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

Online Open House #1 February 24, 2022

York Region

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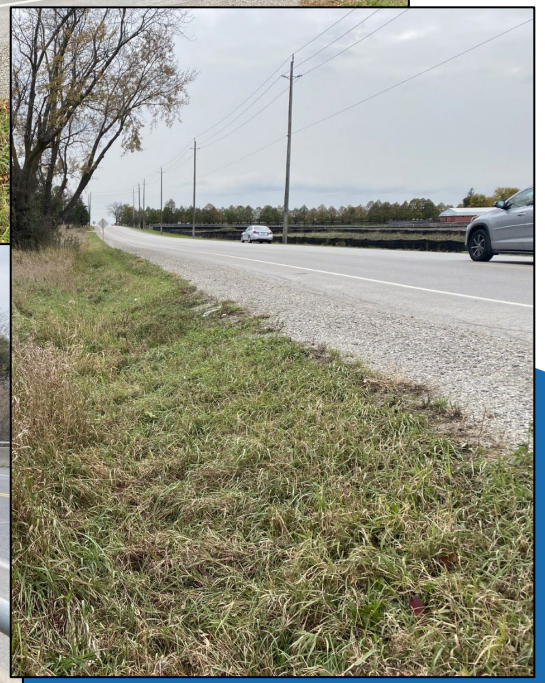
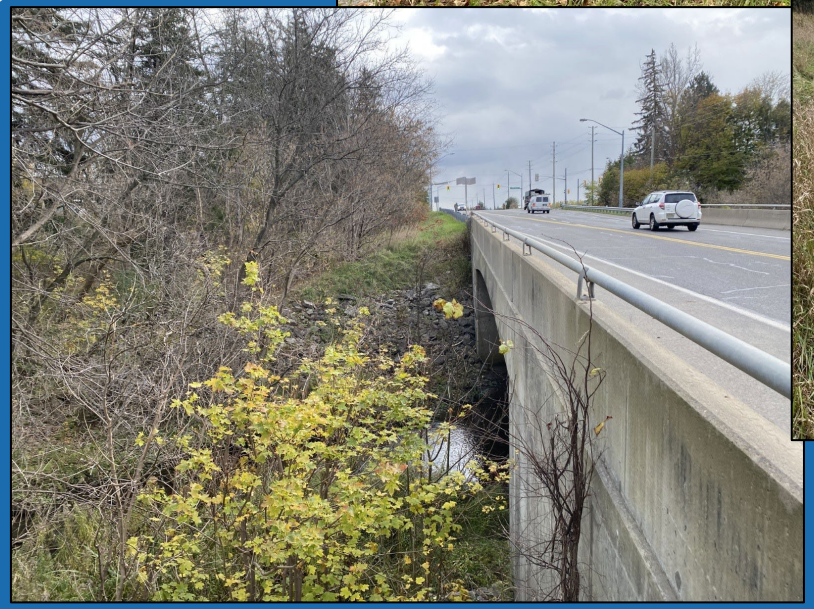
Online open house #1 overview

- 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 road and active transportation improvements and to lessen environmental impacts

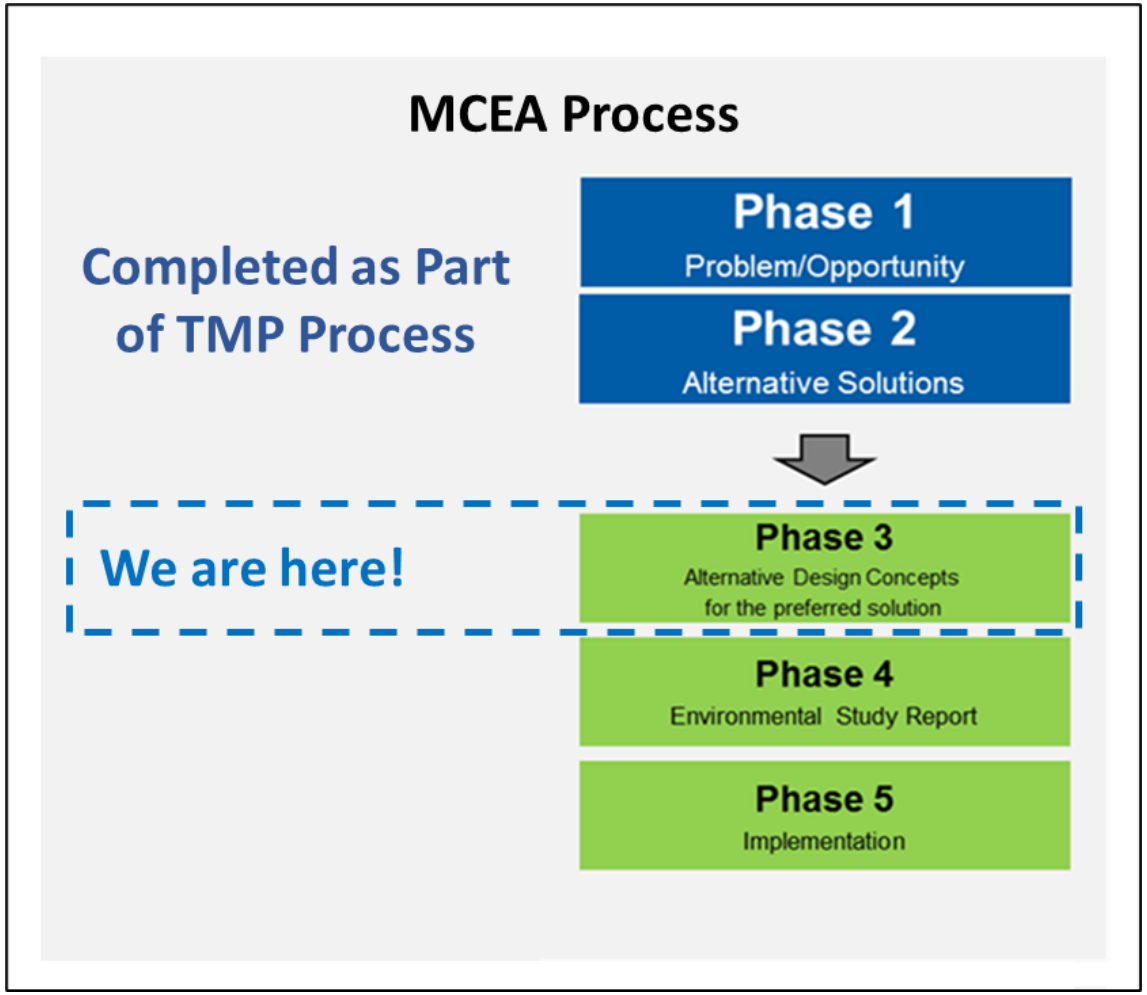
Municipal Class Environmental Assessment Process

Approved 2016 TMP

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

Current studies

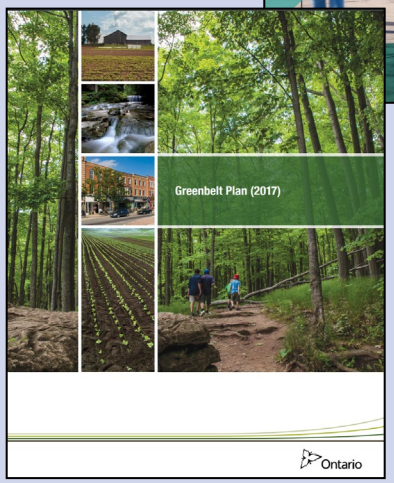
- Identify and evaluate Alternative Design Concepts for Preferred Solutions (Phase 3)
- Complete Environment Study Report (Phase 4)



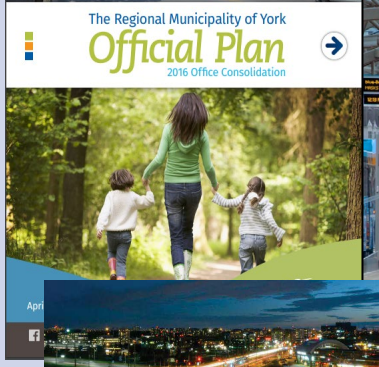
Planning policy context

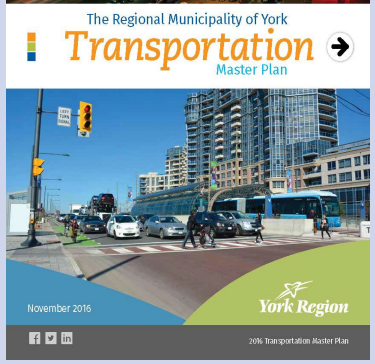
The following key planning documents set the framework for these studies:

