Public Meeting #1

Welcome to the GO Expansion OnCorridor Program

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MORRISON HERSHFIELD

wood.

Gannett Fleming

Grade Separation Overview

Justification for Grade Separations

- Metrolinx is improving service as part of the GO Expansion Program by increasing train frequency and availability.
- The long-term goal and vision of the GO Expansion Program is to provide 15-minute two-way all-day service.
- With trains planned to run every 15 minutes (a crossing every 7 minutes in one direction or the other), it is not possible to maintain at-grade crossings.
- By grade separating the crossings, Metrolinx can increase travel speed and capacity on our rail lines by allowing trains to freely pass over or under roads without the need for stoppages. Grade separations will support the growth of our cities by increasing traffic flow and transit capacity.

Benefits of Grade Separations

Grade separations are essential to support transit expansion, and provide other community benefits, including:

- Improved traffic flow and elimination of the potential for conflicts between trains and vehicles
- Better connections and crossings for pedestrians and cyclists
- Air quality benefits from reduced car idling
- Reduced noise from at-grade crossing signals and train whistles
- Opportunities to bring roads up to new standards, by incorporating wider lanes and sidewalks, separated bike lanes, or improved lighting

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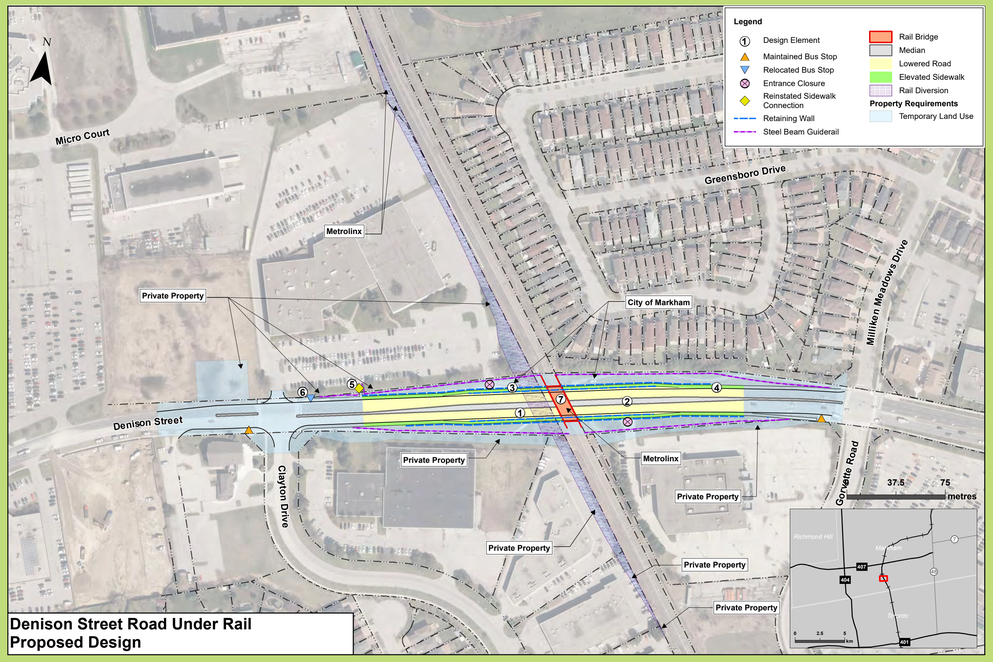
Design and Construction Commitments

Road Under Rail - Design	Utilities
Road under rail design reduces the project footprint and associated property impacts, maintains connections at local roads and institutions, and provides better accessibility for businesses	Relocation and/or realignment of the utilities will occur in consultation with municipalities and other applicable utility owners.
Design features address the change in grade, specific to each location, such as retaining walls, elevated sidewalks, cycling tracks, bus stop relocations, and access roads.	Service interruptions related to utility relocation will be communicated with affected public.
Lighting under the rail bridge promotes traffic and pedestrian safety.	**Traffic - Design**
Road Over Rail - Design	Traffic and pedestrian safety measures will be designed to applicable standards, such as medians and guiderails.
Road over rail design for Progress Avenue provides a crossing of both the rail line and West Highland Creek.	**Traffic - Construction**
Where necessary, electrification protection barriers will be placed along the corridors, including on top of retaining walls, to prevent access to the tracks and the electrified overhead contact system wires.	Potential effects to pedestrian and cyclist activities will be mitigated through the installation of appropriate way finding, regulatory, and warning signs.
Properties	At a minimum, one lane of traffic will be maintained in each direction during construction.
Where entrances to properties must be closed to accommodate the grade separation, alternative entrances or new access locations have been identified.	A site-specific Construction Traffic Control and Management Plan will be prepared and implemented to maintain reasonable access through work zones, to the extent possible, and include construction signage and safety fencing requirements.
Further discussion will occur with property owners regarding access requirements, temporary easements during construction, and property acquisition requirements.	To maintain pedestrian access, a sidewalk will be constructed along one side of the detour and will be at-grade.
Site fencing will be installed as appropriate, to secure the construction area.	**Natural Heritage**
	Temporary effects on the wetland at Kennedy Road will be reduced to the extent possible.
	Consultation will occur with the TRCA for the crossing of West Highland Creek.

Stouffville Rail Corridor Grade Separations Project

Denison Street Road Under Rail



Denison Street Road Under Rail
Proposed Design

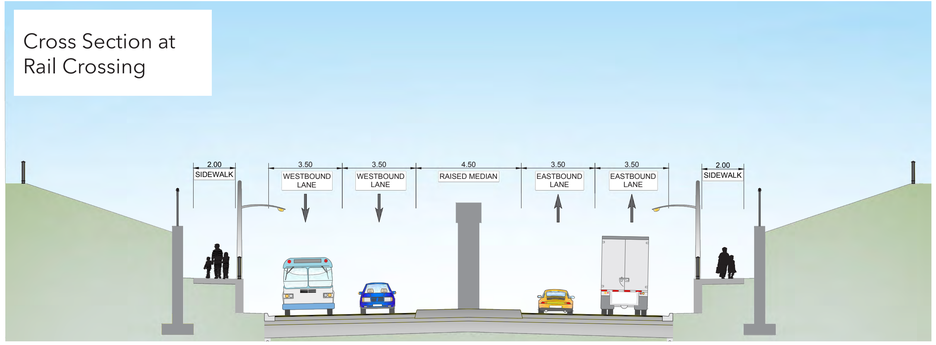
Conceptual Rendering

Design Elements

1. Lowered roadway
2. Median – separates two vehicular traffic lanes in each direction
3. Retaining walls to support the new road under rail structures (as high as 4.7 m, subject to final grading and design)
4. Trail integrated into elevated sidewalks
5. Reinstated sidewalk connection
6. Relocated bus stop – north side of Clayton Drive to be relocated slightly east; south side stops to be maintained
7. Lighting under the rail bridge promotes traffic and pedestrian safety

A road under rail was selected for this location due to the advantages identified below:

DENISON STREET	Road Over Rail	Road Under Rail
Better accessibility for businesses and pedestrians	✗	✓
Maintains sidewalk connection at Canon Canada	✗	✓
Minimizes cost	✓	✗
Minimizes noise and visual impacts	✗	✓
Minimizes the project footprint	✗	✓
Preferred Option	✗	✓



Cross Section at Rail Crossing

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Stouffville Rail Corridor Grade Separations Project

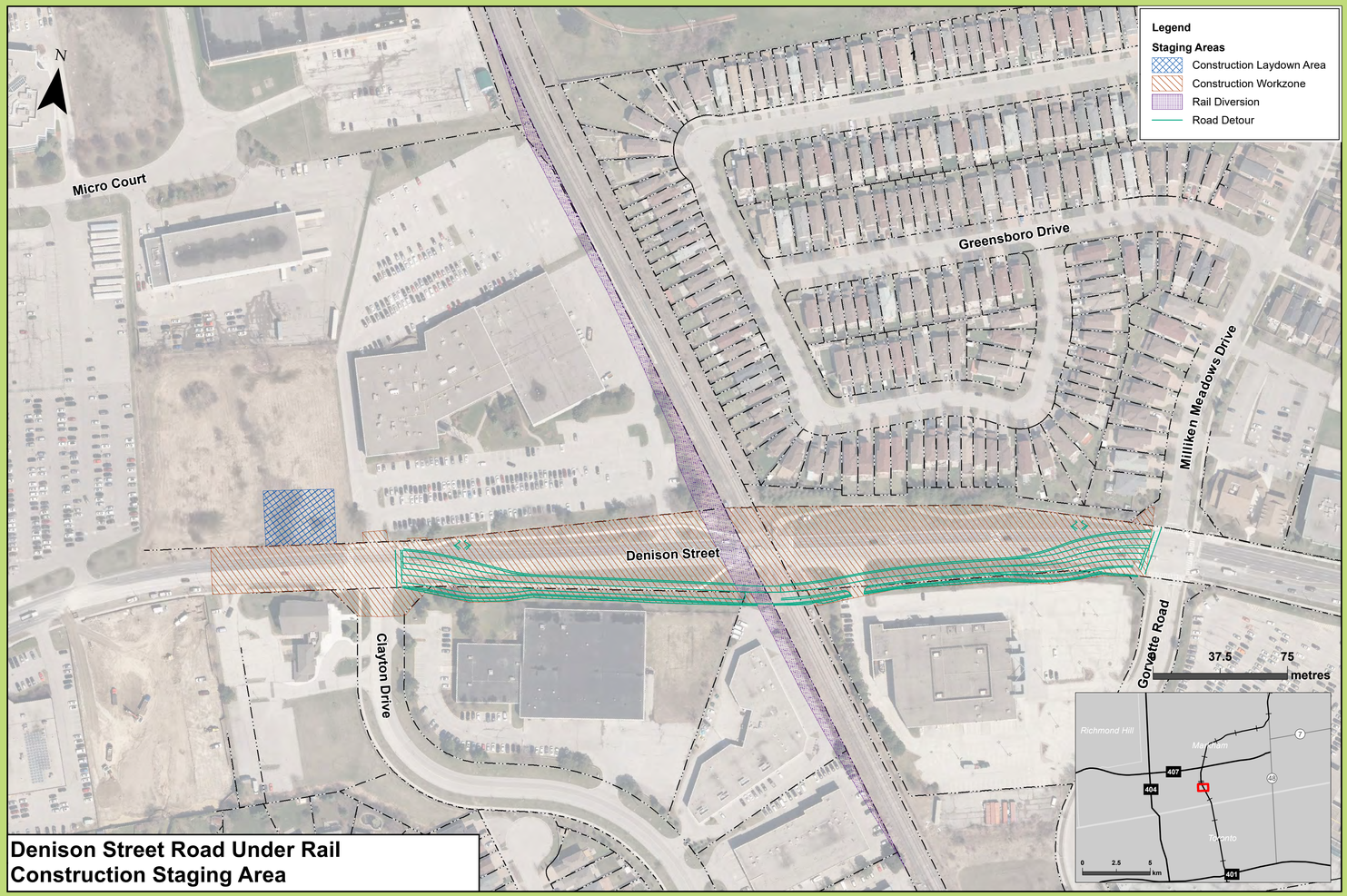
Denison Street Road Under Rail

Traffic Findings

- Following construction, the grade separation will allow traffic, pedestrians and cyclists to travel more efficiently and without interruption.
- One bus stop will be slightly shifted to the north to align with new right of way.
- Permanent entrance closures.
- A road detour to the south of Denison Street will be required during construction.
- Elevated sidewalks through the grade separation will enhance safety of pedestrians and cyclists.

Construction Staging

- Site Preparation – delineation of construction zones through signage and hoarding as needed, site clearing, temporary access to properties as needed, and installation of rail or road detours as required.
- Construction – will vary based on each site, but generally will include excavation, utility relocation, installation or modification of structures and barriers, road/track construction.
- Restoration – final landscaping, road paving/marking, site cleanup and removal of construction zones.



