



UNTAPPED | Marrying Grade Separations with Complete Streets Design to Support Transit-Oriented Communities

- Hilda Esedebe, Transportation Project Manager, City of Vaughan
- Michelle Mascarenhas, Senior Project Manager, HDR



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Introductions



Hilda Esedebe, P.Eng., MBA, M.Sc.
Transportation Project Manager
City of Vaughan

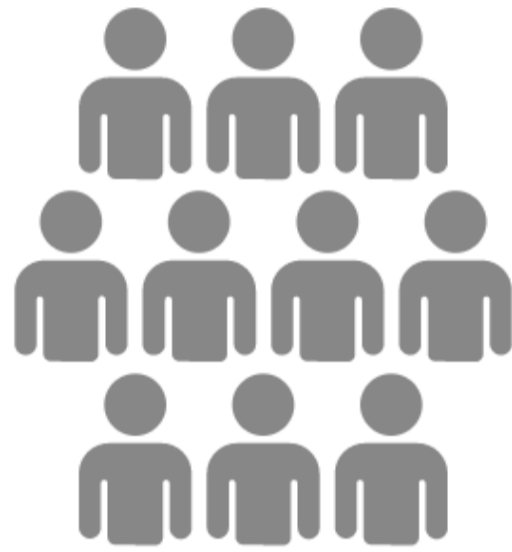


Michelle Mascarenhas, P.Eng.
Senior Project Manager
HDR

Overview

What's happening

York Region Population and Employment Forecasts



Population

YORK REGION'S POPULATION is EXPECTED to GROW from
1.2
MILLION RESIDENTS in 2019 to **1.8**
MILLION RESIDENTS in 2041

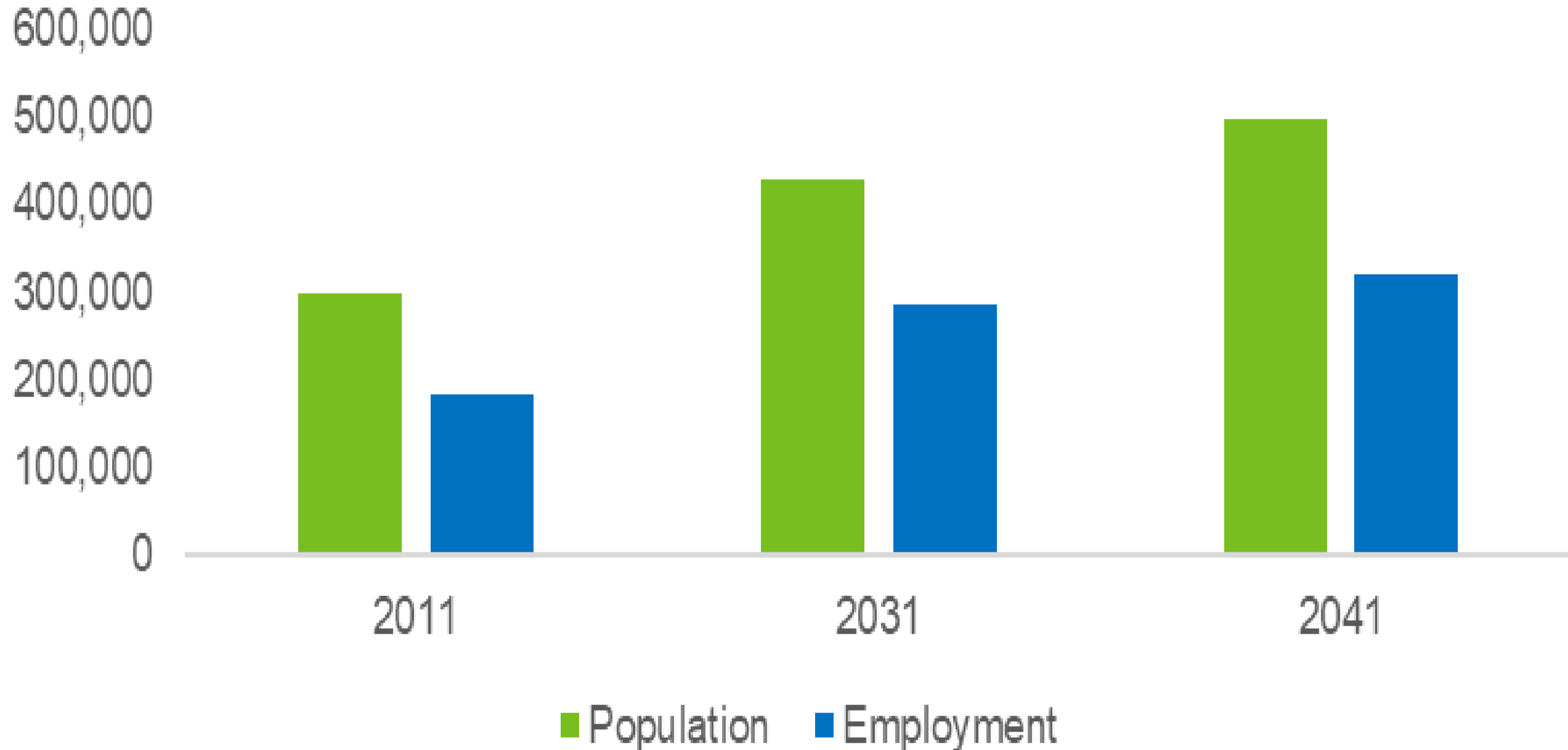


Employment

YORK REGION'S EMPLOYMENT is EXPECTED to GROW from
655
THOUSAND JOBS in 2019 to **900**
THOUSAND JOBS in 2041

Source: Regional Municipality of York (2041 Preferred Growth Scenario)