Provincial Policy

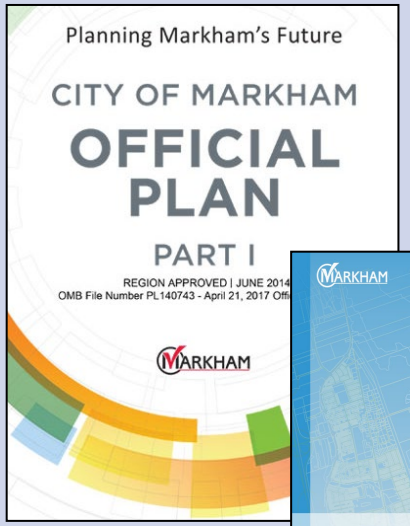


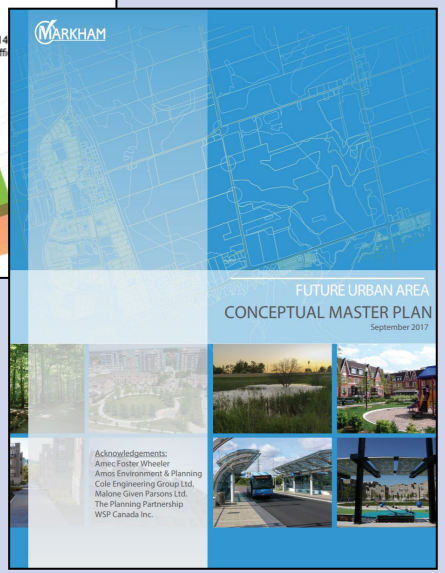
Regional Policy





Municipal Policy





The York Region of tomorrow

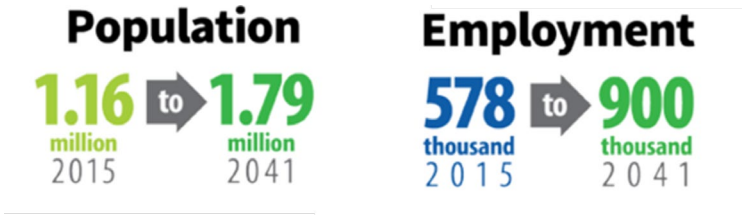
Historical growth

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

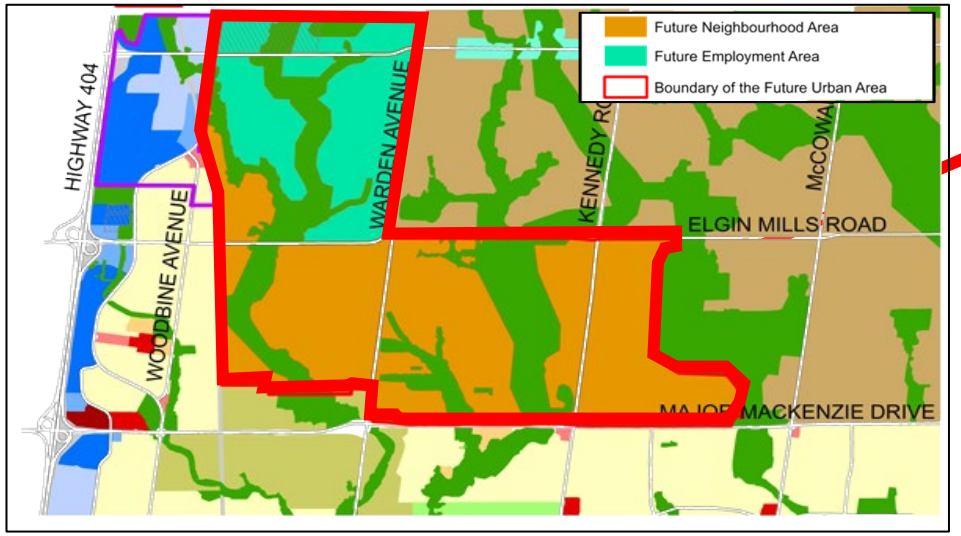


Improvements to the Warden Avenue and Kennedy Road corridors will be necessary to support the growth in the community.

Existing land use and future development

The study areas are mostly undeveloped agricultural lands with some commercial and residential properties.

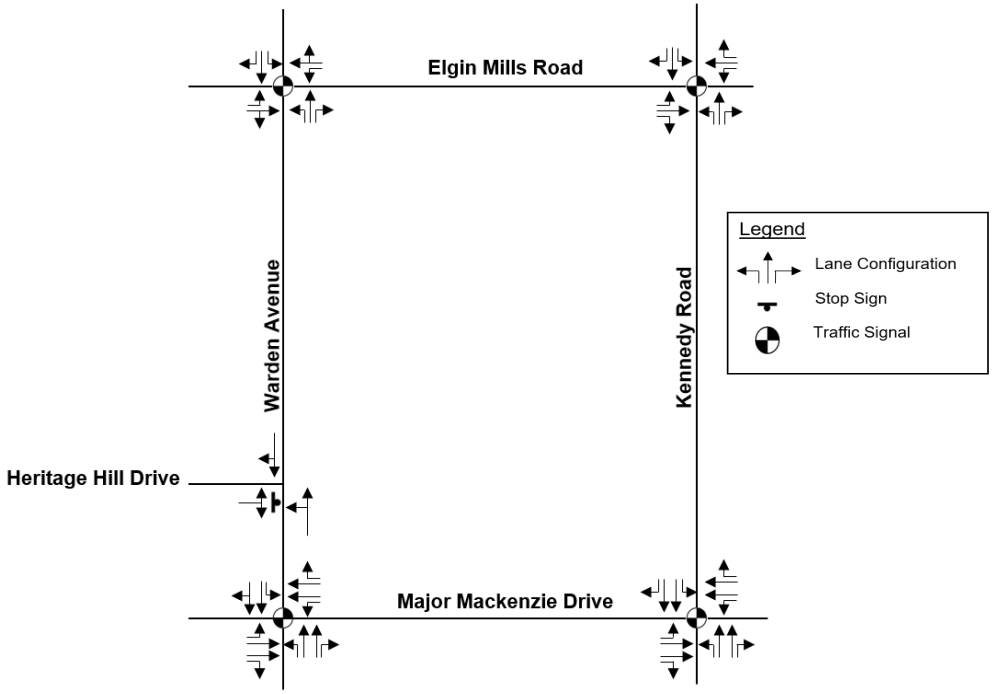
- Located within the City of Markham Future Urban Area (FUA)
- Development blocks proposed west and east of both Warden Avenue and Kennedy Road