Denison Street Road Under Rail
Construction Staging Area

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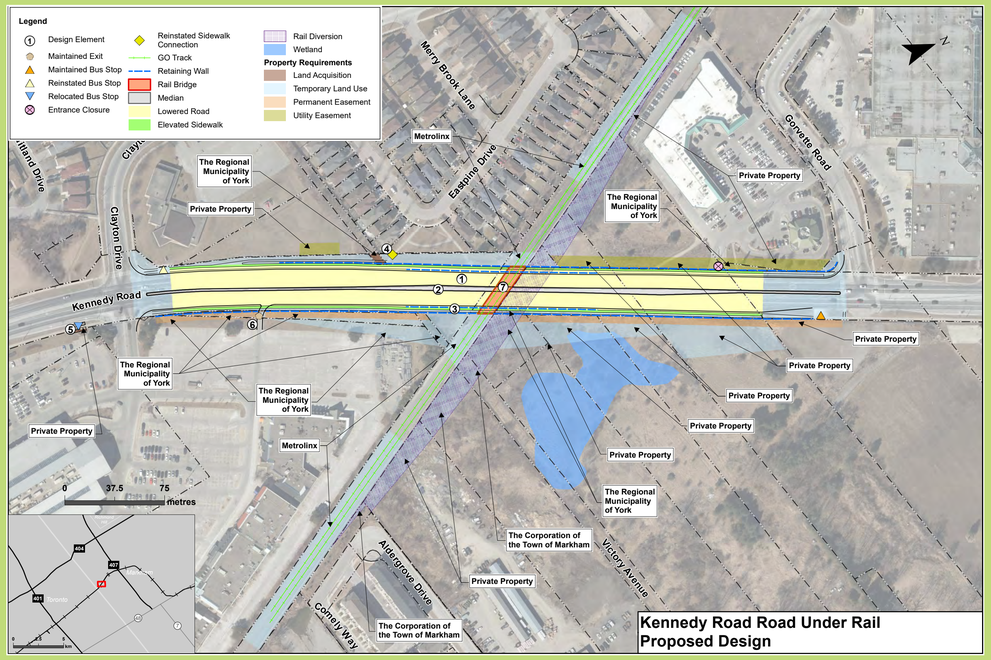
Stouffville Rail Corridor Grade Separations Project

Kennedy Road Road Under Rail



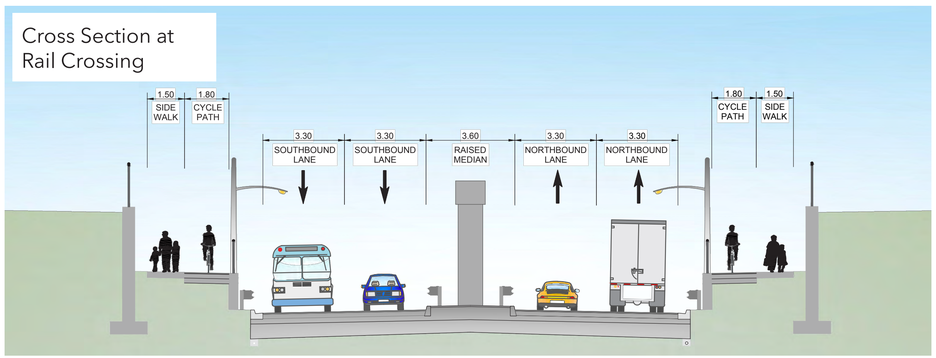
Design Elements

1. Lowered roadway
2. Retaining walls (as high as 8.2 m, subject to final grading and design) and elevated sidewalks
3. Reinstated sidewalk connection – to Eastpine Drive
4. Relocated bus stop – west of rail tracks to be relocated to west of Clayton Drive; remaining stops to be maintained/reinstated
5. Maintained exit – from Pacific Mall/Remington Centre
6. Lighting under the rail bridge promotes traffic and pedestrian safety

Coordination with York Region is ongoing.

A road under rail was selected for this location due to the advantages identified below:

KENNEDY ROAD	Road Over Rail	Road Under Rail
Better accessibility for businesses and pedestrians	✗	✓
Maintains exit from Pacific Mall/Remington Centre	✗	✓
Minimizes cost	✓	✗
Minimizes noise and visual impacts	✗	✓
Minimizes the project footprint	✗	✓
Preferred Option	✗	✓



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Stouffville Rail Corridor Grade Separations Project

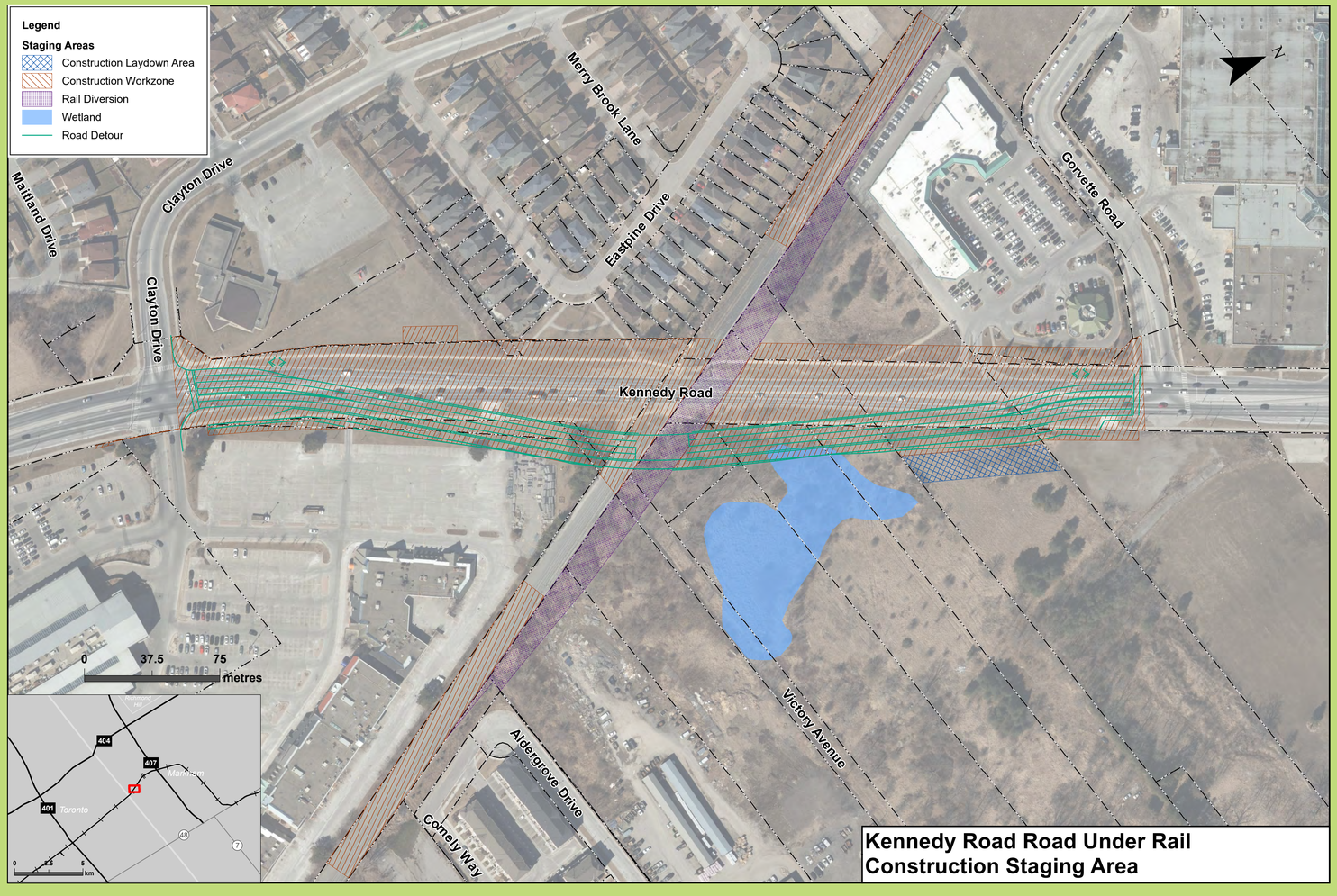
Kennedy Road Road Under Rail

Traffic Findings

- Following construction, the grade separation will allow traffic, pedestrians and cyclists to travel more efficiently and without interruption.
- One bus stop will be permanently relocated to align with new right of way.
- One permanent entrance closure required.
- A road detour to the south of Kennedy Road will be required during construction.
- Elevated sidewalks and cycling track through the grade separation will enhance safety of pedestrians and cyclists.

Construction Staging

- Site Preparation – delineation of construction zones through signage and hoarding as needed, site clearing, temporary access to properties as needed, and installation of rail or road detours as required.
- Construction – will vary based on each site, but generally will include excavation, utility relocation, installation or modification of structures and barriers, road/track construction.
- Restoration – final landscaping, road paving/marking, site cleanup and removal of construction zones.



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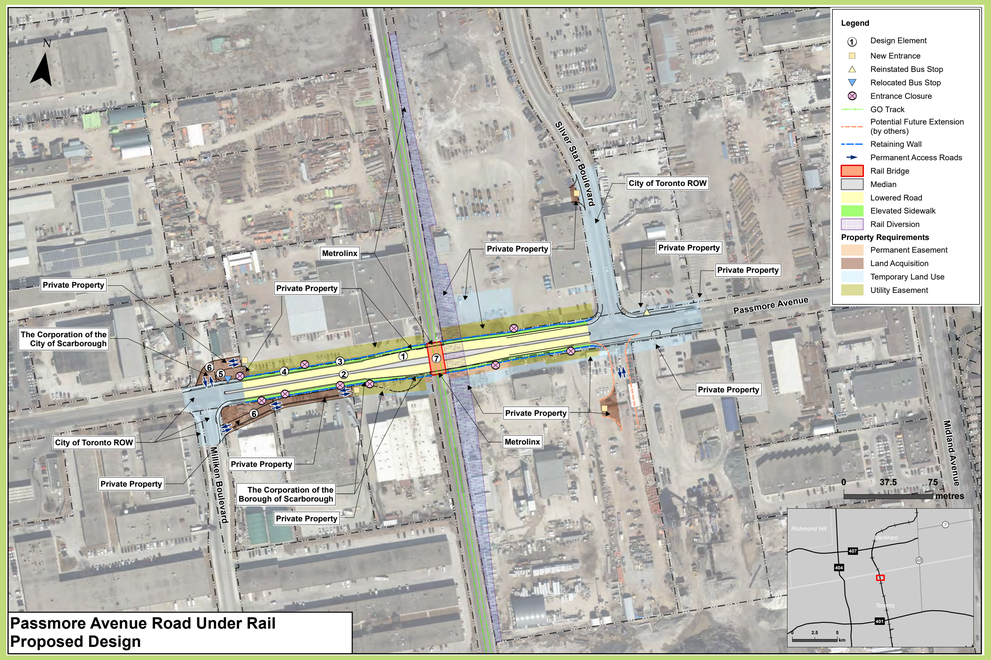
Stouffville Rail Corridor Grade Separations Project

Passmore Avenue Road Under Rail

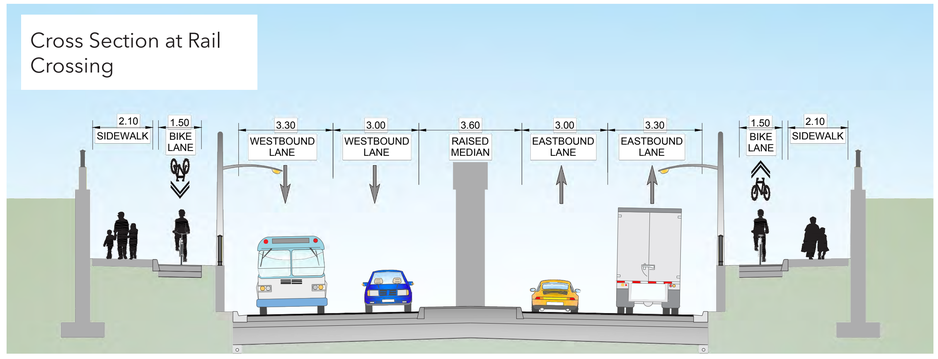


Design Elements

1. Lowered roadway
2. Median – separates two vehicular traffic lanes in each direction
3. Retaining walls to support the new road under rail structure (as high as 7.8 m, subject to final grading and design)
4. Reinstated sidewalks
5. Relocated bus stop – west of rail tracks to be relocated westward towards Milliken Blvd.; remaining stops to be reinstated
6. Permanent access roads to provide new entrances for impacted properties
7. Lighting under the rail bridge promotes traffic and pedestrian safety

A road under rail was selected for this location due to the advantages identified below:

PASSMORE AVENUE	Road Over Rail	Road Under Rail
Better accessibility for businesses and pedestrians	✗	✓
Maintains connectivity of Silver Star Blvd.	✗	✓
Minimizes cost	✓	✗
Minimizes noise and visual impacts	✗	✓
Reduces requirements for service road connections	✗	✓
Preferred Option	✗	✓



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Stouffville Rail Corridor Grade Separations Project

Passmore Avenue Road Under Rail

Traffic Findings

- Following construction, the grade separation will allow traffic, pedestrians and cyclists to travel more efficiently and without interruption.
- One bus stop will be permanently relocated to align with new right of way.
- A road detour to the south of Passmore Avenue will be required during construction.
- Elevated sidewalks through the grade separation will enhance safety of pedestrians and cyclists.
- Permanent access roads to provide new entrances (nine existing entrances will be closed).

Construction Staging

- Site Preparation – delineation of construction zones through signage and hoarding as needed, site clearing, temporary access to properties as needed, and installation of rail or road detours as required.
- Construction – will vary based on each site, but generally will include excavation, utility relocation, installation or modification of structures and barriers, road/track construction.
- Restoration – final landscaping, road paving/marking, site cleanup and removal of construction zones.

