew Crickmay	City of Markham	ACrickmay@markham.ca
Jason Scovell	City of Markham Fire and Emergency Services	jscovell@markham.ca

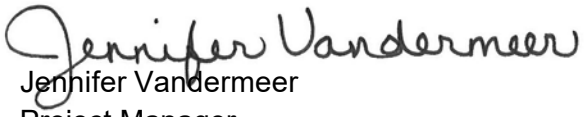
The following items were discussed		Action by
1.	**Introductions**	
1.1	The introductions were led by Edward Chiu (EC). TRCA noted that Eric Wang (EW) would be sitting in for Matthew Kuyntjes and Emily Markovic (EM) was attending in place of Elyse Dickson. City of Markham noted that Marina Riad (MR) was attending in place of Mark Siu and requested to be added to the Project Contact List and Technical Advisory Committee (TAC).	Burnside
2.	**Purpose of the Technical Advisory Committee (TAC)**	
2.1	A summary of information to be presented to the public at Online Open House (OOH) #2 was shared, as per attached material. The presentation was comprised of an overview of the MCEA process, Alternative Design Concepts with feedback from TAC #1, the Evaluation of Alternative Design Concepts and the Preferred Design Concept. The Region noted that the presentation and the Evaluation of Alternative Design Concepts will be forwarded following the meeting.	
3.	**Discussion of Issues / opportunities in the Study Area**	
3.1	The Region acknowledged the City of Markham's preference for a 1.8 m wide cycle track, requested during previous meetings with the City. At this time, the Region will carry forward a width of 1.5 m as a minimum, with the possibility of a cycle track width up to 1.8 m depending on the need to balance other features within the corridor, such as LID, utilities and streetscaping. The Region noted ongoing discussions with the City of Markham regarding the use of other treatment to replace impervious surfaces, such as porous asphalt in place of concrete for the cycle track, which could potentially reduce the LID requirements and allow for more space for cycle track facilities.	
3.2	TRCA acknowledged that the project is not at the detailed design stage, however, commented on the illustration of LID features, that there should not be piping into the bioswale and there may be a need for curb cuts. The Region responded that the piping will be used only as an overflow control. The Region is working with Burnside on the design of these areas. Burnside noted that the curb	

	The following items were discussed	Action by
	outlets flow into the bioswale / box trench for quantity control is part of the design feature.	
3.3	The Region asked whether the City of Markham had enough information regarding the project from the presentation given. The City responded that once the material is forwarded and reviewed by staff in more detail, there may be questions.	City
3.4	The Region asked whether the TRCA had any comments, questions, or concerns. TRCA would want confirmation that the project is in line with the Future Urban Area (FUA) and that the Region is in discussion with the City. TRCA noted one question regarding the road drainage to be managed before stormwater ponds. The Region responded that staff have been in discussions with developers regarding the use of their stormwater management ponds to further enhance stormwater management in the study area. The Region has discussed the regulated culvert crossing on Warden Avenue with Burnside and is aware of the low road profile at this point and its effects on the watercourse. The discussion has been around the replacement of the twin steel corrugated culvert with a structural culvert and the raising of the road profile. TRCA noted that by raising the road profile, the stream would be affected, however, staff acknowledge that the Region would be replacing the culvert to compensate. The Region noted staff are working closely with the City of Markham.	
3.5	The Region noted to TRCA that Region staff had been in earlier discussions with TRCA regarding the existing culverts on Kennedy Road, south of Elgin Mills at a meeting on September 9, 2022. The Region referenced a technical memo, which Burnside provided to TRCA regarding the drainage considerations for this area. TRCA acknowledged the memo. TRCA responded that they did not see any issues regarding the Kennedy Road and Elgin Mills Road drainage. TRCA will review the technical memo in more detail when distributed and submit comments if necessary.	TRCA

The preceding are the minutes of the meeting as observed by the undersigned. Should there be a need for revision, please advise Burnside within seven days of issuance. In the absence of notification to the contrary, these minutes will be deemed to be an accurate record of the meeting.

Minutes prepared by:

R.J. Burnside & Associates Limited



Jennifer Vandermeer
Project Manager
JV:js

Distribution:

All Attendees via Email

221108_Minutes TAC2.docx
12/6/2022 2:32 PM

From:	Jennifer Vandermeer
To:	Harsha Gammanpila
Cc:	Chiu, Edward; Deanna De Forest; Harsha Gammanpila
Subject:	RE: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2 [MCM File 0014749] (CFN 62960/62961)
Date:	Friday, February 10, 2023 9:46:25 AM
Attachments:	image004.png image005.png

Good morning, Harsha,
Thanks for your email. We have you as that main contact for these projects, not to worry. For some reason Karla Barboza had cc'd Suzanne Bevan on her email to the study team; so, I kept her copied on my response. We won't include Suzanne on our Project Contact List and will continue to correspond directly with you and cc Harsimrat on correspondence. We have your email from October 3, 2022 (follow up re. Phase 1/2 ESR Comments) as well as your email from November 30, 2022 (follow up from TAC2). We are taking the comments from these emails into consideration as we prepare the draft ESR.
Best regards,
Jennifer

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Unit 20, Guelph, ON N1H 1C4
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www.rjburnside.com

From: Harsha Gammanpila <Harsha.Gammanpila@trca.ca>
Sent: Wednesday, February 08, 2023 5:21 PM
To: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Subject: RE: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2 [MCM File 0014749] (CFN 62960/62961)

HI Jennifer,

I will be the main contact for these project, and I am working with Harsimrat on these project.

Please remove Suzanne's email from the list.

TRCA responded to below TAC 2 Meeting circulation and TRCA provided comments for Both Kennedy Road and Warden Avenue ESR -Phase 1 and 2.

As mentioned Staff unable to comment on the Appendix you provided on August 30, 20222without the ESR as the responses referred to ESR. However please see below comments related to the matrix and to be addressed in the next submission.

14. Warden and Kennedy

    The main body of the ESR mentions the need for quantity control and quality control, for example, but doesn't mention extended detention or erosion control (e.g. Section 5.5). Also, staff could not locate discussion regarding retention volume requirements in ESR or Appendix L.

16. Warden and Kennedy

    As per the meeting on Sept 9 2022, please provide the material presented, particularly the information regarding drainage patterns on Kennedy Road, for further review by TRCA staff.

17. Warden only

    The response provided is acceptable however please provide a commitment within the text of the ESR (or its appendices) to update the fluvial geomorphological investigation, at detailed design, to determine 100-year erosion limits, in addition to the meander belt, to inform the sizing of the proposed hydraulic structure.

    Please note that if erosion limits determined at detailed design require the proposed culvert design to be updated, the hydraulic assessment / modelling / floodplain mapping will also need to be updated accordingly.

Please let me know if there is anything outstanding from TRCA.

Thank you,

Harsha Gammanpila M.Sc., PMP
Planner
Infrastructure Planning and Permits | Development and Engineering Services

T: 437 880 2423
E: harsha.gammanpila@trca.ca
A: 101 Exchange Avenue, Vaughan, ON, L4K 5R6 | trca.ca

From: Harsimrat Pruthi <Harsimrat.Pruthi@trca.ca>
Sent: February 7, 2023 7:58 AM

To: Suzanne Bevan <Suzanne.Bevan@trca.ca>
Cc: Harsha Gammanpila <Harsha.Gammanpila@trca.ca>
Subject: RE: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2 [MCM File 0014749]

Suzanne Bevan, B.Sc. (Hons), ENV SP
Senior Manager
Infrastructure Planning and Permits – Peel/York | Development and Engineering Services

T: (437) 880-2436
C: (647) 924-5467
E: suzanne.bevan@trca.ca
A: 101 Exchange Avenue, Vaughan, ON, L4K 5R6 | trca.ca

From: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Sent: February 6, 2023 1:52 PM
To: Barboza, Karla (MCM) <Karla.Barboza@ontario.ca>
Cc: Suzanne Bevan <Suzanne.Bevan@trca.ca>; Minkin, Dan (MCM) <Dan.Minkin@ontario.ca>; Chiu, Edward <Edward.Chiu@york.ca>; Lee, Jessica <Jessica.Lee@york.ca>; Li, Vince <Vince.Li@york.ca>; Nurani, Kadin <Kadin.Nurani@york.ca>; Deanna De Forest <Deanna.DeForest@rjburnside.com>; Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>; Ray Bacquie <Ray.Bacquie@rjburnside.com>
Subject: RE: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2 [MCM File 0014749]

Good afternoon, Karla,

Thank-you for your email.

Per your email direction, we have removed Laura Hatcher from the contact list.

We're happy to provide you with the following status update on the technical cultural heritage assessments for the Warden Avenue and Kennedy Road EA Studies:

A Cultural Heritage Report: Existing Conditions was completed April 2022 for Warden Avenue and Kennedy Road EA Studies. The existing conditions report will be updated once the detailed design of the preferred solution is available.
A Stage 1 Archaeological Assessment was also completed for both EA study corridors. A Stage 2 will be completed for each study corridor during detailed design if identified areas with potential for heritage resources may be impacted.

We have your contact information as well as Dan's contact information on our contact list to receive notices about these projects.

Should you have any further questions, please let us know.

Best regards,
Jennifer

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

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From: Barboza, Karla (MCM) <Karla.Barboza@ontario.ca>
Sent: Friday, January 20, 2023 10:53 AM
To: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Cc: Sylvia Waters <Sylvia.Waters@rjburnside.com>; Suzanne Bevan <Suzanne.Bevan@trca.ca>; Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>; Minkin, Dan (MCM) <Dan.Minkin@ontario.ca>
Subject: FW: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2 [MCM File 0014749]

Hi Jennifer,

Thanks for sending the presentation and the detailed evaluation matrices related to the above reference project to the Ministry of Citizenship and Multiculturalism (MCM).

There has also been some changes in the office. Could you please include both Dan Minkin, MCM Heritage Planner, and me on this project's contact list?

- Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | Karla.Barboza@ontario.ca
- Dan Minkin, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-786-7553 | Dan.Minkin@ontario.ca

You can remove Laura Hatcher from the list.

In the meantime, could you please advise what is the status of the technical cultural heritage studies?

Thanks in advance,
Karla

Karla Barboza, RPP, MCIP, CAHP
Team Lead, Heritage | Heritage Planning Unit | **Ministry of Citizenship and Multiculturalism** | 416-660-1027
Karla.barboza@ontario.ca

From: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Sent: November-16-22 11:54 AM
To: Heeney, Paul (MECP) <Paul.Heeney@ontario.ca>; Andersen, Jeff (MECP) <Jeff.Andersen@ontario.ca>; Maria Jawaid (Maria.Jawaid@ontario.ca) <maria.jawaid@ontario.ca>; Hatcher, Laura (MCM) <Laura.E.Hatcher@ontario.ca>; mriad@markham.ca; acachola@markham.ca; jlanni@markham.ca; jscovell@markham.ca; Crickmay, Andrew <ACrickmay@markham.ca>; Harsimrat Pruthi <Harsimrat.Pruthi@trca.ca>; Harsha Gammanpila <Harsha.Gammanpila@trca.ca>; Matthew Kuyntjes <Matthew.Kuyntjes@trca.ca>; eric.wang@trca.ca; emily.markovic@trca.ca; Dan.Thomson@rci.rogers.com; vince.cina@enbridge.com; Darlene Presley <dpresley@mhbcplan.com>; aphillips@alectrautilities.com; christine.barnes@allstream.com; Chiu, Edward <Edward.Chiu@york.ca>; Lee, Jessica <Jessica.Lee@york.ca>; Nurani, Kadin <Kadin.Nurani@york.ca>; Ray Bacquie <Ray.Bacquie@rjburnside.com>; Deanna De Forest <Deanna.DeForest@rjburnside.com>; Harold Faulkner <Harold.Faulkner@rjburnside.com>
Cc: Sylvia Waters <Sylvia.Waters@rjburnside.com>; Barboza, Karla (MCM) <Karla.Barboza@ontario.ca>; Suzanne Bevan <Suzanne.Bevan@trca.ca>; Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>
Subject: York Warden Avenue and Kennedy Road EA Studies - Technical Advisory Committee Meeting 2

Good afternoon,

As promised at the TAC2 Meeting last week, we are circulating a copy of the presentation and the detailed evaluation matrices for your information (see attached). One important note about the presentation slides is that the study team are in the process of fine tuning the preferred design concept roll plans to include some additional details at the future collector road intersections (namely for Warden Avenue) and a few adjustments around some existing driveways. To this end, the content on Slides 17-20 of the attached presentation will be amended for the upcoming Online Open House#2 (OOH#2) presentation, set to launch on November 25, 2022. Should you have any comments on the attached information or the OOH#2 presentation materials once released, please provide us with feedback by January 6, 2023.

We are in the process of preparing minutes from the TAC2 Meeting and will circulate those separately.

Best regards,
Jennifer

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

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From: Chiu, Edward <Edward.Chiu@york.ca>
Sent: January 27, 2022 3:15 PM
To: 'Rick Mangotich' <rickm@fieldgatedevelopments.com>
Cc: Maria Herrera <mariah@fieldgatedevelopments.com>; Asa Artman <asaa@fieldgatedevelopments.com>; Emily Grant <egrant@mgp.ca>; Sylvia Waters <Sylvia.Waters@rjburnside.com>; Deanna De Forest <Deanna.DeForest@rjburnside.com>
Subject: RE: 052314 - Notice of Study Commencement, MCEA Sch C, Warden Avenue and Kennedy Road

Good afternoon Rick,

There is a Stakeholder Committee (SAC) meeting scheduled for tonight from 6pm to 8pm.

Because of privacy reason I can't forward you the invitation directly because other SAC members can see your email, I will have to ask Deanna or Sylvia to send you the invitation again.

If you are not able to attend and wish someone else in your office to attend, please let us know and we will send them the invitation directly. Please note Emily indicated she will be attending this meeting as well.

Edward Chiu, P.Eng. (he/him), Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---
The Regional Municipality of York | 17250 Yonge Street | Newmarket, ON L3Y 6Z1
1-877-464-9675 ext. 75908 | edward.chiu@york.ca| york.ca

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From: Rick Mangotich <rickm@fieldgatedevelopments.com>
Sent: Thursday, January 27, 2022 2:44 PM
To: Sylvia Waters <Sylvia.Waters@rjburnside.com>; Chiu, Edward <Edward.Chiu@york.ca>; Deanna De Forest <Deanna.DeForest@rjburnside.com>
Cc: Maria Herrera <mariah@fieldgatedevelopments.com>; Asa Artman <asaa@fieldgatedevelopments.com>; Emily Grant (egrant@mgp.ca) <egrant@mgp.ca>
Subject: Re: 052314 - Notice of Study Commencement, MCEA Sch C, Warden Avenue and Kennedy Road

Is there a meeting today? My apologies if I missed your invitation.
Please also see my message below. My apologies if I missed your reply.
Please let me know what's going on.

Rick Mangotich
FIELDGATE DEVELOPMENTS
(416) 629-2927

From: Rick Mangotich <rickm@fieldgatedevelopments.com>
Date: Tuesday, December 21, 2021 at 9:36 AM
To: Sylvia Waters <Sylvia.Waters@rjburnside.com>, Chiu, Edward <Edward.Chiu@york.ca>, Deanna De Forest <Deanna.DeForest@rjburnside.com>
Cc: Maria Herrera <mariah@fieldgatedevelopments.com>, Asa Artman <asaa@fieldgatedevelopments.com>
Subject: RE: 052314 - Notice of Study Commencement, MCEA Sch C, Warden Avenue and Kennedy Road

Thank you for the notice.
Our lands comprise approximately 60% of the eastern frontage of Kennedy Road within the study area. As such we have a very significant interest in this project and its outcomes.
Please keep me on your stakeholder list and I would appreciate being advised prior to any further consideration of this matter by the public, or Regional or Municipal Council. I would also appreciate the opportunity to meet with you at appropriate times throughout the project, to discuss the various alternative designs under consideration prior to decisions being made.
I have copied this email to Maria Herrera and Asa Artman of our office. They should also be added to your distribution lists, please.
Thank you very much for your attention to these requests.

Rick Mangotich
FIELDGATE DEVELOPMENTS
(416) 629-2927

From: Sylvia Waters <Sylvia.Waters@rjburnside.com>
Sent: December 20, 2021 11:17 AM
Cc: Chiu, Edward <Edward.Chiu@york.ca>; Deanna De Forest <Deanna.DeForest@rjburnside.com>
Subject: 052314 - Notice of Study Commencement, MCEA Sch C, Warden Avenue and Kennedy Road

On behalf of the Regional Municipality of York, please see the attached Notice of Commencement. The Regional Municipality of York is initiating Schedule C Municipal Class Environmental Assessment studies for Warden Avenue and Kennedy Road between Major Mackenzie Drive and Elgin Mills Road in the City of Markham. These studies will build upon the recommendations from the approved 2016 York Region Transportation Master Plan.

Public consultation is an important part of the EA studies.

To provide comment or request additional information, please contact:

York Region Transportation Services
Edward Chiu, P.Eng., Senior Project Manager
17250 Yonge Street
Newmarket, ON L3Y 6Z1
Phone: 1-877-464-9675 ext. 75908
TTY: 1-866-512-6228
Email: Edward.Chiu@york.ca

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Sylvia Waters
Technical Administrator, EPA

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www.rjburnside.com

Sylvia Waters

From: Chiu, Edward <Edward.Chiu@york.ca>
Sent: Thursday, January 27, 2022 3:28 PM
To: 'Emily Grant'; 'Rick Mangotich'
Cc: Maria Herrera; Asa Artman; Sylvia Waters; Deanna De Forest
Subject: RE: 052314 - Notice of Study Commencement, MCEA Sch C, Warden Avenue and Kennedy Road

Hello Emily,

Sorry for the mix up. I will check with RJ Burnside to ensure everyone on the attached list are included in the invitation.

Edward Chiu, P.Eng. (he/him), Sr. Project Manager, Capital Planning & Delivery, Transportation Services
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From: Emily Grant <egrant@mgp.ca>
Sent: Thursday, January 27, 2022 3:23 PM
To: Chiu, Edward <Edward.Chiu@york.ca>; 'Rick Mangotich' <rickm@fieldgatedevelopments.com>
Cc: Maria Herrera <mariah@fieldgatedevelopments.com>; Asa Artman <asaa@fieldgatedevelopments.com>; Sylvia Waters <Sylvia.Waters@rjburnside.com>; Deanna De Forest <Deanna.DeForest@rjburnside.com>
Subject: RE: 052314 - Notice of Study Commencement, MCEA Sch C, Warden Avenue and Kennedy Road

Hi Edward,

I had provided you with a list of owners who requested to participate (attached again) however in my check-ins with the owners, it appears that none of them have received the invite. I have subsequently forwarded the meeting invite but request by way of this email that Deanna or Sylvia also send it to them directly.

Thanks,
Emily
647-929-4028

Landowners Requesting to Participate in the Stakeholder Committee
Mr. Michael Montgomery c/o Kylemore Communities 9980 Kennedy Road, Suite 200 Markham, Ontario L6C 1N9 michael@kylemorecommunities.com
Mr. Christian Lamanna c/o Madison Group 369 Rimrock Road Toronto, ON M3J 3G2 Christian@madisongroup.ca
Ms. Alexandra De Gasperis c/o DECO Communities 570 Applewood Crescent Vaughan, ON L4K 4B4 alexandra@decocommunities.ca
Mr. Christopher Marchese c/o DECO Communities 570 Applewood Crescent Vaughan, ON L4K 4B4 cmarchese@decocommunities.ca
Mr. Rick Mangotich c/o Fieldgate Developments Ltd. 5400 Yonge Street, Suite 501, Toronto, ON, M2N 5R5 rickm@fieldgatedevelopments.com
Mr. Clay Leibel 7800 Kennedy Road, Suite 201 Markham, ON L3R 2C7 clayl@bellnet.ca
Mr. Eddie Lee c/o Forest Hill Homes 2700 Dufferin, Unit 34 Toronto ON M6B 4J3 elee@statebuild.com

Sylvia Waters

From: Chiu, Edward <Edward.Chiu@york.ca>
Sent: Monday, November 29, 2021 11:27 AM
To: Jennifer Vandermeer; Deanna De Forest
Cc: Ray Bacquie; Lee, Jessica; Alemi- Baygy, Tanin
Subject: FW: Stakeholder Advisory Ctte for Warden and Kennedy Rd (Major Mac to Elgin Mills) EAs

Please add [redacted] to the SAC list, he is representing CPAC.

Edward Chiu, P.Eng. | Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---
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From: Chiu, Edward
Sent: Monday, November 29, 2021 11:24 AM
To: [redacted]
Subject: RE: Stakeholder Advisory Ctte for Warden and Kennedy Rd (Major Mac to Elgin Mills) EAs

Good morning [redacted]

We look forward to working with you again.

Edward Chiu, P.Eng. | Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---
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From: [redacted]>
Sent: Sunday, November 28, 2021 2:34 PM
To: Chiu, Edward <Edward.Chiu@york.ca>
Subject: Stakeholder Advisory Ctte for Warden and Kennedy Rd (Major Mac to Elgin Mills) EAs

Hi Ed...Please add me to the stakeholder advisory group for these two EAs. It will be good to work with you again.

Best regards

[redacted]'

Sylvia Waters

From: Chiu, Edward <Edward.Chiu@york.ca>
Sent: Monday, November 29, 2021 11:26 AM
To: Jennifer Vandermeer; Deanna De Forest
Cc: Ray Bacquie; Lee, Jessica; Alemi- Baygy, Tanin
Subject: FW: Ref: Notice of study commencement - Warden Avenue and Kennedy Road

Please add [redacted] to both the contact list and as a SAC member.

Edward Chiu, P.Eng. | Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---
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From: Chiu, Edward
Sent: Monday, November 29, 2021 11:22 AM
To: [redacted]
Subject: RE: Ref: Notice of study commencement - Warden Avenue and Kennedy Road

Thank you [redacted] for the quick reply,

Our Consultant R. J. Burnside will be contacting you once the date of the Stakeholder Advisory Committee meetings are set. The first meeting is tentatively scheduled for mid to late January.