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

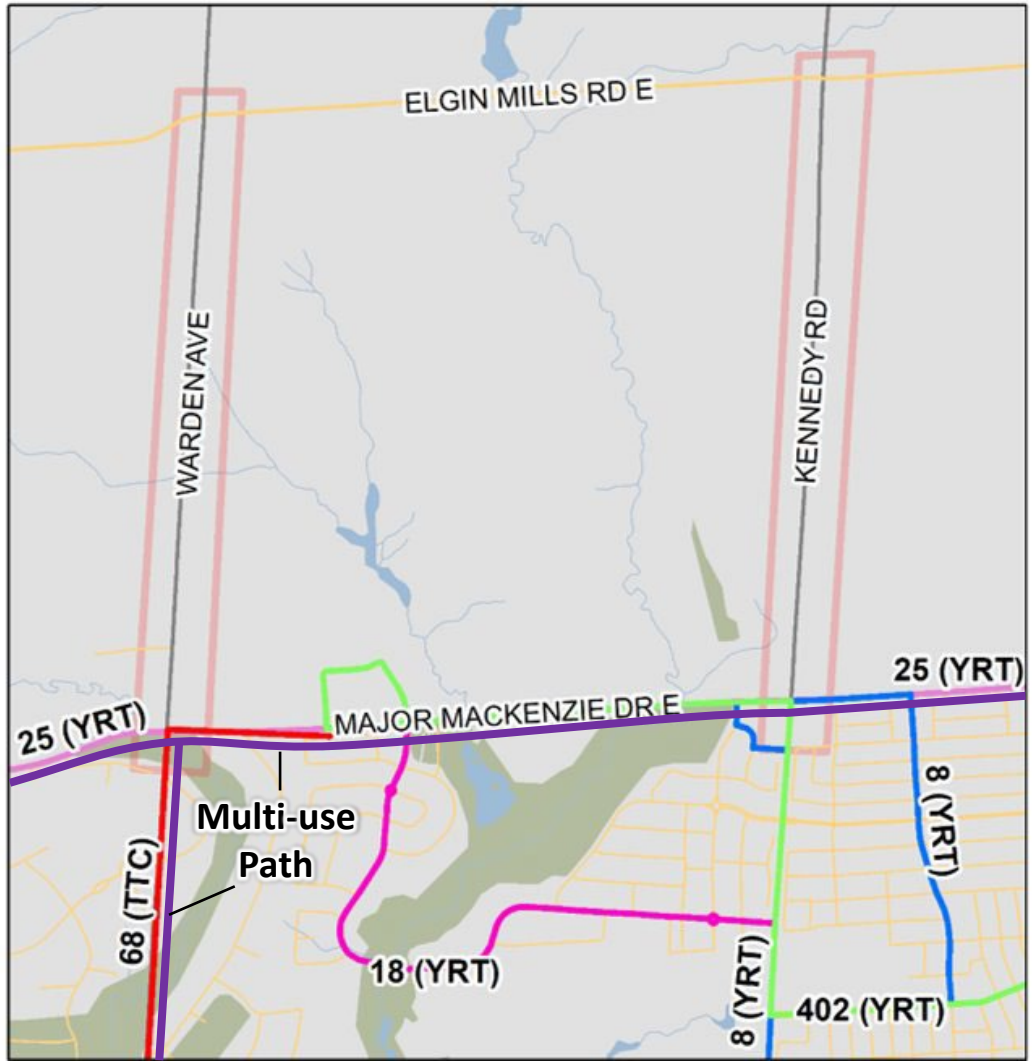
Name (Approximate Length)	Jurisdiction	Classification	Number of Through Lanes in Each Direction	Posted Speed Limit
Kennedy Road (2.0 km)	York Region	Regional Arterial Road	1	60 - 80 km/h
Warden Avenue (2.1 km)	York Region	Regional Arterial Road	1	60 - 80 km/h

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/h
Elgin Mills Road East (2.0 km)	City of Markham	City Arterial Road	1	60 km/h

Existing transit and active transportation network

- Paved shoulders along Warden Avenue and Kennedy Road are 1.0 m to 3.0 m wide
- 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 operate south of Major Mackenzie Drive East



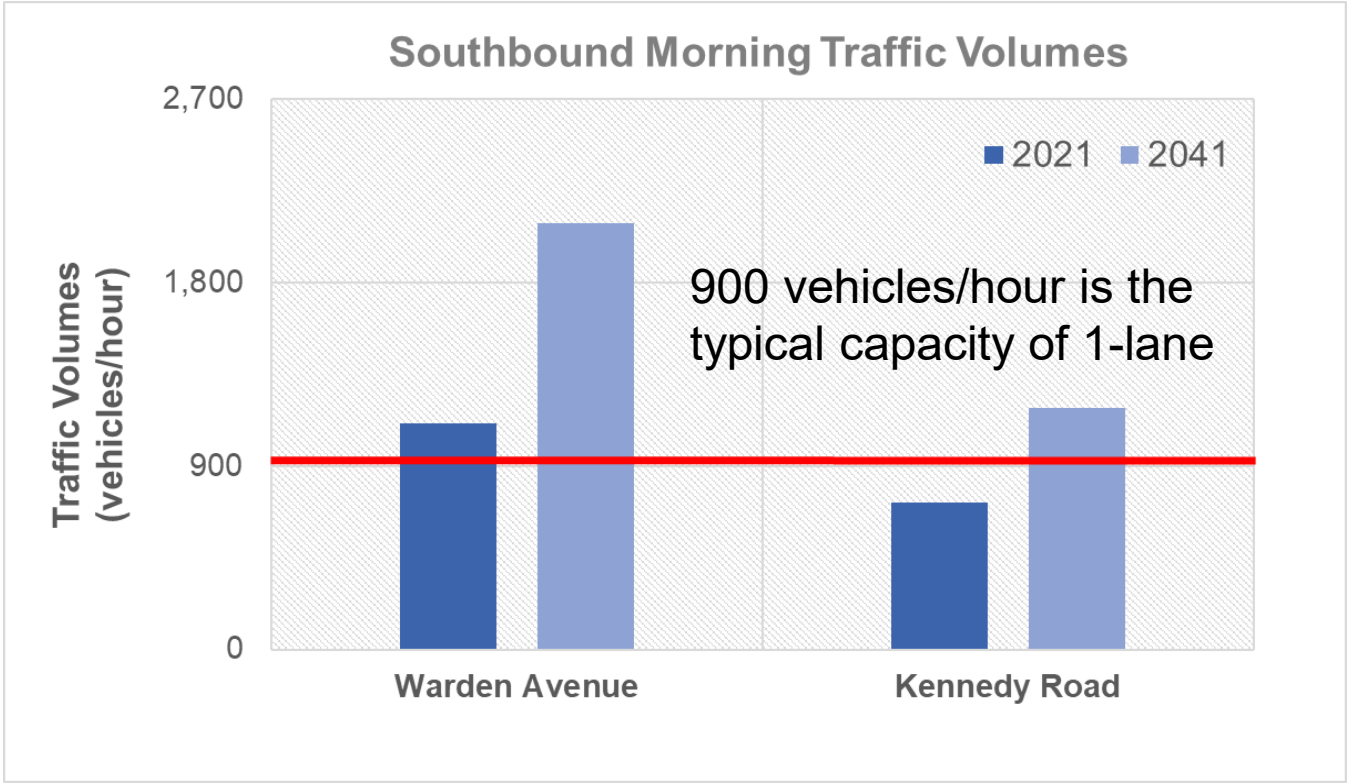
TTC, YRT Bus Routes, and multi-use paths near the study areas

Existing and future traffic volumes (A.M. 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

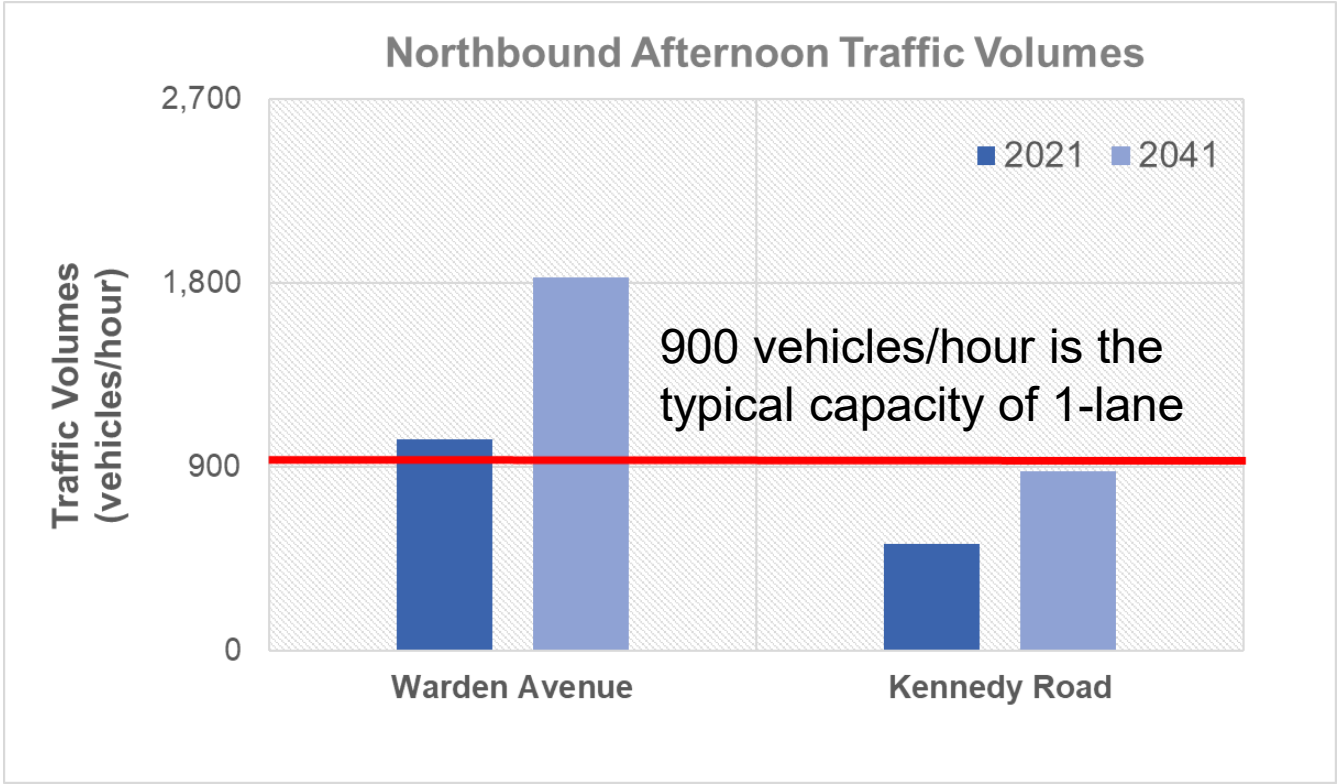


Existing and future traffic volumes (P.M. northbound direction)