Passmore Avenue Road Under Rail
Construction Staging Area

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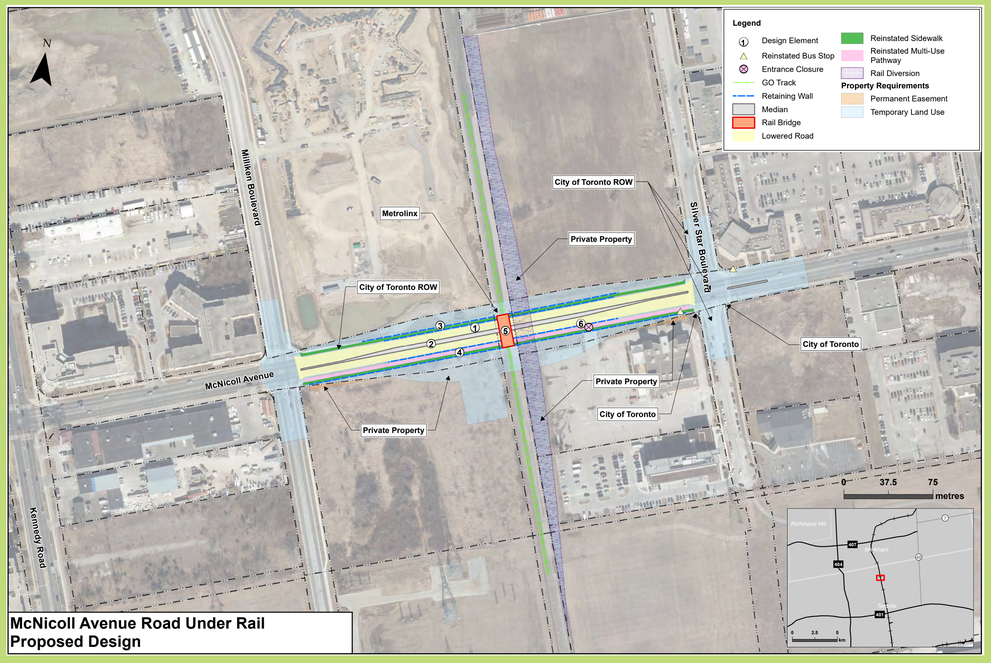
Stouffville Rail Corridor Grade Separations Project

McNicoll Avenue Road Under Rail

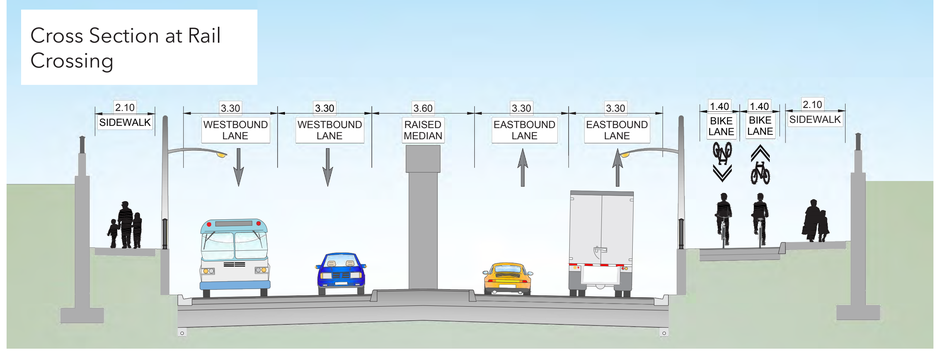


Design Elements

1. Lowered roadway
2. Median – separates two vehicular traffic lanes in each direction
3. Retaining walls to support the new road under rail structure (as high as 6.6 m, subject to final grading and design)
4. Reinstated sidewalks and multi-use path
5. Lighting under the rail bridge promotes traffic and pedestrian safety
6. One permanent entrance closure

A road under rail was selected for this location due to the advantages identified below:

McNICOLL AVENUE	Road Over Rail	Road Under Rail
Better accessibility for businesses and pedestrians	✗	✓
Minimizes cost	✓	✗
Minimizes noise and visual impacts	✗	✓
Minimizes the project footprint	✗	✓
Reduces conflicts with existing intersections	✗	✓
Preferred Option	✗	✓



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McNicoll Avenue Road Under Rail

Traffic Findings

- Following construction, the grade separation will allow traffic, pedestrians and cyclists to travel more efficiently and without interruption.
- Two impacted bus stops will be temporarily relocated during construction.
- One permanent entrance closure required.
- A road detour to the south of McNicoll Avenue will be required during construction.
- Elevated sidewalks and cycling track through the grade separation will enhance safety of pedestrians and cyclists.

Construction Staging

- Site Preparation – delineation of construction zones through signage and hoarding as needed, site clearing, temporary access to properties as needed, and installation of rail or road detours as required.
- Construction – will vary based on each site, but generally will include excavation, utility relocation, installation or modification of structures and barriers, road/track construction.
- Restoration – final landscaping, road paving/marking, site cleanup and removal of construction zones.

McNicoll Avenue Road Under Rail
Construction Staging Area

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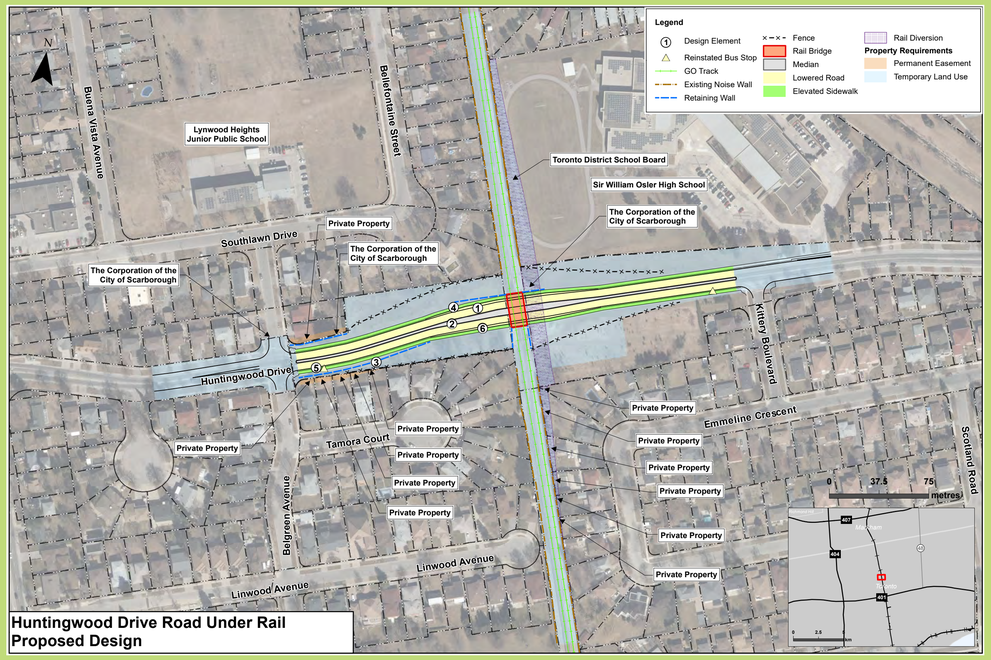
Stouffville Rail Corridor Grade Separations Project

Huntingwood Drive Road Under Rail

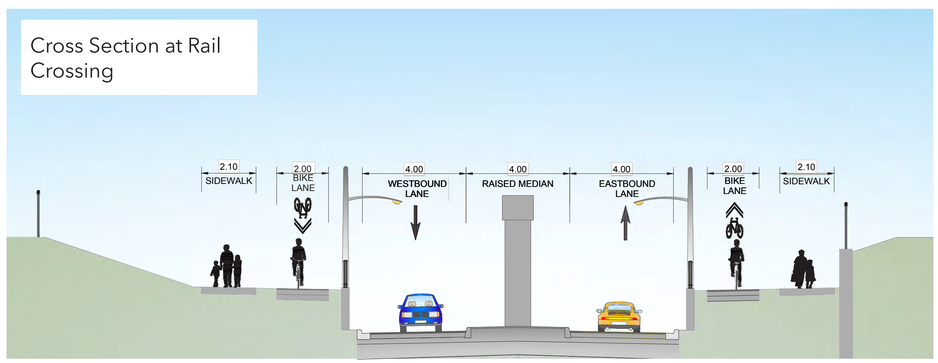


Design Elements

1. Lowered roadway
2. Median – separates one vehicle lane and one bike lane in each direction
3. Retaining walls to support the new road under rail structure (as high as 7.3 m, subject to final grading and design)
4. Elevated sidewalks
5. Reinstated bus stops
6. Existing bike lane to be maintained alongside road

A road under rail was selected for this location due to the advantages identified below:

HUNTINGWOOD DRIVE	Road Over Rail	Road Under Rail
Better accessibility for Sir William Osler High School, and pedestrians	✗	✓
Minimizes cost	✓	✗
Minimizes noise and visual impacts	✗	✓
Minimizes the project footprint	✗	✓
Reduces conflicts with existing intersections	✗	✓
Preferred Option	✗	✓



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Stouffville Rail Corridor Grade Separations Project

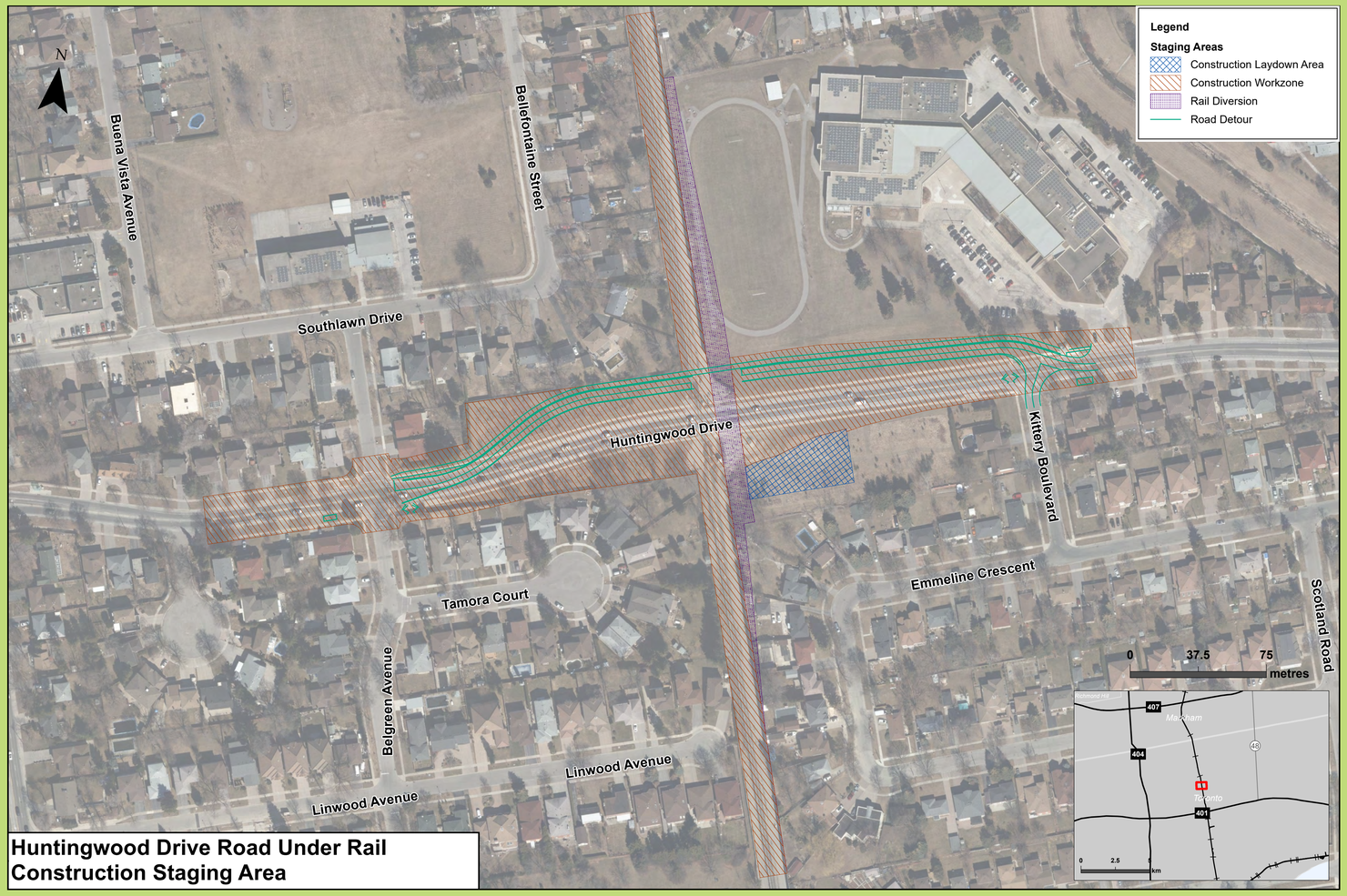
Huntingwood Drive Road Under Rail

Traffic Findings

- Following construction, the grade separation will allow traffic, pedestrians and cyclists to travel more efficiently and without interruption.
- Bus stops will be temporarily relocated during construction.
- No entrance closures required.
- A road detour to the north of Huntingwood Drive will be required during construction.
- Elevated sidewalks and cycling track through the grade separation will enhance safety of pedestrians and cyclists.