Edward Chiu, P.Eng. | Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---
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From: [redacted]
Sent: Monday, November 29, 2021 11:17 AM
To: Chiu, Edward <Edward.Chiu@york.ca>
Subject: Re: Ref: Notice of study commencement - Warden Avenue and Kennedy Road

Good morning Edward

Thank you for your consideration.
I am eager to participate as an " interested resident".

Best wishes.

[redacted]

On Mon, Nov 29, 2021 at 10:27 AM Chiu, Edward <Edward.Chiu@york.ca> wrote:

Good morning [redacted]

Thank you for your interest in the Warden Ave. and Kennedy Rd. EA Studies, we will add you into both the Stakeholder Advisory Committee as well as the contact list to send you all future notifications.

For the Stakeholder Advisory Committee, we are attempting to balance the various perspectives from people that may be representing current business owners, developers in the area, or as interested residents. Would you let me know which one you are representing?

Edward Chiu, P.Eng. | Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---

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1-877-464-9675 ext. 75908 | edward.chiu@york.ca| york.ca

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From: [redacted]
Sent: Sunday, November 28, 2021 1:23 PM
To: Chiu, Edward <Edward.Chiu@york.ca>
Subject: Ref: Notice of study commencement - Warden Avenue and Kennedy Road

Hello Edward

I am in receipt of a flyer on the subject.

I'd like to be a member of a stakeholder advisory group.

Kindly let me know of next steps.

Thank you and best wishes

[redacted]

[redacted]

Sylvia Waters

From: Chiu, Edward <Edward.Chiu@york.ca>
Sent: Friday, November 26, 2021 10:35 AM
To: Jennifer Vandermeer; Deanna De Forest
Cc: Lee, Jessica; Alemi- Baygy, Tanin; Ray Bacquie
Subject: FW: Warden and Kennedy EAs

Hello Jennifer/Deanna,
Please add both Christian and Ryan to the contact list as well as the Stakeholder Committee, thanks.

Edward Chiu, P.Eng. | Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---
The Regional Municipality of York | 17250 Yonge Street | Newmarket, ON L3Y 6Z1
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From: Chiu, Edward
Sent: Friday, November 26, 2021 9:57 AM
To: 'Christian Lamanna' <christian@madisongroup.ca>
Cc: Ryan Chin <rchin@madisongroup.ca>
Subject: RE: Warden and Kennedy EAs

Thank you Christian,

We will add you both to the stakeholder committee as well as the contact list.

Please note we have tentatively set the first meeting in mid-January, our Consultant RJ Burnside will email you the tentative date/time later this year.

Edward Chiu, P.Eng. | Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---
The Regional Municipality of York | 17250 Yonge Street | Newmarket, ON L3Y 6Z1
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From: Christian Lamanna <christian@madisongroup.ca>
Sent: Thursday, November 25, 2021 6:24 PM
To: Chiu, Edward <Edward.Chiu@york.ca>; Ryan Chin <rchin@madisongroup.ca>
Subject: RE: Warden and Kennedy EAs

Thank You for your email.

The stakeholder committee and we are local developers in the area.

Thank You

From: Chiu, Edward <Edward.Chiu@york.ca>
Sent: November 25, 2021 3:42 PM
To: Ryan Chin <rchin@madisongroup.ca>; Christian Lamanna <christian@madisongroup.ca>
Subject: RE: Warden and Kennedy EAs

Good afternoon Ryan and Christian,

Just to confirm, do you wish to just be included in our contact list or participate as part of our Stakeholder Committee?

The Stakeholder Committee will meet 2 to 3 times in the evening during the course of the study to provide input and perspectives to the Study Team. If you are interested in participating, would you let me know if you are representing current business owners, developer in the area, or as interested residents so we can get a variety of input and perspectives from the 3 different sectors?

Edward Chiu, P.Eng. | Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---
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From: Ryan Chin <rchin@madisongroup.ca>
Sent: Thursday, November 25, 2021 2:20 PM
To: Chiu, Edward <Edward.Chiu@york.ca>
Cc: Christian Lamanna <christian@madisongroup.ca>
Subject: Warden and Kennedy EAs

Can you please include Christian Lamanna (cc'd on this email) and myself in the circulation list as stakeholders for the Warden and Kennedy EA's?

Thank you,

Ryan Chin
Project Manager, Land Development
MADISON GROUP
369 Rimrock Road | Toronto, Ontario, Canada | M3J 3G2
T: 416.661.4000 | C: 416.460.5213 | F: 416.661.4229 | E: rchin@madisongroup.ca

R.J. Burnside & Associates Limited 292 Speedvale Ave W #20, Guelph, ON N1H 1C4 CANADA
telephone (519) 823-4995 fax (519) 836-547 **web** www.rjburnside.com

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Agenda

Date and Time: January 27, 2022 6:00 to 8:00 pm **Project No.:** 300052314.0000

Project Name: Warden Avenue and Kennedy Road EAs

Meeting Subject: Stakeholder Advisory Committee Meeting #1

Meeting Location: Microsoft Teams

Items

1. Introductions
2. Purpose of Stakeholder Advisory Committee (SAC)
3. Review the findings from the approved York Region 2016 Transportation Master Plan, (Phase 1 and 2 recommendations for preferred solution to widen both roads)
4. Overview of the development plan of the Markham Future Urban Area (FUA)
5. Overview of investigations in the Study Area, including the Elgin Mills Municipal Class Environmental Assessment , City of Markham
6. Review preliminary alternative design concepts
7. Discuss issues / opportunities in Study Area
8. Next Steps/Schedule
9. Questions

220127_Agenda-SAC1
1/13/2022 11:00 AM

R.J. Burnside & Associates Limited 6990 Creditview Road, Unit 2 Mississauga ON L5N 8R9 CANADA
telephone (905) 821-1800 **fax** (519) 941-8120 **web** www.rjburnside.com

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Minutes of Meeting

Meeting Date:	January 27, 2022	**Project No.:**	300052314.0000
Project Name:	Warden Ave. and Kennedy Rd. EA Studies between Major Mackenzie Drive and Elgin Mills Road		
Meeting Subject:	Stakeholder Advisory Committee #1		
Meeting Location:	Microsoft Teams Meeting		
Date Prepared:	February 3, 2022		

Those Team members in attendance were:

Edward Chiu	York Region (Region)	Edward.Chiu@york.ca
Tanin Alemi-Baygy	Region	Tanin.Alemi-Baygy@york.ca
Jessica Lee	Region	Jessica.Lee@york.ca
Jennifer Vandermeer	R.J. Burnside & Associates Limited (Burnside)	Jennifer.Vandermeer@rjburnside.com
Gordon Hui	Burnside	Gordon.Hui@rjburnside.com
Deanna De Forest	Burnside	Deanna.Deforest@rjburnside.com
Sylvia Waters	Burnside	Sylvia.Waters@rjburnside.com

The following items were discussed		**Action by**
1.	**Introductions**	
1.1	The Project Team was introduced. A Stakeholder Advisory Committee (SAC) Member requested to know how many people were participating on the call tonight. The Region responded that there are nine members from the public and six Project Team members (at the time of question). One additional committee member signed on during the meeting.	
2.	**Purpose of Stakeholder Advisory Committee (SAC)**	
2.1	It was noted that SAC attendees would provide input and discuss concerns on technical details at various decision-making points throughout the project. A second SAC meeting is tentatively set for May 2022.	

The following items were discussed		Action by
3.	**Project Overview**	
3.1	Project Information was presented as per attached material comprised of an overview of the existing conditions in study corridors and results of previous investigations, including existing and future traffic volumes, the City of Markham's Elgin Mills Municipal Class Environmental Assessment (MCEA), the development plan of the Markham Future Urban Area, and the preferred solution from approved York Region 2016 Transportation Master Plan (TMP) to widen both Warden Avenue and Kennedy Road to 4-lanes. It was noted that the current Environmental Assessment (EA) studies have confirmed the recommended solutions identified in the approved 2016 TMP are still valid for the Study Areas.	
3.2	A SAC Member noted that having the consultation for road widenings completed as part of the TMP, may cause the public to miss the opportunity to provide comments on specific corridors. The Region noted the 2016 TMP was completed to a level that satisfies Phase 1 and 2 of the MCEA process, which includes the evaluation and recommendation of preferred solutions. The member suggested the current TMP update should clearly indicate to the public that this is time to comment on projects completed as part of Phase 1 and 2 of the EA process. The Region's project team to provide this suggestion to the TMP update team for consideration. The Region indicated that this process to incorporate Phases 1 and 2 of the EA process as part of the TMP is part of the Ministry of Environment Conservation and Parks (MECP) approved process. The purpose of the TMP is to provide an overview and justification for improvements in the region to balance the needs and impacts in a larger area instead of an individual corridor. The recommendations in the TMP are then reconfirmed during the subsequent EA process completed for the identified individual projects.	York Region
3.3	A SAC Member noted that the widening south of Major Mackenzie Drive will already be in place before this project is constructed and inquired if this has been considered in these current projects and if traffic counts were based on traffic during COVID-19.	

	The following items were discussed	Action by
	It was noted that the widening will be two lanes in each direction and this EA study will reconfirm the need to ensure the solution is still valid. The anticipated traffic increase is mainly a result of the current and planned developments adjacent to the corridors. Widening to three lanes both ways, south of Major Mackenzie Drive on Kennedy Road is removed in the current Region's 10-year road and transit capital construction program.	
3.4	A SAC Member inquired whether the expectation of traffic volume in 2016 was very different than the expectation of traffic volume in 2022 and commented there appears to be a mismatch between transportation plan and land use in the corridors. There is a lot of development north of 16 h Avenue and very little transit. The 2016 TMP report drives this transit disconnect vs. land use planning. The Region noted these two corridors are part of the frequent transit network, and the use of transit is promoted.	
3.5	A SAC Member commented regarding the traffic capacity of Warden Avenue, noting that the number illustrated in the slide is the traffic demand not the traffic volume. Burnside noted the projection from the modelling was the volume anticipated to be coming onto the road based on all the information available. A SAC Member suggested that cars will simply take different routes if traffic is clogged. A SAC Member requested whether the number of occupants in a car had been considered in these calculations; and whether this information was based on development in the next 20 years. Burnside noted that the project team will confirm if the number of occupants were considered. *Post-Meeting Note: The vehicle occupancy factor ranges from 1 to 1.3 persons per vehicle which allows the model to convert person-trips to vehicle trips. The traffic forecast also considered different modes of travel such as walking, transit, or cycling depending on the future development of the area.* A SAC Member noted that parents driving children to school accounts for some of the traffic. Region responded that school	Burnside

	The following items were discussed	Action by
	locations and requirements are reviewed in the planning of subdivisions to minimize vehicular travelling whenever possible. A SAC Member recommended the ideal model would be summer traffic and inquired if the model included the mode of travel once development is complete, occupancy in the cars, and how residents will travel out of the developments. It was suggested that between City of Markham and York Region staff there exists a lot of knowledge regarding ideal modelling in these matters, this suggestion will be provided to the Traffic Modelling team(s) for their consideration. A SAC Member noted that Kennedy Road will not reach capacity for 20 years and questioned if the current EA is premature, or if the EA will expire before the solution is constructed. Region indicated staff are currently working with developers of the Future Urban Area to understand their needs of the corridor, including accommodating drainage from the road corridors. Updates to the MCEA will be made if required.	York Region
3.6	A SAC Member questioned how road widening will impact the Significant Groundwater Recharge Areas (SGRA) and whether infiltration will be needed to offset the impervious road surface. The project team indicated the Low Impact Development (LID) will increase the infiltration to the groundwater. According to the source water protection policy, LIDs will be a benefit to the SGRA. LIDs are increasingly implemented to satisfy source water protection policies.	
4.	**Review of preliminary alternative design concepts**	
4.1	The three preliminary alternative design concepts for the proposed 4-lane road widening in the study corridors were presented and discussed with SAC Members.	

	The following items were discussed	Action by
4.1.1	A SAC Member noted that a wider ROW could lend itself to incorporating bike lanes on the roadway. Region noted that they are moving away from on road bike lanes to off-road active transportation (AT) facilities. A SAC Member inquired how wide the sidewalks and bike paths are expected to be, they noted that 4.0 m is generally considered a suitable width. The Region noted the City of Markham will be consulted for the recommended width of the AT facilities, while balancing other needs within the corridor such as LID treatment, tree planting, utility installation (above and underground).	
4.1.2	Group discussion regarding types of LIDs being investigated. The Region noted that staff were in discussion with the City of Markham regarding the materials to be used for the active transportation facility. The Region would prefer a permeable material; however, the City uses currently use cement, because it is easier to maintain. The type of material will be decided later in the project. A SAC Member inquired if the illustrated Box Trench LID received run-off from the road, indicating this would create a salt loading issue for groundwater and could be at odds with vegetation plantings. There followed a discussion of the function of this LID. A follow up meeting to discuss the details of the LIDs was offered.	Burnside / Region
	Post Meeting Note: The intent of the LID design is to drain water from the road surfaces into the box trench units via the storm catch basins. Runoff within the boulevard area would also be directed to the box trench units. During winter months when salt is being applied to the road, its intended most of the salt applied to the road and subsequently washed into the LID will settle in the sump portion of the catch basins prior to draining towards the LID features.	
4.2	The Region requested that attendees review the preliminary evaluation criteria presented and identify any criteria that may be missing. Attendees were requested that any further feedback be sent by February 3, 2022, as staff are preparing materials for the Open	SAC / Burnside

The following items were discussed		Action by
	House (OH). The attendees will be sent the presentation at the end of the meeting, allowing for review in more detail.	
4.3	A SAC Member noted that residential development is occurring now, and there is already a disconnect in coordination. During COVID-19 there has been an increase in cycling using the shoulder in this area. It is suggested the Region work with the City to ensure existing cycling network is available while development is happening. The Region will speak to the AT and Development Engineering groups to confirm if the shoulder can be maintained for cyclist while construction is ongoing.	Region
5.	**Next Steps Schedule**	
5.1	Following OH #1, the project team will review public feedback, evaluate Alternative Design Concepts, identify a preliminary preferred Design Concept for each study area and develop the Preliminary Preferred Designs to be presented at OH #2.	

The preceding are the minutes of the meeting as observed by the undersigned. Should there be a need for revision, please advise Burnside within seven days of issuance. In the absence of notification to the contrary, these minutes will be deemed to be an accurate record of the meeting.

Minutes prepared by:

R.J. Burnside International Limited

Sylvia Waters

SW:jm

Distribution:

All Attendees via Email

Sylvia Waters

From: Jennifer Vandermeer
Sent: Friday, January 28, 2022 10:09 AM
Cc: Chiu, Edward
Subject: York Warden Avenue and Kennedy Road Environmental Assessment Studies - Stakeholder Advisory Committee (SAC) Meeting No. 1 - Presentation Slides
Attachments: 052314 Warden Kennedy EAs - SAC_220127.pdf

Good morning,

Thank-you kindly for your participation at the first Stakeholder Advisor Committee (SAC) meeting yesterday evening. We certainly welcomed the dialogue and feedback provided by the SAC members.

For those who were not able to make the meeting, we do apologize that some of you received the invitation late and we will ensure ample notice time for the next meeting, which is tentatively schedule for some time in May 2022. As promised, please find attached a copy of the presentation given at the meeting for your information. We will be preparing meeting minutes and will aim to circulate those next week to all SAC members.

Kindly provide any additional feedback on the information shared at last evening's meeting by **Thursday February 3, 2022**. Your feedback will help us in our preparation for the upcoming virtual Public Open House (POH) #1, for which information is currently scheduled for posting to the City's website during the week of February 21, 2022. As you are all on our Project Contact List, you will receive an email with the Notice of POH#1, and when you do, we invite you to visit the website to review that information when it's posted.

If you have any questions or comments about the Warden Avenue and Kennedy Road Environmental Assessment (EA) studies, please do not hesitate to email myself or Ed Chiu.

Thank-you again and we look forward to receiving any additional comments you may have over the next week.

Best regards,
Jennifer

BURNSIDE
Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

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Municipal Class Environmental Assessment Study

Warden Avenue and Kennedy Road from Major Mackenzie Drive to Elgin Mills Road

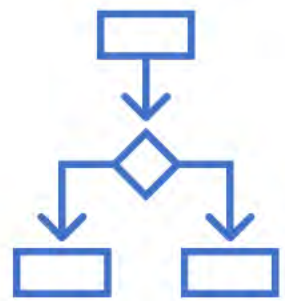
SAC Meeting #1

January 27, 2022

York Region

WELCOME

- **Introductions**
- **Purpose of Stakeholder Advisory Committee (SAC)**
  - Discuss input, concerns, and technical details at various decision-making points throughout the study.
  - Provide feedback and guidance to the Project Team.



SAC Meeting Objectives

Meeting # 1 (today):

- Review findings of the approved 2016 Transportation Master Plan (TMP) including MCEA Phases 1 and 2 recommendations.
- Review preliminary alternative design concepts.
- Discuss issues / opportunities in Study Areas.

Meeting # 2 (tentatively May 2022):

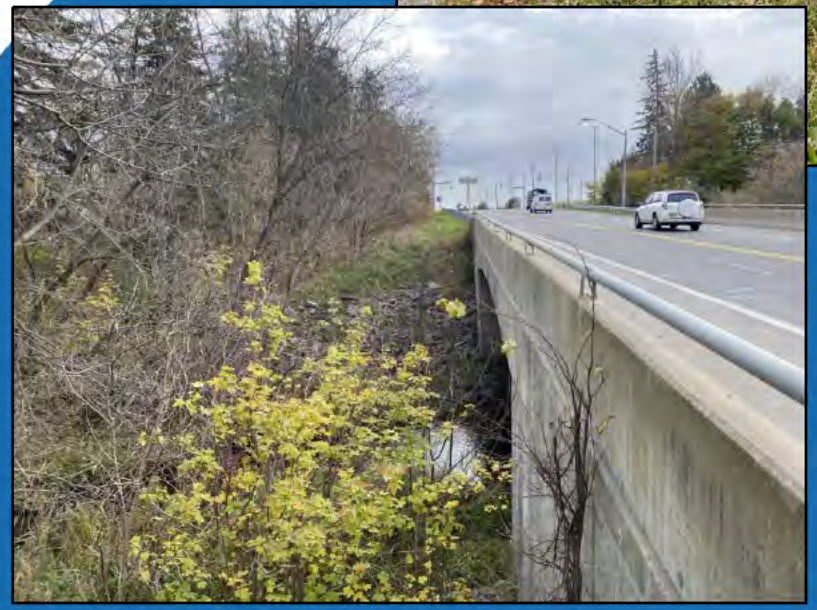
- Review results of MCEA Phase 3, specifically the evaluation of alternative design concepts and Preliminary Preferred Design Concept.

Project Overview

- Study Areas and Objectives
- Study Process and Planning Context
- Land Use and Future Development
- Existing Conditions
- Problem/Opportunity Statement
- Preferred Solution
- Preliminary Alternative Design Concepts
- Next steps

Warden North

Warden South



Kennedy Bridge

York Region

Study Areas and Objectives

The Regional Municipality of York is undertaking Schedule C Municipal Class Environmental Assessment (MCEA) Studies for improvements to Warden Avenue and Kennedy Road, between Major Mackenzie Drive East and Elgin Mills Road East, in the City of Markham.

- These studies build on the recommendations from the approved 2016 York Region Transportation Master Plan (TMP).
- Through the MCEA studies, York Region is examining how to complete the identified infrastructure and active transportation improvements, and to mitigate environmental impacts.

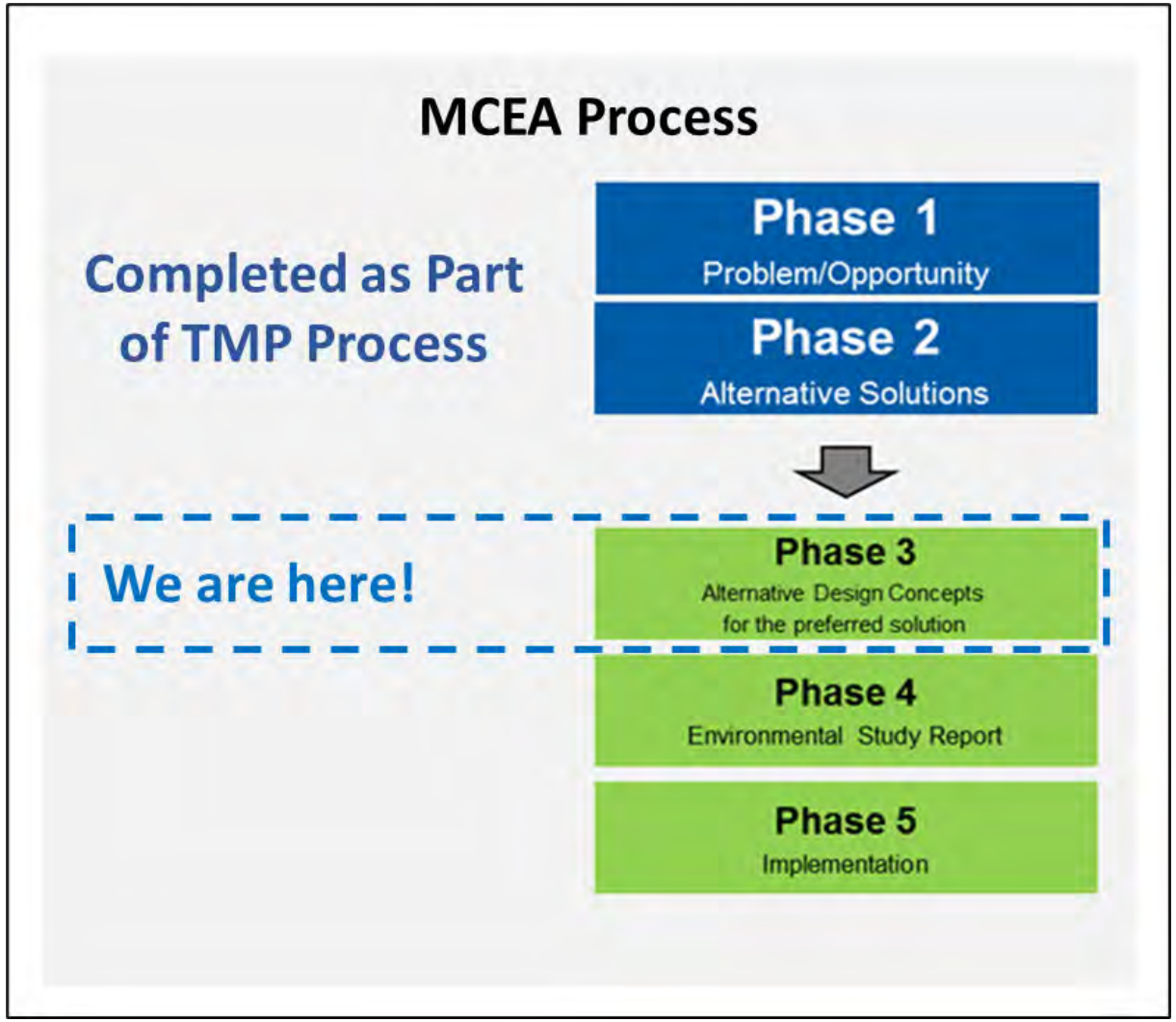
Municipal Class Environmental Assessment Process

Approved 2016 TMP

- Road needs and justifications established for the two study corridors.
- Completed to a level of detail that meets the requirements for Phase 1 and 2.