Existing and future road traffic capacity constraints were identified

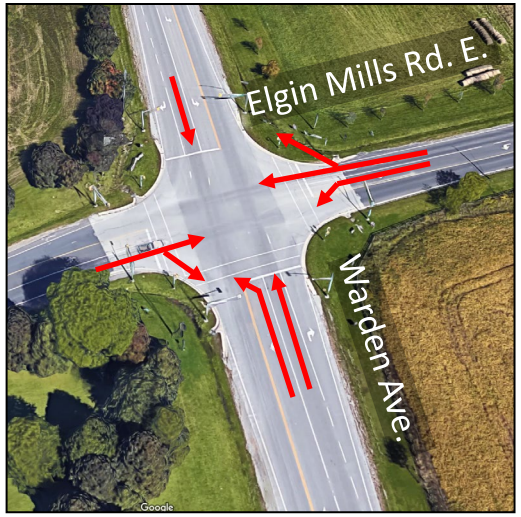
2021- Northbound afternoon traffic volumes along Warden Avenue experience delay

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 will approach road capacity by 2041

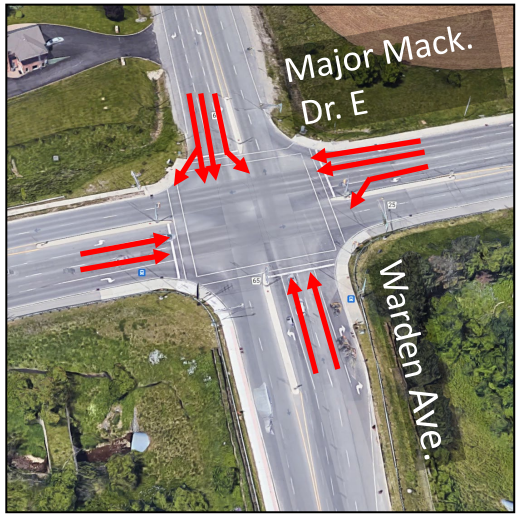


Existing road network with future traffic demand

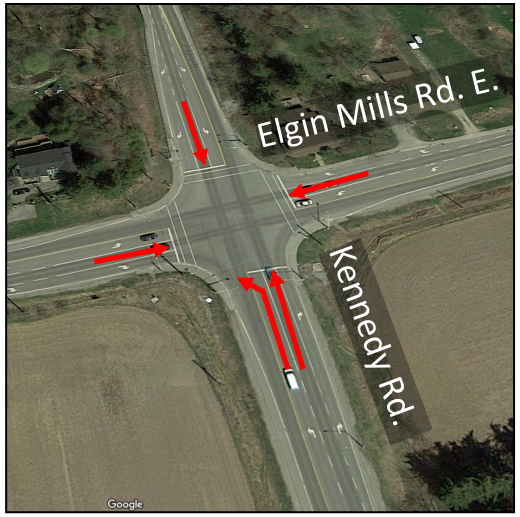
Delays at intersections are predicted to worsen if no road improvements are undertaken.



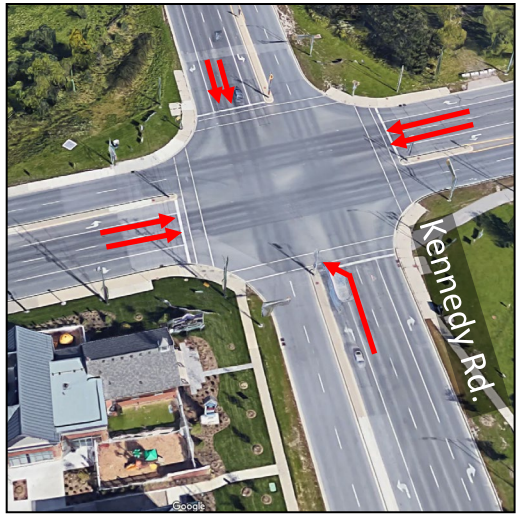
Warden Ave. and Elgin Mills Rd. E.



Warden Ave. and Major Mackenzie Dr. E.



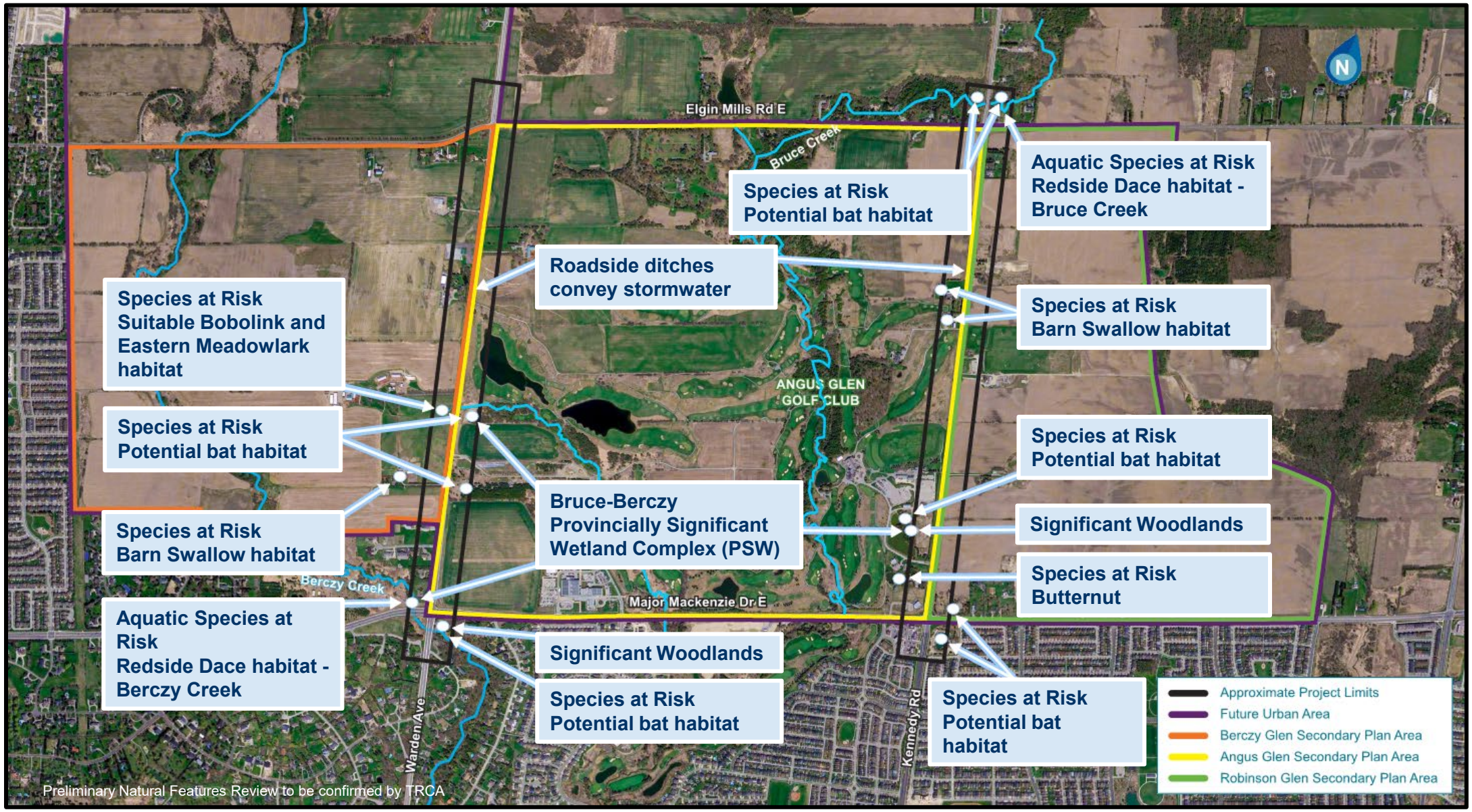
Kennedy Rd. and Elgin Mills Rd. E.