Construction Staging

- Site Preparation – delineation of construction zones through signage and hoarding as needed, site clearing, temporary access to properties as needed, and installation of rail or road detours as required.
- Construction – will vary based on each site, but generally will include excavation, utility relocation, installation or modification of structures and barriers, road/track construction.
- Restoration – final landscaping, road paving/marking, site cleanup and removal of construction zones.



Huntingwood Drive Road Under Rail
Construction Staging Area

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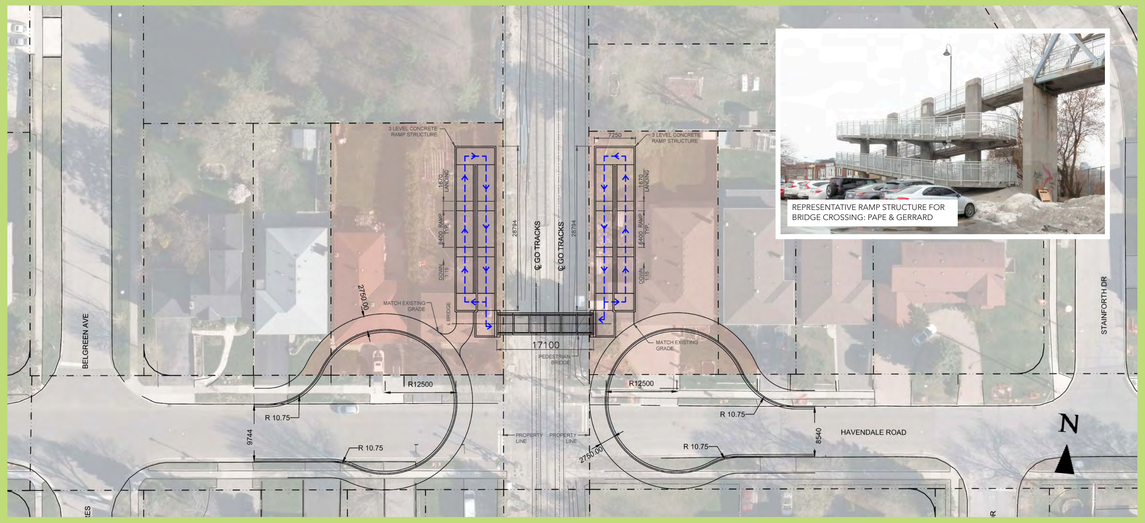
Stouffville Rail Corridor Grade Separations Project

Havendale Road Closure with Crossing Options

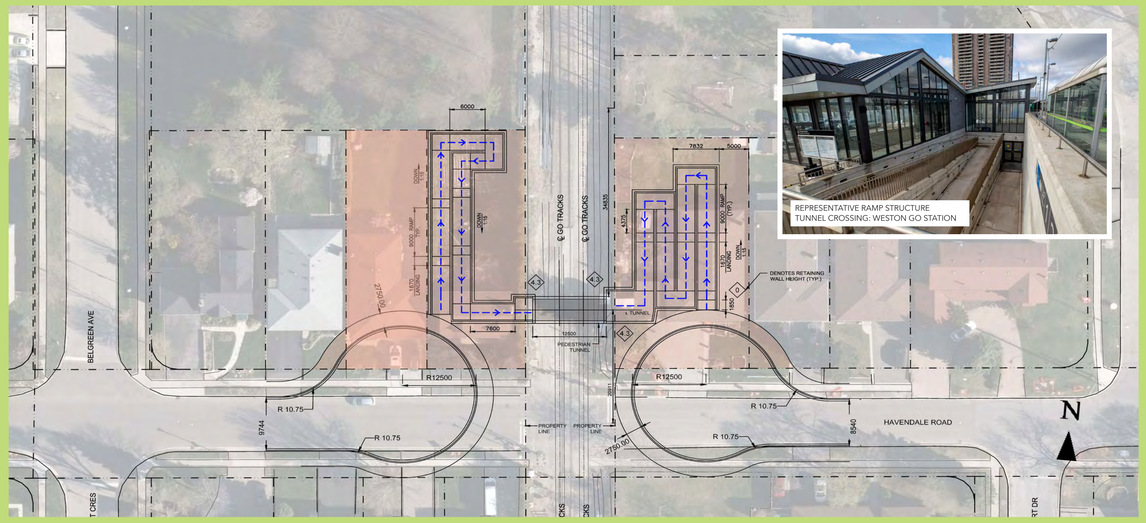
- To facilitate two-way all day service on the Stouffville Line, a road closure is required at Havendale Road. Constructing a new road over rail or road under rail structure would have significant property impacts and neighborhood impacts
- To maintain pedestrian and cyclist connectivity, Metrolinx is considering options for a new multi-use crossing to either pass over or under the rail corridor (through a new bridge or tunnel)
- Metrolinx has identified a bridge crossing as the preferred design. Based on ongoing discussions with the City, Metrolinx is obtaining TPAP approval for both bridge and tunnel options

Pedestrian Bridge (Preferred)

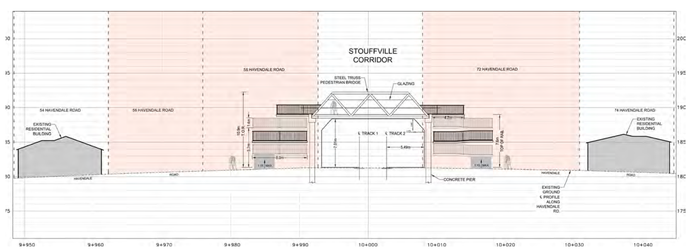


Construction staging/laydown area to be confirmed

Pedestrian Tunnel

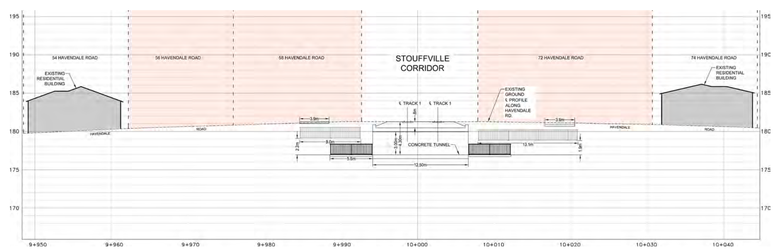


Construction staging/laydown area to be confirmed



Bridge and Tunnel: Common Elements

- Ramps and crossings will be designed to a minimum width of 3 m, with slopes that meet accessibility requirements
- Location and design will focus on opportunities to limit encroachment on houses and visual impacts on the neighborhood
- Space may be available on the northwest side of the rail corridor to create a new connection to Havendale Park
- A cul-de-sac on each side of the newly closed road is proposed to meet City of Toronto road standards



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Havendale Road Closure with Crossing Options

Pedestrian Bridge (Preferred)

REPRESENTATIVE RAMP IMAGE:
PEDESTRIAN BRIDGE AT PAPE & GERRARD

Design Elements

- New pedestrian bridge with a 3-level ramp structure to cross the rail line at about 7 m high
- Transparent protection barriers over the rail lines will protect electrification infrastructure
- Guardrails and barriers will be designed to reduce visual impact and maximize natural lighting
- Open/transparent design will maximize sightlines across ramps and bridge

Pedestrian Tunnel

REPRESENTATIVE RAMP
IMAGE: WESTON GO STATION

Design Elements

- New ramps will descend to about 4.3 m underground so that the 2.5 m - 3 m high tunnel can pass beneath the rail lines
- Retaining walls as high as approximately 4.3 m will be required to support the new depressed ramp structures
- Retaining walls and structural elements will be limited where feasible to maximize natural lighting. Lighting will be included in the tunnel to improve visibility
- Where feasible, ramp configuration will be designed to maximize sightlines through tunnel

Construction Impacts and Mitigation

- The properties required to accommodate the structure and cul-de-sacs will also be used as construction laydown areas, to limit the temporary impacts on the neighborhood
- Metrolinx will contact property owners directly to discuss acquisition
- Construction activities will be limited to daytime hours to the extent possible to limit the potential for nuisance effects such as noise, vibration and dust
- The ability to cross the corridor will be restricted during construction, but detour signage can be provided
- Service interruptions related to utility relocation will be communicated to the public

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Tell us what you think

Havendale Road Multi-use Crossing Options

Your feedback is one of many important factors that Metrolinx considers in decision-making.

Place a dot on the option you like and use a sticky note to tell us why.

Havendale Road Pedestrian Bridge

Place your dot here

Stick your note here

Havendale Road Pedestrian Tunnel

Place your dot here

Stick your note here

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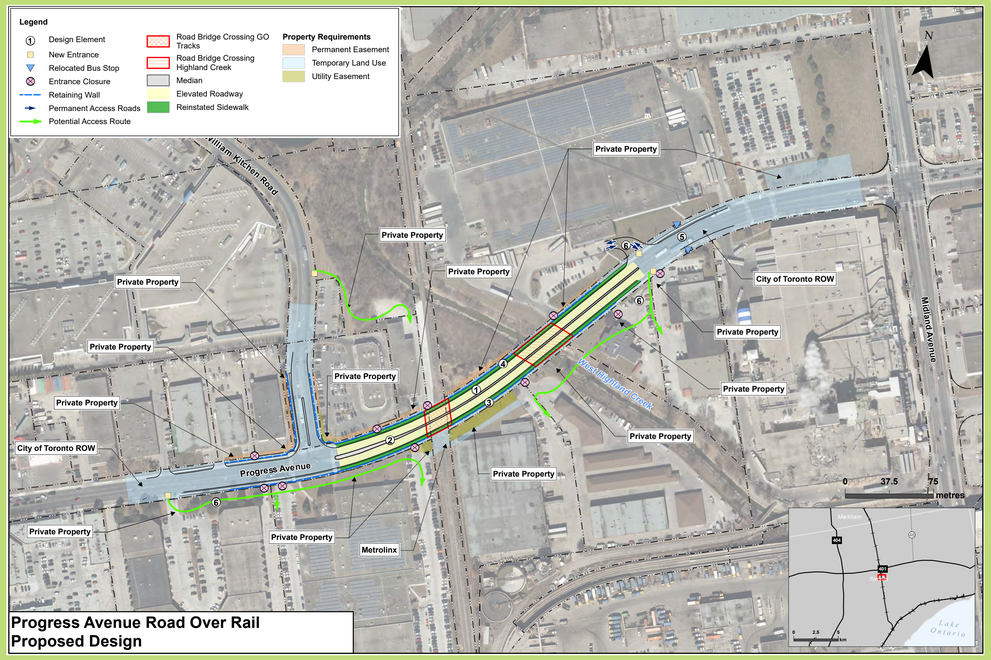
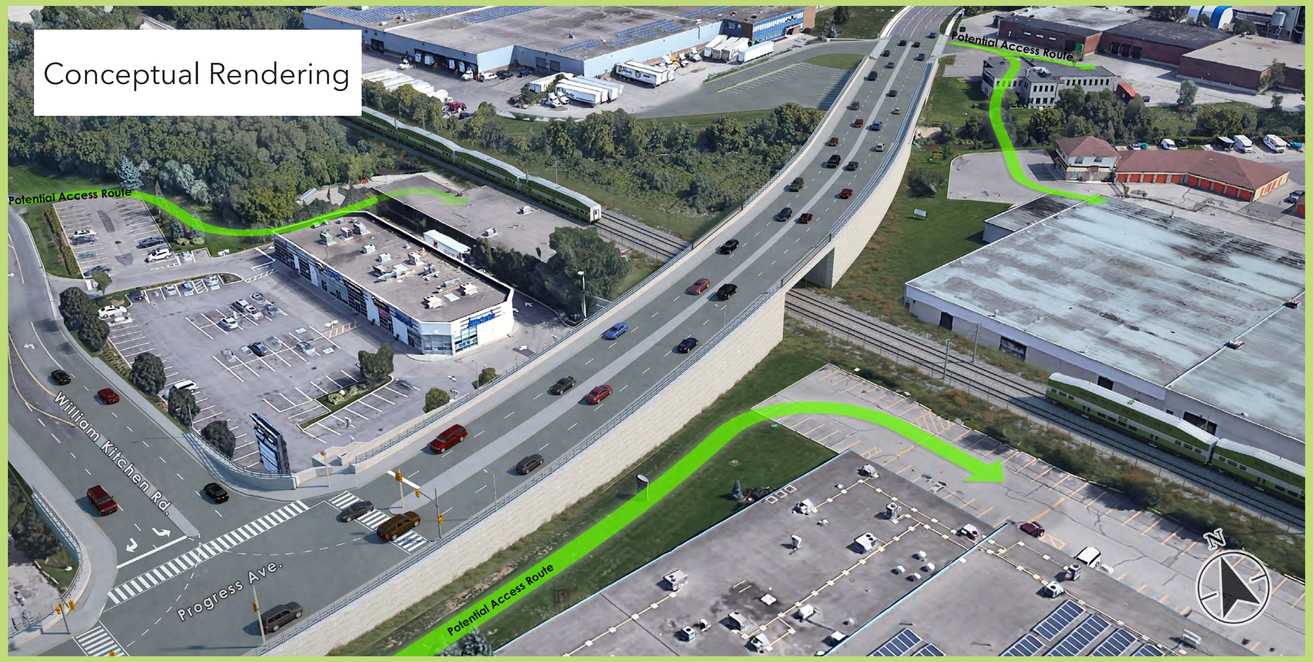
Stouffville Rail Corridor Grade Separations Project