Current Studies

- Identify and evaluate Alternative Design Concepts for Preferred Solutions (Phase 3).
- Complete Environment Study Report (Phase 4).



Provincial Planning Policy Context

The following key provincial planning documents set the framework for these Studies:

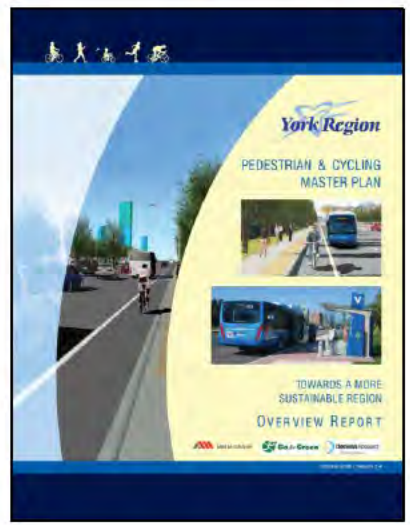
- Provincial Policy Statement, 2020
- Provincial Growth Plan, 2020
- Greenbelt Plan, 2017

Regional Planning Policy Context

The following key Regional planning documents set the framework for these Studies:

- York Region Official Plan, 2016
- York Region Vision 2051, 2011
- York Region's Sustainability Strategy, 2007
- York Region Transportation Master Plan, 2016
- York Region's Pedestrian and Cycling Master Plan, 2007
- York Region Transit Business Plan for 2021 – 2025

The Regional Municipality of York
Transportation
Master Plan



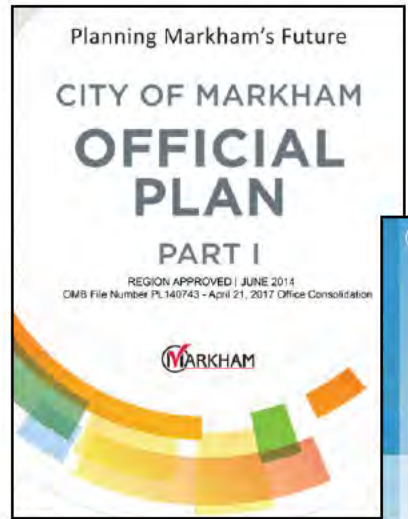
York Region SUSTAINABILITY STRATEGY
Towards a Sustainable Region

YORK REGION VISION 2051

Municipal Planning Policy Context

The following key Municipal planning documents set the framework for these Studies:

- City of Markham Official Plan, 2014
- City of Markham's Future Urban Area Conceptual Master Plan, 2017
- City of Markham Active Transportation Master Plan, 2020
- Elgin Mills Road Municipal Class EA (in progress)



The York Region of Tomorrow

Historical Growth

Since 1971, York Region's population has increased nearly seven-fold.

Planned Growth

50% Increase in population between 2015 and 2041

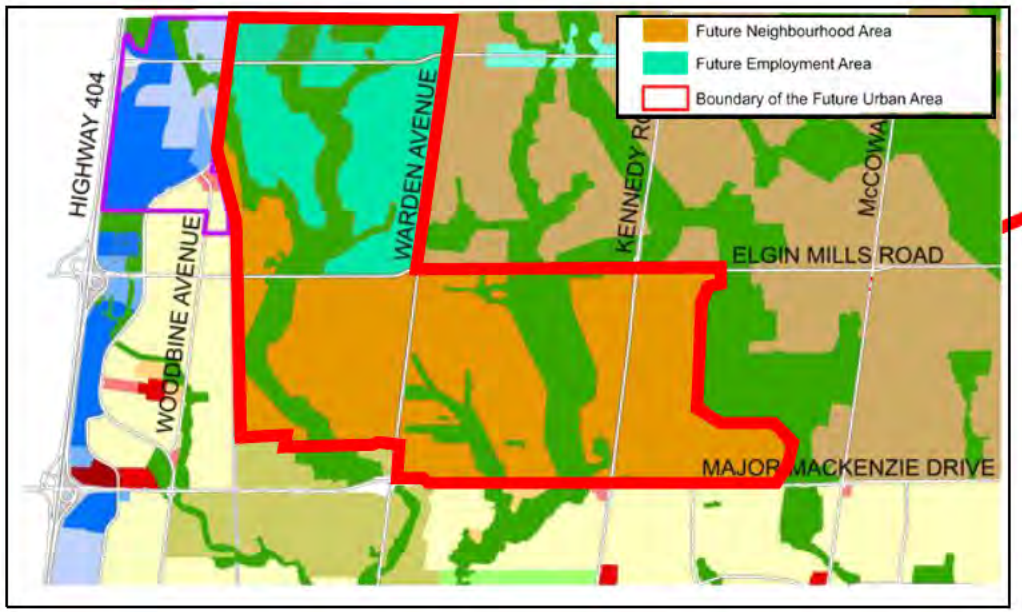
55% Increase in employment between 2015 and 2041

Improvements to the Warden Avenue and Kennedy Road corridors will be necessary to support the growth in the community.

Existing Land Use and Future Development

The Study Areas are mostly undeveloped agricultural lands with some commercial and residential properties.

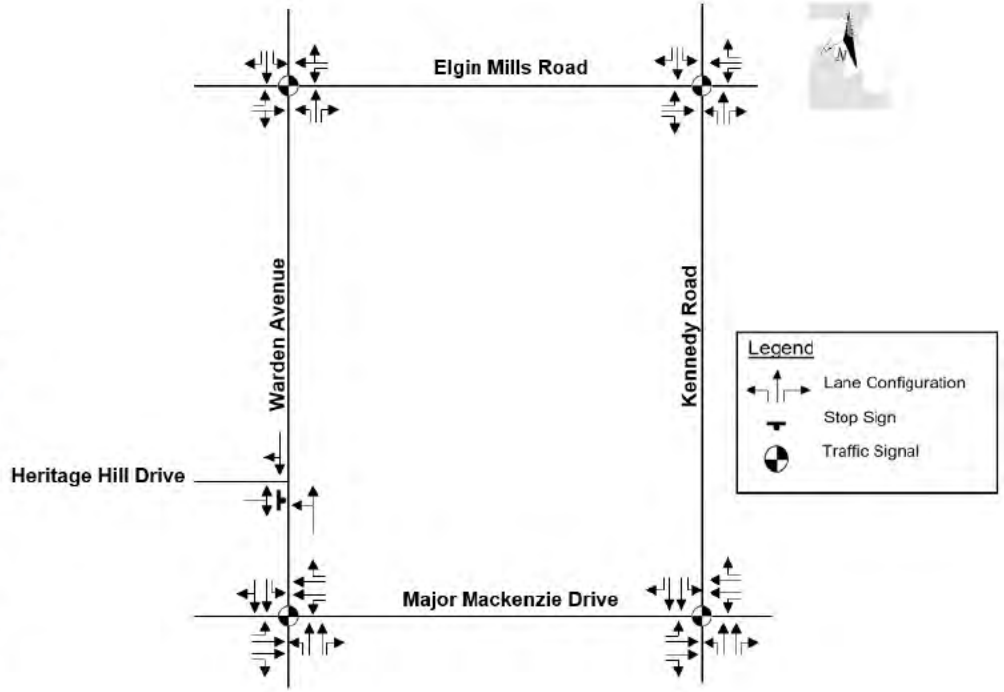
- Located within the City of Markham Future Urban Area (FUA).
- Development blocks proposed west and east of both Warden Avenue and Kennedy Road.



Existing Road Network

- Warden Avenue is a north-south, two-lane rural arterial road with posted speed limits of 60 km/hr from Major Mackenzie Drive to Heritage Hill Drive and 80 km/hr from Heritage Hill Drive to Elgin Mills Road.

- Kennedy Road is a north-south, two-lane rural arterial road with posted speed limits of 60 km/hr from Major Mackenzie Drive to 300 m north of the intersection and 80 km/hr for the remainder.



Study Corridors

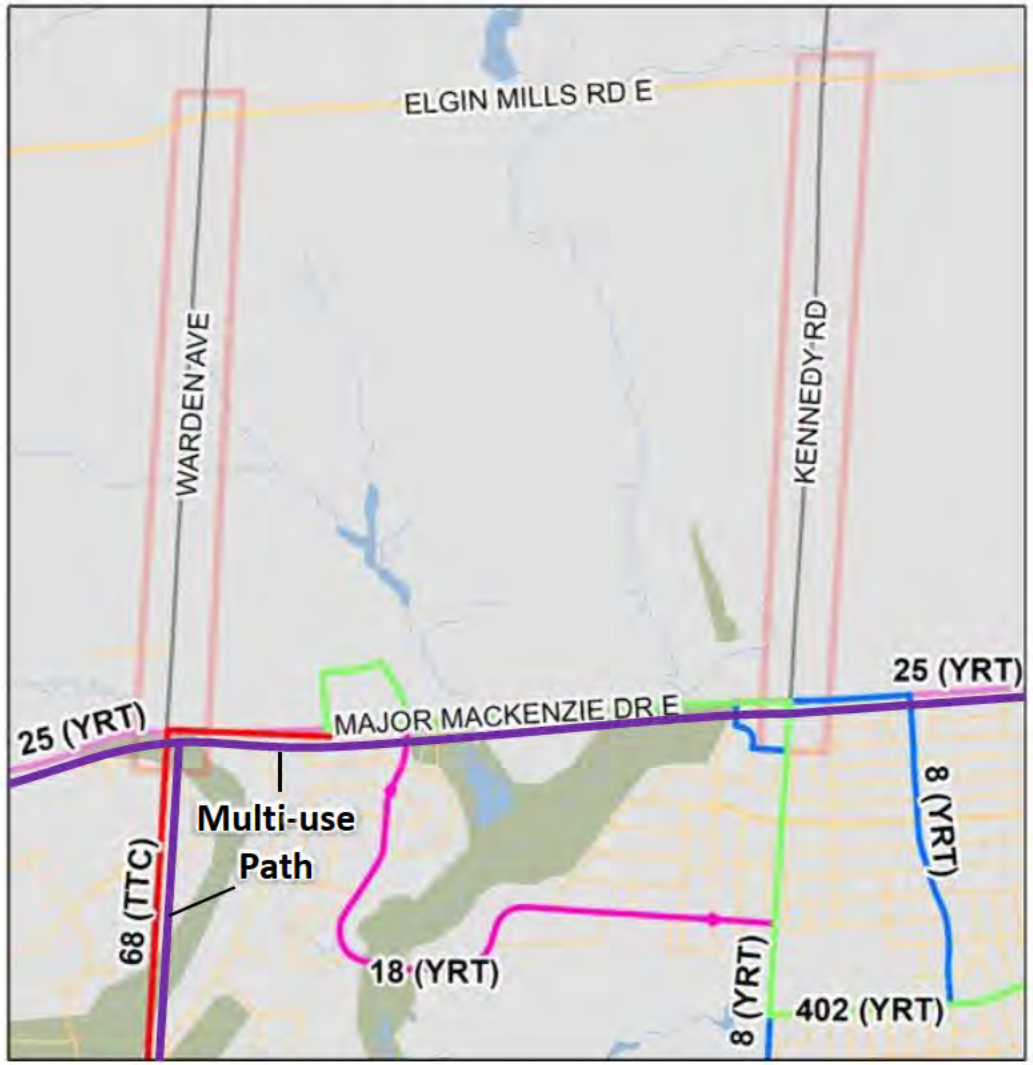
Name (Approximate Length)	Jurisdiction	Classification	Number of Through Lanes in Each Direction	Posted Speed Limit
Kennedy Road (2.0 km)	York Region	Regional Arterial Road	1	60 - 80 km/hr
Warden Avenue (2.1 km)	York Region	Regional Arterial Road	1	60 - 80 km/hr

Intersecting Roads

Name (Approximate Length)	Jurisdiction	Classification	Number of Through Lanes in Each Direction	Posted Speed Limit
Major Mackenzie Drive East (2.1 km)	York Region	Regional Arterial Road	2	70 km/hr
Elgin Mills Road East (2.0 km)	City of Markham	City Arterial Road	1	60 km/hr

Existing Transit and Active Transportation Network

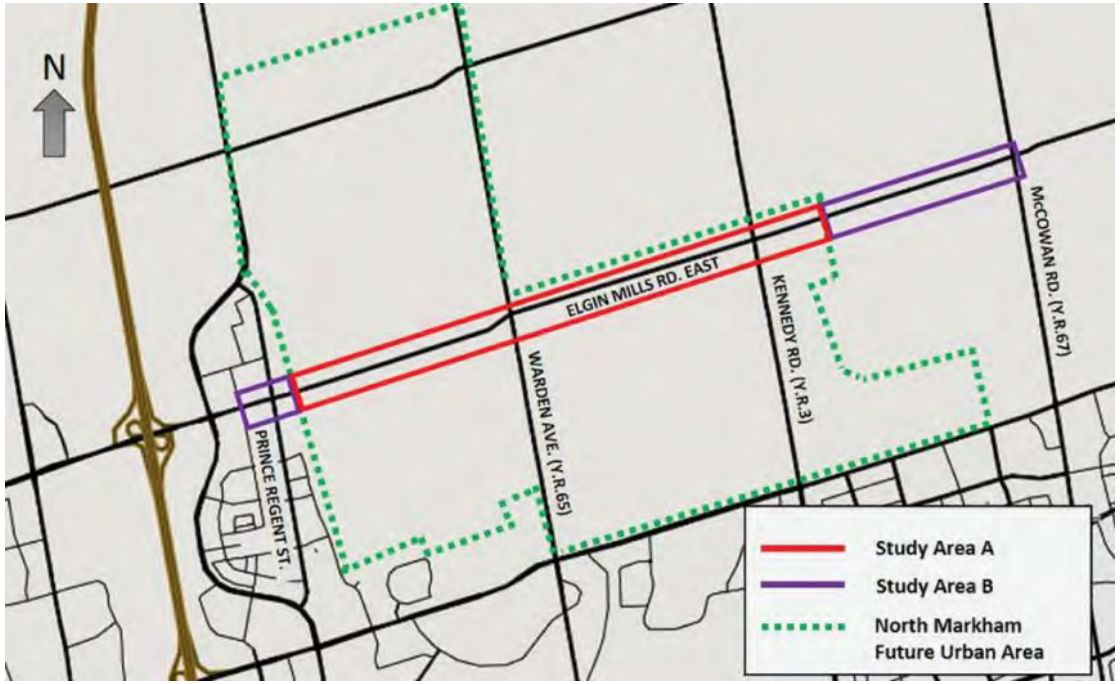
- 1.0 m to 3.0 m wide paved shoulders along Warden Avenue and Kennedy Road.
- Multi-use paths along Major Mackenzie Drive East and south of Major Mackenzie Drive on Warden Avenue.
- Opportunity to improve Active Transportation connectivity as part of improvements.
- No transit service along the two study corridors.
- YRT and TTC bus services south of Major Mackenzie Drive East.



TTC, YRT Bus Routes, and multi-use paths near the Study Areas

Elgin Mills Road East Class Environmental Assessment

The City of Markham is conducting an EA to provide transportation improvements along Elgin Mills Rd.



The City's EA intersects the study area of the EAs being conducted by the Region at the intersections of Kennedy Rd. and Warden Ave. along Elgin Mills Rd. E.

The City's traffic analysis for the **Elgin Mills Rd. E. and Kennedy Rd. intersection** recommended to:

- Provide additional eastbound and westbound through lanes, and
- Improve signal timings

The traffic analysis for the **Elgin Mills Rd. and Warden Ave. intersection** recommended to:

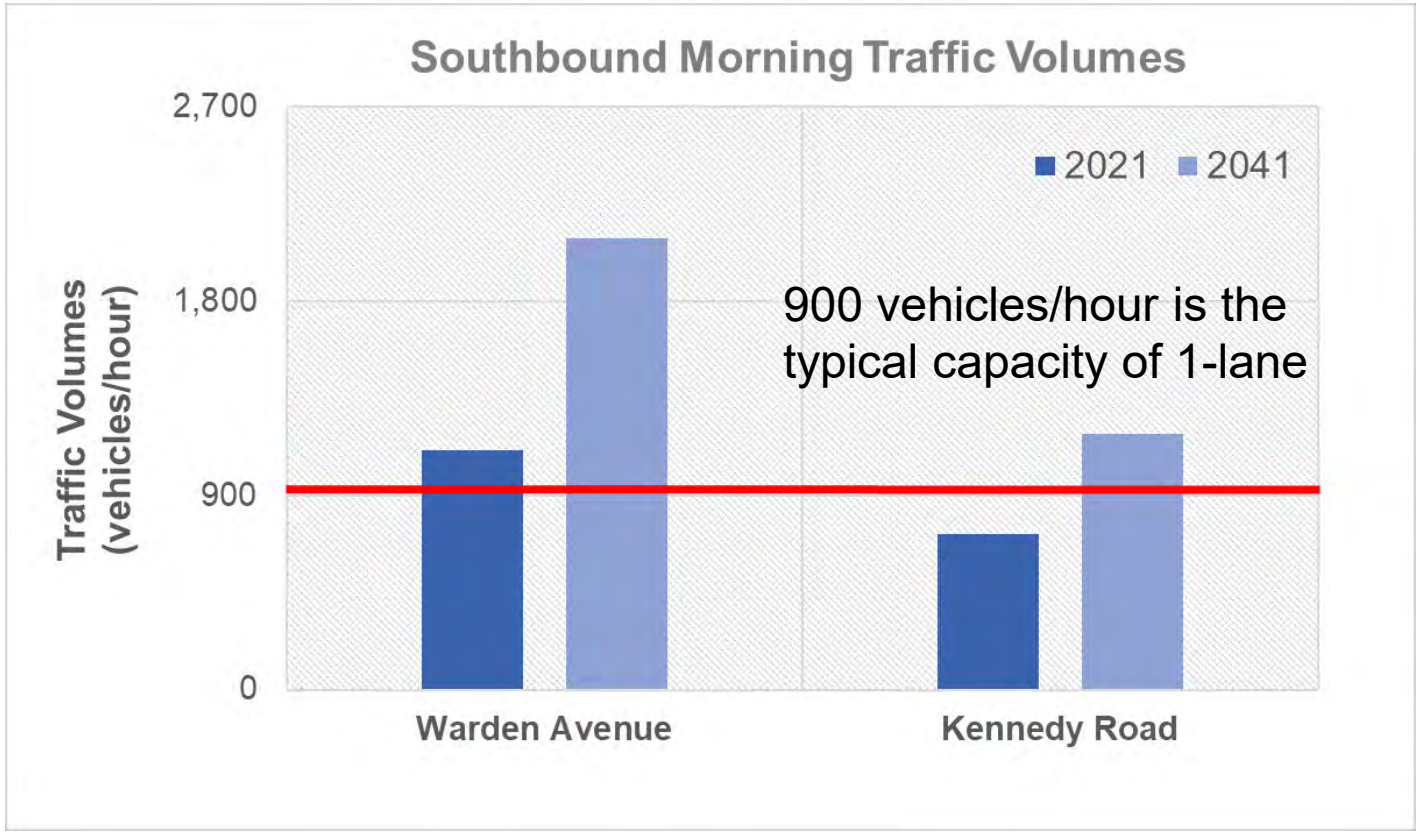
- Provide additional eastbound and westbound through lanes,
- Provide exclusive eastbound and westbound right-turning lanes, and
- Improve signal timings

Existing and Future Traffic Volumes (AM Southbound Direction)

Existing and future road traffic capacity constraints were identified

2021- Southbound morning traffic volumes along Warden Avenue experience delay.

2041- Southbound morning traffic volumes along Kennedy Road and Warden Avenue are forecasted to be considerably higher than the existing road capacity by 2041.