City of Vaughan Population and Employment Forecasts

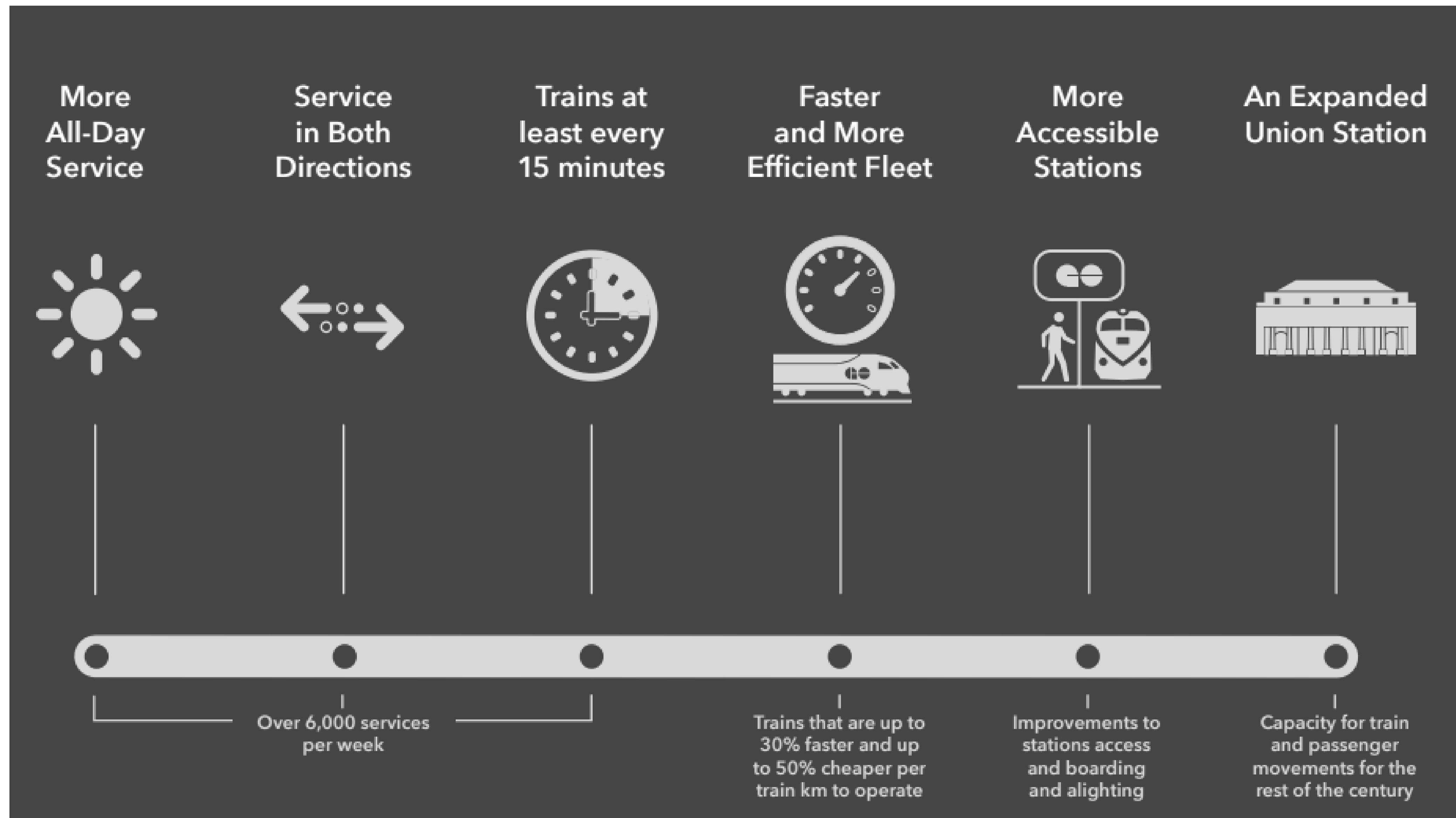


Source: Regional Municipality of York (2041 Preferred Growth Scenario)

**Significant growth is forecasted.
Infrastructure improvements are needed to support this growth.**

What's happening

GO Expansion Program



Source: GO Expansion Program, 2018

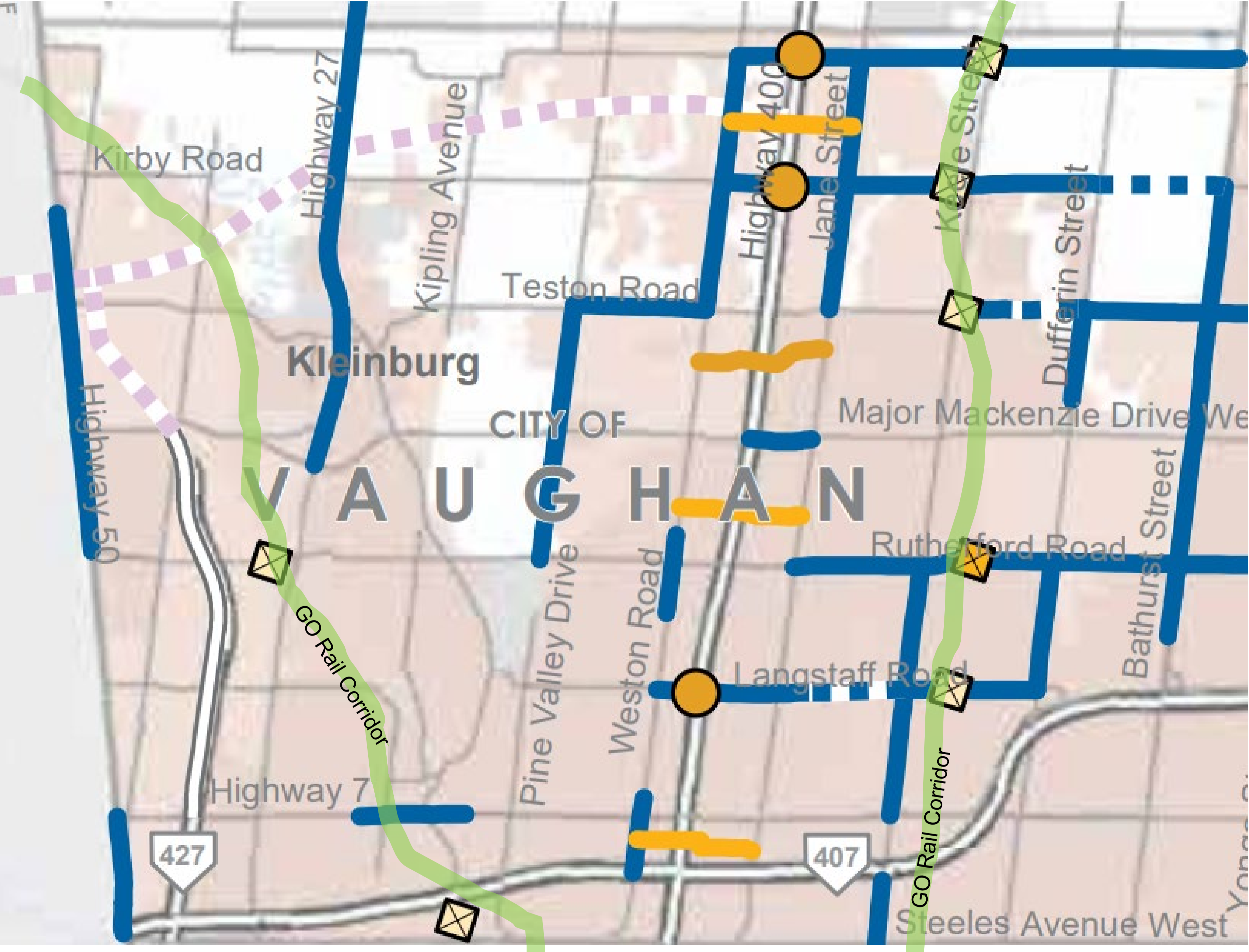
Service enhancements and expansion of the GO Transit network are planned to connect the Greater Toronto Area (GTA).

Metrolinx is creating partnerships to deliver Transit Oriented Communities (TOC). TOCs are designed to increase ridership and reduce traffic congestion, providing more direct access to transit stations and stops.

GO Expansion Program and increased rail service requires improvements at existing level (at-grade) crossings.

Proactively assessing and planning grade-separations support new community growth and development.