Progress Avenue Road Over Rail



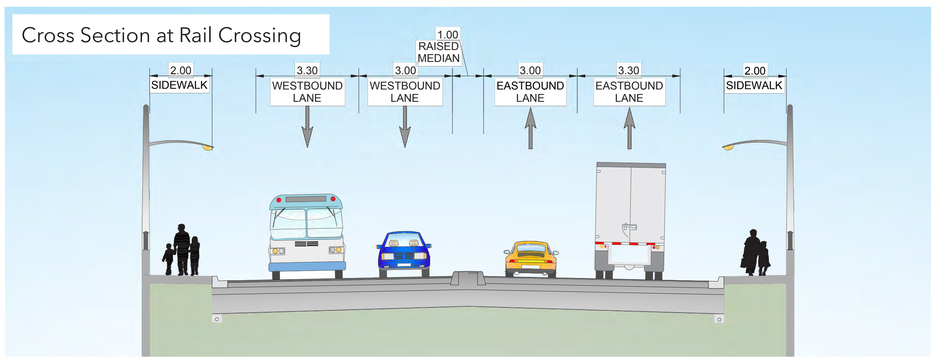


Design Elements

1. Elevated roadway
2. Median – separates two vehicular lanes in each direction
3. Retaining walls to support the new road over rail structure (as high as 9.8 m, subject to final grading and design)
4. Reinstated sidewalks
5. Relocated bus stops – moved eastward towards Midland Ave.
6. Permanent access roads will provide new entrances for ten impacted properties

A road over rail was selected for this location due to the advantages identified below:

PROGRESS AVENUE	Road Over Rail	Road Under Rail
Better accessibility for businesses and pedestrians	✗	✓
Minimizes cost	✓	✗
Minimizes noise and visual impacts	✗	✓
Mitigates conflicts with West Highland Creek	✓	✗
Preferred Option	✓	✗



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Stouffville Rail Corridor Grade Separations Project

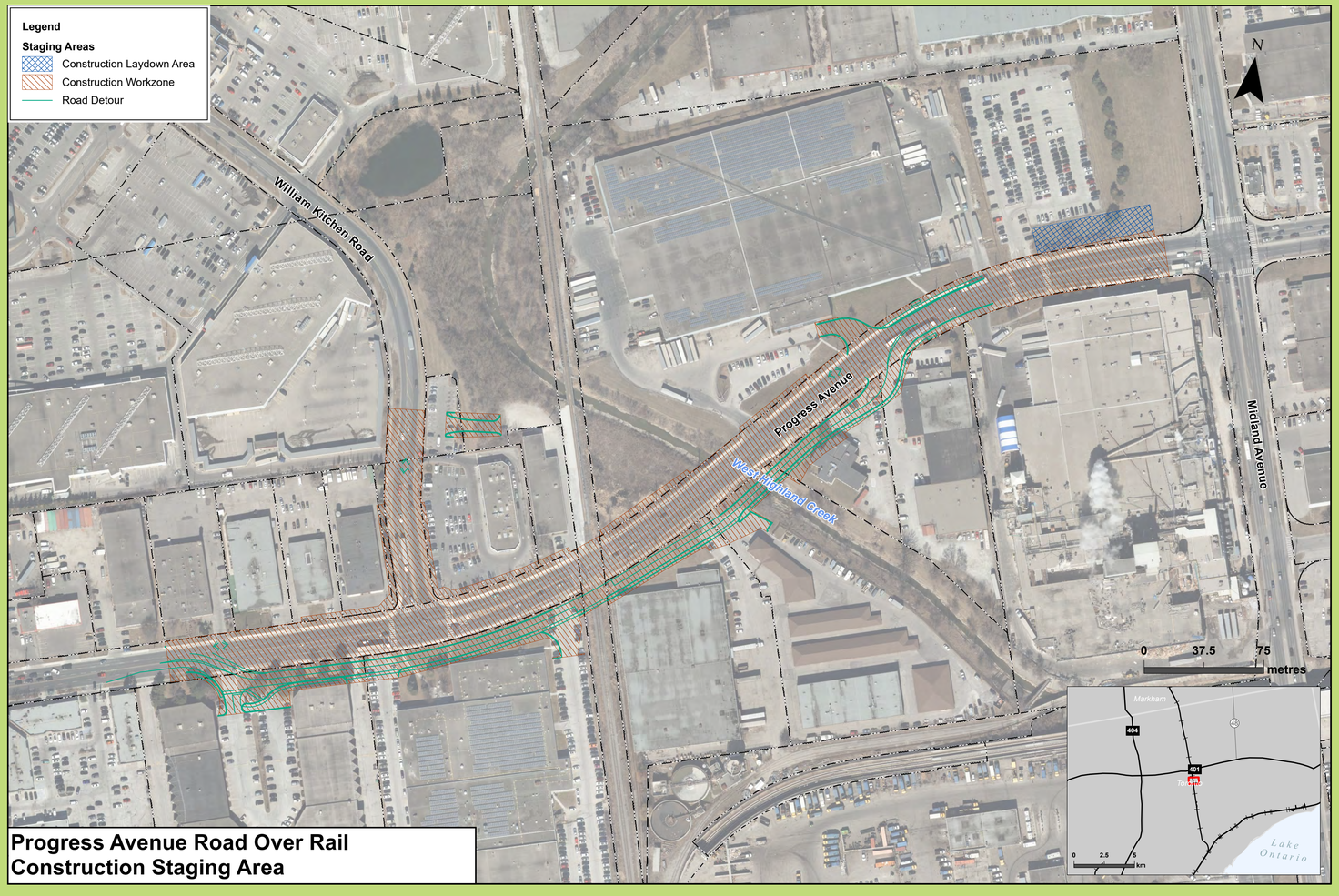
Progress Avenue Road Over Rail

Traffic Findings

- Following construction, the grade separation will allow traffic, pedestrians and cyclists to travel more efficiently and without interruption.
- Bus stops will be temporarily relocated during construction.
- A road detour to the south of Progress Avenue will be required during construction.
- Access to William Kitchen Road from Progress Avenue will be closed during construction.
- Permanent access roads provide news entrances for ten impacted properties.

Construction Staging

- Site Preparation – delineation of construction zones through signage and hoarding as needed, site clearing, temporary access to properties as needed, and installation of rail or road detours as required.
- Construction – will vary based on each site, but generally will include excavation, utility relocation, installation or modification of structures and barriers, road/track construction.
- Restoration – final landscaping, road paving/marking, site cleanup and removal of construction zones.



Progress Avenue Road Over Rail
Construction Staging Area

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Design and Construction Commitments

Rail Tunnel - Design	**Traffic - Design**
Rail tunnel reduces the Project footprint and improves traffic operations.	Traffic and pedestrian safety measures will be designed to applicable standards, such as medians and guiderails.
Where necessary, electrification protection barriers will be placed along the corridors, including on top of retaining walls, to prevent access to the tracks and the electrified overhead contact system wires.	**Traffic - Construction**
Transparent barriers will be used at the corner of Danforth and Midland to improve visibility for traffic and pedestrians.	At Danforth Road, potential effects to pedestrian and cyclist activities will be mitigated through the installation of appropriate way finding, regulatory, and warning signs.
St. Clair Avenue East Bridge - Design	At Danforth Road, up to three travel lanes (both directions combined) are proposed to remain open during each construction stage.
The existing road and sidewalks will be maintained with limited disturbance.	At Danforth Road, Metrolinx will consult with the TTC to establish a suitable mitigation strategy to be implemented.
Lighting under the rail bridge promotes traffic and pedestrian safety.	At Danforth Road, a sidewalk will be maintained on one side of the road during construction.
Utilities	At Danforth Road, signal timing optimization for key intersections will mitigate the impacts of temporary construction stages.
Relocation and/or realignment of the utilities will occur in consultation with the City of Toronto and other applicable utility owners.	At St. Clair Avenue East, two lanes of traffic will be maintained in each direction during construction.
Service interruptions related to utility relocation will be communicated with affected public.	A site-specific Construction Traffic Control and Management Plan will be prepared and implemented to maintain reasonable access through work zones, to the extent possible, and include construction signage and safety fencing requirements.
Properties	
Where entrances to properties must be closed to accommodate the grade separation, alternative entrances or new access locations have been identified.	
Further discussion will occur with property owners regarding access requirements, temporary easements during construction, and property acquisition requirements.	

A full list of impacts and mitigation measures will be identified as design progresses, and will be documented in the Environmental Project Report which will be made available for public review.

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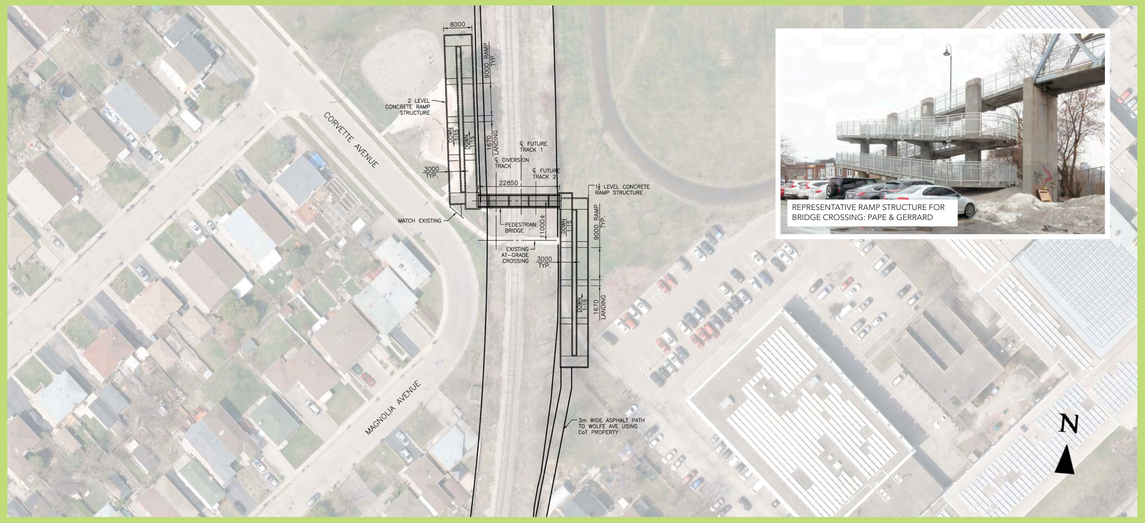
Scarborough Junction Grade Separation Project

Corvette Park Crossing Options

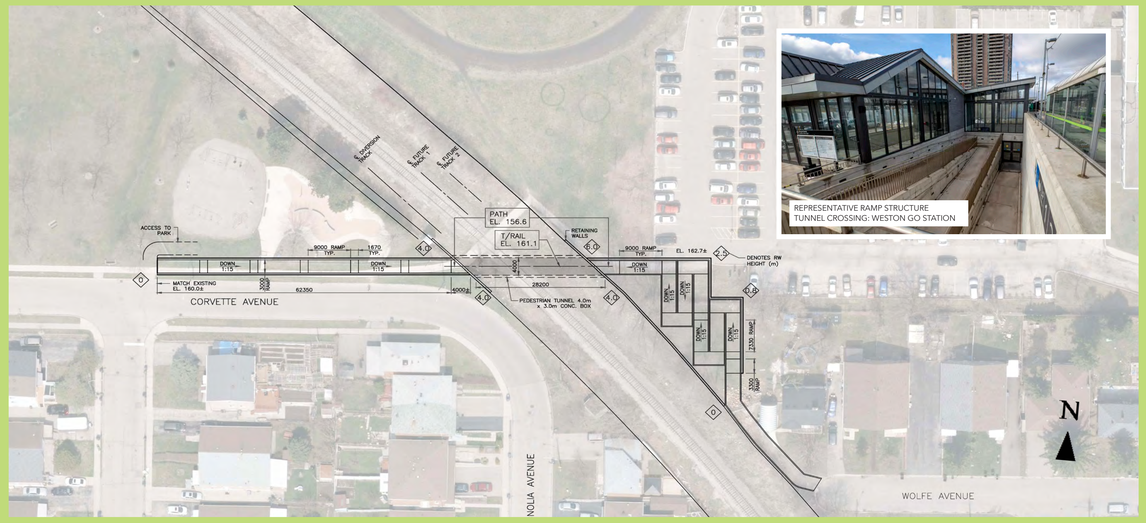
- To facilitate two-way all day service on the Stouffville Line, the existing at-grade crossing of the rail corridor near Corvette Park needs to be replaced with a structure that separates pedestrian and cyclist traffic from the tracks
- To maintain pedestrian and cyclist connectivity, Metrolinx is considering options for a new multi-use crossing to either pass over or under the rail corridor (through a new bridge or tunnel)
- Metrolinx has identified a bridge crossing as the preferred design. Based on ongoing discussions with the City, Metrolinx is obtaining TPAP approval for both bridge and tunnel options