Kennedy Rd. and Major Mackenzie Dr. E.

Arrows indicate the anticipated intersection movements that will experience significant delays by 2041 if no road 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 19th 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

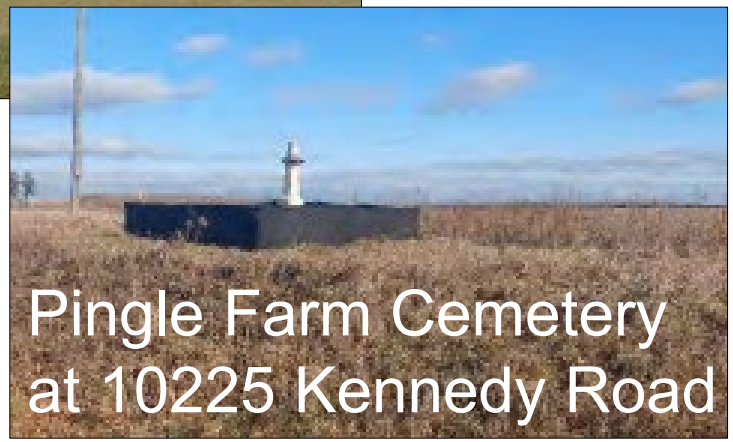


Image Source: Cultural Heritage Report, ASI

Existing hydrogeological environment

- Groundwater in the study areas is contained within an upper, middle and lower aquifer below the ground's surface
- Depth to groundwater ranges from 1 m to 9 m below ground's 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)

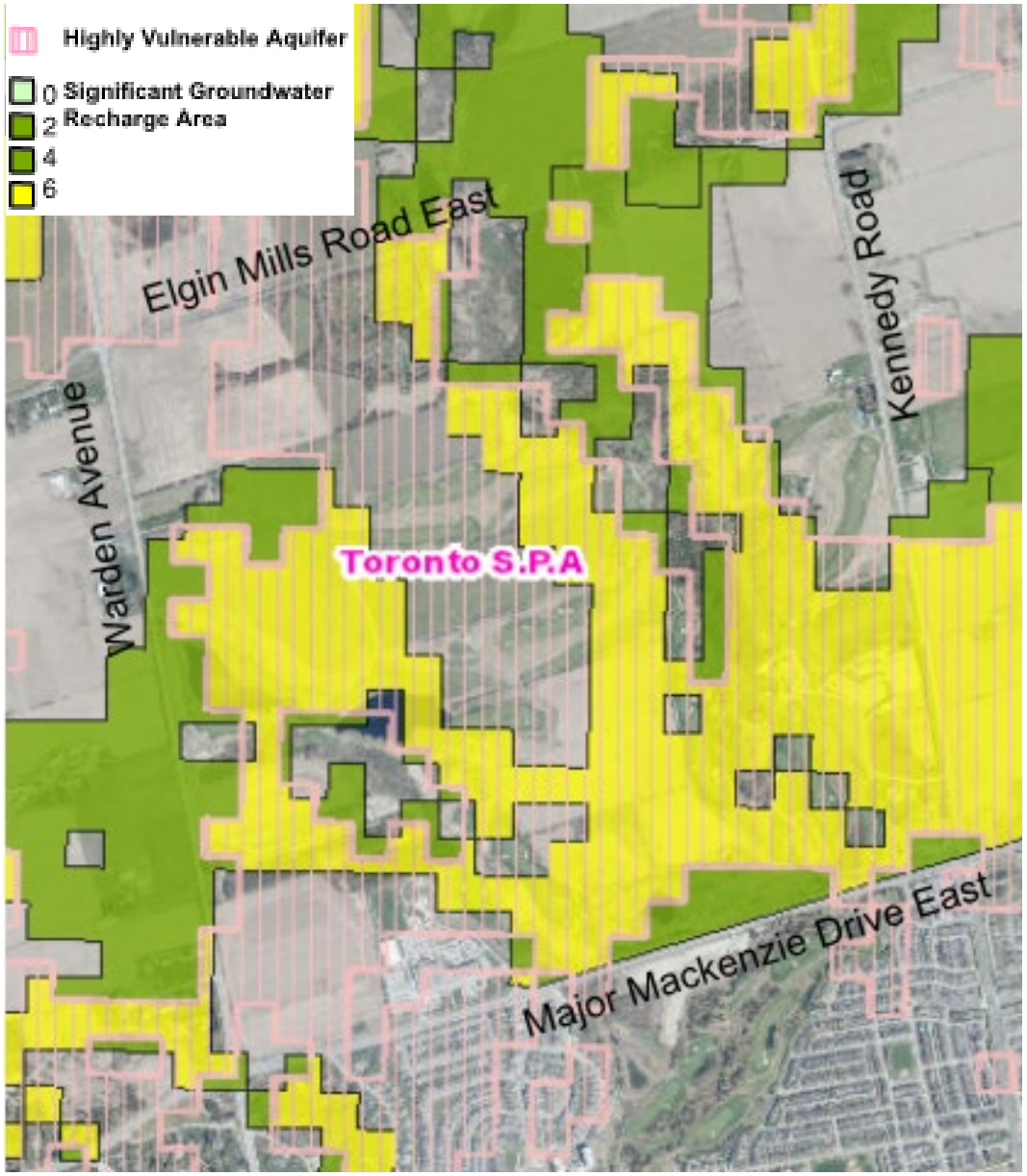
The study areas fall within an SGRA with vulnerability scores 4 (medium) and 6 (high).

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



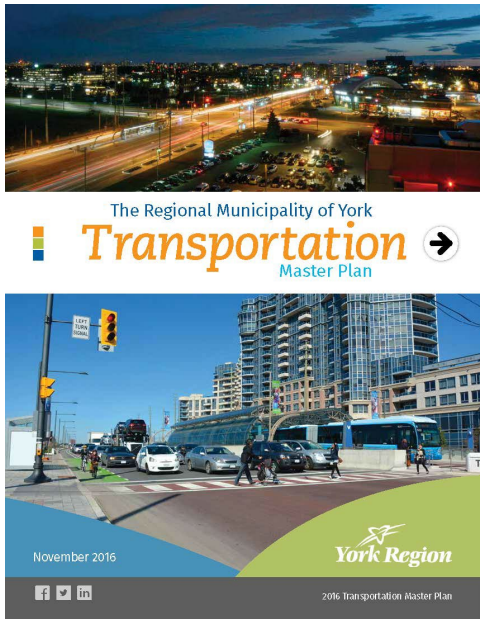
Source: Source Protection Information Atlas, MECP

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 for Warden Avenue (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 the widening of 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 also provides an opportunity to improve walking, cycling and transit facilities. (*includes curb and gutter, active transportation, streetscaping, transit)

Summary of Alternative Solutions for Kennedy Road (2016 TMP)

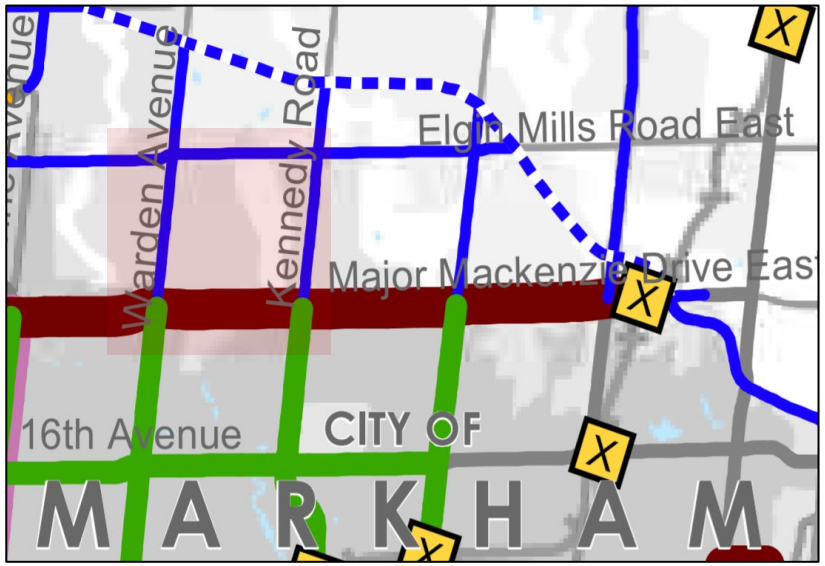
	Alternative Solution	Evaluation
1	Do Nothing	Did not address the problem or opportunity statement
2	Optimize existing facility with intersection improvements only	Provided minor improvements to traffic flow; did not address overall traffic congestion
3	Urbanize corridor but maintain 2-lane cross-section	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 also provides an opportunity to improve walking, cycling and transit facilities. (*includes curb and gutter, active transportation, streetscaping, transit)