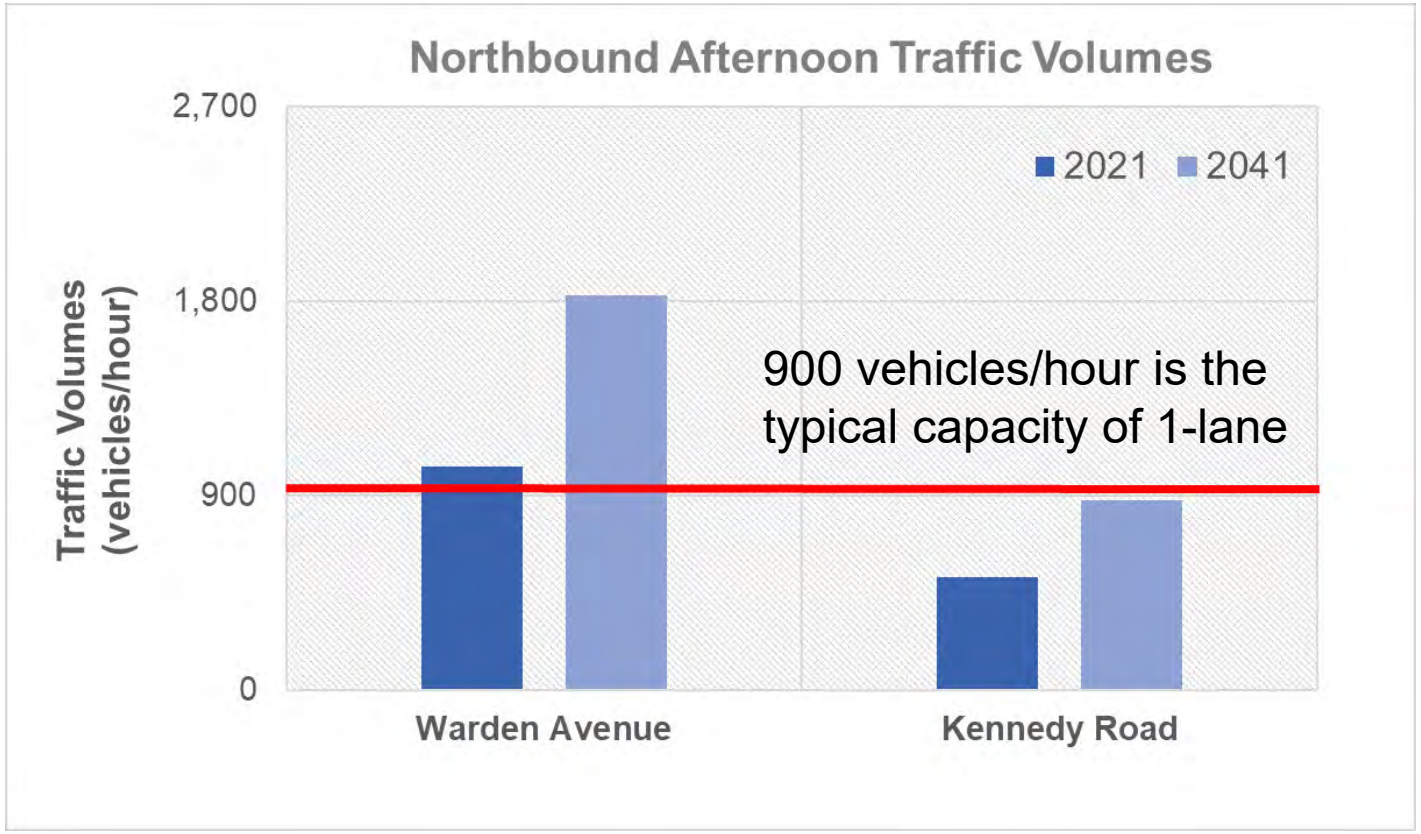


Existing and Future Traffic Volumes (PM Northbound Direction)

Existing and future road traffic capacity constraints were identified

2021- Northbound afternoon traffic volumes along Warden Avenue experience delay.

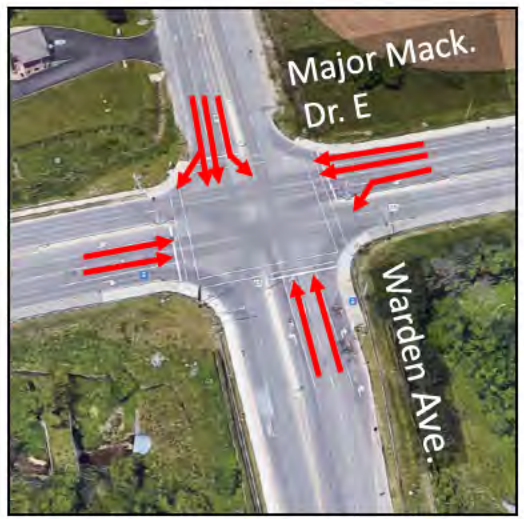
2041- Northbound afternoon traffic volumes along Warden Avenue are forecasted to be considerably higher than the existing road capacity by 2041.
Northbound afternoon traffic volumes along Kennedy Road are approaching road capacity.



Existing Road Network with Future Traffic Demand

Delays at intersections are predicted to worsen if no improvements are undertaken

Warden Ave. and Elgin Mills Rd. E.



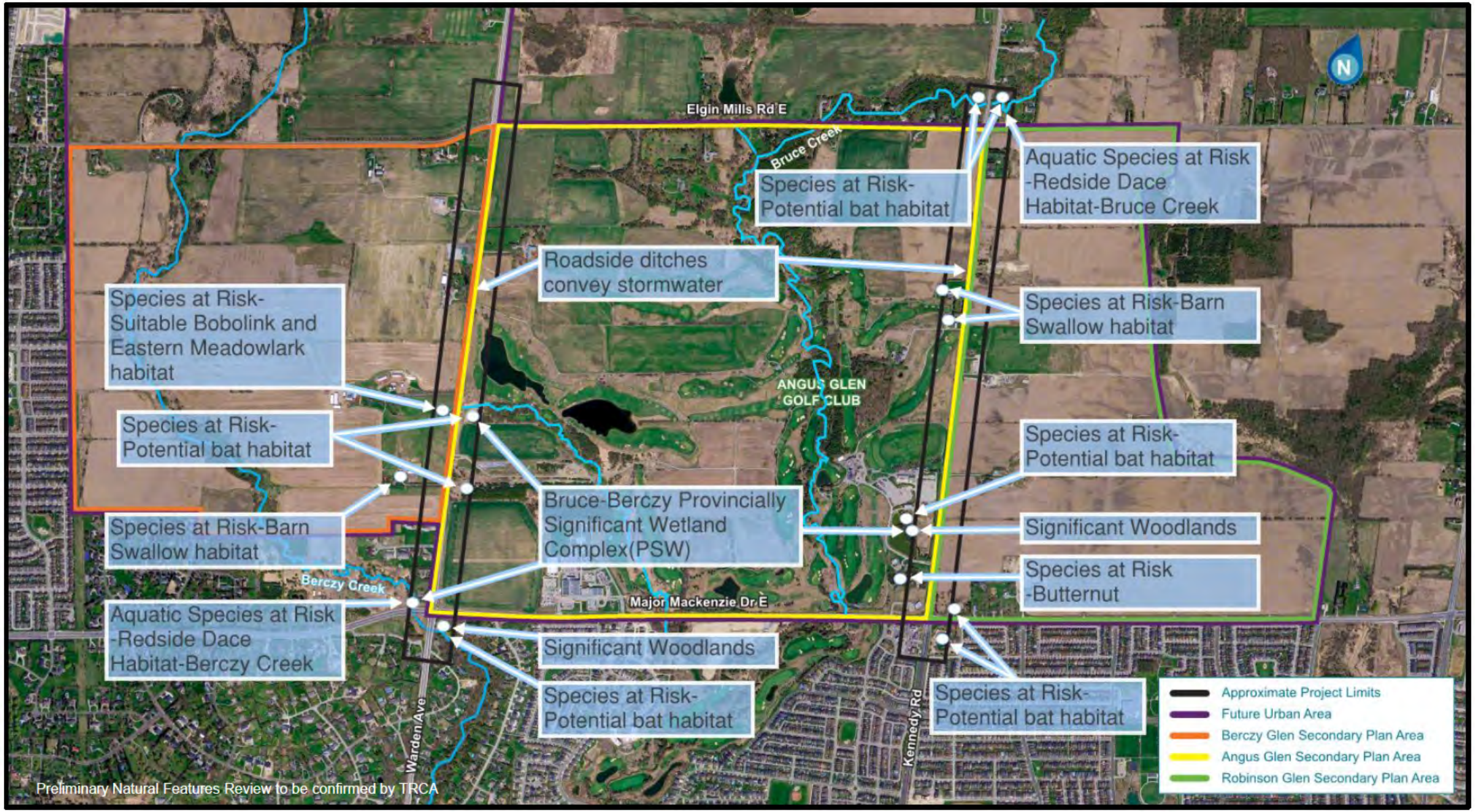
Warden Ave. and Major Mackenzie Dr. E.

Kennedy Rd. and Elgin Mills Rd. E.

Kennedy Rd. and Major Mackenzie Dr. E.

Arrows in red indicate the anticipated intersection movements that will experience significant delays by 2041 if no improvements are made

Existing Natural Heritage Features



Existing Cultural Heritage

The Warden Avenue and Kennedy Road Study Areas are a mixture of residential, agricultural, and recreational properties with rural land use history dating back to the early nineteenth century.

The Study Areas are within the traditional territory of the Michi Saagiig and Chippewa Nations, collectively known as the Williams Treaties First Nations.

Warden Avenue

- Six features of cultural heritage value consisting of a barn and farmscapes.

Kennedy Road

- Sixteen features of cultural heritage value consisting of a barn, schoolhouse, residences and farmscapes and agricultural field.
- Pingle Farm Cemetery - small family cemetery that dates to prior to 1866.

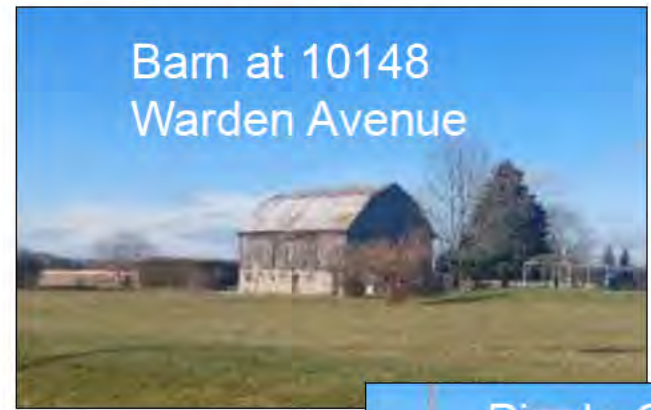


Image Source: Cultural Heritage Report, ASI

Existing Hydrogeological Environment

- Groundwater in the Study Areas is contained within an upper, middle and lower aquifer below the ground surface.
- Depth to groundwater ranges from 1 m to 9 m below ground surface.
- Seasonal groundwater discharge to wetlands and watercourses has been observed in previous studies.
- Individual private water wells supply the area north of Major Mackenzie Drive and within 500 m of the Study Area corridors.

Source Water Protection

Significant Groundwater Recharge Areas (SGRAs)

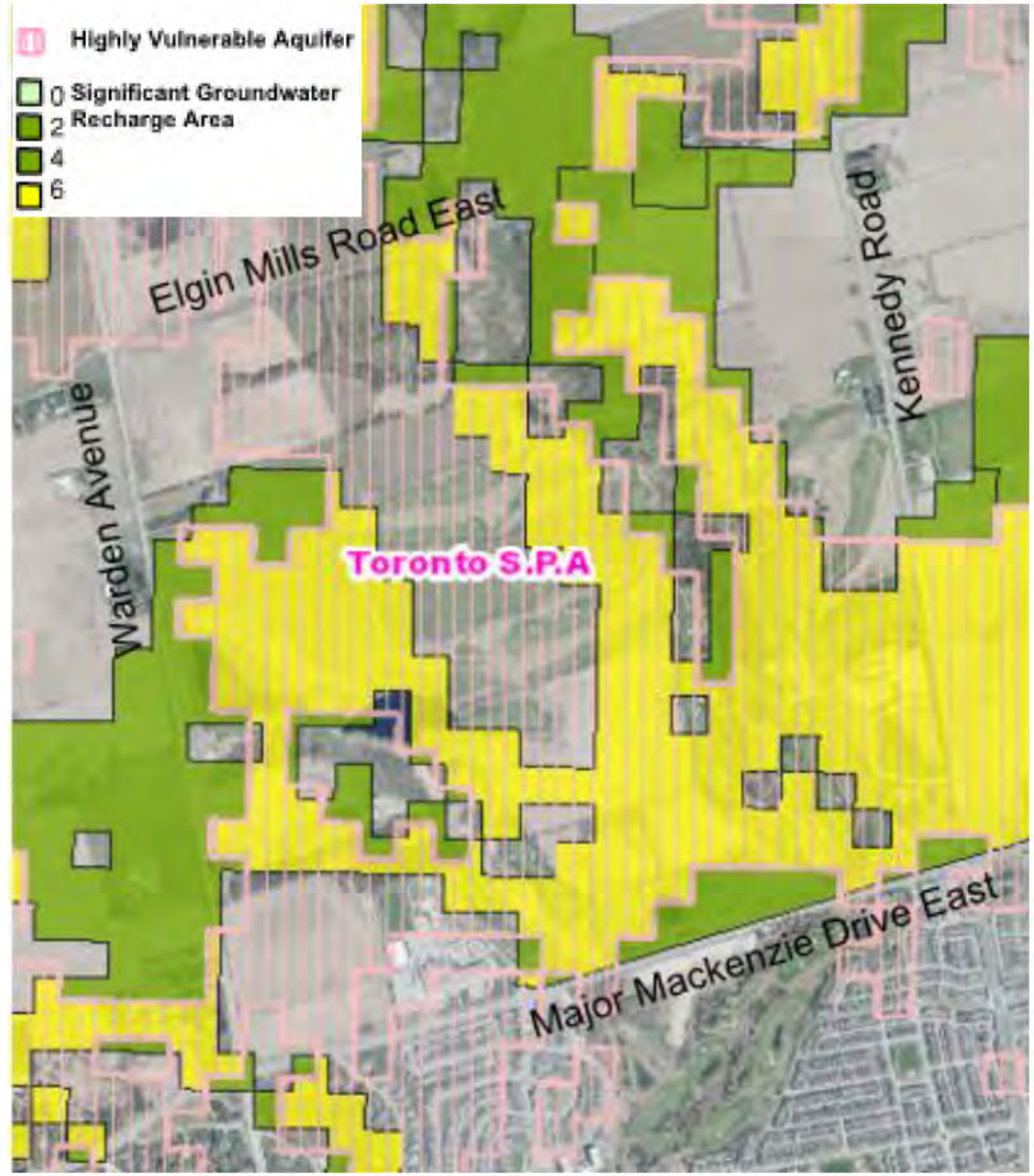
The Study Areas fall within an SGRA with vulnerability scores 4 (medium) and 6 (high).

Highly Vulnerable Aquifers (HVAs)

The Study Areas fall within an HVA area with vulnerability score of 6.

Groundwater Vulnerability	Vulnerability Score
High	6
Medium	4
Low	2

Source: Toronto and Region Source Protection Area Assessment Report, July 2015



Source: Source Protection Information Atlas, MECP

Approved 2016 Transportation Master Plan

Approved 2016 Transportation Master Plan

The approved 2016 TMP documented broader, Region-wide problems and opportunities, including:

- Creating a road network 'Fit for the Future'.
- Integration of active transportation in urban areas.

Problem and opportunities identified in the 2016 TMP for Warden Avenue and Kennedy Road Study Areas:

- Transportation network improvements are needed to accommodate expansion of the designated Urban Area and future travel demands.
- Capacity improvements are needed to accommodate future travel demands.
- Corridor improvements to support walking, cycling and transit access.

Current analysis of existing and future traffic and development in the Study Area corridors have confirmed the Problem/Opportunities identified in the approved 2016 TMP.

Summary of Alternative Solutions Considered for Warden Avenue in the 2016 TMP

	Alternative Solution	Evaluation
1	Do Nothing	Did not address the problem or opportunity statement.
2	Optimize existing facility with intersection improvements only.	Provided minor improvements to traffic flow. Did not address overall traffic congestion.
3	Urbanize corridor but maintain 2-lane cross-section.	Did not address traffic congestion. Addressed opportunity to improve walking and cycling facilities.
4	Widen corridor to 4 lanes and maintain rural cross-section.	Addressed traffic capacity. Did not address. opportunity to improve walking and cycling facilities.
5	Widen corridor to 4 lanes and construct to urban cross-section.	Addressed traffic capacity. Addressed opportunity to improve walking, cycling, and transit facilities.
6	Widen parallel/adjacent corridor.	Potential to divert some traffic to other corridors. Did not address corridor congestion and provided no improvements to walking and cycling facilities.

The 2016 TMP recommended to widen Warden Avenue to 4 lanes and construct to urban arterial standard. The justification provided was that the forecasted traffic volume meets the threshold for a 4-lane widening. This recommendation provides an opportunity to improve walking, cycling and transit facilities.

Summary of Alternative Solutions Considered for Kennedy Road in the 2016 TMP

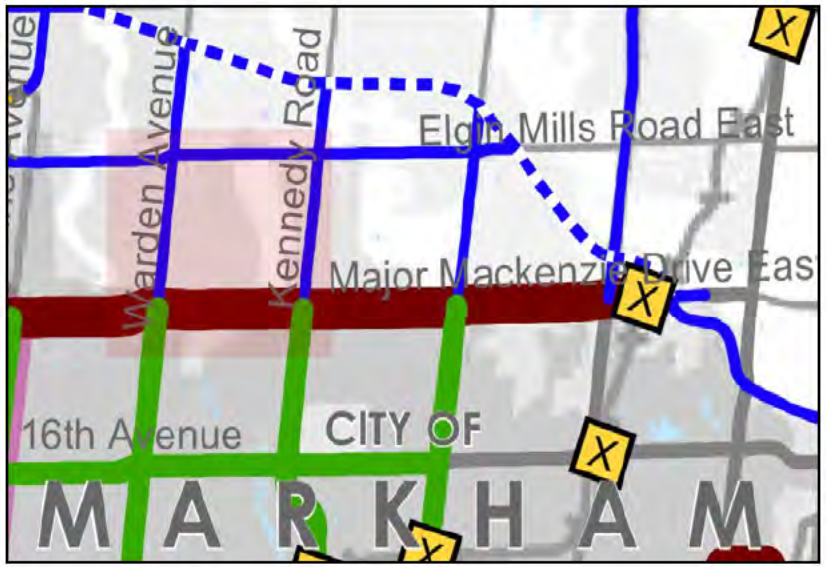
	Alternative Solution	Evaluation
1	Do Nothing	Did not address the problem or opportunity statement.
2	Optimize existing facility with intersection improvements only.	Provided minor improvements to traffic flow. Did not address overall traffic congestion.
3	Urbanize corridor but maintain 2-lane cross-section.	Did not address traffic congestion. Addressed opportunity to improve walking and cycling facilities.
4	Widen corridor to 4 lanes and construct to urban arterial standard.	Addressed traffic capacity. Addressed opportunity to improve walking, cycling, and transit facilities.
5	Widen parallel/adjacent corridor.	Potential to divert some traffic to other corridors. Did not address corridor congestion and provided no improvements to walking and cycling facilities.

The 2016 TMP recommended to widen Kennedy Road corridor to 4 lanes and construct to urban arterial standard. The justification provided was that the forecasted traffic volume meets the threshold for a 4-lane widening. This recommendation provides an opportunity to improve walking, cycling and transit facilities.

Preferred Solutions (Approved 2016 TMP)

- Widen to two lanes in each direction and construct to urban arterial standard.
- Provide opportunity to improve transit network.
- Provide opportunity to improve walking and cycling facilities.

