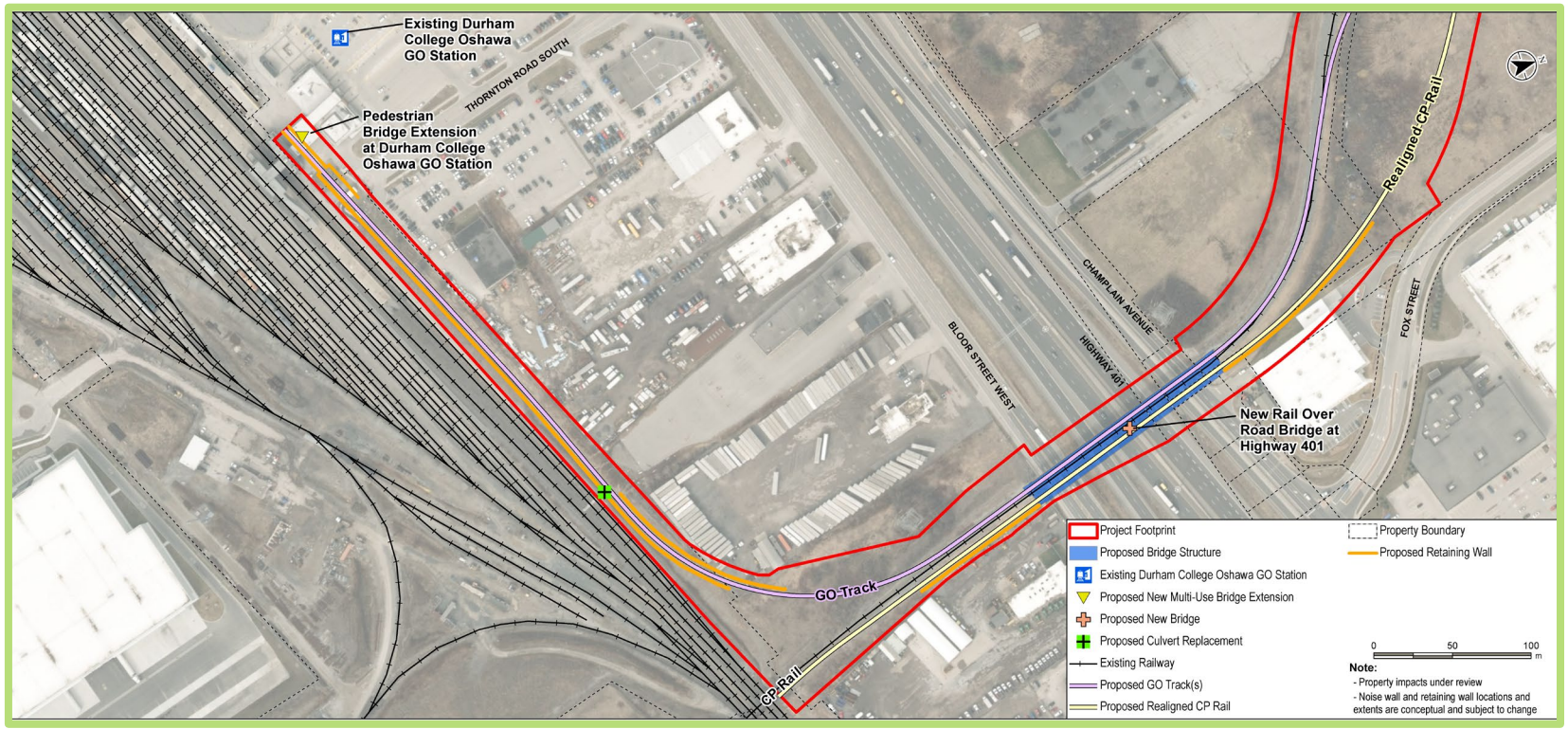
Project Overview – Key Components



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