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

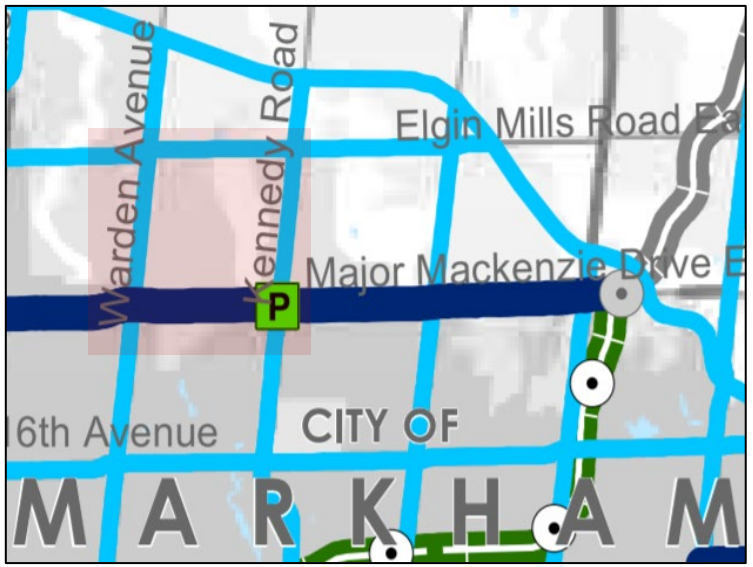
Lane improvement



Proposed Future 4 Lane Widening

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

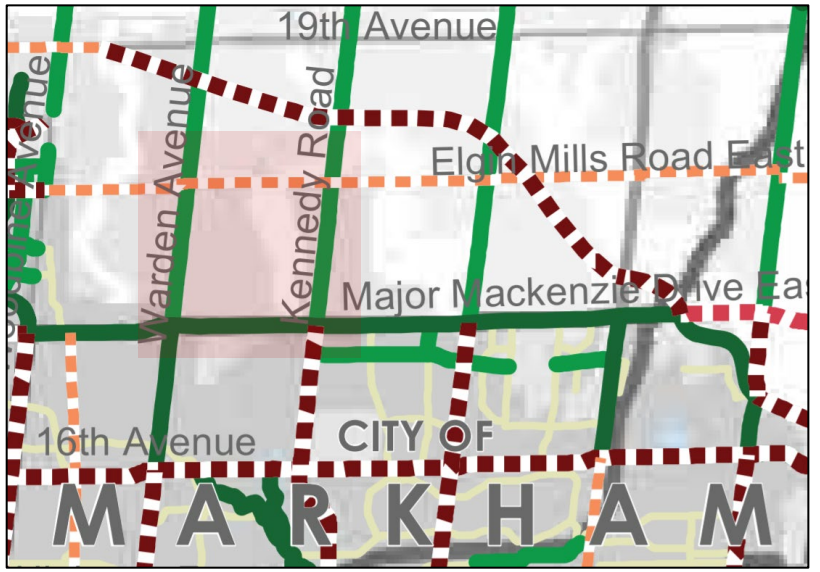
Transit improvement



Frequent Transit Network

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

Active transportation improvement



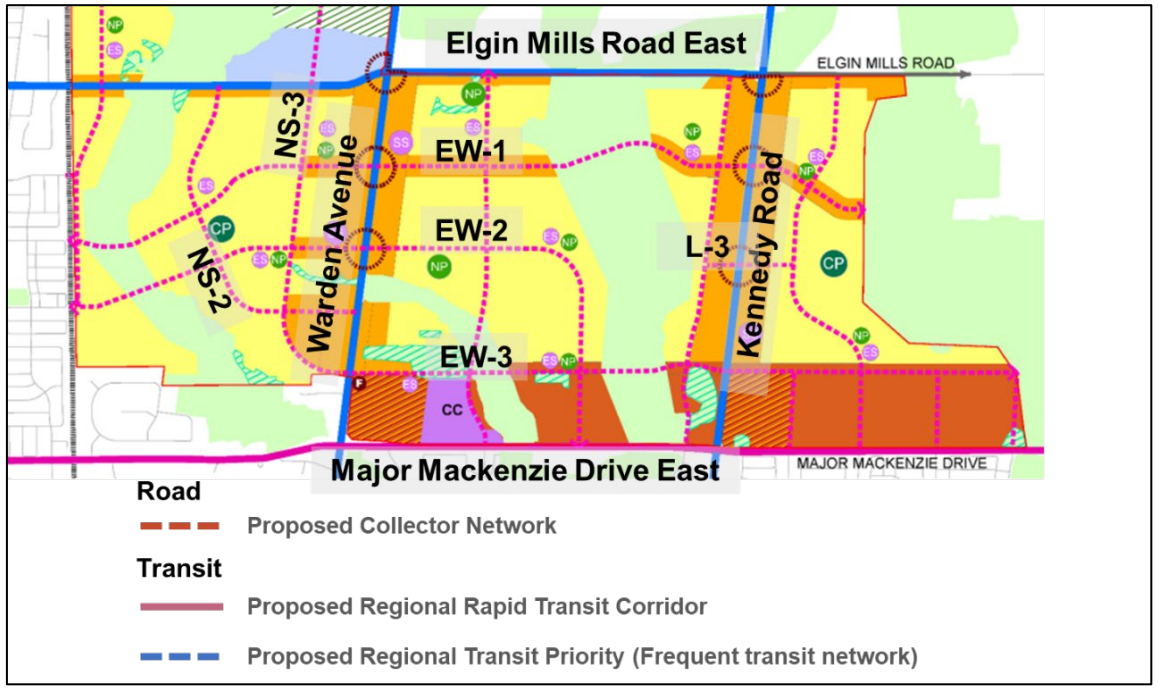
Dedicated Facility

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

Additional recommendations for Warden Avenue and Kennedy Road

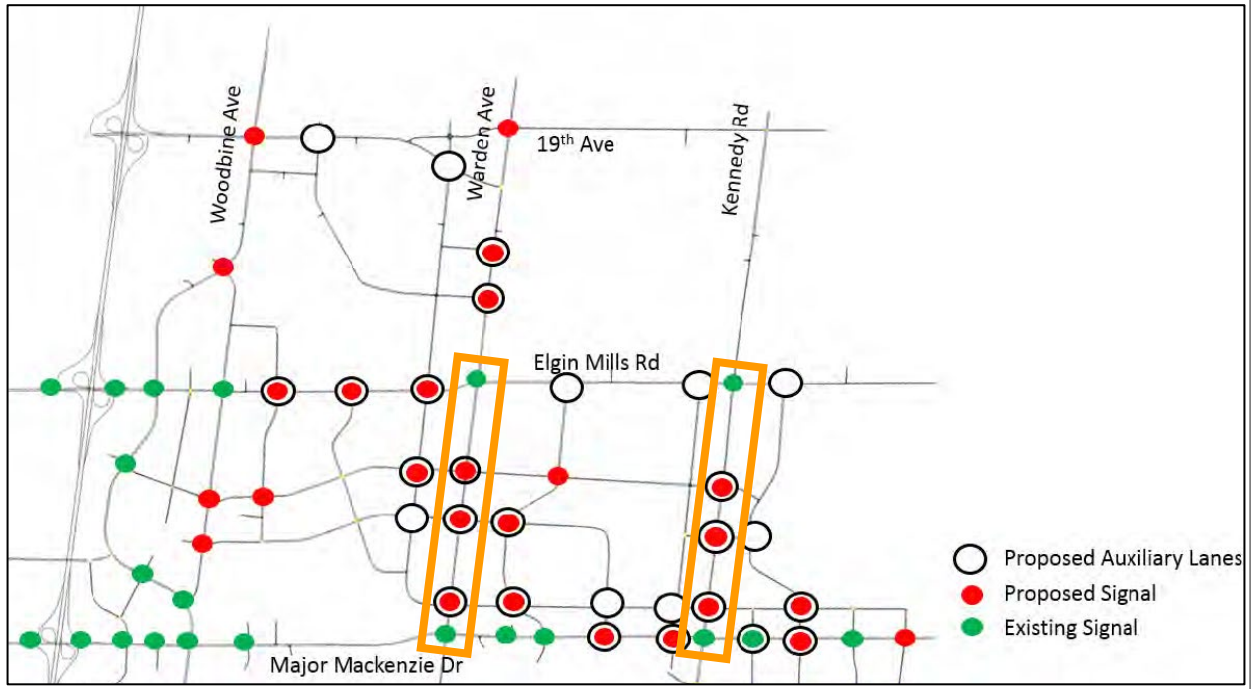
The City of Markham's Future Urban Area Conceptual Master Plan