Pedestrian Bridge (Preferred)

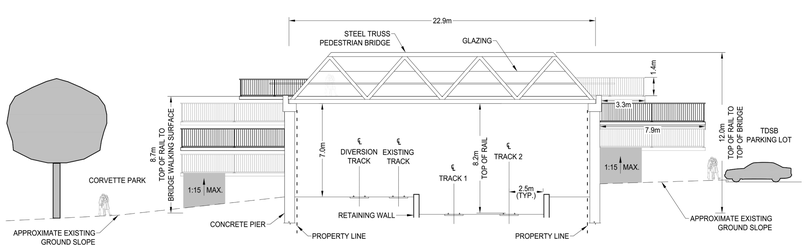


Construction staging/laydown area to be confirmed

Pedestrian Tunnel

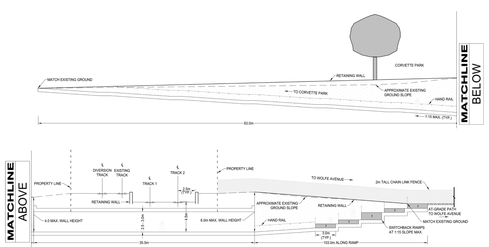


Construction staging/laydown area to be confirmed



Bridge and Tunnel: Common Elements

- Ramps and crossings will be designed to a minimum width of 3 m, with slopes that meet accessibility requirements
- A new connection to Wolfe Ave. will be created using existing City of Toronto property, and direct access to the Scarborough Centre for Alternative Studies will be removed through fencing
- Impacts and mitigation to Corvette Park splash pad will be coordinated with the City of Toronto, including coordinating construction works, relocation plans for the splash pad and playground improvements or modifications



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Corvette Park Crossing Options

Pedestrian Bridge (Preferred)

REPRESENTATIVE RAMP IMAGE:
PEDESTRIAN BRIDGE AT PAPE & GERRARD

Design Elements

- New pedestrian bridge with a 3-level ramp on the west and 2-level ramp on the east to cross the rail line at about 6.9 m high
- Transparent protection barriers over the rail lines will protect electrification infrastructure
- Guardrails and barriers will be designed to reduce visual impact and maximize natural lighting
- Open/transparent design will maximize sightlines across ramps and bridge
- The western ramp into Corvette Park will require relocation of the splash pad
- Since the splash pad will require removal, this area can be used as a construction laydown area, to limit the temporary impacts on the neighborhood and other areas of the park

Pedestrian Tunnel

REPRESENTATIVE RAMP
IMAGE: WESTON GO STATION

Design Elements

- New ramps will descend to approximately 4.5 m underground to allow the 2.5 m - 3 m vertical height of the tunnel to pass beneath the rail lines
- Retaining walls as high as approximately 4 - 6 m will be required to support the new depressed ramp structures
- Retaining walls and structural elements will be limited where feasible to maximize natural lighting. Lighting will be included in the tunnel to improve visibility
- Where feasible, ramp configuration will be designed to maximize sightlines through tunnel
- The western ramp will limit direct impacts on the splash pad, and allow it to remain in place
- A laydown area within Corvette Park will need to be confirmed to facilitate construction, while limiting impacts on park users during construction

Construction Impacts and Mitigation

- Metrolinx will work with the City of Toronto and Toronto District School Board to discuss property acquisition needs
- Construction activities will be limited to daytime hours to the extent possible to limit the potential for nuisance effects such as noise, vibration and dust
- The ability to cross the corridor will be restricted during construction, but detour signage can be provided (such as directions to the nearest pedestrian crossing at Benjamin Blvd. / Saugeen Crescent or Danforth Road)
- Service interruptions related to utility relocation will be communicated to the public

Tell us what you think

Corvette Park Multi-use Crossing Options

Your feedback is one of many important factors that Metrolinx considers in decision-making.

Place a dot on the option you like and use a sticky note to tell us why.

Corvette Park Pedestrian Bridge

Place your dot here

Stick your note here

Corvette Park Pedestrian Tunnel

Place your dot here

Stick your note here

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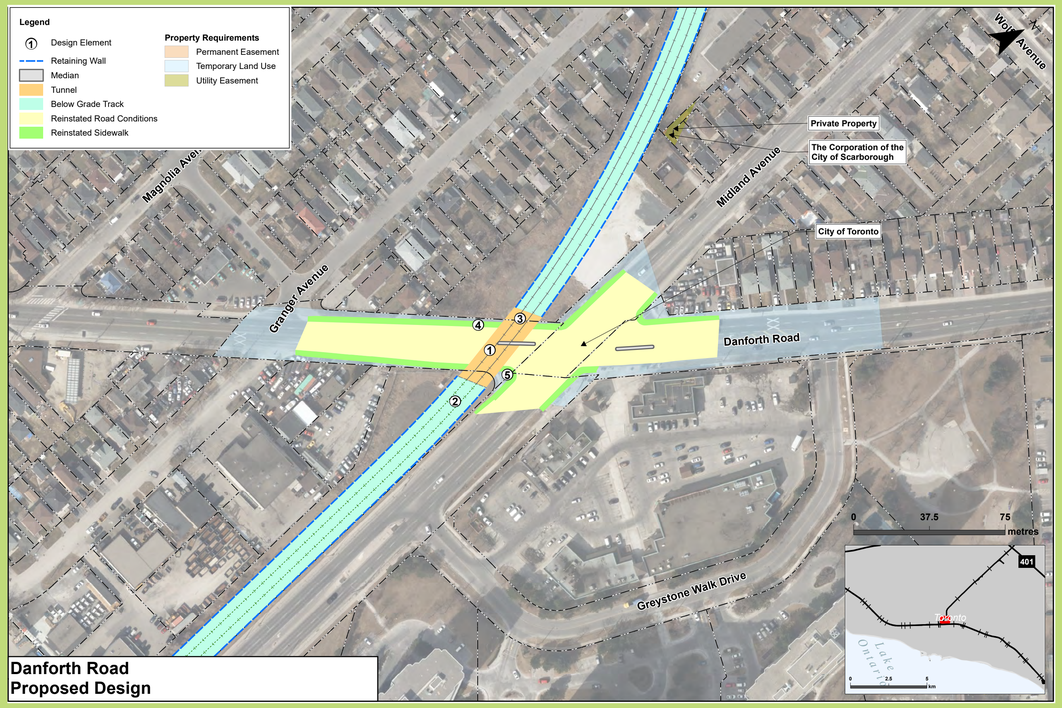
Scarborough Junction Grade Separation Project

Danforth Road Rail Tunnel

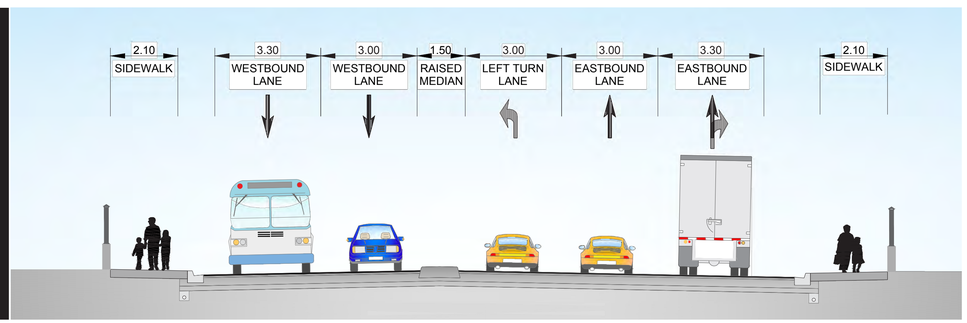


Design Elements

1. New rail tunnel maintains Danforth Road at-grade
2. Lowered rail corridor is necessary to facilitate the Scarborough Junction rail-rail grade separation
3. Property fence and electrification protection barrier on Danforth bridge
4. Reinstated sidewalks
5. Improved intersection configuration to remove right-turn channels

Stouffville tracks to pass underneath Danforth Road, replacing at-grade crossing and improving traffic operations.

Cross Section at Rail Crossing



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Danforth Road Rail Tunnel

Traffic Findings

- A three-lane detour is proposed during construction to maintain adequate traffic flow across Danforth with limited delays.
- Optimization of signal timings is expected to help reduce queues and delays significantly.
- Following construction, the grade separation will allow traffic, pedestrians and cyclists to travel more efficiently and without interruption.
- Full detour of TTC bus services will not be required. Some delays to TTC Route 16 expected.

Construction Staging

- Site Preparation – delineation of construction zones through signage and hoarding as needed, site clearing, temporary access to properties as needed, and installation of rail or road detours as required.
- Construction – will vary based on each site, but generally will include excavation, utility relocation, installation or modification of structures and barriers, road/track construction.
- Restoration – final landscaping, road paving/marking, site cleanup and removal of construction zones.

Danforth Road
Construction Staging Area

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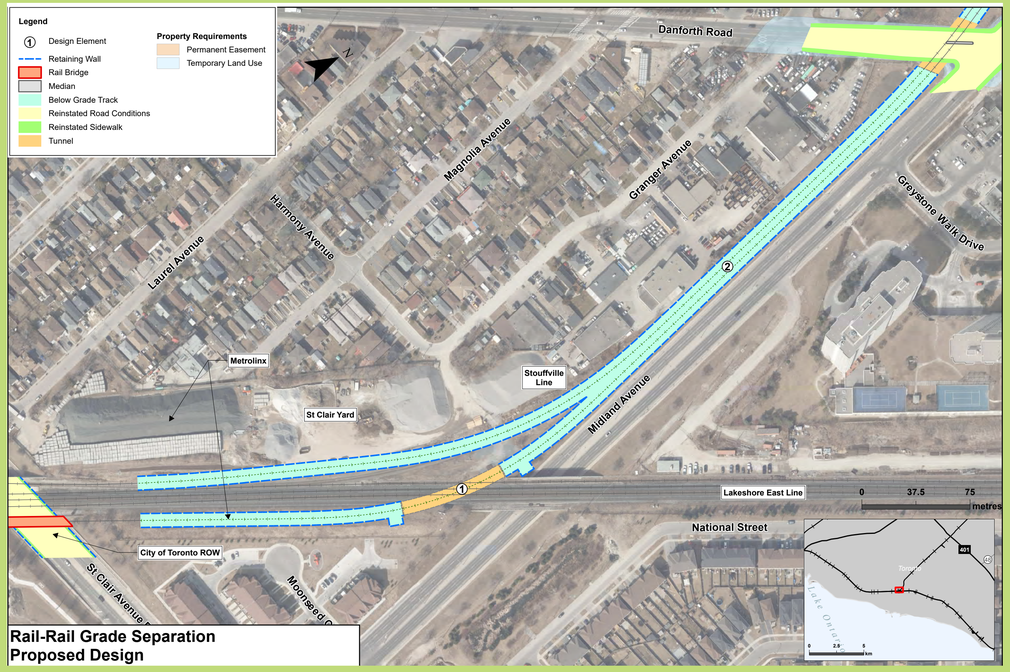
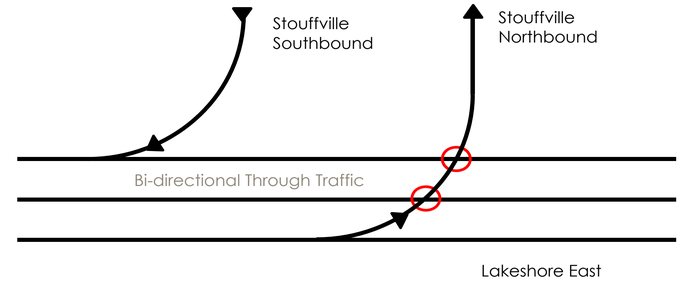
Scarborough Junction Grade Separation Project

Rail / Rail Grade Separation

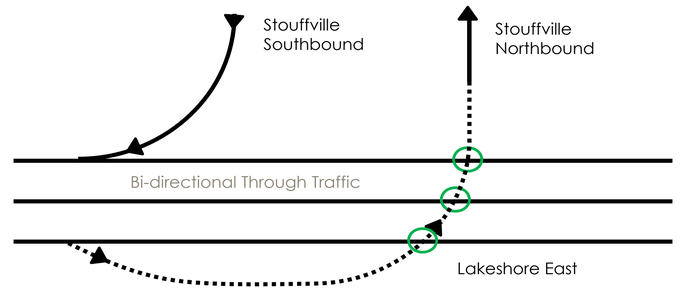


Design Elements

1. The new second Stouffville track will drop below grade and cross under the Lakeshore East tracks before meeting with the existing Stouffville track.
2. The Stouffville line will continue within a lowered rail corridor to accommodate the rail tunnel at Danforth Road.