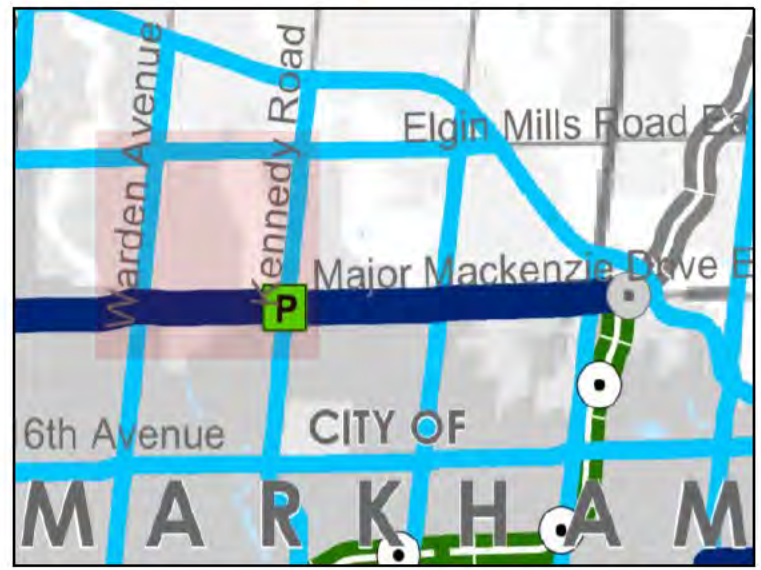
Lane improvement



Proposed Future 4 Lane Widening

Source: Map 8, Proposed 2041 Road Network (2016 TMP)

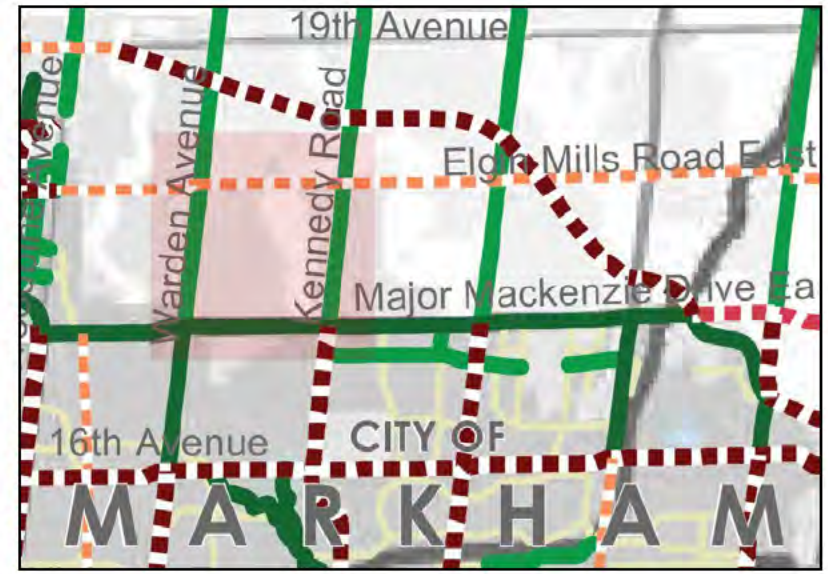
Transit improvement



Frequent Transit Network

Source: Map 7, Proposed 2041 Road Network (2016 TMP)

Active transportation improvement



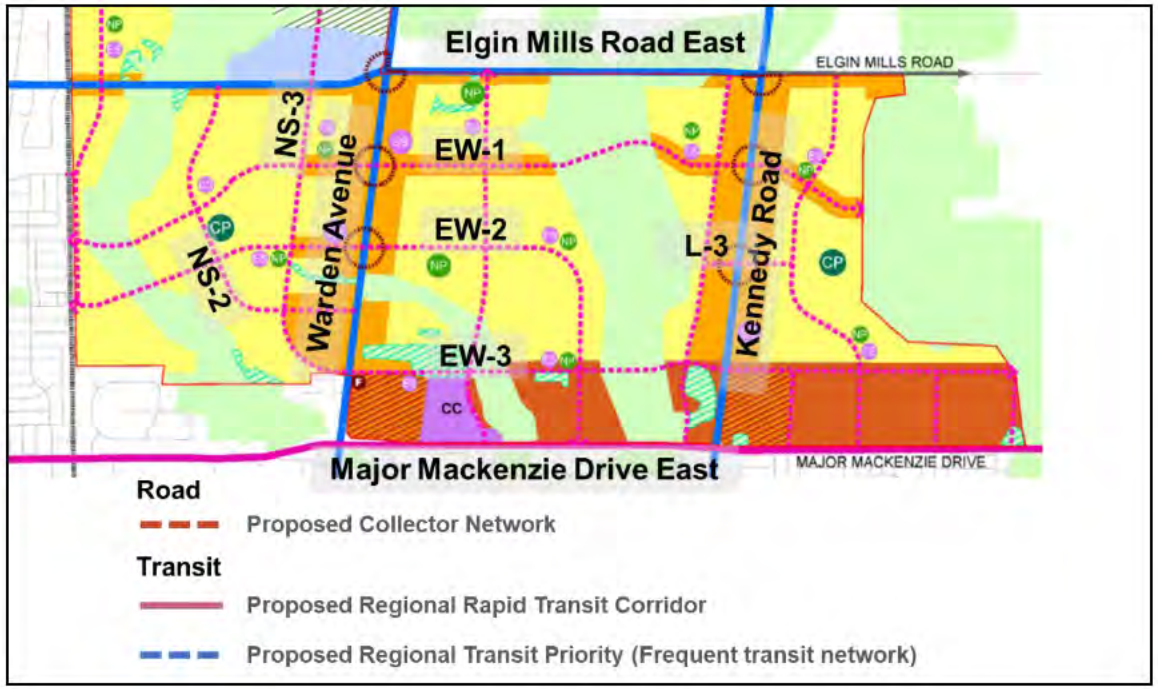
Dedicated Facility

Source: Map 9, Proposed 2041 Cycling Network (2016 TMP)

Additional Recommendations for Warden Avenue and Kennedy Road

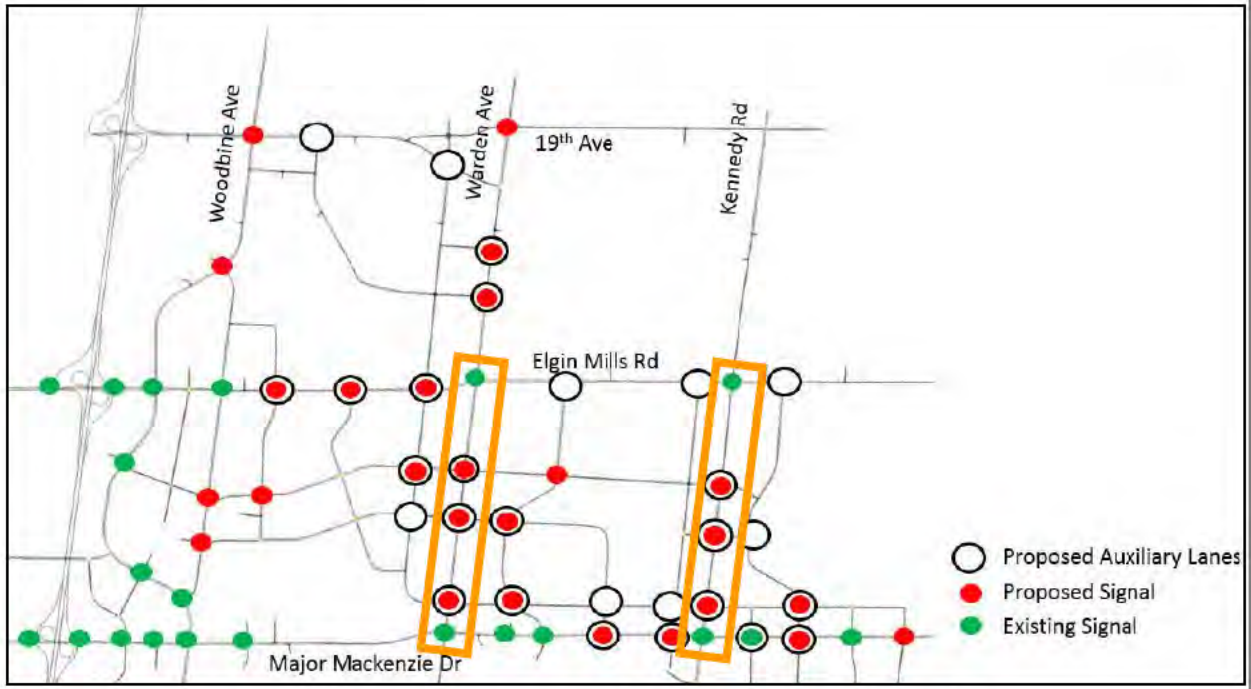
The City of Markham's Future Urban Area Conceptual Master Plan

Recommended comprehensive collector road network of roads and active transportation infrastructure



Proposed Community Structure Plan (Conceptual Master Plan)
Adapted from: Future Urban Area Conceptual Master Plan Volume 2 (October 2018)

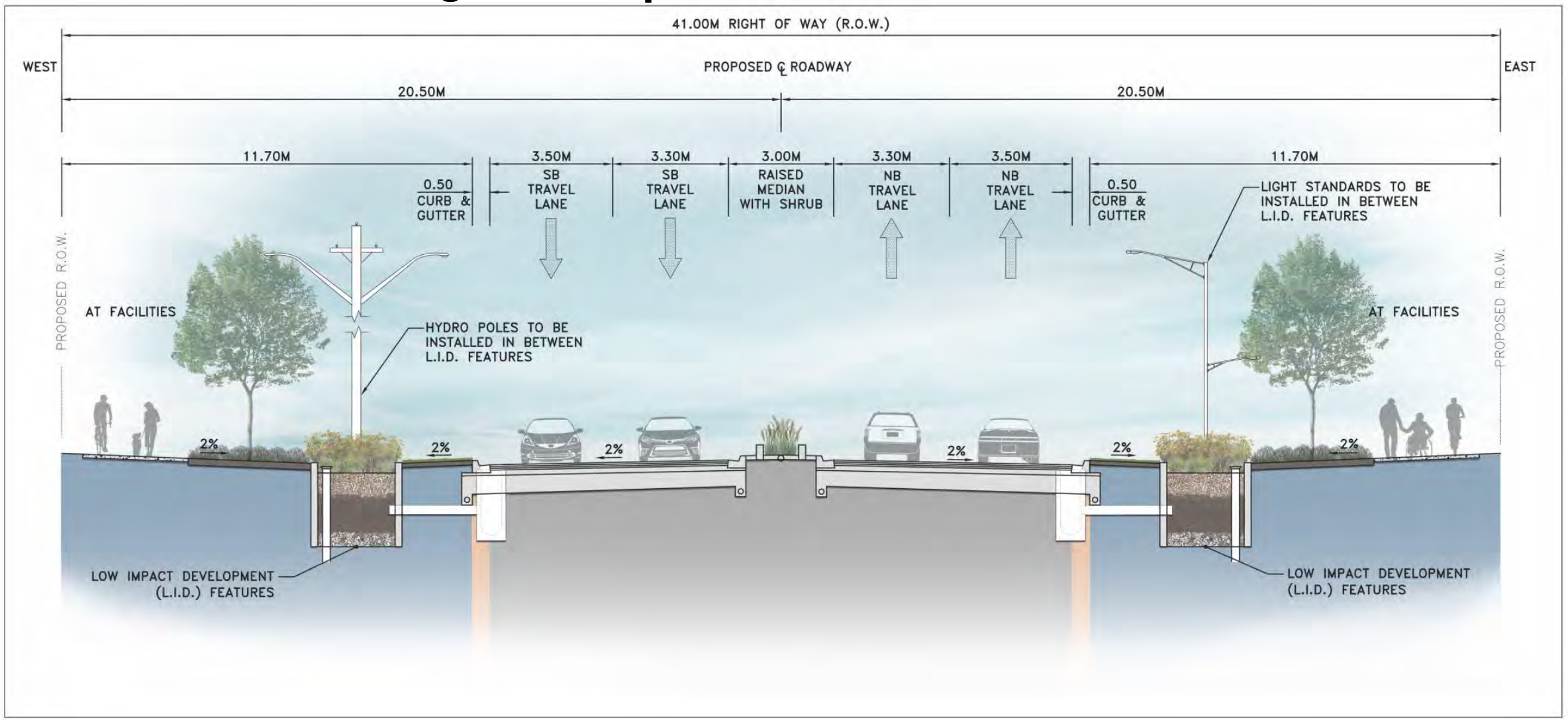
Anticipated signals in support of the future development and travel demands



Proposed Signal and Intersection Configuration
Source: Future Urban Area Conceptual Master Plan Volume 2 (October 2018)

Preliminary Alternative Design Concepts

Alternative Design Concept 1

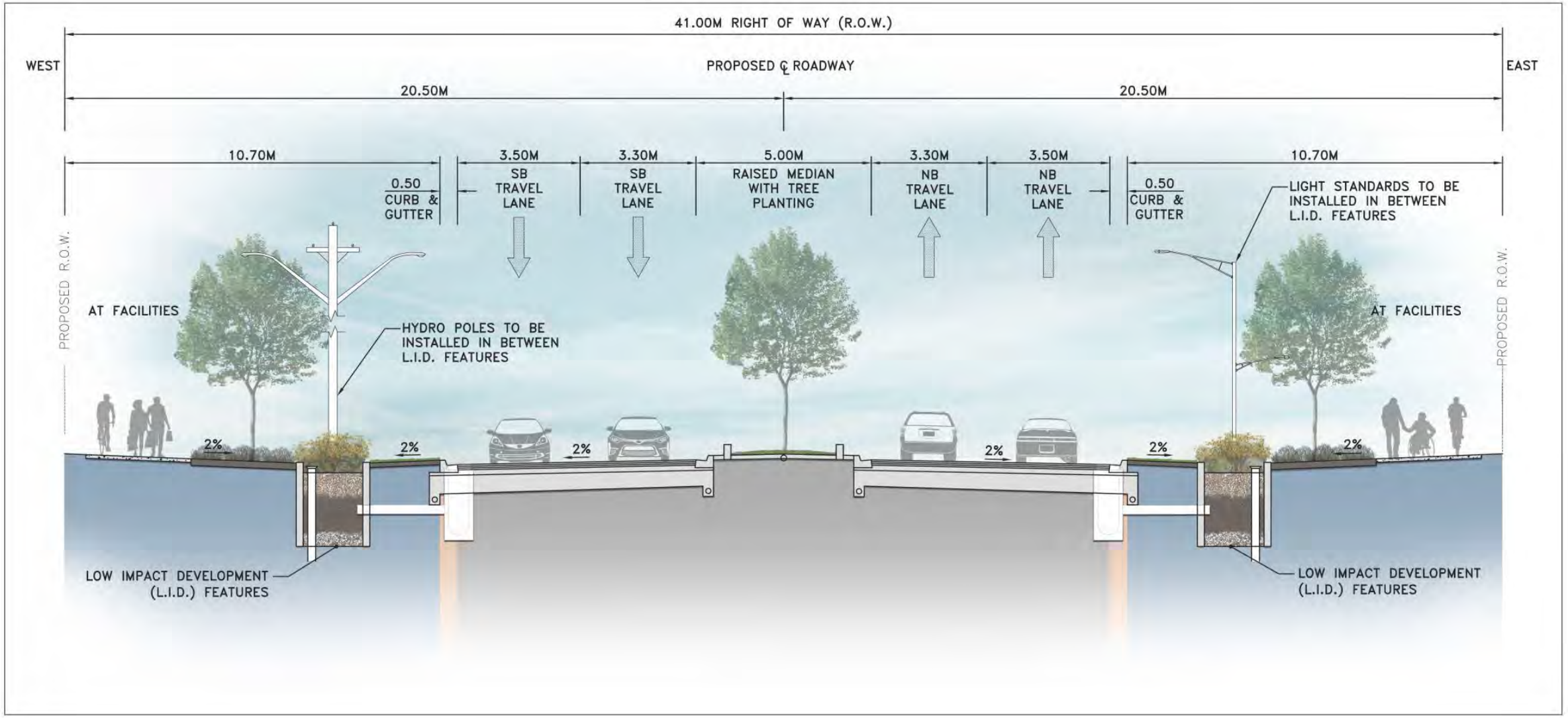


WARDEN AVENUE AND KENNEDY ROAD

TYPICAL 4-LANE CROSS SECTION | WITH 3.0M MEDIAN ISLAND

BURNSIDE

Alternative Design Concept 2

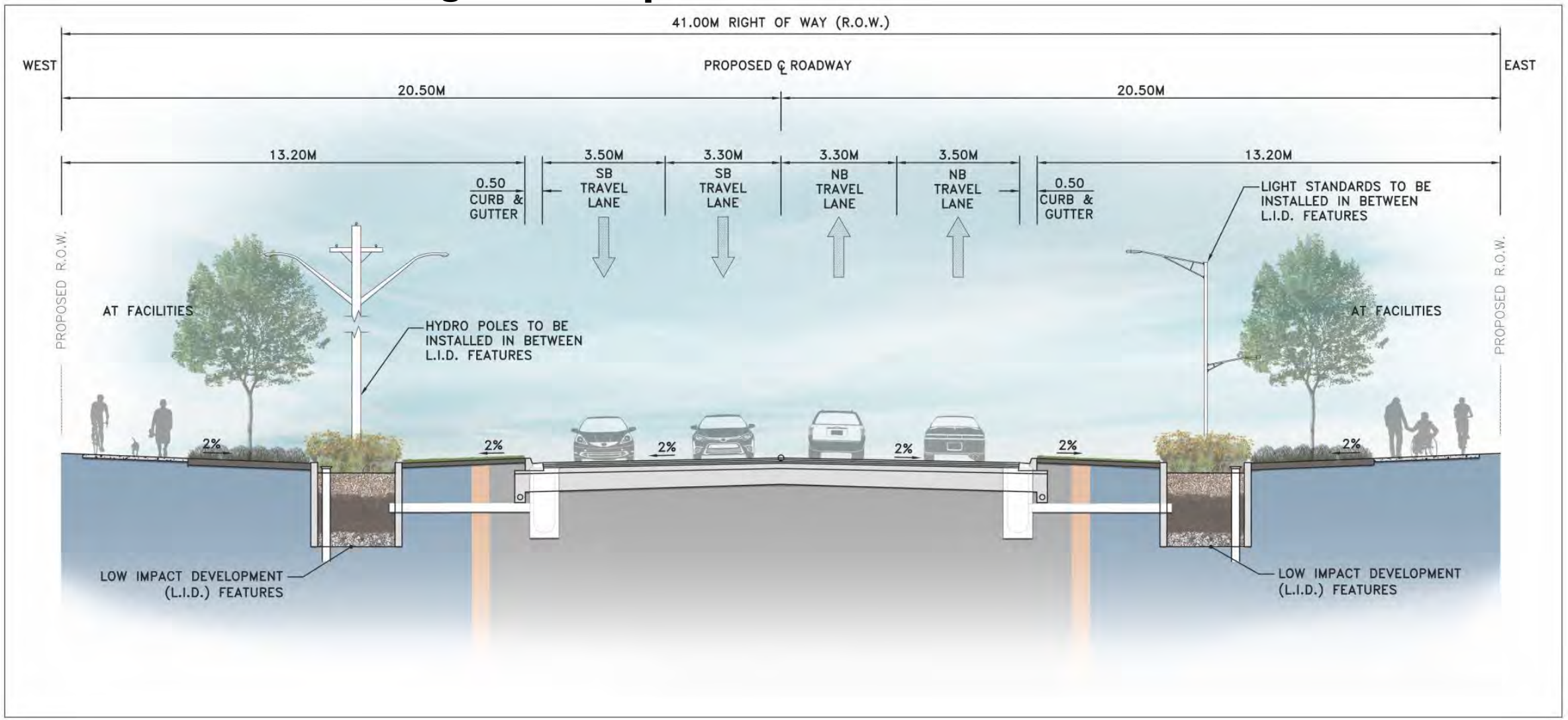


WARDEN AVENUE AND KENNEDY ROAD

TYPICAL 4-LANE CROSS SECTION | WITH 5.0M MEDIAN ISLAND

BURNSIDE

Alternative Design Concept 3



WARDEN AVENUE AND KENNEDY ROAD

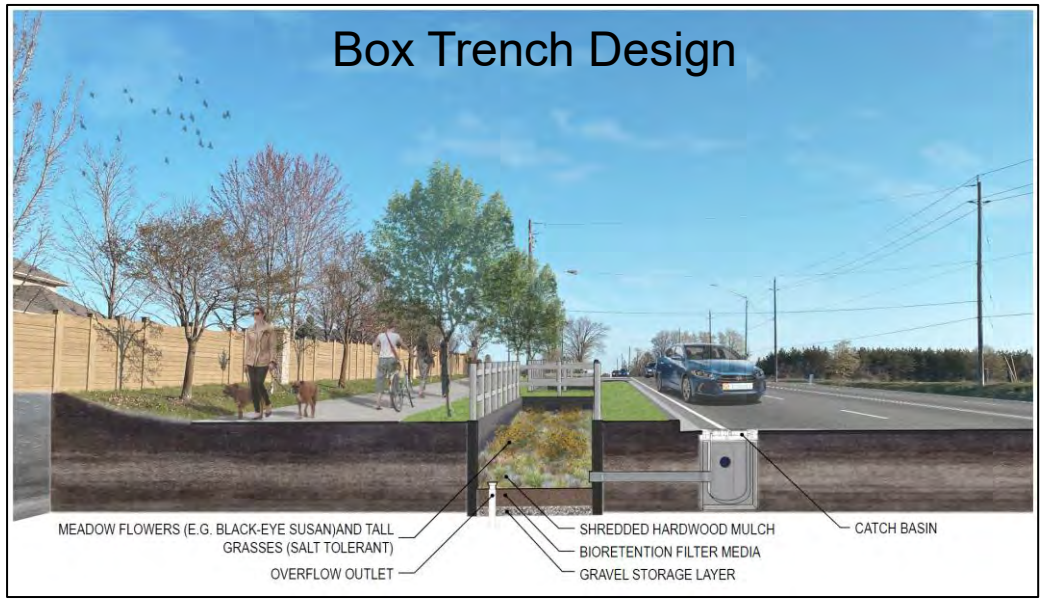
TYPICAL 4-LANE CROSS SECTION | WITHOUT MEDIAN ISLAND

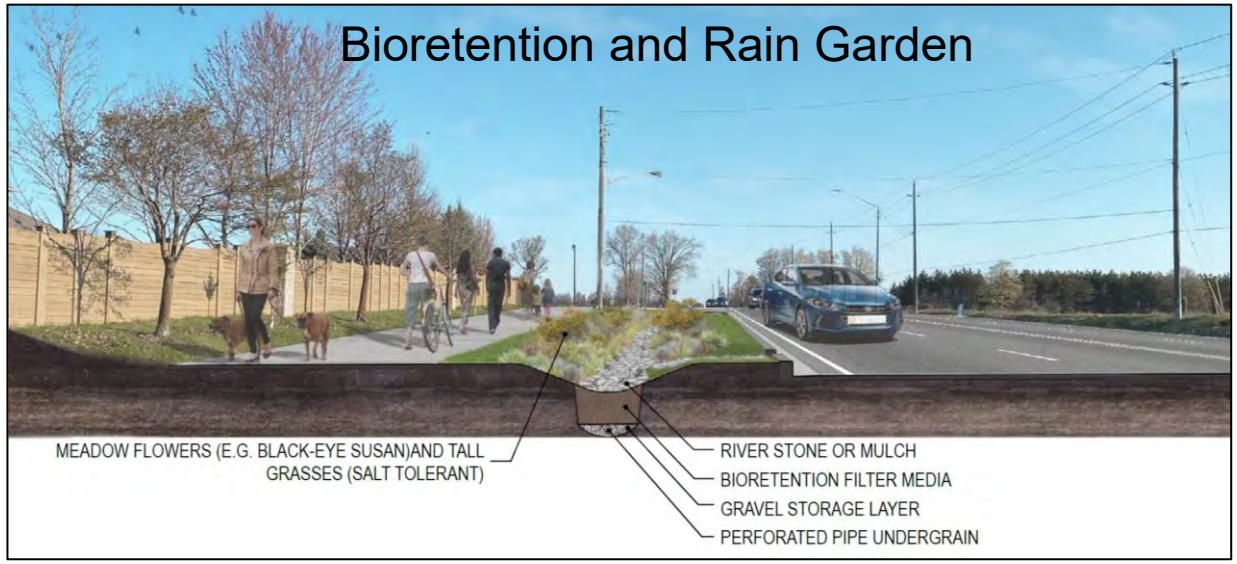
BURNSIDE

Low Impact Development (LID) Measures

LID uses cost-effective construction and building methods to store, filter and infiltrate rainwater and snow melt into the ground. LID measures are necessary to consider for all road widening projects to address increased impervious surfaces and improve sustainable and climate adaptive solutions. Some example designs that are feasible for road improvement projects and are being considered for Warden Avenue and Kennedy Road include:

- Box Trench Design
- Vegetated/Bio Swale Design
- Bioretention and Rain Garden Design
- Infiltration trenches and soak-aways
- Permeable pavement
- Above-ground rainwater harvesting tanks
- Underground storage tanks





Studies to Support Evaluation of Alternative Design Concepts

- Traffic and Safety Assessment
- Stormwater Management, Drainage and Hydrology Assessment
- Foundation Design
- Hydrogeological Assessment
- Noise Impact Assessment
- Air Quality Impact Assessment
- Natural Heritage Impact Assessment
- Fluvial Geomorphological Assessment
- Archaeological and Cultural Heritage Assessments
- Contamination Overview Study
- Low Impact Development Assessment and Benefit-Cost Analysis

Preliminary Evaluation Criteria

The Alternative Design Concepts in the Study Areas will be evaluated relative to each other against a set of criteria. Preliminary criteria are provided below under each of the project environments:

Natural Environment

- Potential impact to vegetation
- Potential impact to wildlife habitat and habitat of species at risk
- Potential impact to water resources and drainage
- Potential climate change impact and resilience

Engineering Environment

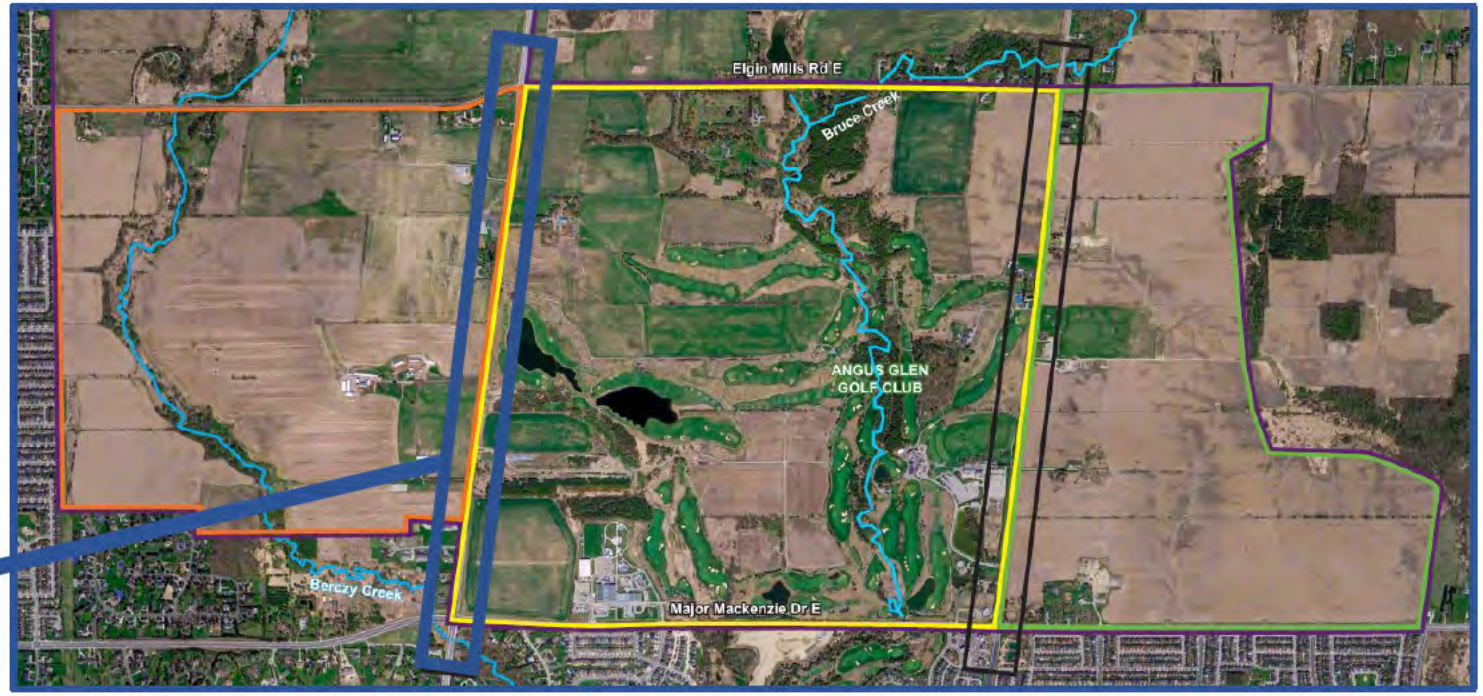
- Level of service / traffic congestion
- Operational safety / roadside safety
- Design constraints
- Utility impacts
- Constructability

Socio-Cultural Environment

- Potential impact to heritage resources (e.g., archaeology, cultural heritage)
- Nuisance impacts (e.g., noise, visual, or construction impacts)
- Land acquisition needs, impacts to driveway access
- Conformity to municipal and agency policy
- Level of service for local residents and business, impact to municipal services
- Connectivity and safety

Financial Environment

- Estimated capital costs
- Estimate operation and maintenance costs
- Property acquisition costs

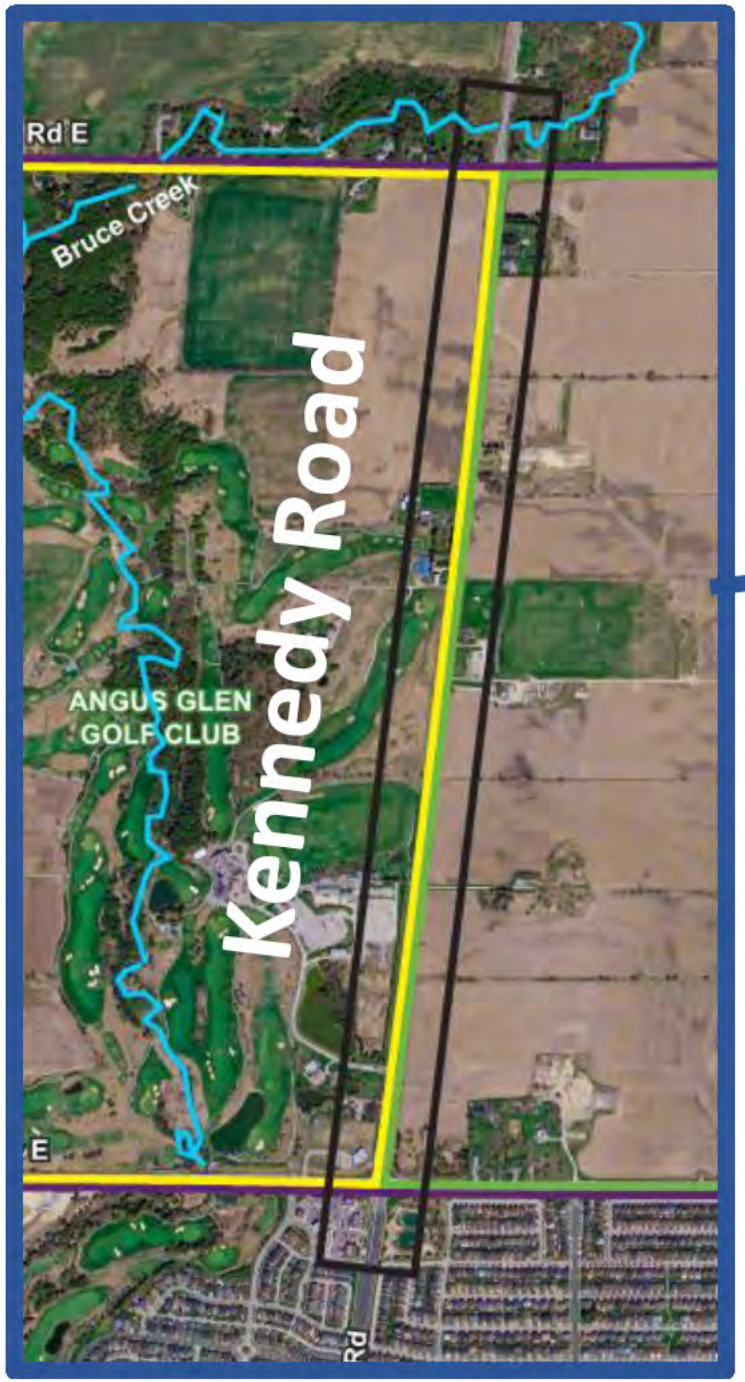


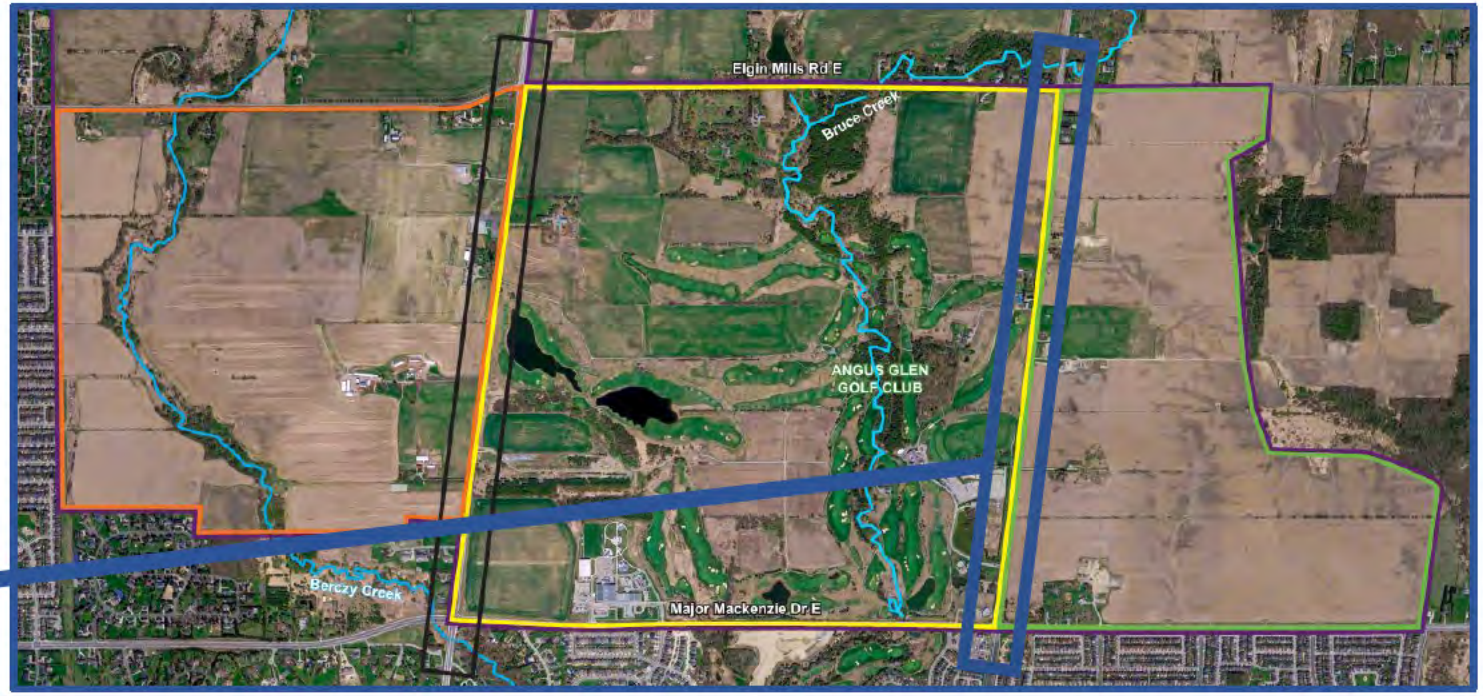
Discussion and Comments

Are there issues or concerns the study team should consider?

Are there any concerns with driving along Warden Avenue?

How would you improve the pedestrian and cycling environment?





Discussion and Comments

Are there issues or concerns the study team should consider?

Are there any concerns with driving along Kennedy Road?

How would you improve the pedestrian and cycling environment?

Next Steps

- Review feedback on Study Area issues and Design Concepts, please provide your feedback by **February 3, 2022**
- Refine and Evaluate the Alternative Design Concepts
- Select and Develop Preferred Design
- Present the Preliminary Preferred Design at SAC Meeting 2 (~May 2022)
- Present the Preliminary Preferred Design at Public Open House 2

York Region

We are happy to answer your questions

For more information, visit us at:
www.york.ca/WardenKennedyStudy

During the Studies, please connect with the Study Team by sending us an email to
Jennifer.Vandermeer@rjburnside.com

York Region

Sylvia Waters

From: Deanna De Forest
Sent: Wednesday, February 16, 2022 10:31 AM
To: [redacted]
Jennifer Vandermeer; Chiu, Edward; Lee, Jessica; Alemi- Baygy, Tanin; Sylvia Waters
Subject: York Region, Warden Avenue and Kennedy Road Environmental Assessment Studies - Stakeholder Advisory Committee (SAC) Meeting No. 1

Good morning [redacted]
On behalf of the study team, thank you for your comments and insight into these studies, and your interest in the cycling facilities in the corridors.

The current Environmental Assessment Studies for Warden Avenue and Kennedy Road will review how best to provide the improvements, while balancing impacts to the residents and communities in the surrounding area, as well as to the environment. The review to provide better cycling and pedestrian facilities will be part of the scope and the recommended plan will be provided later on during this study.

As for Kennedy Road south of Major Mackenzie Drive, the Region had recently completed the Environment Assessment Study for Kennedy Road from Steeles Avenue to Major Mackenzie Drive, and the recommended plan is to provide a designated, off-road active transportation facility along the Kennedy Road. For more information, please visit Kennedy Road EA. The final type of active transportation facility will be determined once the section of Kennedy Road is included in the Region's 10-year road and transit capital construction program, in consultation with the City of Markham.

We look forward to your continued participation on the Stakeholder Advisory Committee as the studies progress.

Regards,

Deanna De Forest

Deanna De Forest, B.Sc., E.P.
Senior Environmental Coordinator
R.J. Burnside & Associates Limited | www.rjburnside.com
Office: +1 800-265-9662 Direct: +1 705-797-4357

From: [redacted]
Sent: Friday, January 28, 2022 7:22 PM
To: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Subject: Re: York Warden Avenue and Kennedy Road Environmental Assessment Studies - Stakeholder Advisory Committee (SAC) Meeting No. 1 - Presentation Slides

Hello Jennifer

This is indeed a fascinating view of the opportunities and challenges of urban development.
One disadvantage I have felt as a resident of the Angus Glen community is the absence of cycle paths/lanes along Kenndy and onwards through Hwy 7.
In non pandemic times I would cycle down Kennedy to get to the Centennial GO station. But an already congested road would always have me cycle with abundant precaution.
With the former " York Downs &Country Golf Club" now giving palace to a large housing development, the traffic intensity on this road is bound to increase leaving cyclists vulnerable to the intensity of flow.

Are there plans to factor in cycle lanes on Kennedy in the assessment studies?

Thank you

[redacted]

On Fri, 28 Jan 2022 at 10:09, Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com> wrote:

> Good morning,
>
> Thank-you kindly for your participation at the first Stakeholder Advisor Committee (SAC) meeting yesterday evening. We certainly welcomed the dialogue and feedback provided by the SAC members.
>
> For those who were not able to make the meeting, we do apologize that some of you received the invitation late and we will ensure ample notice time for the next meeting, which is tentatively schedule for some time in May 2022. As promised, please find attached a copy of the presentation given at the meeting for your information. We will be preparing meeting minutes and will aim to circulate those next week to all SAC members.
>
> Kindly provide any additional feedback on the information shared at last evening's meeting by **Thursday February 3, 2022**. Your feedback will help us in our preparation for the upcoming virtual Public Open House (POH) #1, for which information is currently scheduled for posting to the City's website during the week of February 21, 2022. As you are all on our Project Contact List, you will receive an email with the Notice of POH#1, and when you do, we invite you to visit the website to review that information when it's posted.
>
> If you have any questions or comments about the Warden Avenue and Kennedy Road Environmental Assessment (EA) studies, please do not hesitate to email myself or Ed Chiu.
>
> Thank-you again and we look forward to receiving any additional comments you may have over the next week.
>
> Best regards,
>
> Jennifer

BURNSIDE

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Unit 20, Guelph, ON N1H 1C4
Office: 800-265-9662 Direct: 226-486-1559
www.rjburnside.com

Sylvia Waters

From: Chiu, Edward <Edward.Chiu@york.ca>
Sent: Monday, April 11, 2022 2:05 PM
To: Jennifer Vandermeer; Deanna De Forest
Cc: Ray Bacquie; Lee, Jessica; Alemi- Baygy, Tanin
Subject: FW: Future Widening and Location of Utilities in Warden/Kennedy (Maj Mac to Elgin Mills) EAs

For your information and filing.

Edward Chiu, P.Eng. (he/him), Sr. Project Manager, Capital Planning & Delivery, Transportation Services
---
The Regional Municipality of York | 17250 Yonge Street | Newmarket, ON L3Y 6Z1
1-877-464-9675 ext. 75908 | edward.chiu@york.ca| york.ca

Our Mission: **Working together to serve our thriving communities – today and tomorrow**

From: Transportation <transportation@york.ca>
Sent: Wednesday, April 6, 2022 4:36 PM
To: [redacted]
Cc: Cheah, Loy <LCheah@markham.ca>; 'Councillor, Reid McAlpine - Markham' <RMcAlpine@markham.ca>; Don Hamilton <dhamilton@markham.ca>
Subject: RE: Future Widening and Location of Utilities in Warden/Kennedy (Maj Mac to Elgin Mills) EAs

Good afternoon [redacted]

This email is a follow-up to your inquiry regarding the Warden Avenue and Kennedy Road, from Major Mackenzie Drive to Elgin Mills Road, Class Environmental Assessment Study, in the City of Markham.

All three concepts in the Environmental Assessment (EA) Study will accommodate the future 6 lanes widening with the third lane as transit/HOV lane. Some concepts would be easier to convert in the future and some would require additional works and adjustments. The flexibility to accommodate future widening will be included in the evaluation to balance the current and future needs to determine the recommended width of the cross section. The location of the proposed utilities will be reviewed and evaluated to best balance the current and future needs of the corridor.

Active Transportation (AT) facilities are 3.0m as the desired minimum width and 2.4m as the absolute minimum width in constrained locations following the Planning and Design Guidelines for York Region Pedestrian and Cycling Facilities as well as Ontario Traffic Manual Book 18. For Warden Avenue and Kennedy Road, AT facilities will be recommended based on a context sensitive approach to balance the needs within the corridor such as utilities, streetscaping, and low impact development features.

Should you have any further questions or concerns, please do not hesitate to contact us.

Sincerely,

Ahmed B. | Customer Relations Coordinator
Strategic Initiatives and Programs, Transportation Services

The Regional Municipality of York | 50 High Tech Road | Richmond Hill, ON L4B 4N7
O: 1-877-464-9675 ext. 72848 | transportation@york.ca | www.york.ca
Our Mission: **Working together to serve our thriving communities – today and tomorrow**

Please consider the environment before printing this email.

From: Transportation <transportation@york.ca>
Sent: Tuesday, March 22, 2022 12:58 PM
[redacted]
Cc: Cheah, Loy <LCheah@markham.ca>; 'Councillor, Reid McAlpine - Markham' <RMcAlpine@markham.ca>; Don Hamilton <dhamilton@markham.ca>
Subject: RE: Future Widening and Location of Utilities in Warden/Kennedy (Maj Mac to Elgin Mills) EAs

Good afternoon [redacted]

Thank you for your email regarding the Warden Avenue and Kennedy Road from Major Mackenzie Drive to Elgin Mills Road Environmental Assessment Study, in the City of Markham.

Your concerns have been forwarded to the appropriate York Region staff for review, and you will receive a response once the review has been completed. For your reference, case number 3125066 has been created.

Should you have any further questions or concerns, please do not hesitate to contact us.

Sincerely,

Denise D. | Customer Relations Coordinator
Strategic Initiatives and Programs, Transportation Services

The Regional Municipality of York | 50 High Tech Road | Richmond Hill, ON L4B 4N7
O: 1-877-464-9675 ext. 75369 | transportation@york.ca | www.york.ca
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From: [redacted]
Sent: Sunday, March 20, 2022 3:43 PM
To: Chiu, Edward <Edward.Chiu@york.ca>
Cc: Loy Cheah <lcheah@markham.ca>; Reid McAlpine <rmcalpine@markham.ca>; Don Hamilton <dhamilton@markham.ca>
Subject: Future Widening and Location of Utilities in Warden/Kennedy (Maj Mac to Elgin Mills) EAs

As you know, I attended the first stakeholder advisory committee meeting (January 27, 2022) on these EAs, so I am reasonably familiar with them and the preferred design alternative for each. In summary, it is to "widen corridor to 4 lanes and construct to an urban cross section". The design concepts all have a ROW width of 41 meters (consistent with draft Regional Official Plan). A MUP is proposed on each side with minimum width of 3.5 m and hopefully 4.0 m.

A good question was asked at the CPAC meeting last week that I couldn't answer well. It was "What if, in the future, it is necessary to add two HOV/Transit lanes, giving a total of 6 lanes + AT facility? After all, this is part of the Future Urban Area"

I recognize that the 2022 draft Transportation Master Plan doesn't even plan for future widening of Warden or Kennedy to 6 lanes between 16th Ave and Major Mac, let alone from Maj Mac to Elgin Mills. But nevertheless, who can predict the future? It seems prudent tp design this stretch so that future widening could be done cost-effectively, if needed. So I have 3 questions:

- Is the proposed ROW width of 41 m sufficient to accommodate 6 lanes + AT? [I believe the answer is "yes"]
- Is the proposed locations of the utilities consistent with such a widening? [based on the diagrams in the EA, I believe the answer is "no"]
- Do you have any other comments on this matter?

Best regards,

[redacted]

Sylvia Waters

From: [redacted]
Sent: Tuesday, May 24, 2022 5:37 PM
To: Deanna De Forest
Cc: Lee, Jessica; Jennifer Vandermeer; Gordon Hui; Sylvia Waters; Chiu, Edward; Li, Vince
Subject: Re: 052314-Warden - Kennedy EA Minutes January 27, 2022

Deanna...thank you but I am still confused. Road salt is very soluble in water. So how can "the filtration of pollutants, such as salt" (to use your words) occur?? Filtration is the process of separating solids from liquids. The salt will be in the liquid phase.