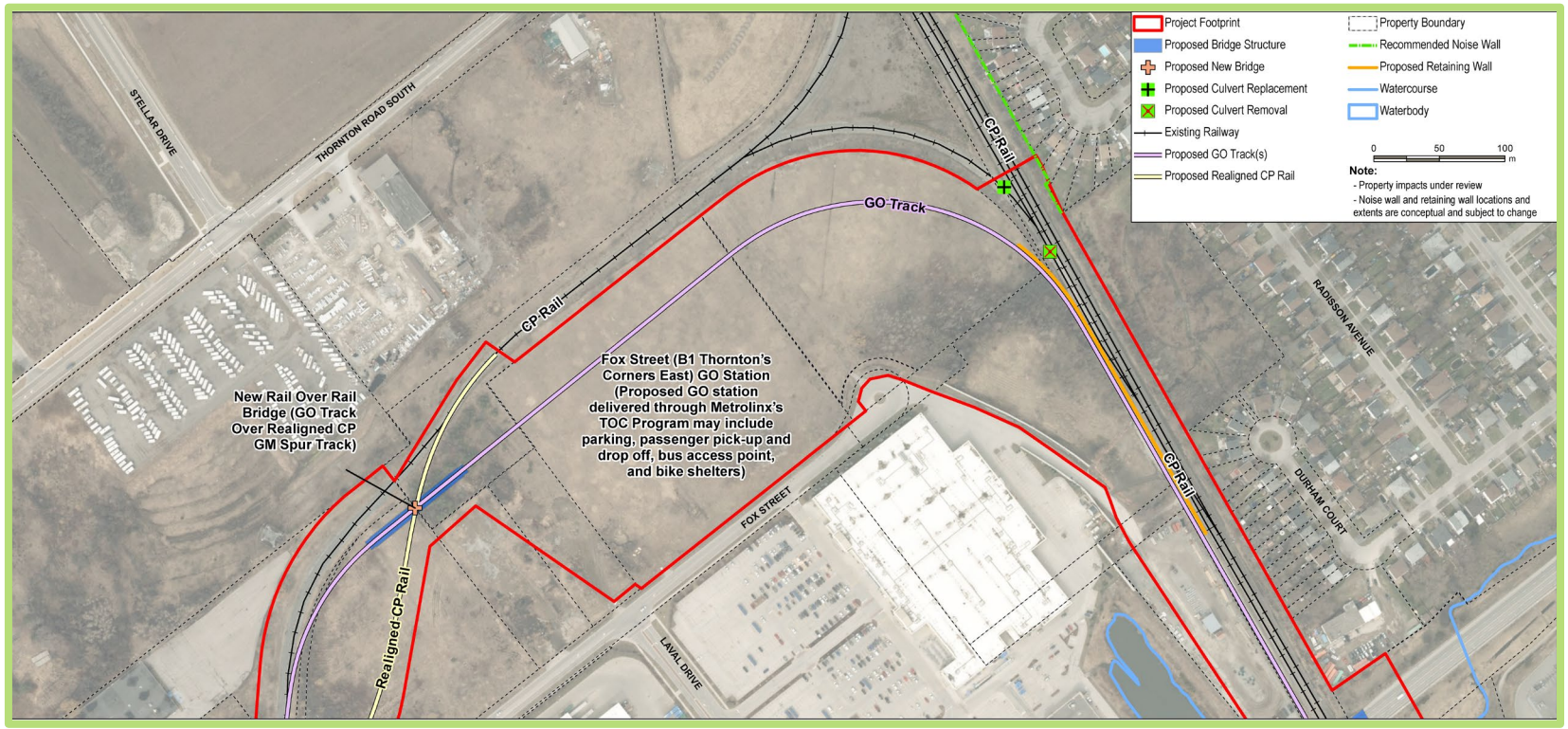
Project Overview – Key Components



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