Expanded Service without Grade Separation – northbound trains create conflicts by switching across two tracks



Expanded Service with Grade Separation – depressed crossing removes conflicts across tracks

Key Points

- With increased train service from GO Expansion, the current track configuration at the Scarborough Junction will not provide effective train movement between the Stouffville and Lakeshore East rail corridors.
- Currently, north-south trains along the Stouffville Rail Corridor would need to cross three tracks at-grade, creating potential train conflicts and delays.
- Switching across tracks will not be feasible to maintain train flow with increased service levels.
- To remove the potential for train conflicts and meet future service targets, a rail-rail grade separation just east of Midland Avenue is proposed.

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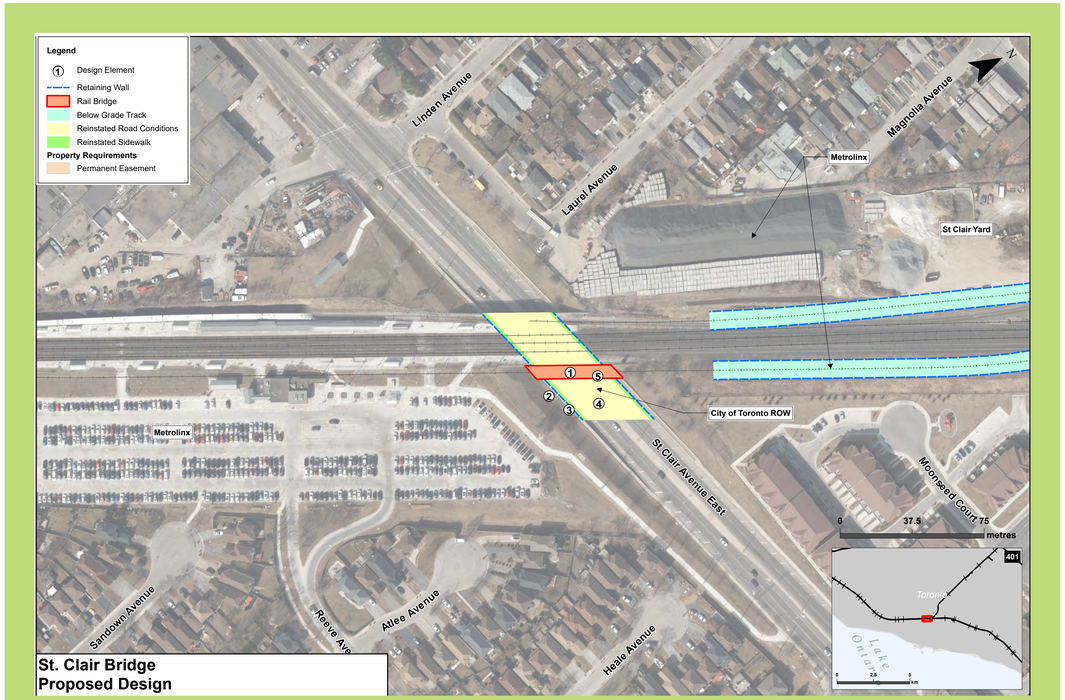
Scarborough Junction Grade Separation Project

St. Clair Avenue East Bridge Expansion



Key Points

- Expanded bridge at St. Clair Avenue East is required to accommodate the additional Stouffville track.
- The new structure will match the existing bridge.

Design Elements

1. Extended bridge
2. New retaining walls (as high as 5.3 m), wing walls, abutments to support additional track
3. Maintained elevated sidewalks
4. Reinstated road conditions
5. Additional lighting under the rail bridge promotes traffic and pedestrian safety

The existing Metrolinx St. Clair Yard has been identified as the Project construction staging site.

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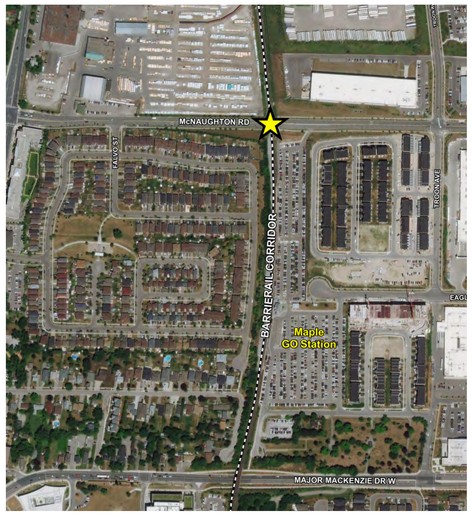
McNaughton Road

Key Points

- Road over rail grade separation

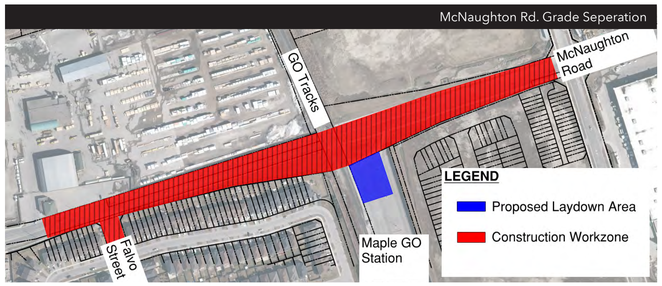
Design Elements

1. Elevated roadway
2. Two vehicular traffic lanes in each direction
3. Multi-use pathway (MUP) on south side of bridge
4. Retaining walls and landscaped embankment to soften visual impact
5. Lighting on bridge for traffic and pedestrian safety
6. MUP at grade on south side of McNaughton Rd., to provide connection to Maple GO Station
7. Exit from Maple GO Station parking lot



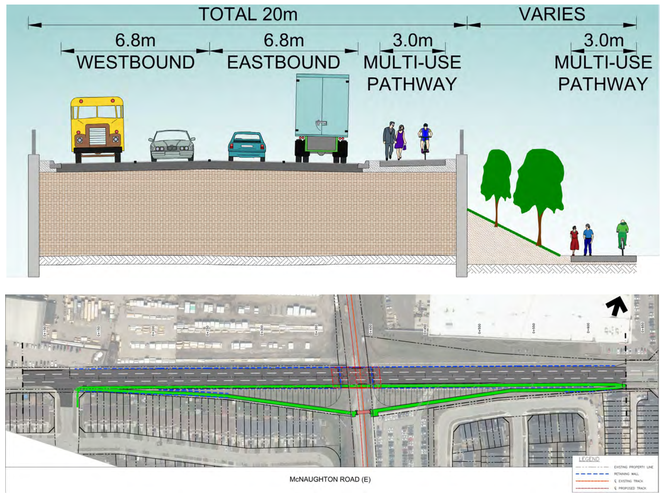
to McNaughton Rd. permanently closed

8. Access to Falvo St., Keele St., and Rodinea Rd. to be maintained
9. Electrification Protection Barriers



Construction Staging

- The laydown area will be in the southern limit of the existing road right-of-way
- Temporary re-routing of York Region Transit (YRT) Route 22, and relocate stops outside road closure work zone



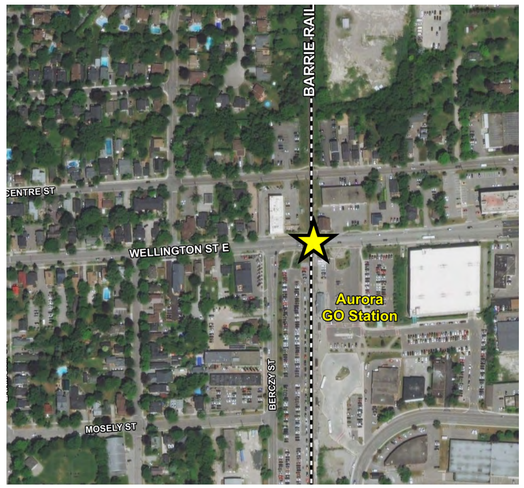
A road over rail overpass was selected for this location based on the advantages identified below:

OPTIONS ANALYSIS: OVERPASS OR UNDERPASS	OVERPASS	UNDERPASS
Limits changes to road and pedestrian access	✗	✓
Minimizes visual impact and community character	✗	✓
Minimizes impact on surrounding properties	✗	✗
Minimizes impact on utilities	✗	✗
Minimizes impact to rail service	✓	✗
Minimizes project footprint	✗	✓
Minimizes environmental impacts	✓	✗
Limits maintenance during construction	✓	✗
Minimizes construction costs	✓	✗
Minimizes construction time	✓	✗
Preferred	✓	✗

Wellington Street East

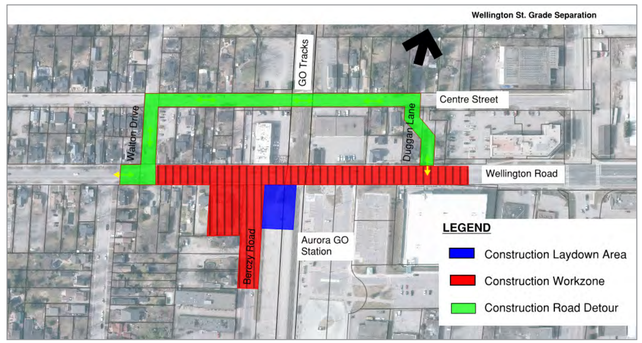
Key Points

- Rail over road grade separation
- One bridge to accommodate two tracks
- Temporary diversion track with an at-grade crossing



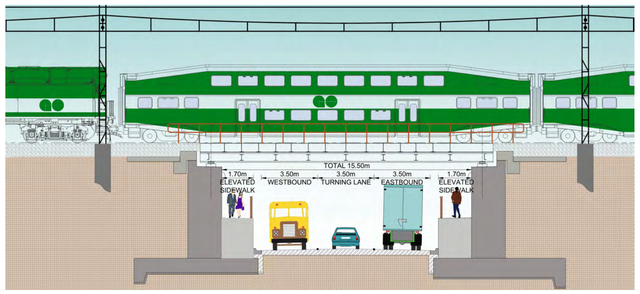
Design Elements

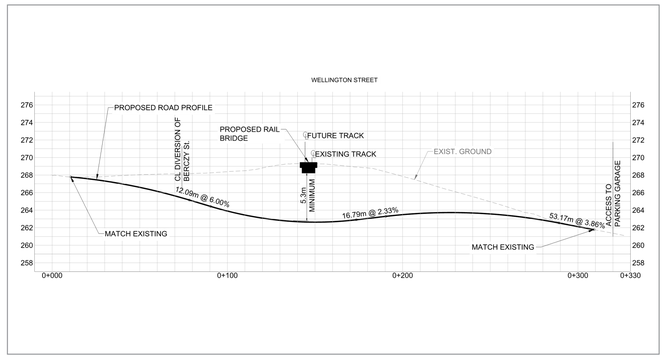
1. Lowered roadway
2. Three lanes under the GO Rail track, with one lane in either direction and one centre turning lane
3. Retaining walls to support the new underpass
4. Lighting under the rail bridge to promote traffic and pedestrian safety
5. Access to Berczy St., Walton Dr., Duggan Ln., and Industrial Pkwy. to be maintained
6. Access to GO Station parking to be maintained



Construction Staging

- Utilities to be reconstructed within the Wellington St. E. right-of-way
- Potential temporary detour route via Centre St.
- Temporary re-routing of York Region Transit (YRT) Routes 32, 33/33A, and 54, and relocate stops outside road closure work zone





A rail over road underpass was selected for this location based on the advantages identified below:

OPTIONS ANALYSIS: OVERPASS OR UNDERPASS	OVERPASS	UNDERPASS
Limits changes to road and pedestrian access	✗	✓
Minimizes impact on visual impact and community character	✗	✓
Minimizes impact on surrounding properties	✗	✗
Minimizes impact on utilities	✗	✗
Minimizes construction costs	✗	✓
Preferred	✗	✓

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GO Expansion – New Track & Facilities TPAP

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Proposed Layover & Train Storage

Example of the Willowbrook Layover Facility, City of Toronto

Layovers Facilities typically include:

1) Train Storage
2) Cleaning and Servicing
3) Waste Management
4) Crew Services
5) Track, Switches and Utilities

Additional layover/storage yard facilities are required to accommodate service expansion. Layover/storage yards are strategically located throughout the rail network.