The minutes indicate that a followup meeting to discuss the details of the LIDs was offered. I would like to take you up on this offer. I am a big supporter of LID facilities, but it is important to understand their limitations and not over-sell them.

Looking fwd to your response.

[redacted]

On Wednesday, May 18, 2022, 02:00:46 p.m. EDT, Deanna De Forest <deanna.deforest@rjburnside.com> wrote:

Hello [redacted]

Thank you for your comments. Your comments will become part of the public record for the projects.
Road salt does dissolve in water and can be transported along with stormwater. The implementation of LID facilities is intended to contribute to an improvement over existing conditions where salt runoff currently infiltrates unabated through roadside ditches in the study area.

The filtration of pollutants, such as salt, is considered in the evaluation of LID facilities for Warden Avenue and Kennedy Road, including those facilities with sufficient separation between the infiltration surface (absorption media) and the groundwater level. The performance (or ability) to minimize salt into the groundwater will be one of the key factors to determinate the LID facility.

Regards,

Deanna

Deanna De Forest
Senior Environmental Coordinator

R.J. Burnside & Associates | www.rjburnside.com
Office: +1 800-265-9662 Direct: +1 705-797-4357

From: [redacted]
Sent: Thursday, April 07, 2022 1:05 PM
To: Chiu, Edward <edward.chiu@york.ca>; Alemi- Baygy, Tanin <tanin.alemi-baygy@york.ca>; Lee, Jessica <jessica.lee@york.ca>; Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Gordon Hui <Gordon.Hui@rjburnside.com>; Deanna De Forest <Deanna.DeForest@rjburnside.com>; Sylvia Waters <Sylvia.Waters@rjburnside.com>
Subject: Re: 052314-Warden - Kennedy EA Minutes January 27, 2022

Thank you for these minutes. I would like a clarification on one item. One page 5 in the italicized portion, it states *"During winter months when salt is being applied to the road it is intended most of the salt applied to the road and subsequently washed into the LID will settle in the sump portion of the catch basins prior to draining towards the LID features"* I thought road salt was very soluble in water. So how can it settle in the catch basin sump? I know that dirt particles will settle, but won't the salt just solubilize and not be retained?

[redacted]

Sylvia Waters

From: Jennifer Vandermeer
Sent: Monday, July 25, 2022 11:59 AM
To: Chiu, Edward; Lee, Jessica; Li, Vince; HT Lam; Ray Bacquie
Cc: Deanna De Forest; Harold Faulkner; Sylvia Waters
Subject: York Warden Avenue and Kennedy Road EA Studies - Stakeholder Advisory Committee Meeting
Attachments: 220609_Minutes SAC_LID Meeting.pdf

Good afternoon,
Please find attached a copy of the minutes from the June 9, 2022 Stakeholder Advisory Committee topic specific meeting where we discussed Low Impact Development (LID) Options for the two studies.
Should you have any questions or comments on the minutes, please let us know.
Best regards,
Jennifer

BURNSIDE

Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

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R.J. Burnside & Associates Limited 6990 Creditview Road, Unit 2 Mississauga ON L5N 8R9 CANADA
telephone (905) 821-1800 **fax** (519) 941-8120 **web** www.rjburnside.com

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Minutes of Meeting

Meeting Date:	June 9, 2022	**Project No.:**	300052314.0000
Project Name:	Warden Ave. and Kennedy Rd. ES Studies between Major Mackenzie Dr. and Elgin Mills Rd.		
Meeting Subject:	Stakeholder Advisory Committee Topic-Specific Meeting: Low Impact Development (LID) Options		
Meeting Location:	Microsoft Teams		
Date Prepared:	June 21, 2022		

Those in attendance were:

Edward Chiu (EC)	York Region (Region)	Edward.Chiu@york.ca
Jessica Lee (JL)	Region	Jessica.Lee@york.ca
Vince Li (VL)	Region	Vince.Li@york.ca
Jennifer Vandermeer (JV)	R.J. Burnside & Associates Limited (Burnside)	Jennifer.Vandermeer@rjburnside.com
H.T. Lam (HL)	Burnside	HT.Lam@rjburnside.com
Ray Bacquie (RB)	Burnside	Ray.Bacquie@rjburnside.com
Ahmad Ishtiaq (AI)	Burnside	Ahmad.Ishtiaq@rjburnside.com
Six Stakeholder Advisory Committee (SAC) Members		

The following items were discussed		**Action by**
1.	**Introductions**	
1.1	Project Team introduced themselves and the role for the benefit of the six Stakeholder Advisory Committee (SAC) members in attendance.	
2.	**Presentation**	
2.1	JV and HL provided a presentation to the SAC on what LIDs do, the scope of LIDs in project phases, overview of LID options being	

The following items were discussed		Action by
	considered for the two road corridors, evaluation criteria and next steps.	
3.	**Question & Answer / Discussion Period**	
3.1	SAC Member 1 asked if the LID facilities would mitigate impacts from road salt and other solubles (e.g., nitrates).	
3.1.1	HT noted that this question would be posed to the conservation authorities and municipalities that are currently testing these technologies. Given the location of these studies, Burnside will specifically contact TRCA to get their opinion on which of the LID options considered removes the most pollutants especially salt. HT also noted that current grassed boulevards offer limited filtration performance.	Burnside
3.2	SAC Member 1 noted that the SAC#1 meeting minutes implied that LIDs would help with salt management but felt that this wasn't the case.	
3.2.1	JV noted that the intent of the SAC#1 meeting minutes was not to imply that LIDs would address the existing challenges of salt migration into groundwater. HT reiterated that the primary function of LIDs is for volumetric control for water runoff and flood abatement.	
3.3	SAC Member 2 asked if the volumetric control requirements are just for Regional road runoff or does it also have to include the runoff from local municipal roads.	
3.3.1	JV noted that runoff from the Regional road right-of-way is to be managed by the Region. This runoff is predominantly the paved road surface but to a lesser degree includes and other paved surface in the right-of-way such as the active transportation facilities (e.g., multi-use path).	
3.4	SAC Member 2 asked to clarify the proposed number of vehicle lanes for Warden Avenue and Kennedy Road in the Study Areas. As a follow up question, SAC Member 2 asked if there any consideration for only two lanes at this point given the concerns for salt impacts. The ultimate concern is that while the Region may be doing its due diligence to mitigate impacts to the environment, these	

The following items were discussed	Action by
positive steps may not be enough to offset the cumulative environmental impacts from the extensive low-rise developments in the expanded urban boundary.	
3.4.1 JV clarified that the intent is to have four lanes, two travel lanes in each direction. EC noted that the Region cannot continue with two lanes on these roads, the two additional travel lanes are required to accommodate the traffic due to the approved development growth in the area. EC noted that if the Region didn't need to widen the road, the Region wouldn't need to consider LID treatment. EC noted that each development will have to follow the same conservation authority requirements as the Region to provide appropriate LID treatment and storm water management. The intent is to ensure that post-development conditions in the area are the same as pre-development conditions. EC noted that the Region is working with the adjacent developers to look for opportunities to direct water runoff from the Regional ROW to the proposed stormwater management ponds within the developments for additional treatment prior to release to local watercourses.	
3.5 SAC Member 3 (local developer) noted their understanding was that the LIDs were intended to receive water runoff primarily from the boulevard while the stormwater management system would manage runoff from the road surfaces. It was suggested that the Region try to limit the spray from road surfaces into the LIDs. From development experience, high salt content in soil is considered contaminated and must be disposed as a hazardous waste. It was suggested that silt management is also a concern for LIDs.	
3.5.1 EC asked if SAC Member 3 was aware of any approach that could be done to limit salt spray into LIDs. SAC Member 3 wasn't aware of any approach in this regard as LIDs for developments are set back from sources of road salt.	
3.6 SAC Member 3 noted that the Canadian Tire store at Leslie Street and Sheppard Avenue has used a permeable pavement product (similar to the pervious concrete illustrated on the presentation slide) for their parking lot. The product has been in place for several	

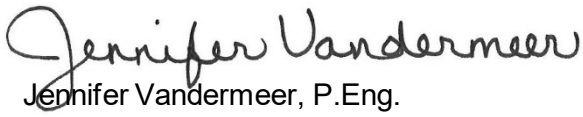
	The following items were discussed	Action by
	years, so it seems quite tolerant to heavier loads. It was suggested that the technology may have been improved over the years. EC indicated that the interlocking permeable pavers may not be ideal for application on the proposed active transportation facilities for these two road corridors, rather permeable concrete or asphalt would be more appropriate for walking and cycling from a drivability perspective. JV acknowledged.	
3.6.1	EC asked that Burnside include the permeable concrete / asphalt type product in the assessment of the LID facility costs. AI noted that he has specified this product for another project (Caledon) and so this information can be integrated into the cost estimates for this project.	Burnside
3.7	SAC Member 1 asked if the study team was aware of the maintenance frequency for the LIDs.	
3.7.1	HT noted that the monitoring data from LID pilot projects is still coming in. Currently, we don't have specific data on the maintenance frequency of the LIDs. EC mentioned that the Region worked with a firm from Minnesota (EOR) when they were working on the EA for the Kennedy and McCowan road improvements (Steeles to Major Mackenzie). The information shared with the Region on these projects could be leveraged for the Warden and Kennedy EAs and EOR would be a good resource.	
3.8	SAC Member 2 asked if the 2022 TMP would include the policy for applying LIDs to road widening projects.	
3.8.1	EC noted that he wasn't aware of this policy being included in the 2022 TMP; however, this policy is being applied through the Ministry of Environment, Conservation and Parks and the conservation authority.	
3.8.2	SAC Member 2 suggested that this policy should be included in the 2022 TMP as the TMP is the central document for outlining the Region's approach to all transportation related works. EC will follow up with the 2022 TMP team.	Region
3.9	SAC Member 3 suggested that the study team might want to prioritize the bioretention LID options over others for these corridors	

	The following items were discussed	Action by
	to address salt impacts. These options will allow for retention of water near the surface, provide some evaporation action, retain the salt near the surface and prevent infiltration further into the LID facility. Also suggested that Region consider a range of LID options to find the optimal LID technology given the variable conditions of corridors.	
3.10	SAC Member 3 suggested that permeable asphalt can be problematic due our winter weather conditions, e.g., freeze / thaw. Water collected within the permeable asphalt can freeze and expand and cause damage to the ground surface which can impact the life cycle of the permeable asphalt. SAC Member 3 suggested that there is a paving product that absorbs water to a certain saturation point within the product itself for a certain retention time and then the water is discharged into the ground. *Post-Meeting Note: Hydro Pavers is a product that matches this description.* https://hydropavers.ca/ SAC Member 3 also cautioned when considering the use of permeable asphalt due to impact from salt, silt and other chemical loading.	
3.11	SAC Member 3 suggested that Region reaches out to developers as they have been looking at the implementation of LIDs for some time now and would have a lot to offer in terms of advice for certain LID treatments.	
3.12	SAC Member 4 (developer consultant) supported idea of Region reaching out to developers. The engineers that are working on behalf of the developers in the FUA (SCS, WSP and Sabourin Kimble) would be a great resource for information on what LIDs would work best for the area, building on the lessons they have learned over the years working in this area. SAC Member 4 suggested that a separate technical meeting could be set will the developer engineers and offered to provide contact information to the study team if desired.	
3.12.1	JV suggested that the idea of a technical meeting with the developer engineers was good. Burnside will take this idea back to the consultant study team for further consideration and reach out to SAC Member 4 for contact information if that is the decided approach.	Burnside

The preceding are the minutes of the meeting as observed by the undersigned. Should there be a need for revision, please advise Burnside within seven days of issuance. In the absence of notification to the contrary, these minutes will be deemed to be an accurate record of the meeting.

Minutes prepared by:

R.J. Burnside & Associates Limited



Jennifer Vandermeer, P.Eng.
Project Manager
JV:js

Enclosure(s) Presentation

Distribution:

All Attendees

Deanna DeForest	Burnside	Via: Email
Harold Faulkner	Burnside	Via: Email

GREAT | STREETS
Building Roads that Build Community 2022

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDIES

Warden Avenue and Kennedy Road from Major Mackenzie Drive to Elgin Mills Road

SAC Meeting - Low Impact Development (LID)

June 9, 2022

York Region

GREAT | STREETS
Building Roads that Build Community 2022

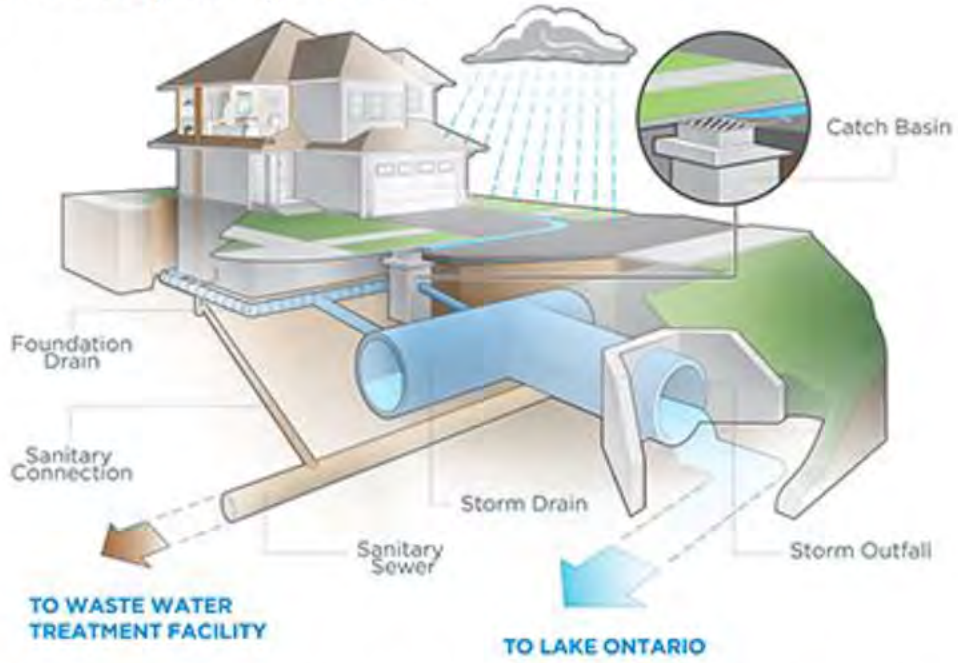
Agenda

- What LIDs do
- Scope of LID in project phases
- LID Background Review
- LID Options
- LID Options Evaluation Criteria
- Next steps
- Q&A / discussion

York Region

"What LIDs do"

- Capture, Mitigate and Support standard municipal systems
- Hold and gradually release water to infiltrate into ground and/or to municipal systems



Standard municipal infrastructure (source: City of Mississauga)

Rain Garden (Source: TRCA)

King St, Kitchener (source: Aquafor Beech)

Elm Drive (source: CVC)

Scope of LID During Project Phases

Environmental Assessment

- Evaluation of LID options
- Selection of preferred LID option
- Development of LID design concept

Detailed Design

- Costing of selected LID
- LID Design

Monitoring

- Monitor progress of LID post-construction

We are currently at the **Environmental Assessment** phase and the costing and design of the selected LID will be prepared in the upcoming Detailed Design stage.

Low Impact Development (LID) Review

Relevant stormwater management design criteria documents referenced as part of the storm drainage and LID review include the following documents:

- North Markham Future Urban Areas Subwatershed Study, City of Markham, Amec Foster Wheeler Environment and Infrastructure – FUA SWS, 2019
- York Region Road Design Guidelines
- York Region Transportation Services, December 2020
- TRCA Stormwater Management Criteria, Toronto and Region Conservation Authority, August 2012
- Stormwater Management Planning and Design Manual, Ontario Ministry of Environment, March 2003
- Low Impact Development Stormwater Management Planning and Design Guide, Credit Valley Conservation & Toronto and Region Conservation Authority, 2010

Low Impact Development (LID) Options

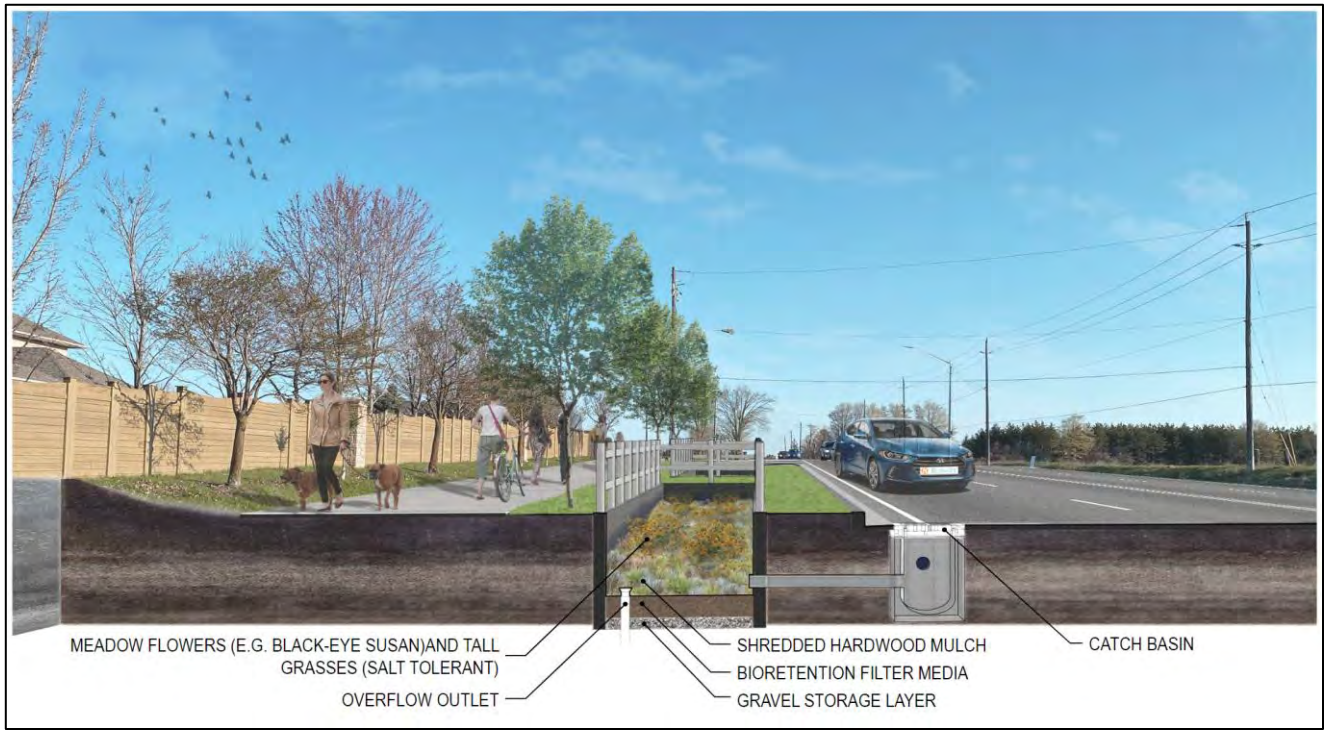
LID uses building methods to store, filter and infiltrate surface water into the ground. LID measures are necessary to consider for all road widening projects to address increased impervious (does not allow water to pass through) surfaces and improve sustainable and climate adaptive solutions. Some example designs that are feasible for road improvement projects and are being considered for Warden Avenue and Kennedy Road include:

1. Box Trench Design
2. Vegetated/Bio Swale Design
3. Bioretention and Rain Garden Design
4. Infiltration trenches and soak-aways
5. Underground storage tanks
6. Permeable pavement

Elm Drive LID retrofit, CVC

1. Box Trench Design

- Linear design to hold, filter and infiltrate surface water through below ground perforated pipe system.
- Box Trench LID have vertical sidewalls and are often narrow, maximizing stormwater retention within small footprint with a Hickenbottom to manage volumes.
- Ideal for tight areas such as road right-of-ways.
- Pavement runoff may be collected through catch basin inlets along sides of roadway and redirected into units.
- Boxes planted with wet, pollution and salt tolerant plant species supported by the TRCA.



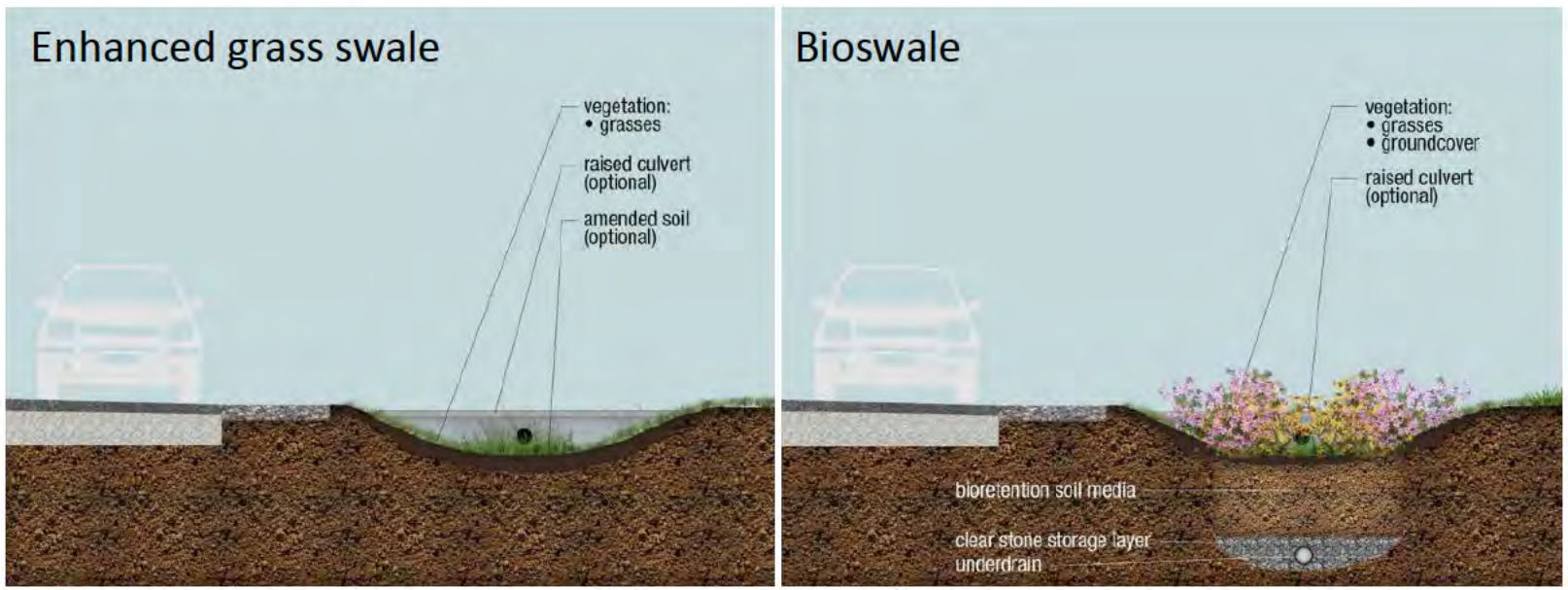
Hickenbottom structure

Source: Drainage Solutions Inc.