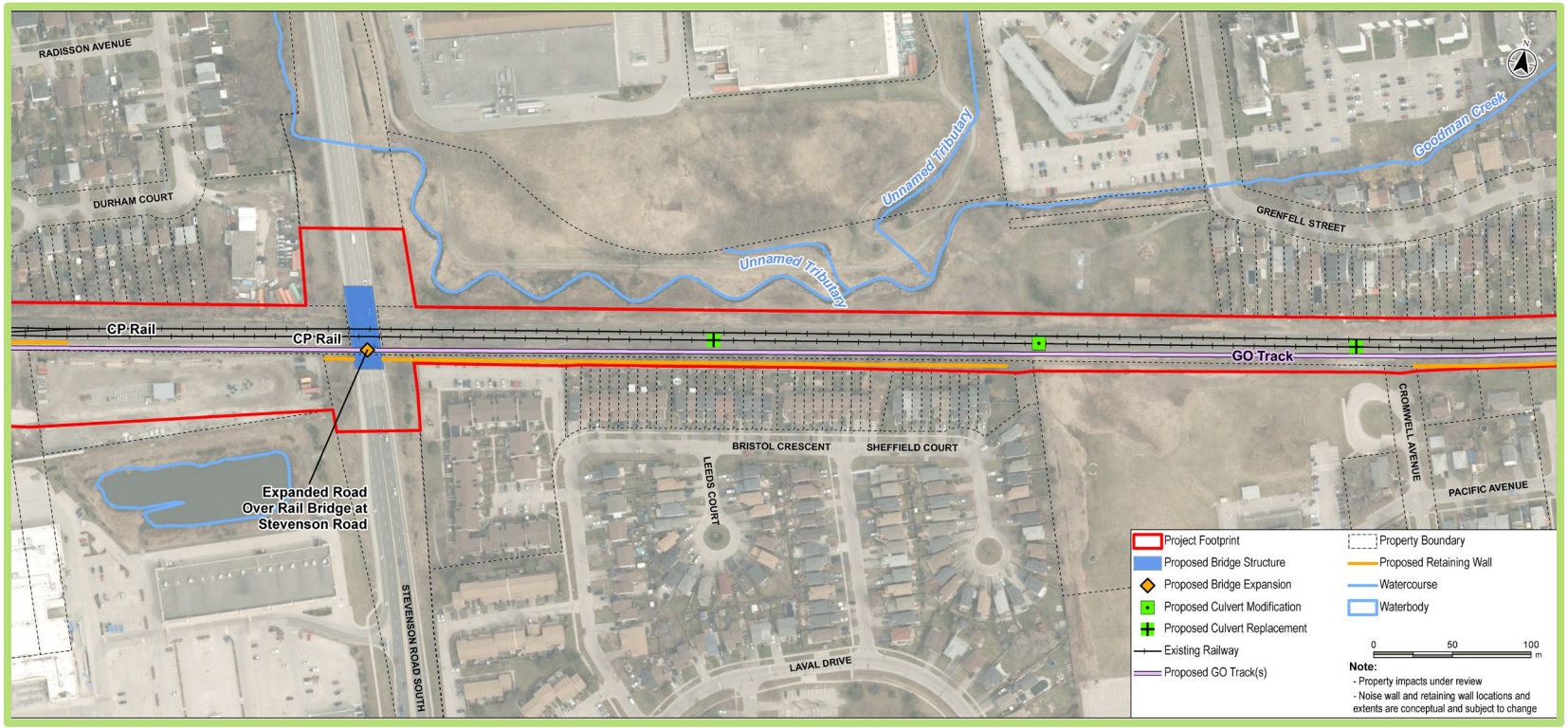

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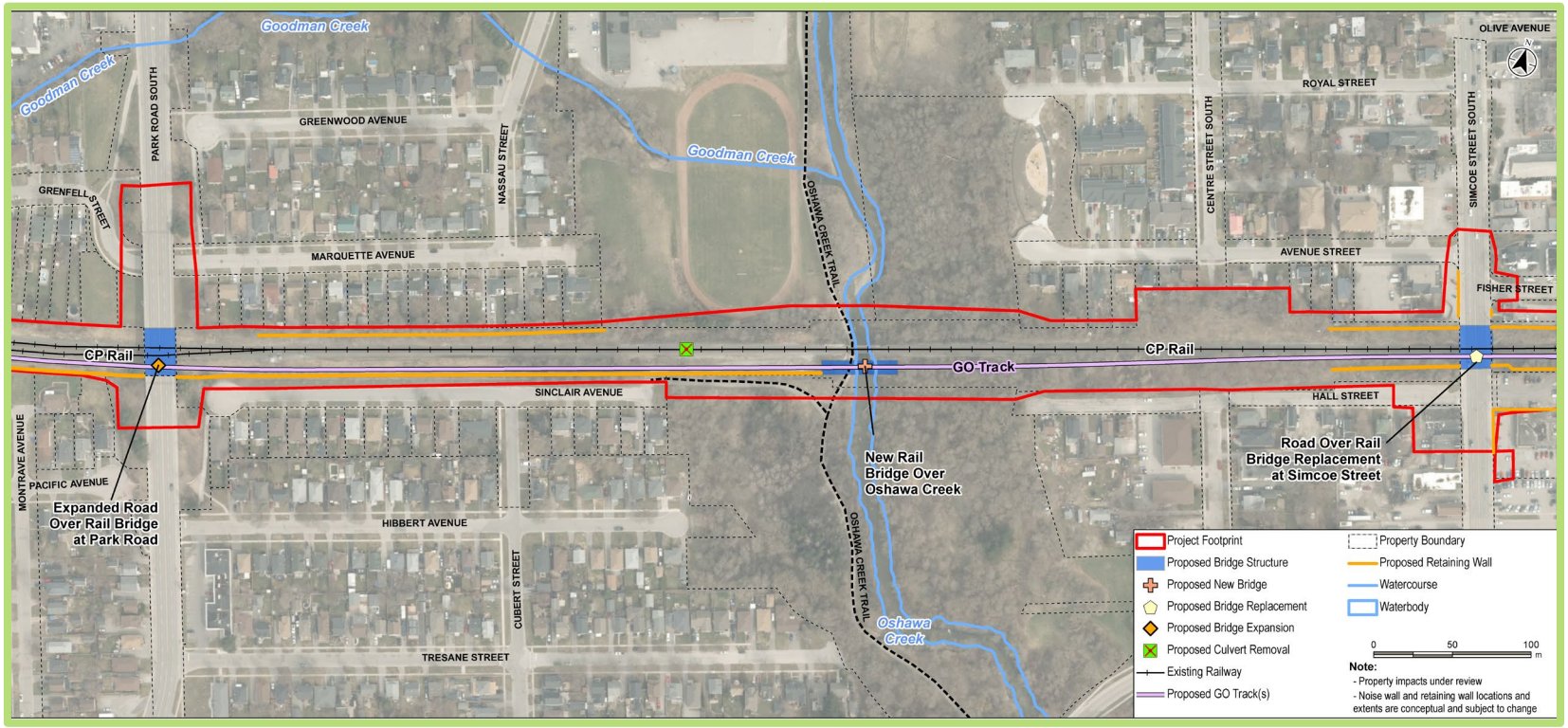