Layover and storage facilities are necessary to achieve the targeted GO Expansion service levels by:

- Reducing long-distance non-revenue trips.
- Accommodating train storage during off-peak hours.
- Allowing trains to be routinely serviced and cleaned.
- Providing flexibility for trains to operate more seamlessly across the network.

Progressive Maintenance Facility

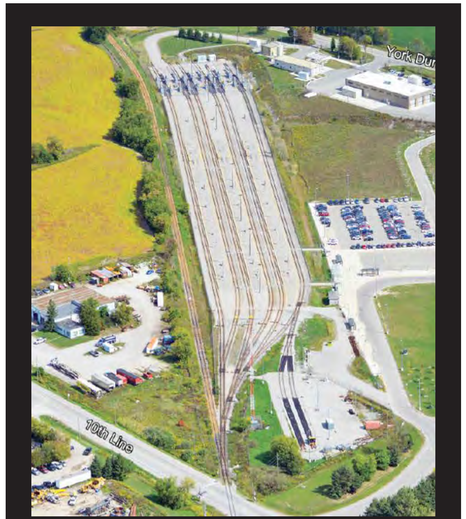
- A sheltered 400 metre long garage for train maintenance.

Exterior

Interior

Train Wash Facility

A structure for cleaning the exterior of trains, similar to a drive-thru car wash.



Lincolnville Layover Facility

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GO Expansion – New Track & Facilities TPAP

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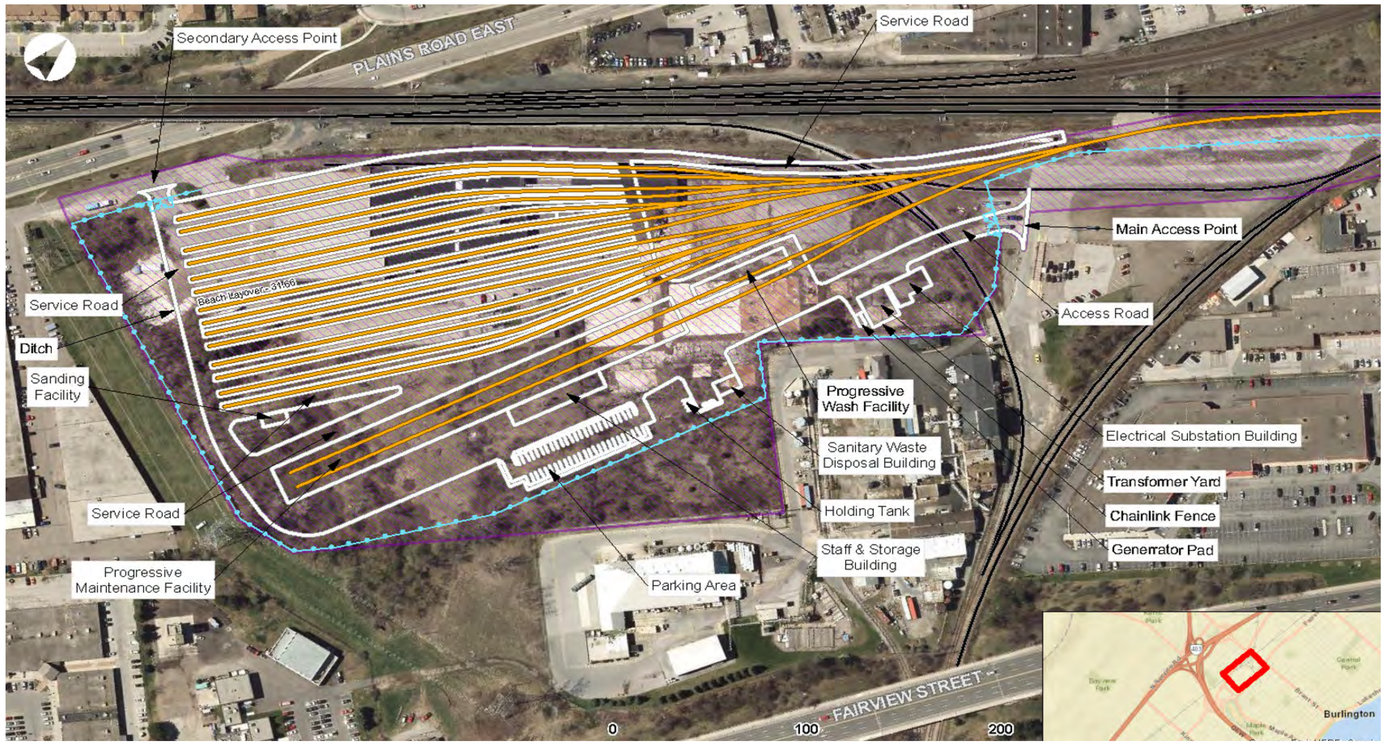
Proposed Beach Layover Facility - City of Burlington



To meet increasing service levels, the Beach Layover Facility is required for:

- Storing trains during the day and night.
- Reducing rail congestion on the Lakeshore West Corridor.
- Serving as the terminus of electrification of the corridor.

Existing Site

Proposed Site

Conceptual Design – Subject to Further Study

Design Elements:

- Electrification infrastructure
- Storage of 16 GO Trains
- Progressive Maintenance Bay and Wash Facility
- Fleet Storage and Servicing, Crew Services, Sanitary Storage and Staff Parking
- Connection to mainline track
- Staff entrance from Gray's Lane

Surrounding Characteristics:

- Property is currently being used by various industries
- Property is not currently owned by Metrolinx
- Surrounding land uses are primarily industrial

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GO Expansion – New Track & Facilities TPAP

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Proposed Unionville Storage Yard Facility – City of Markham

To meet increasing service levels, the Unionville Storage Yard Facility is required for:

- Storing trains during the day and night.
- Reducing rail congestion on the Stouffville Corridor.
- Serve as the terminus of electrification of the corridor.

Design Elements:

- Electrification infrastructure
- Storage for 2 GO Trains (single track)
- Includes staff parking
- Connection to mainline track
- Staff entrance from Enterprise Boulevard

Surrounding Characteristics:

- Storage tracks will be located within Metrolinx rail right of way
- Additional property will be needed for a new access road connecting to Enterprise Boulevard

Existing Site

Proposed Site

Conceptual Design – Subject to Further Study

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GO Expansion – New Track & Facilities TPAP

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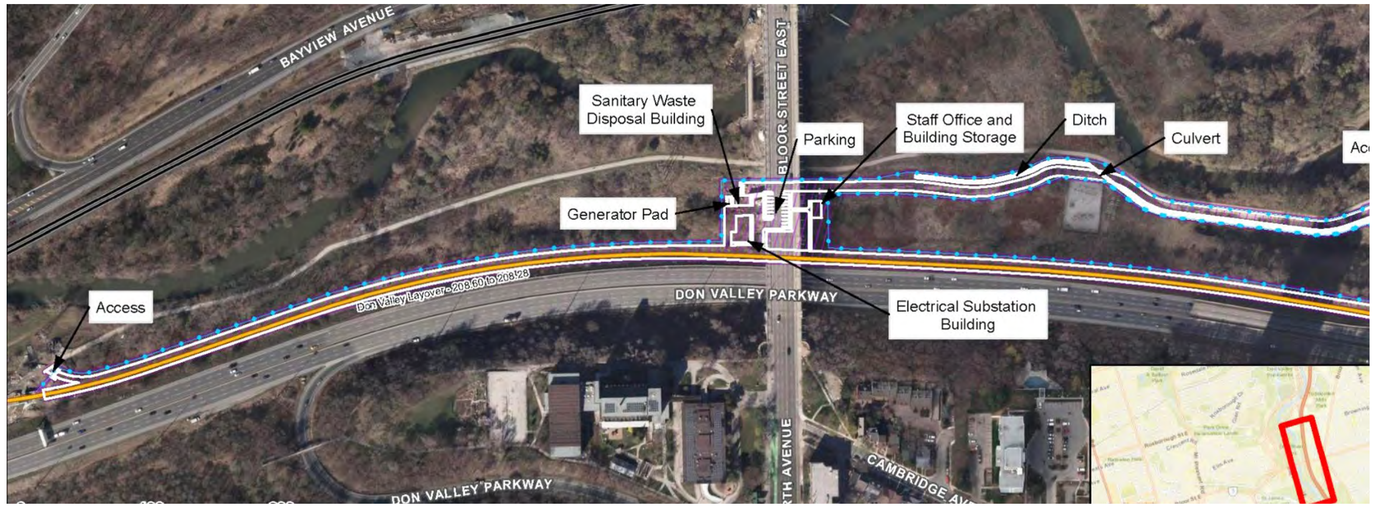
Proposed Don Valley Layover Facility - City of Toronto



Union Station is a bottleneck in the GO network. By situating a layover site on the Metrolinx-owned Don Branch, trains will be allowed to quickly and efficiently drop passengers at Union Station and allow for improved movement and reduced congestion. The site is ideally located to Union Station to allow for off-peak train storage.

Existing Site

Proposed Site

Conceptual Design - Subject to Further Study

Design Elements:

- Train traction servicing: wayside power
- Storage for 3 GO Trains
- Crew Services, Sanitary Storage and Staff Parking
- Connection to mainline track
- Entrance off Don Valley Parkway ramp to Bayview Avenue/Bloor Street

Surrounding Characteristics:

- Metrolinx owns the Don Branch rail corridor that runs parallel to the Don Valley Trail
- The Don Branch is currently not operational
- The track storage infrastructure will be on Metrolinx's existing property
- Additional property will be required for crewing services, wayside power, staff parking, etc.
- Road improvements to access the property may be required
- Protection of Don Valley Trail and connectivity to the surrounding community will be maintained.

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GO Expansion – New Track & Facilities TPAP

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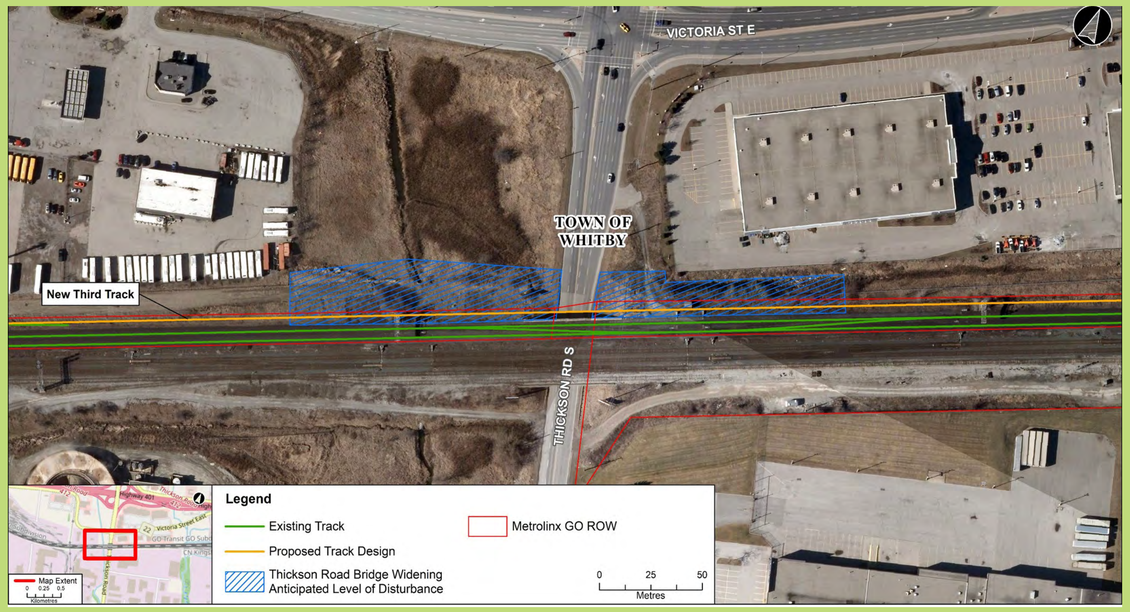
Thickson Road Bridge Expansion



The existing rail bridge at Thickson Road is to be widened to accommodate a new third track extending from the Whitby Maintenance Facility to Oshawa GO Station, within the Town of Whitby.

Design Elements:

- Maintaining the clearance for large vehicular traffic (Tractor Trailers, Hauling Trucks, Dump Trucks, etc.)
- Minimize impact to Thickson Road and surrounding properties
- Future proofing the proposed new bridge so that it is compatible with alternative forms of transportation (Pedestrian, Cycling, etc.)

Surrounding Characteristics:

- The surrounding area mainly consists of employment/ industrial and commercial type uses, which are not anticipated to be impacted by the proposed bridge expansion.
- Visual impacts are not anticipated due to the industrial nature of the surrounding area.
- No archaeological or cultural heritage resources are located within the vicinity of the Thickson Road Bridge.

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