What's happening



Legend

Road Projects

- Midblock Crossing
- Road Improvements
- New Road Link
- Road Improvements (Provincial Jurisdiction)
- Future Highway

Grade Separations

- Grade Separation (Included in 10-Year Capital Program)
- Grade Separation (Subject to Future Study)

Interchanges

- Potential Interchange or Interchange Improvements

Source: Regional Municipality of York (2022 Transportation Master Plan – Map 4: 2051 Road Network)

Multiple future grade separations are subject to further study along each rail corridor.

General Concerns at Level (At-Grade) Crossings



- Rail corridors are serviced by Commuter and Freight Rail; increase frequencies result in crossing delays
- Expansion of rail service is forecasted (increased train frequencies and volume)



- Growth and demands on the transportation road network will result in increased volumes
- Vehicles are delayed at existing level (at-grade) crossings as they are required to stop for trains to cross – safety concerns for motorists due to conflicts with crossing trains
- Vehicle queues at existing level (at-grade) crossings can extend to adjacent intersections / entrances when crossing arms are lowered for passing trains



- Active transportation networks are expanding to create safe and comfortable passage for pedestrians and cyclist, with direct access to adjacent land use



- Railway crossings can be barriers to pedestrian and cyclist passage
- Safety concerns for pedestrians and/or cyclists at existing level (at-grade) crossings due to potential conflicts with crossing trains



Kirby Road at GO Rail crossing, west of Keele Street



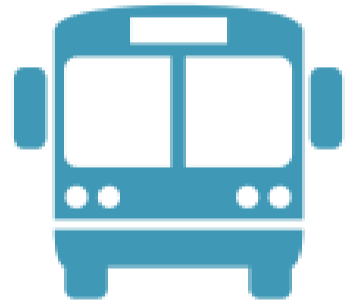





Image source: Googlemaps.ca



Kirby Road at GO Rail crossing

Image source: yorkmaps.ca

Opportunities

	Delays are experienced at level (at-grade) railway crossing		Improve railway crossing and reduce delays and congestion with the associated crossing
	Level (at-grade) railway crossing does not support enhanced transit service and results in delays		Improve the efficiency and reliability of transit
	Level (at-grade) railway crossing acts as barrier to continuous pedestrian and cyclist facilities		Improve pedestrian and cycling facilities at the crossing to encourage other modes of transportation to reduce congestion and promote sustainable travel
	Safety and operational concerns at railway crossing		Improve safety, performance, and operational efficiency for all modes at railway crossing

Overpass Examples (Road over Rail)



Bayview Avenue south of Highway 407



Bayview Avenue south of Highway 407



Bantry Avenue east of Yonge Street



16th Avenue, east of Yonge Street



16th Avenue, east of Yonge Street

Underpass Examples (Road under Rail)