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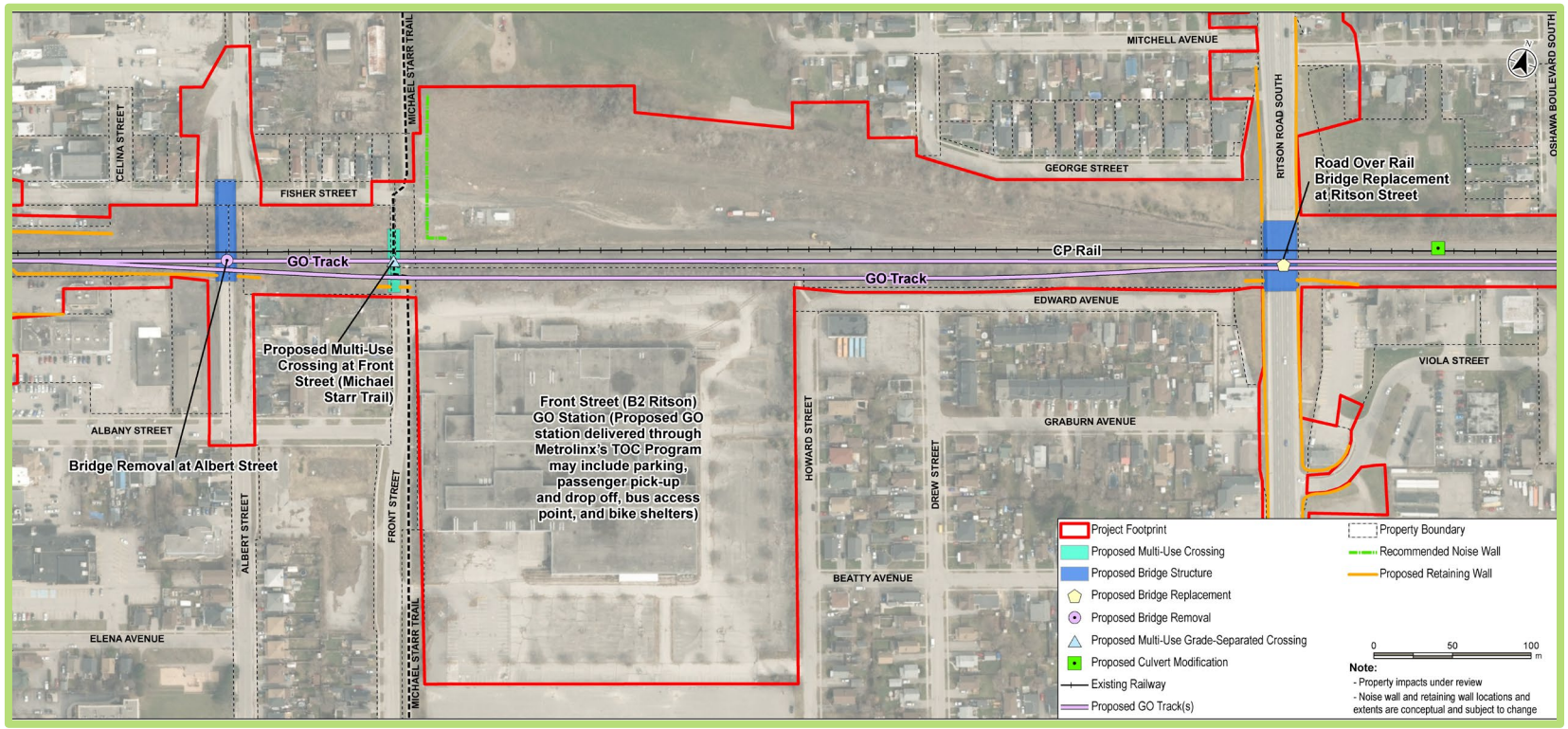