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)

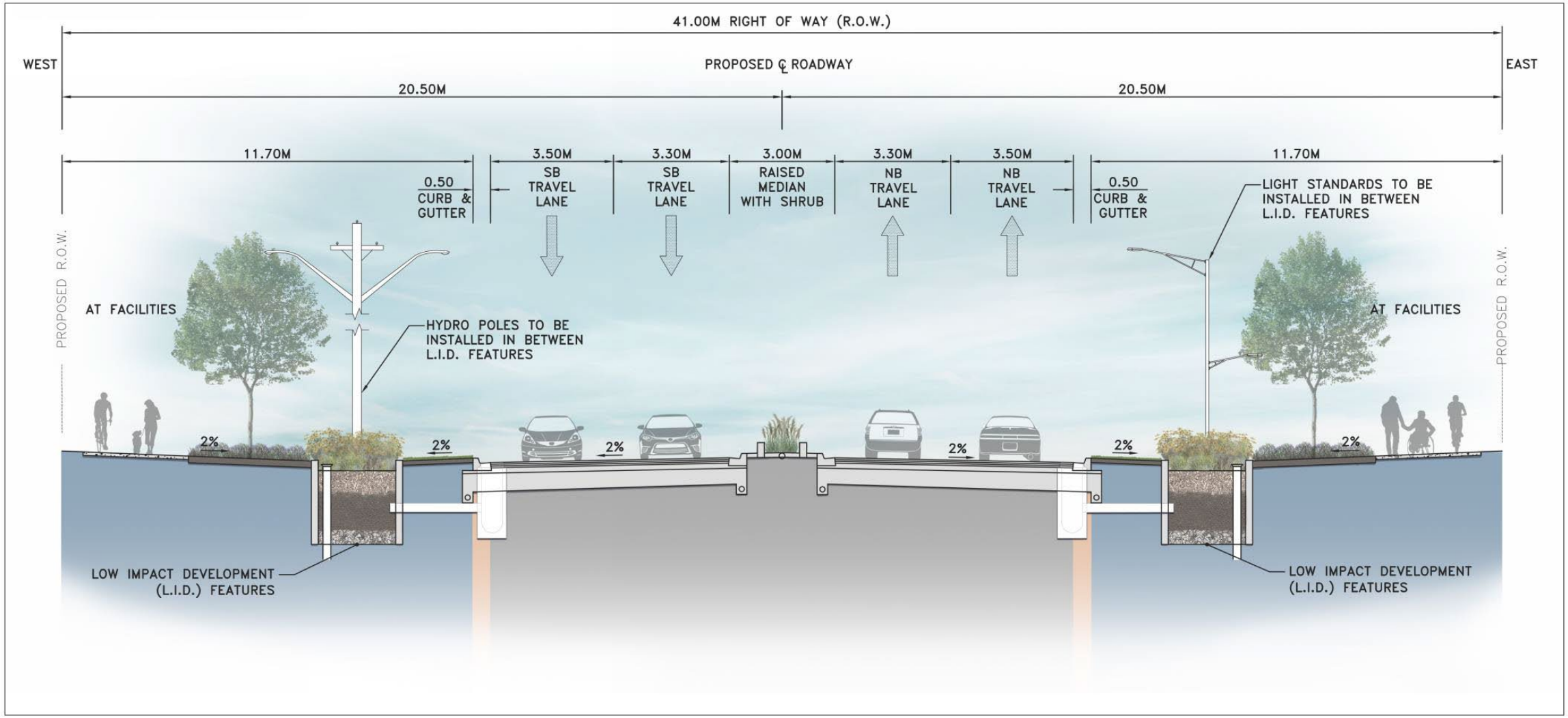
Anticipated signals in support of the future development and travel demands