2. Vegetated/Bioswale Design

- A linear or meander application of water collection and conveyance from paved surfaces to larger bioretention and rain gardens.
- Effectiveness of this design depends on the size of the rain event and flow rates.
- This design will capture lower rates and flow volumes, allowing surface water to filter through plant material and absorption media before infiltrating into the local subgrades.
- The meander width shall be dependent on the anticipated rain events, where spatial requirements will be larger.

Enhanced grass swales, CVC



Source: CVC

Sylvia Waters

From: Chiu, Edward <Edward.Chiu@york.ca>
Sent: Wednesday, November 02, 2022 9:37 AM
To: [redacted]
Cc: Mishaal Rizwan; Doug Willoughby; Lee, Jessica; Nurani, Kadin; Ray Bacquie; Deanna De Forest; Harold Faulkner; Jennifer Vandermeer
Subject: RE: York Warden Avenue and Kennedy Road EA Studies - Stakeholder Advisory Committee Meeting 3

Good morning [redacted]

Please feel free to invite Doug to our meeting. We look forward to discuss in greater details.

Our working hours may be different. Please don't feel obliged to respond outside of your scheduled working hours.

Edward Chiu, P.Eng. (he/him), Sr. Project Manager, Capital Planning & Delivery, Transportation Operations, Public Works
---
The Regional Municipality of York | 17250 Yonge Street | Newmarket, ON L3Y 6Z1
1-877-464-9675 ext. 75908 | edward.chiu@york.ca | york.ca

Our Mission: **Working together to serve our thriving communities – today and tomorrow**

From: [redacted]
Sent: Tuesday, November 1, 2022 2:37 PM
To: Chiu, Edward <Edward.Chiu@york.ca>; Lee, Jessica <Jessica.Lee@york.ca>; Nurani, Kadin <Kadin.Nurani@york.ca>; Ray Bacquie <ray.bacquie@rjburnside.com>; Deanna De Forest <deanna.deforest@rjburnside.com>; Harold Faulkner <harold.faulkner@rjburnside.com>; Jennifer Vandermeer <jennifer.vandermeer@rjburnside.com>
Cc: Mishaal Rizwan <mishaal.rizwan@rjburnside.com>; [redacted]
Subject: Re: York Warden Avenue and Kennedy Road EA Studies - Stakeholder Advisory Committee Meeting 3

Jennifer...thanks for the invite. I look forward to the meeting. Would it be possible to add another item to the agenda, entitled **"Provision of on-road bike lane in addition to MUP"?**

I have been engaged in a dialogue with a Markham resident named [redacted]. [redacted] is a representative of the long-distance, higher-speed cycling community. These "strong and fearless" cyclists (to use an old categorization framework by the City of Portland) are comfortable riding in mixed traffic. In fact, they do not prefer on-boulevard or other protected facilities. All they ask is a 1.5 meter paved surface at the edge of the travel lanes delineated with a painted line.

Warden and Kennedy north of Major Mac are popular routes with these cyclists. On weekends, one sees dozens of these cyclists on these roads. The Warden/Kennedy EA is an excellent opportunity to air out how we can address their needs.

I have pasted [redacted] email to me below in *italics*, and cc'd him on this note. I have also invited him to the meeting, which I presume is OK.

Talk next week.

[redacted]

NOTE FROM [redacted]

[redacted]

During our conversation on October 23, 2022, I was shocked to learn that provision of on-street bike lanes is currently not being contemplated for Region of York and City of Markham roadway reconstruction projects. On-street bike lanes are required in addition to off-road cycling and pedestrian facilities. This major oversight must be corrected during the planning stages to ensure that on-street bike lanes are provided on all Region and City roadway reconstruction projects.

Omission of bike lanes is inconsistent with Markham's stated policy on cycling:

https://www.markham.ca/wps/portal/home/neighbourhood-services/walking-and-cycling/cycling/02-cycling

"Cycling is a great way to get around the City. There are many benefits for people to choose cycling - it creates a greener environment, promotes a healthy lifestyle, reduces traffic volume on roads, and provides opportunities for social interaction. City of Markham supports cycling by building and maintaining bike lanes, multi-use trails, bike repair stations, bike parking facilities and more."

There are excellent references for planning cycling infrastructure. The Toronto Complete Streets Guidelines provides guidance for on-street bikeway design and multi-use trail design.

https://www.toronto.ca/wp-content/uploads/2017/11/90c8-Chapter-5.pdf

The introductory paragraph provides a succinct overview of the justification for provision of cycling infrastructure.

"Cycling infrastructure provides choice in how people are able to move around the city. Cyclists are vulnerable road users and can be seriously injured in even minor collisions, so prioritizing the safety of cyclists by designing safe streets for cycling is critical. Streets that feel unsafe for cycling may also discourage people from choosing to ride. For many people, cycling close to fast moving motor vehicles is uncomfortable, but well-designed streets and cycling facilities can reduce conflicts for all road users and enhance real and perceived safety. It is critical to consider safe and comfortable cycling on all Toronto streets as part of the street design process. This includes mitigating exposure to potential conflict between cyclists and motor vehicles. Toronto's On-Street Bikeway Design Guidelines and Multi-Use Trail Design Guidelines provide detailed design guidance and should be used in the design of cycling facilities. When trips are shifted from driving to cycling, motor vehicle volumes decrease, which in turn reduces traffic congestion, as well as air and noise pollution. Streets with cycling infrastructure also have the potential to move more people, at a lower cost, and with improved public health outcomes."

In the absence of similar guidelines and specific requirements from City of Markham and York Region, the Toronto Complete Streets Guidelines should be forthwith implemented in all City and Region roadway reconstruction projects.

I understand that you are providing input on cycling infrastructure for roadway reconstruction projects. Please forward these requirements to the appropriate City of Markham and Region of York parties for implementation of on-street bike lanes for all roadway construction and reconstruction projects.

Regards,

[redacted]

On Friday, October 28, 2022 at 10:13:02 a.m. EDT, Jennifer Vandermeer <jennifer.vandermeer@rjburnside.com> wrote:

Good morning,

Further to Sylvia's email, please accept this invitation to the third Stakeholder Advisory Committee (SAC) meeting for the York Region Warden Avenue and Kennedy Road EA Studies.

Our second SAC meeting was held on June 9, 2022 – focusing on the Low Impact Development component of the study.

The proposed agenda for this meeting is attached and there will be a presentation provided by the study team.

The meeting will be held through Microsoft Teams, see link below. For those who need it, a call-in number is provided.

Should you have any questions, please feel free to contact me.

Best regards,

Jennifer

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Passcode: sU4JzE

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3. Enter your name and choose your audio and video settings. If the meeting room (or another device that's connected to the meeting) is nearby, choose **Audio off** to avoid disrupting. Select **Phone audio** if you want to listen to the meeting on your mobile phone.
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Sylvia Waters

From: Jennifer Vandermeer
Sent: Friday, October 28, 2022 4:59 PM
To: Robert Webb; Chiu, Edward; Lee, Jessica; Nurani, Kadin; Ray Bacquie; Deanna De Forest; Harold Faulkner
Cc: Mishaal Rizwan; Sylvia Waters
Subject: RE: York Warden Avenue and Kennedy Road EA Studies - Stakeholder Advisory Committee Meeting 3

Hi Bob,
I'm sorry to hear you are no longer available on November 10. No worries. Please forward the meeting invite to a few folks at SCS to attend on your behalf. We will make sure that you receive a copy of the meeting minutes as well as the presentation after the meeting so you can be apprised of the information in a timely manner.
Best regards,
Jennifer

BURNSIDE
Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

R.J. Burnside & Associates Limited
292 Speedvale Avenue West, Unit 20, Guelph, ON N1H 1C4
Office: 800-265-9662 Direct: 226-486-1559
www.rjburnside.com

From: Robert Webb <rwebb@webbco.ca>
Sent: Friday, October 28, 2022 12:58 PM
To: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Chiu, Edward <Edward.Chiu@york.ca>; Lee, Jessica <Jessica.Lee@york.ca>; Nurani, Kadin <Kadin.Nurani@york.ca>; Ray Bacquie <Ray.Bacquie@rjburnside.com>; Deanna De Forest <Deanna.DeForest@rjburnside.com>; Harold Faulkner <Harold.Faulkner@rjburnside.com>
Cc: Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>
Subject: Re: York Warden Avenue and Kennedy Road EA Studies - Stakeholder Advisory Committee Meeting 3

Hello Jennifer,

Thank you for the Agenda. Unfortunately, I am not longer available on the 10th. My apologies. If you wish, I would be happy to review the slides beforehand and comment. If allowed, one or two from SCS, who are designing the development on the west side of Warden and the streets which connect to Warden, may attend. May I forward the invitation to them?

Once again, my apologies re November 10.

Bob

Robert Webb

WEBB + CO LIMITED
647-407-1967
rwebb@webbco.ca

From: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Date: Friday, October 28, 2022 at 10:13 AM
To: Chiu, Edward <Edward.Chiu@york.ca>, Lee, Jessica <Jessica.Lee@york.ca>, Nurani, Kadin <Kadin.Nurani@york.ca>, Ray Bacquie <Ray.Bacquie@rjburnside.com>, Deanna De Forest <Deanna.DeForest@rjburnside.com>, Harold Faulkner <Harold.Faulkner@rjburnside.com>
Cc: Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>
Subject: York Warden Avenue and Kennedy Road EA Studies - Stakeholder Advisory Committee Meeting 3

Good morning,

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The meeting will be held through Microsoft Teams, see link below. For those who need it, a call-in number is provided.

Should you have any questions, please feel free to contact me.

Best regards,
Jennifer

Microsoft Teams meeting

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- Some features of Teams meetings aren't available to guests.

Sylvia Waters

From: Jennifer Vandermeer
Sent: Tuesday, October 18, 2022 4:10 PM
To: Robert Webb
Cc: Sylvia Waters; Deanna De Forest; Chiu, Edward; Lee, Jessica
Subject: RE: 052314-Warden Avenue and Kennedy Road EA Stakeholder Advisory Committee (SAC) November 10, 2022 from 6:00 P.M. to 8:00 P.M.

Hi Bob,
Thanks for letting me know about the bounce back from Sylvia's email address. I can confirm that you are on our attendance list for SAC#2, thank-you for your RSVP.
Best regards,
Jennifer

BURNSIDE
Jennifer Vandermeer, P.Eng.
Senior Environmental Coordinator

Pronouns: (She/Her/Hers)

R.J. Burnside & Associates Limited
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Office: 800-265-9662 Direct: 226-486-1559
www.rjburnside.com

From: Robert Webb <rwebb@webbco.ca>
Sent: Tuesday, October 18, 2022 3:56 PM
To: Sylvia Waters <Sylvia.Waters@rjburnside.com>; Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>
Subject: FW: 052314-Warden Avenue and Kennedy Road EA Stakeholder Advisory Committee (SAC) November 10, 2022 from 6:00 P.M. to 8:00 P.M.

Hello Sylvia and Jennifer,

My reply all bounced back from Sylvia. Jennifer, please make sure Sylvia knows that I will attend.

Thanks,

Bob

Robert Webb

WEBB + CO LIMITED
647-407-1967
rwebb@webbco.ca

From: Robert Webb <rwebb@webbco.ca>
Date: Tuesday, October 18, 2022 at 3:49 PM
To: Sylvia Waters <Sylvia.Waters@rjburnside.com>
Cc: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>, Deanna De Forest <Deanna.DeForest@rjburnside.com>, Chiu, Edward <Edward.Chiu@york.ca>, Lee, Jessica <Jessica.Lee@york.ca>
Subject: Re: 052314-Warden Avenue and Kennedy Road EA Stakeholder Advisory Committee (SAC) November 10, 2022 from 6:00 P.M. to 8:00 P.M.

Thank you Sylvia,

I will attend.

Bob

Robert Webb

WEBB + CO LIMITED
647-407-1967
rwebb@webbco.ca

From: Sylvia Waters <Sylvia.Waters@rjburnside.com>
Date: Tuesday, October 18, 2022 at 3:03 PM
To:
Cc: Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>, Deanna De Forest <Deanna.DeForest@rjburnside.com>, Chiu, Edward <Edward.Chiu@york.ca>, Lee, Jessica <Jessica.Lee@york.ca>
Subject: 052314-Warden Avenue and Kennedy Road EA Stakeholder Advisory Committee (SAC) November 10, 2022 from 6:00 P.M. to 8:00 P.M.

Hello,

The Regional Municipality of York (Region) is completing Schedule C Municipal Class Environmental Assessment (EA) Studies for improvements to Warden Avenue and Kennedy Road between Major Mackenzie Drive and Elgin Mills Road, in the City of Markham.

Thank you for your interest in participating in the Stakeholder Advisory Committee (SAC) for the EA studies.

The second SAC meeting is planned for **November 10, 2022 from 6:00 P.M. to 8:00 P.M.** to discuss the evaluation of design concepts and the recommended design concept for the Warden Avenue and Kennedy Road study corridors.

The meeting will be held in a virtual environment.

Based on your feedback, we will confirm the meeting date and time for this second SAC meeting and send an invitation and agenda in early November by email to SAC participants.

Should you have any questions, or if you are unable to attend, please contact:

Jennifer Vandermeer
Project Manager
R.J. Burnside & Associates Limited
jennifer.vandermeer@rjburnside.com

Regards,
Sylvia Waters on behalf of the Warden Avenue and Kennedy Road EA Study Team

R.J. Burnside & Associates Limited 6990 Creditview Road, Unit 2 Mississauga ON L5N 8R9 CANADA
telephone (905) 821-1800 **fax** (519) 941-8120 **web** www.rjburnside.com

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Minutes of Meeting

Meeting Date:	November 10, 2022	**Project No.:**	300052314.0000
Project Name:	Warden Ave. and Kennedy Rd. ES Studies between Major Mackenzie Dr. and Elgin Mills Rd.		
Meeting Subject:	Stakeholder Advisory Committee #3		
Meeting Location:	Microsoft Teams		
Date Prepared:	November 21, 2022		

Those in attendance were:

Edward Chiu (EC)	York Region (Region)	Edward.Chiu@york.ca
Jessica Lee (JL)	Region	Jessica.Lee@york.ca
Kadin Nurani (KN)	Region	Kadin.Nurani@york.ca
Jennifer Vandermeer (JV)	R.J. Burnside & Associates Limited (Burnside)	Jennifer.Vandermeer@rjburnside.com
Deanna De Forest (DDF)	Burnside	Deanna.DeForest@rjburnside.com
Harold Faulkner	Burnside	Harold.Faulkner@rjburnside.com
Ray Bacquie (RB)	Burnside	Ray.Bacquie@rjburnside.com
Mishaal Rizwan (MR)	Burnside	Mishaal.Rizwan@rjburnside.com
Five Stakeholder Advisory Committee (SAC) Members		
Jeff King (JK)	WSP	Jeff.King@wsg.com
Krista Boyce (KB)	Sabourin Kimble & Associates Ltd.	kboyce@skaengineering.com
Jill Stark (JS)	SCS Consulting Group Ltd.	jstark@scsconsultinggroup.com

The following items were discussed		**Action by**
1.	**Introductions**	
1.1	Project Team introduced themselves and the role for the benefit of the Stakeholder Advisory Committee (SAC) members in attendance and the representatives from development engineering teams.	

The following items were discussed		Action by
2.	**Presentation**	
2.1	DDF and JV provided a presentation to the material for the Online Open House #2 content which included: an overview of SAC #1 and #2 feedback and how this feedback was addressed, evaluation criteria and evaluation of alternative design concepts, alternative LID design concepts, and the preferred design concept.	
3.	**Question & Answer / Discussion Period**	
3.1	SAC Member 1 asked if the Region's policy to include LIDs on all road improvement projects was identified within the 2022 TMP. EC has provided information to the Transportation Master Plan (TMP) staff on this suggestion and find out if this was incorporated into the approved 2022 TMP. SAC Member 1 referenced the detailed designs on Kennedy Road and McCowan Road south of Highway 7 noting that LID didn't seem to be a factor in these areas. EC clarified that LID has become a new requirement for the Ministry of the Environment, Conservation and Parks and Conservation Authority and noted that LID has now been included in the design of Kennedy Road and McCowan Road in these areas; however, Kennedy Road is much narrower and has less LID opportunity than McCowan Road. SAC Member 1 commented on behalf of a community member who could not attend on adding an additional 1 m separation between drivers on road in addition to the 1.5 m sidewalk and 1.5 m cycle track. EC confirmed that at this time additional paved surface is not being considered as this would take away space required for boulevard planting and LID. Underground utilities also require space. The Region is looking to provide facilities that suit most of the general public. SAC Member 1 to communicate with the absent community member that the Region is welcome to discuss this decision through a separate conversation, but this request will not be accommodated for this project. SAC Member 1 asked what the designed and posted speed will be. EC confirmed it will be designed based on 60 km/hr for both Kennedy Road and Warden Avenue.	Region
3.2	SAC Member 1 asked if a refuge island approach has been considered for intersections (quoting York Region's Pedestrian and Cycling Planning and Design Guidelines, and Markham Active	Region

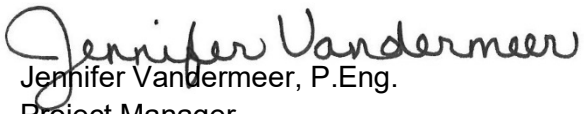
	The following items were discussed	Action by
	Transportation Master Plan page 110-114). EC will confirm with Region's Active Transportation team and update the SAC separately. EC believes that refuge islands are typically only added to major intersections. SAC Member 1 has not seen any in the Region.	
3.3	SAC Member 2 works with a developer on the east side of Kennedy Road and asked the project team to look at ways of shortening the EA process so that development can proceed faster to respond to the need for more housing. EC confirmed the team is working to accelerate the timeline.	
3.4	SAC Member 3 echoes urgency noting that drainage and underground infrastructure are currently being constructed along Warden Avenue and Kennedy Road. SAC Member 3 asked if there are any concerns about the current development and how improvements will help the communities that will live along these corridors. EC explained that the team is working with developers to accelerate the process where possible. Due to inflation and material shortage in recent years, construction prices have increased significantly. In addition, with the introduction of Bill 23 which reduce development charges on housing developments, the Region is not certain how this will impact the deliveries of road widening projects as the funding for road widening projects rely heavily on development charges. These concerns are being reviewed by Management currently to determine how (and which) projects will be delivered in the next few years. SAC Member 3 relayed concerns about Bill 23 and asked how it will impact this project. SAC Member 3 noted that the proposed developments in the Future Urban Area are low density similar to the developments south of the study areas and is concerned about this impact. SAC Member 3 asked why these roads are being widened when we should be encouraging active transportation and offsetting the impact of the low-density development. SAC Member 3 expressed concerns about the road design applied south of Major Mackenzie Drive such as at York Downs, which is not pedestrian-friendly and would like this situation to be avoided. EC responded that the planning team works with developers to make other modes of travel such as public transit more attractive. EC explained that improving facilities for active transportation users has	

	The following items were discussed	Action by
	been a consideration for this project and this is why the lanes and medians for this project are narrower. Designs reflect the time that those decisions were made, some corridors (such as south of Major Mackenzie on Kennedy Drive) were more focused on moving vehicles previously and the Region is now working towards focusing on moving people. SAC Member 3 has cycled south of Major Mackenzie Drive on Kennedy Road and does not find it a friendly environment for pedestrians. The project should consider how users can travel down Kennedy Road. EC agreed and stated that Kennedy Road from Steeles Avenue to Major Mackenzie Drive does not include any cycling facilities within the corridor at the time of construction. The Region is now looking at opportunities to connect missing links to the cycling routes in York Region.	
3.5	SAC Member 4 provided an update that the 2022 TMP has been approved and asked if this will be updated across project documents. EC explained that the Study Team will review the recommendations from the approved 2022 TMP. If the 2022 TMP requires traffic analysis to be updated the project will require additional time to complete. As long as the general concepts such as the number of lanes is consistent, the traffic analysis would not be updated but rather a note would be added to the EA documentation to acknowledge the study is consistent with the recommendations on the approved 2022 TMP.	
3.6	SAC member 4 also noted that the York Region OP was approved by the Province last Friday. This recommends a 41 m ROW for Kennedy Road and Warden Avenue. EC noted that the study team can change the documentation to show the future ROW for both roads as 41 m.	Burnside
3.7	SAC Member 1 noted interest in reviewing the decision-making process for the preferred LID option. JV provided further details about the comparison of the LID alternatives. EC echoed that this evaluation is a high-level summary. Burnside will send the full detailed evaluation matrices to the SAC members following this meeting. EC noted that all agency comments are incorporated into the evaluation of LID options. EC noted that at detailed design, the project team will include more geotechnical investigations that will help support the final designs for the LID features in the road corridors.	Burnside

The preceding are the minutes of the meeting as observed by the undersigned. Should there be a need for revision, please advise Burnside within seven days of issuance. In the absence of notification to the contrary, these minutes will be deemed to be an accurate record of the meeting.

Minutes prepared by:

R.J. Burnside & Associates Limited



Jennifer Vandermeer, P.Eng.
Project Manager
JV:js

Distribution:

All Attendees