Major Mackenzie Drive east of Keele Street



Major Mackenzie Drive east of Keele Street



Major Mackenzie Drive east of Yonge Street



Steeles Avenue west of Leslie Street



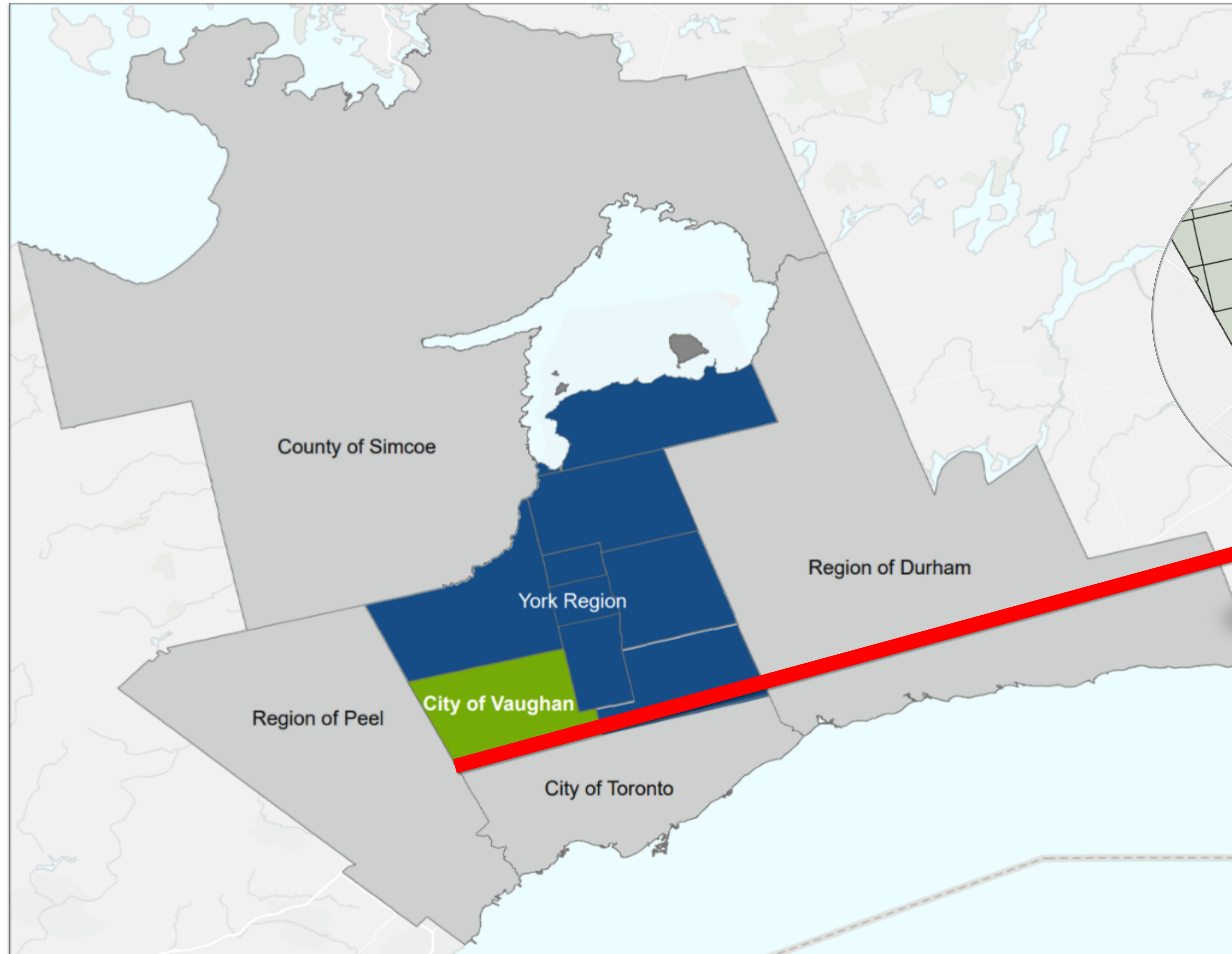
Steeles Avenue west of Leslie Street

Case Study

**Kirby Road Widening
Environmental Assessment**

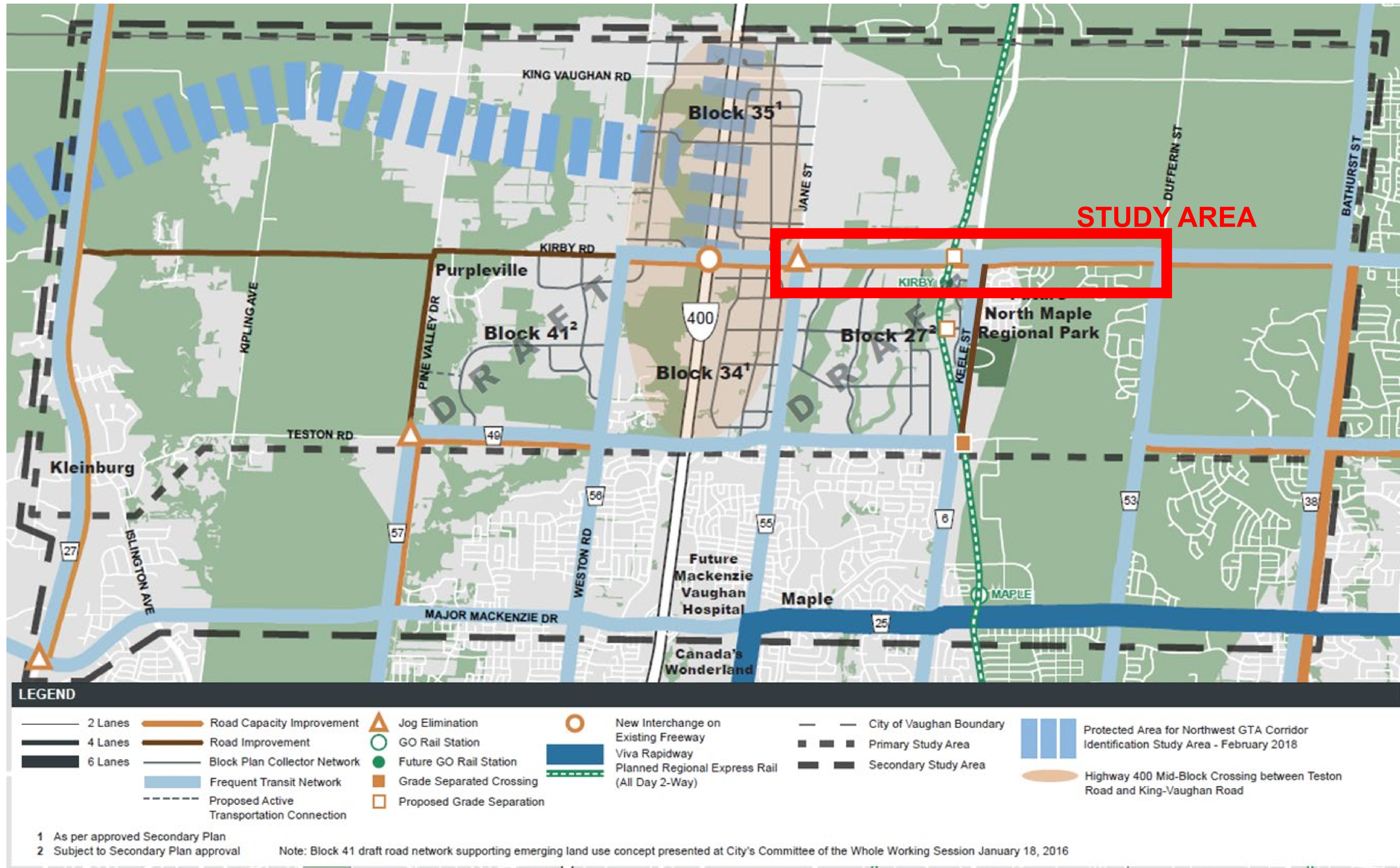
City of Vaughan

Case Study:

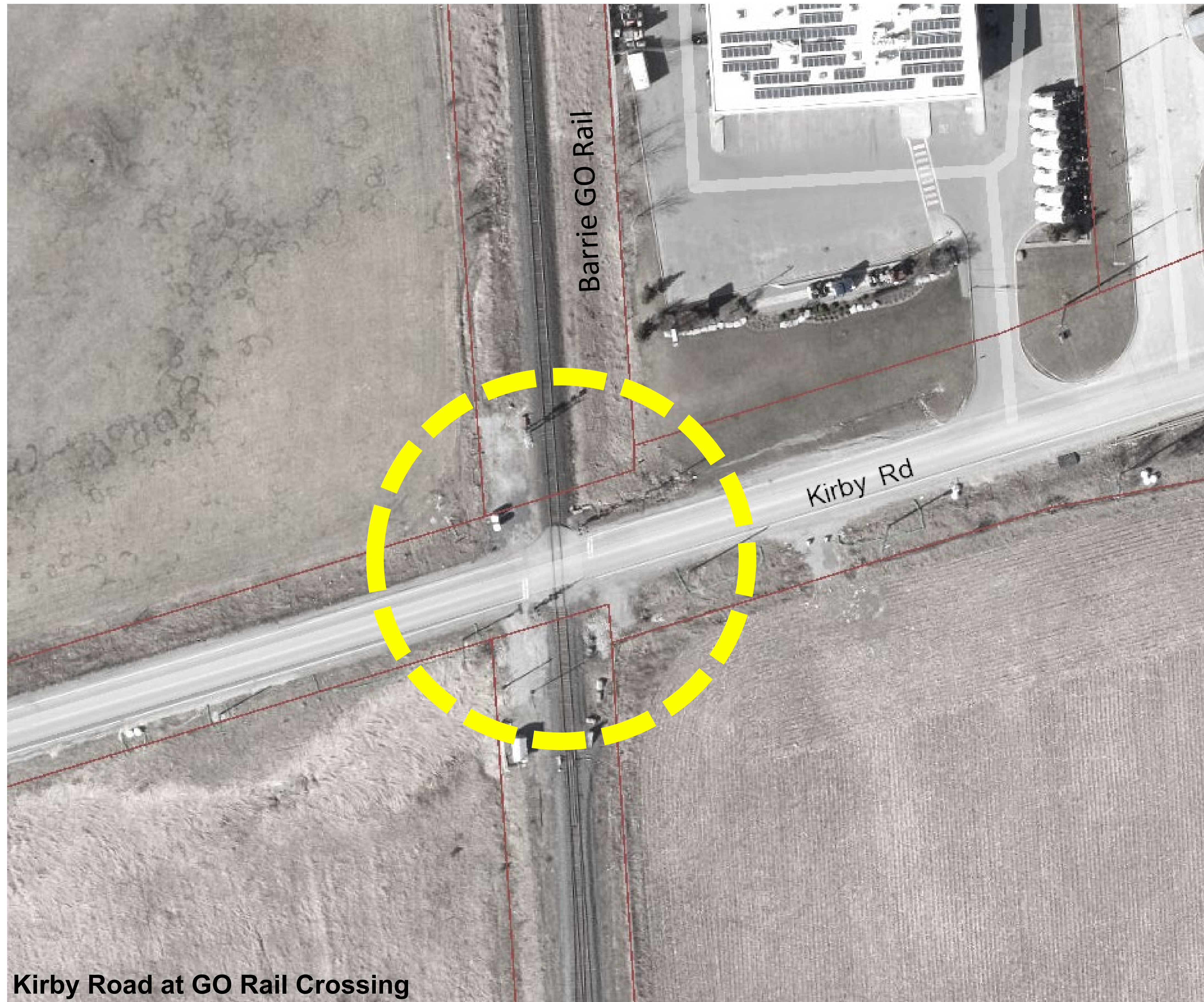


**Kirby Road Widening
Environmental Assessment**
City of Vaughan

Case Study:



Case Study:



Kirby Road at GO Rail Crossing

Image source: yorkmaps.ca



Kirby Road, looking west at GO Rail crossing

Image source: Googlemaps.ca

Kirby Road Today

- ❑ 1 lane per direction, rural
- ❑ No pedestrian or bicycle facilities
- ❑ At-grade GO Rail crossing
 - *Vehicle delays and queues at crossing with each passing train*
 - *Safety concerns for conflicts with motorists and crossing trains*
 - *Safe passage for pedestrians and cyclists*

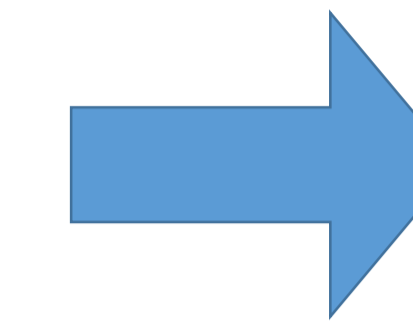
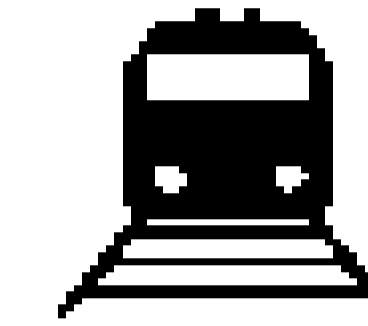
Case Study:



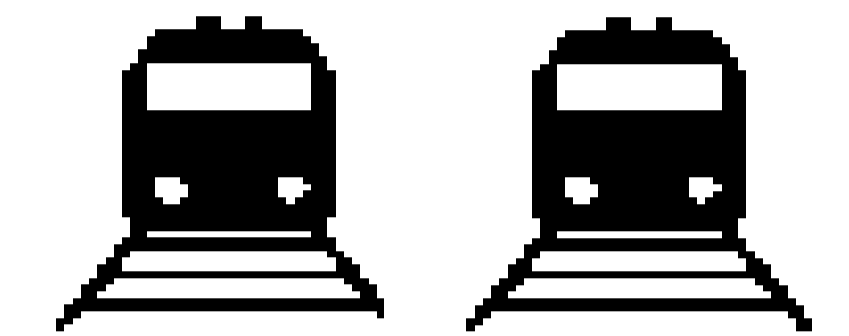
Kirby Road at GO Rail Crossing

Image source: GoogleMaps

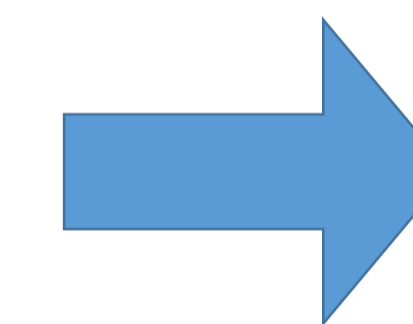
12 trains



120 trains



4,600
AADT



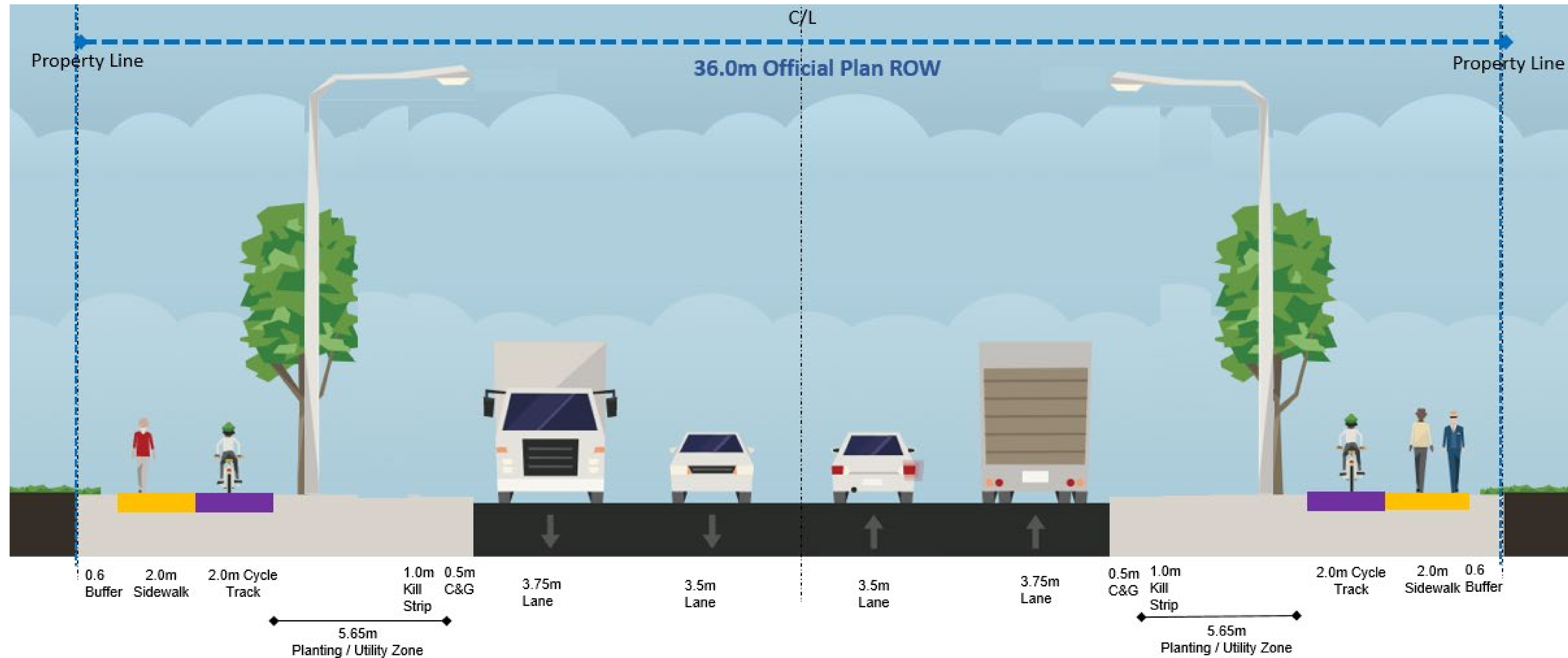
31,800
AADT



Grade Separation is recommended to:

- Enhance safety,
- Reduce traffic delays, and
- Accommodate increased rail service

Case Study:



Recommended Typical Section for Kirby Road

Kirby Road of Tomorrow

- ❑ 2 lanes per direction, urban
- ❑ Sidewalks and cycle tracks in each boulevard
- ❑ Streetscaping
- ❑ Grade Separation at GO Rail crossing

Case Study:

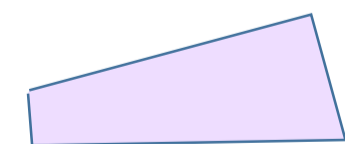


Kirby Road at GO Rail Crossing

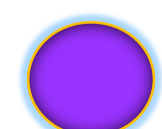
Image source: yorkmaps.ca



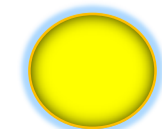
Provincially Significant Wetland (PSW)



Future Kirby GO Station



Future Kirby GO Access (tbc)



Existing Driveways / Entrances



Increased train frequency along rail corridor

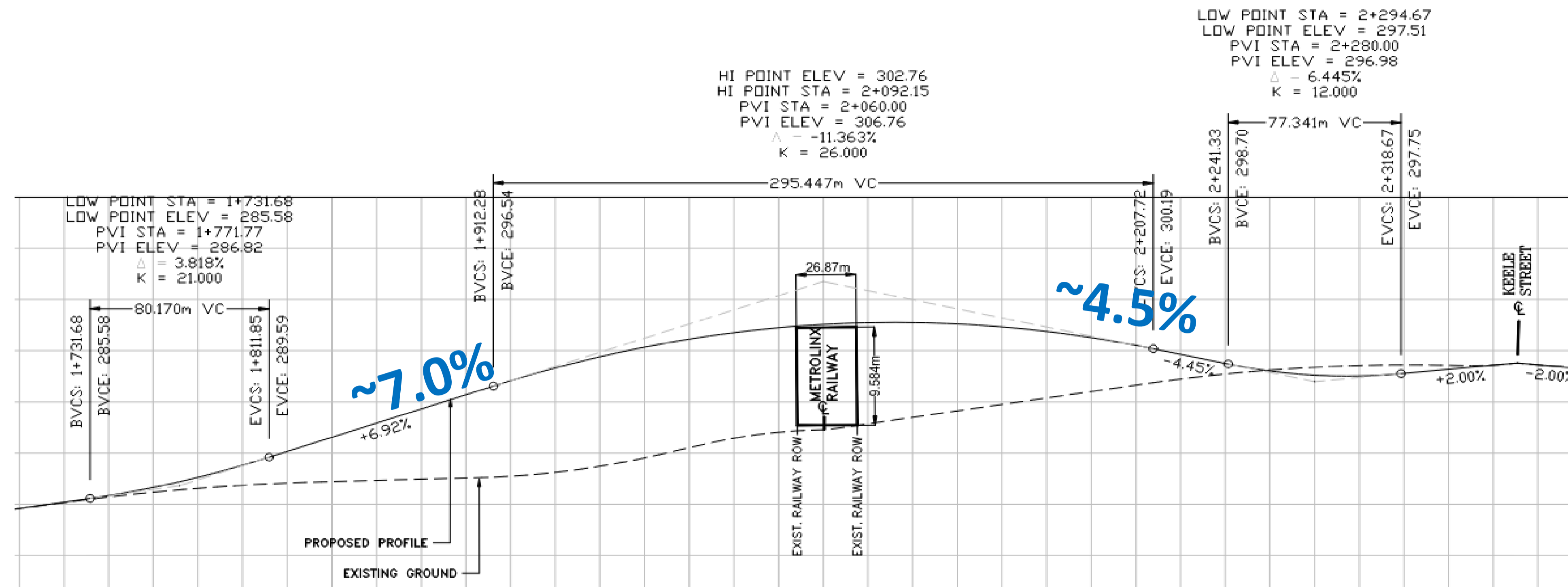


Vehicles delayed at the crossing as they are required to stop for trains to cross – safety concerns for motorists due to conflicts with crossing trains



Accommodating safe passage of pedestrians and cyclists in dedicated and continuous infrastructure

Case Study:



Overpass Road Profile



Overpass Example: Bantry Avenue east of Yonge Street

Key Considerations

❑ Active transportation

- ❑ no direct connections to adjacent land uses
- ❑ pedestrians and cyclists traverse steeper road slopes

❑ Access Management

- ❑ entrance impacts significant requiring closure

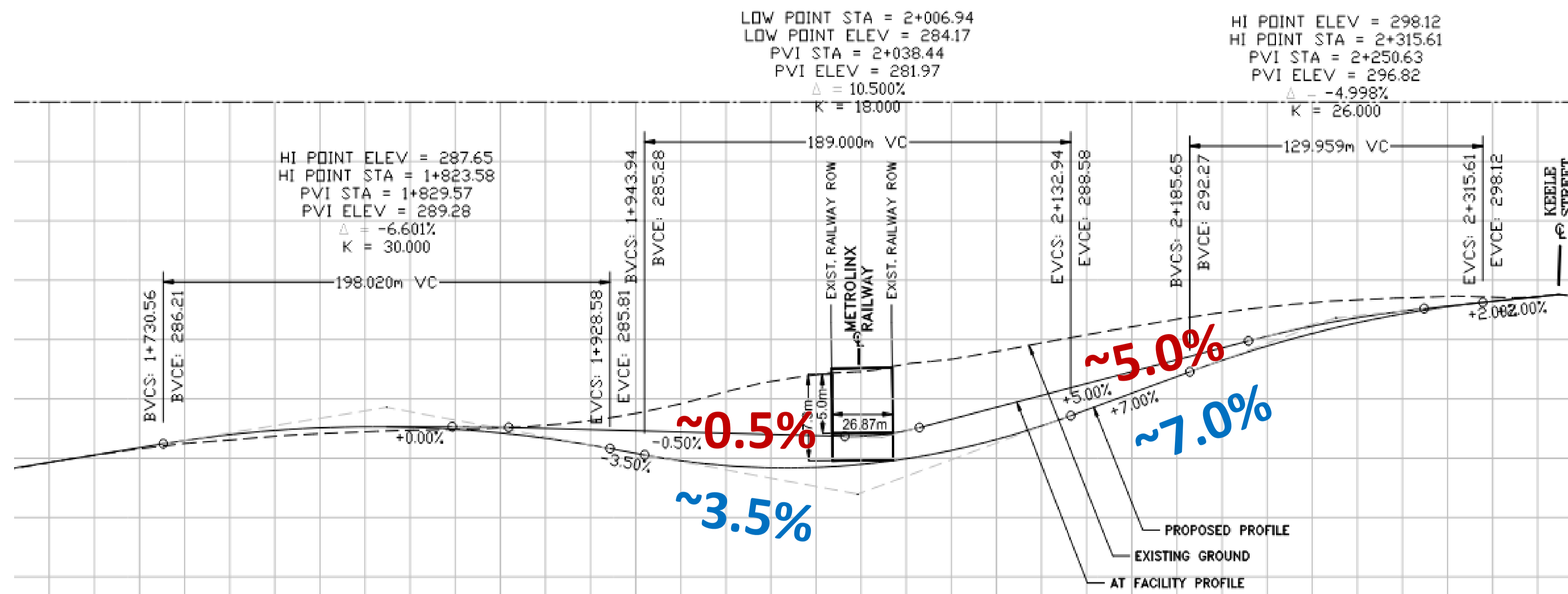
❑ Property Requirements

- ❑ embankment slopes vs retaining walls

❑ Noise impacts

❑ Flood risk / hazards

Case Study:



Underpass Road Profile



Underpass Example: Steeles Avenue west of Leslie Street

Key Considerations

□ Active transportation

- potential connections to adjacent land uses
- raise AT facility for pedestrians and cyclists to travel along less steep slope than road profile

□ Access Management

- entrances maintained / regraded / relocated

□ Property Requirements

- embankment slopes vs. structural walls

□ Noise impacts

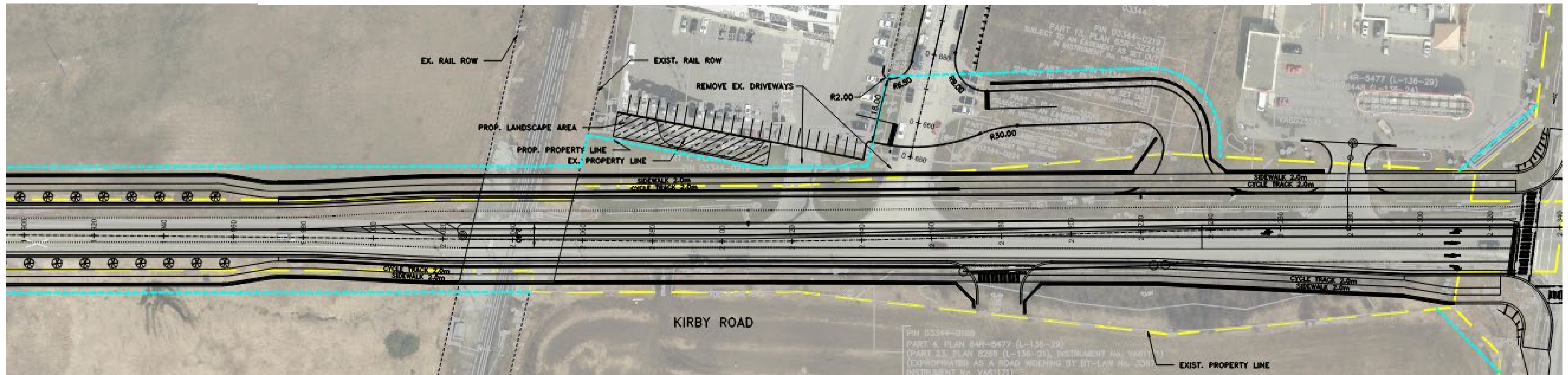
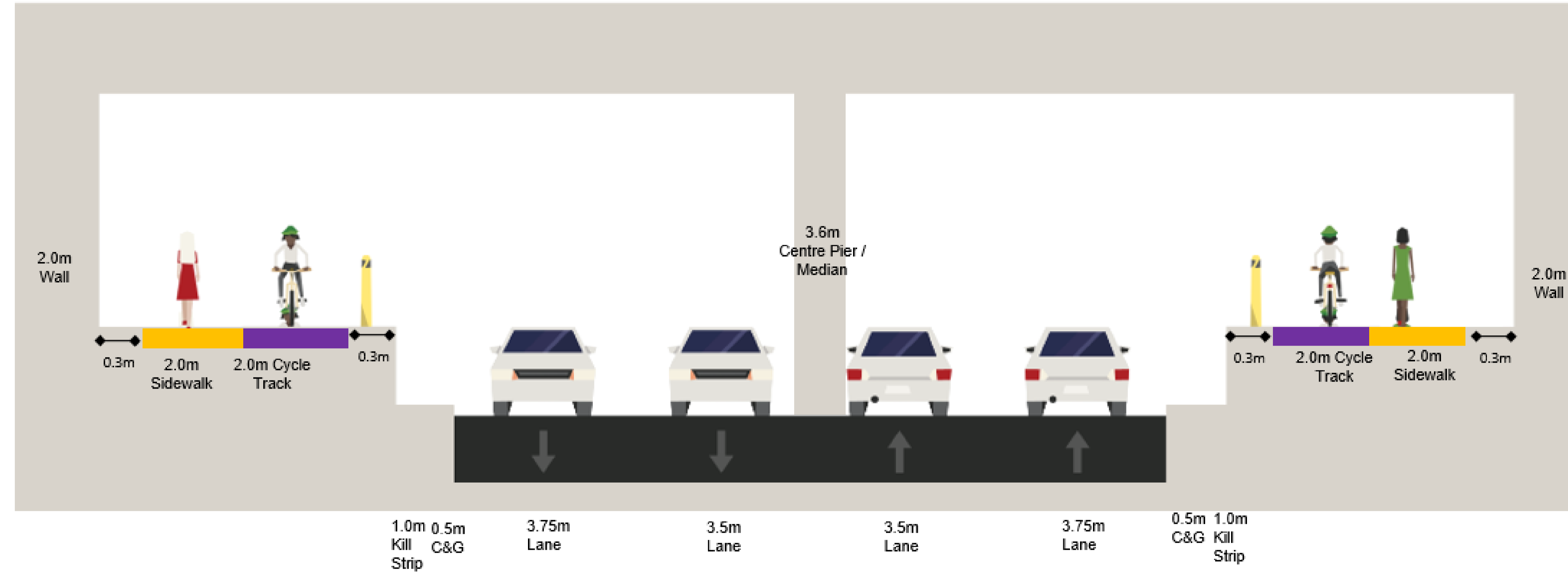
□ Flood risk / hazards

□ Groundwater

- pumping station, watertight design

Case Study:

Underpass Structure

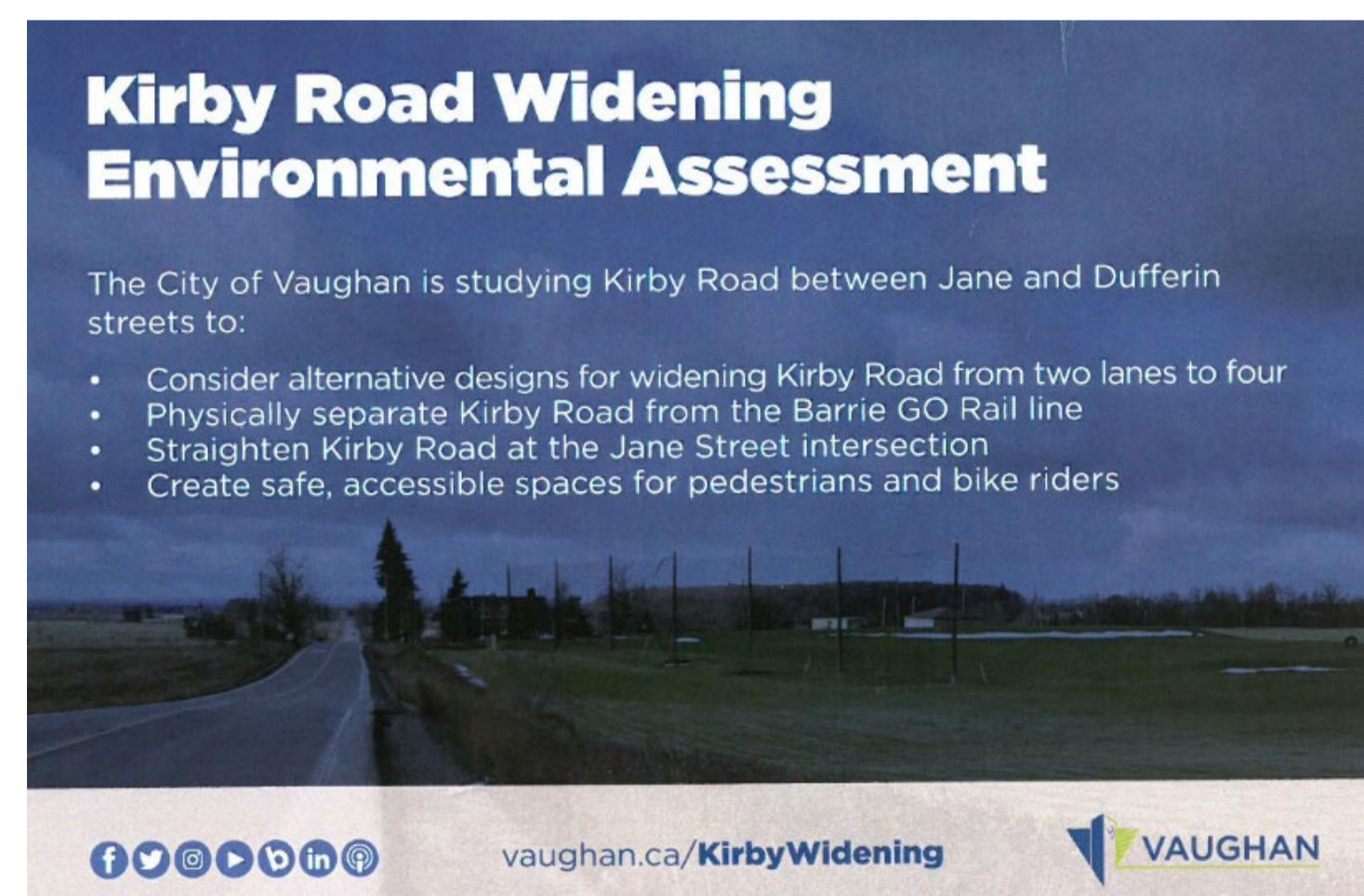


Recommended Underpass

Case Study:

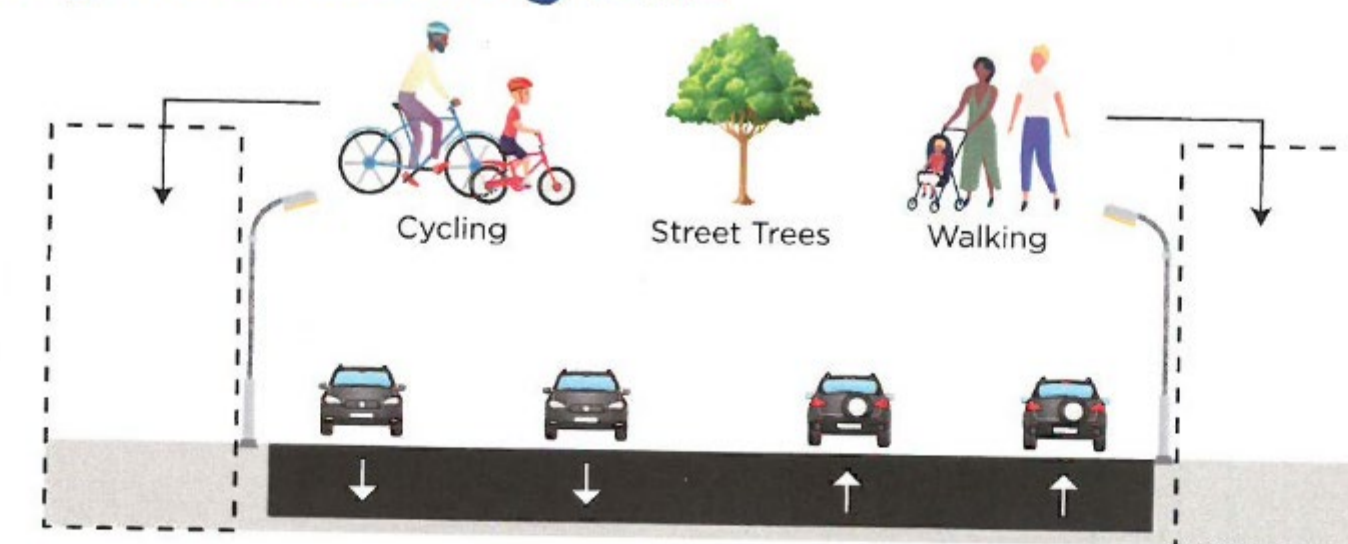
Consultation Program:

- ✓ Project Website
- ✓ Notices
- ✓ Postcard and Online Survey
- ✓ Public Information Centre (virtual)
- ✓ Stakeholder Group
- ✓ Technical Advisory Committee
- ✓ City's Social Media
(Facebook, Instagram, LinkedIn, Twitter)
- ✓ Letters, Emails, Phone Calls, Meetings



Postcard and Online Survey

What changes and updates are important to you?



Participate in the online survey to join the conversation and help shape the future of Kirby Road. The survey will be available at vaughan.ca/KirbyWidening until Aug. 21, 2020.

If you are unable to participate online please leave a voicemail with the City Project Manager Hilda Esedebe at 905-832-2281, ext. 8484 with your name and phone number. A member of the project team will contact you for your input.

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KIRBY ROAD WIDENING ENVIRONMENTAL ASSESSMENT



The City of Vaughan has completed a Schedule 'C' Municipal Class Environmental Assessment (EA) for improvements to Kirby Road between Jane Street and Dufferin Street. These improvements will address capacity and operational needs and accommodate planned growth in the area for pedestrians, cyclists, transit users and motorists. The recommended Kirby Road improvements include widening from two to four lanes and urbanization, in-boulevard cycle tracks and sidewalks on both sides of the road, eliminating the jog at Kirby Road and Jane Street, and the grade Separation (underpass) of the Barrie Go Rail line.

Project Website



Public Information Centre (Virtual)



Case Study:

To prepare for a transit-oriented community:



Prioritize Safety



**Support
multi-modal
solutions**



**Consider adjacent
land uses**

Questions?



Thank You!