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

PRELIMINARY ALTERNATIVE DESIGN CONCEPTS

Alternative Design Concept 1

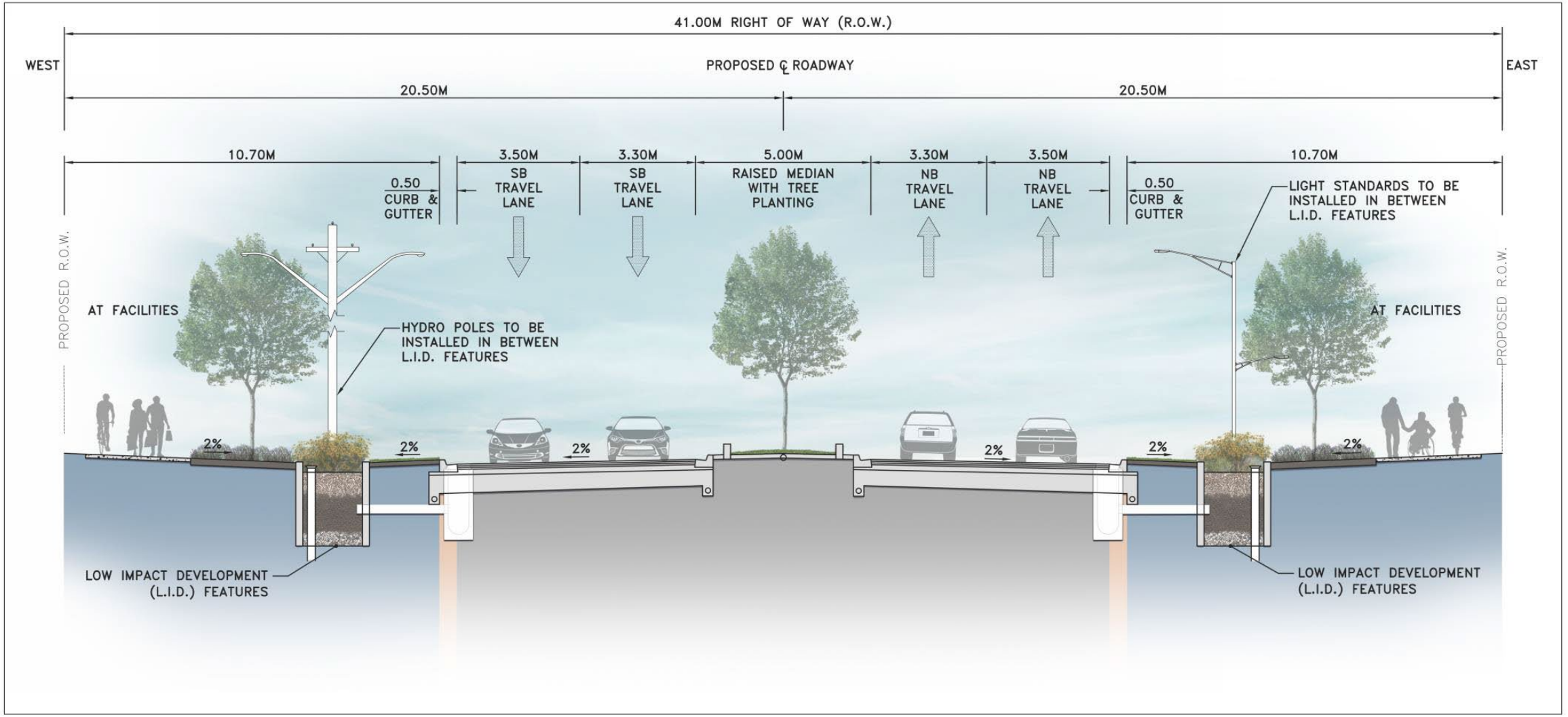


WARDEN AVENUE AND KENNEDY ROAD

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

BURNSIDE

Alternative Design Concept 2

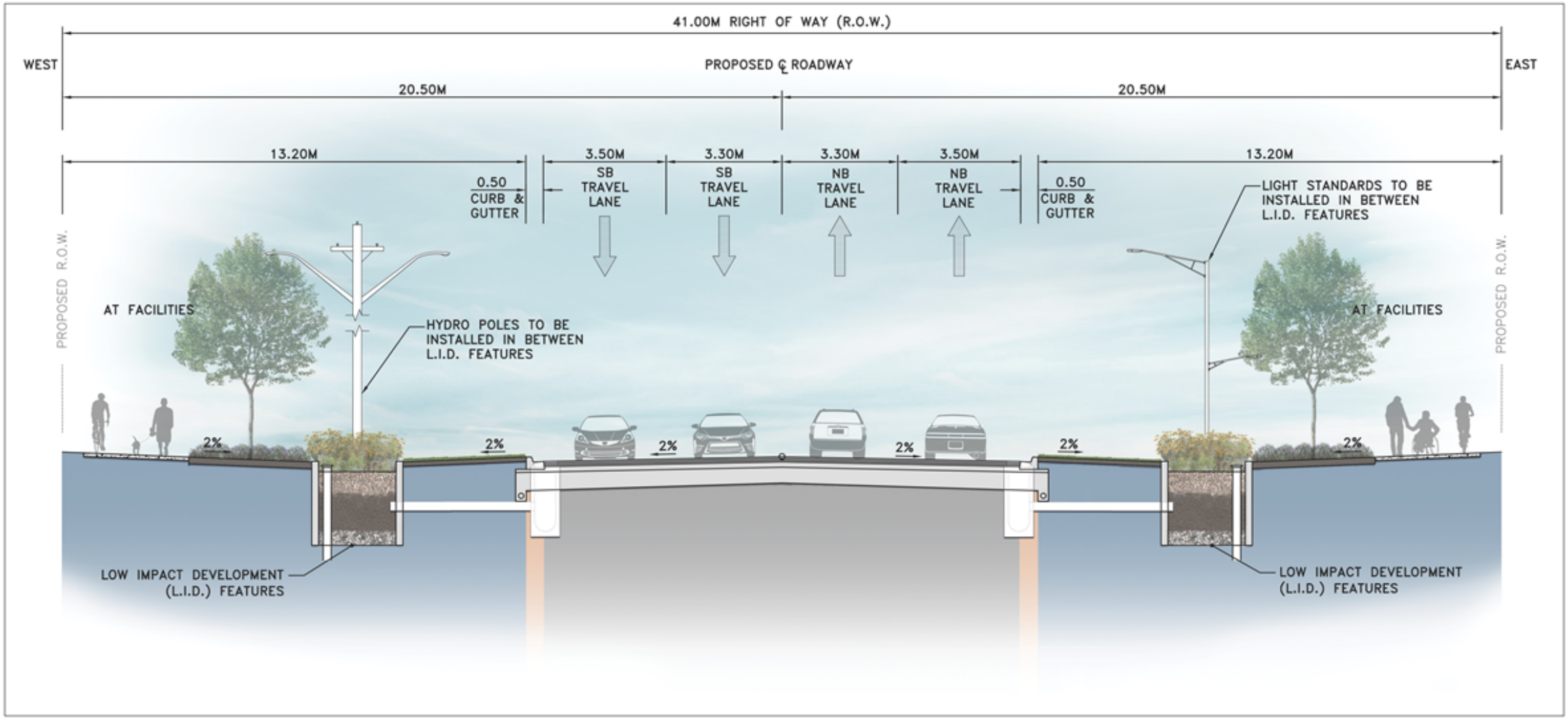


WARDEN AVENUE AND KENNEDY ROAD

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

BURNSIDE

Alternative Design Concept 3



WARDEN AVENUE AND KENNEDY ROAD

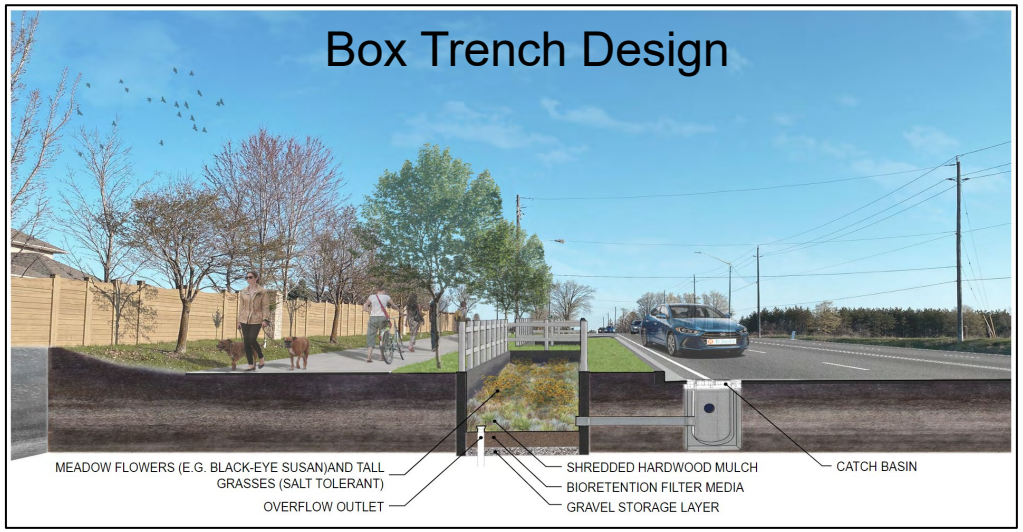
TYPICAL 4-LANE CROSS SECTION | WITHOUT MEDIAN ISLAND

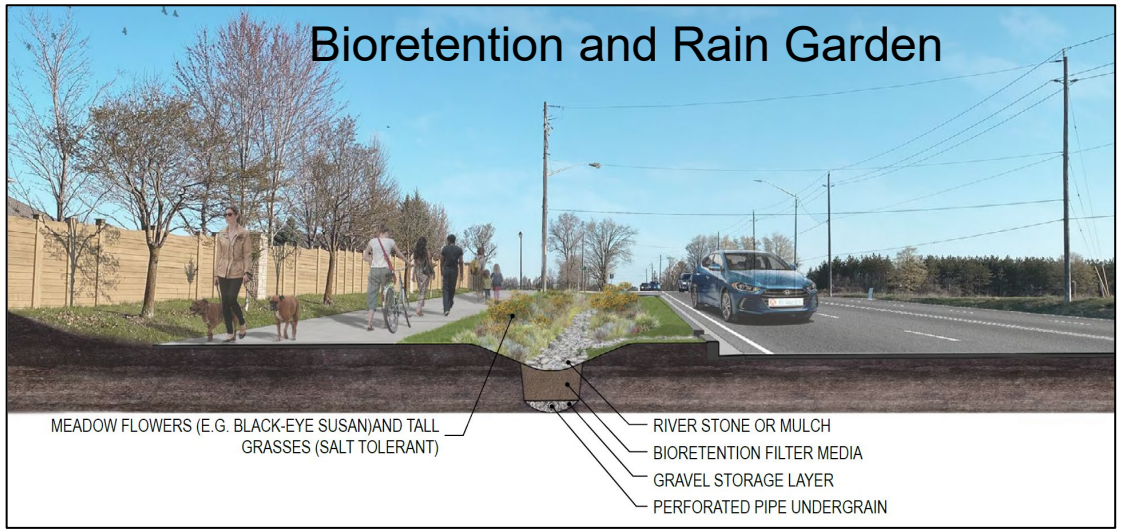
BURNSIDE

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 (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:

- 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

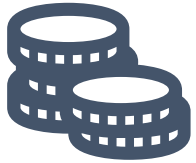
- Potential impact to vegetation
- Potential impact to wildlife habitat and habitat of species at risk
- Potential impact to water resources and drainage
- Potential climate change impact and resilience

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

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Next Steps

- Review public feedback regarding study area concerns and Design Concepts
- Refine and evaluate the Alternative Design Concepts
- Select and develop Preferred Design
- Present the Preliminary Preferred Design at the online open house #2

York Region

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Thank You

We value your input

We invite you to complete the survey available at **www.york.ca/WardenKennedyStudy**
Online open house materials are also posted and will remain available for review and comment until **March 24, 2022**.
A summary of your written comments along with responses to comments received will be provided in an Online Open House Summary Report, which will also be posted on the project page of the Region's website.

For more information please contact:

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