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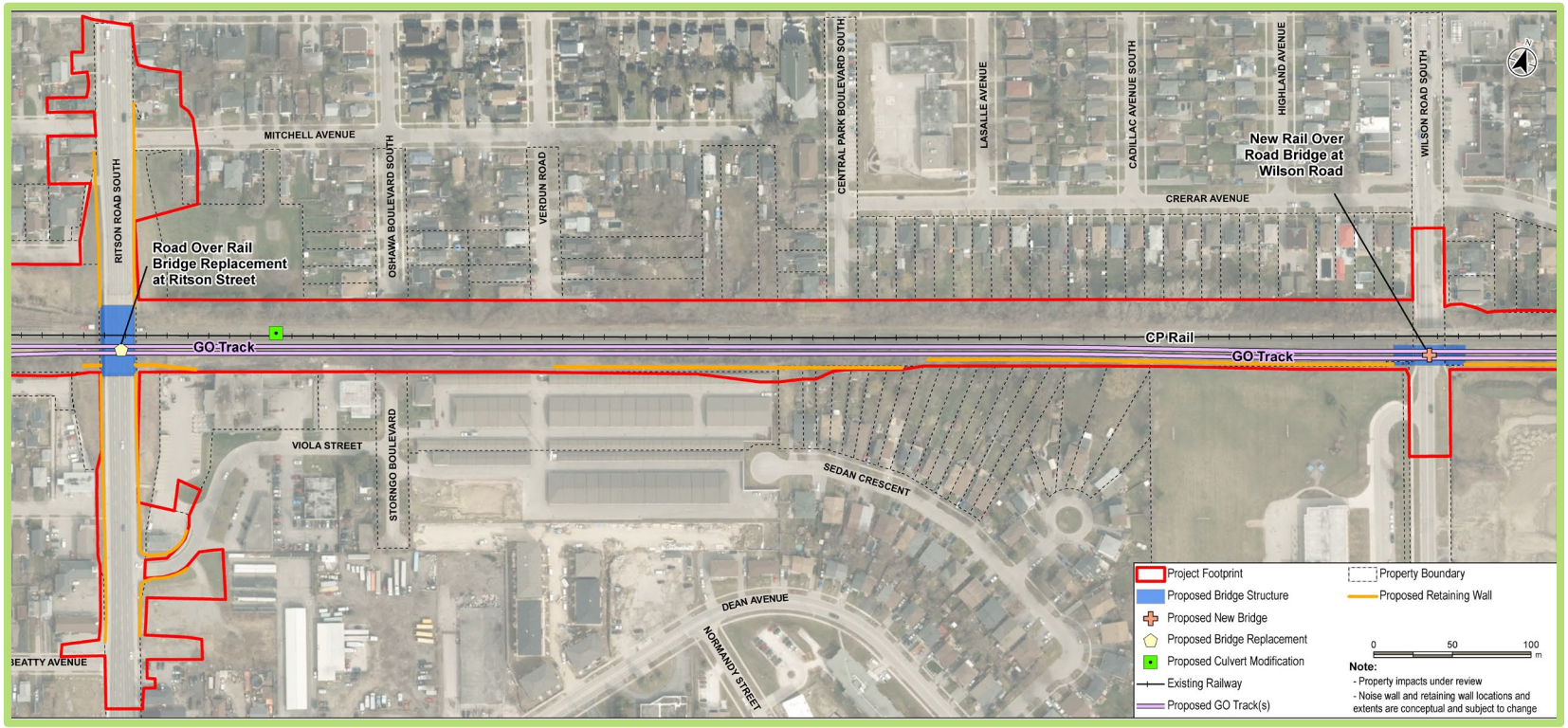

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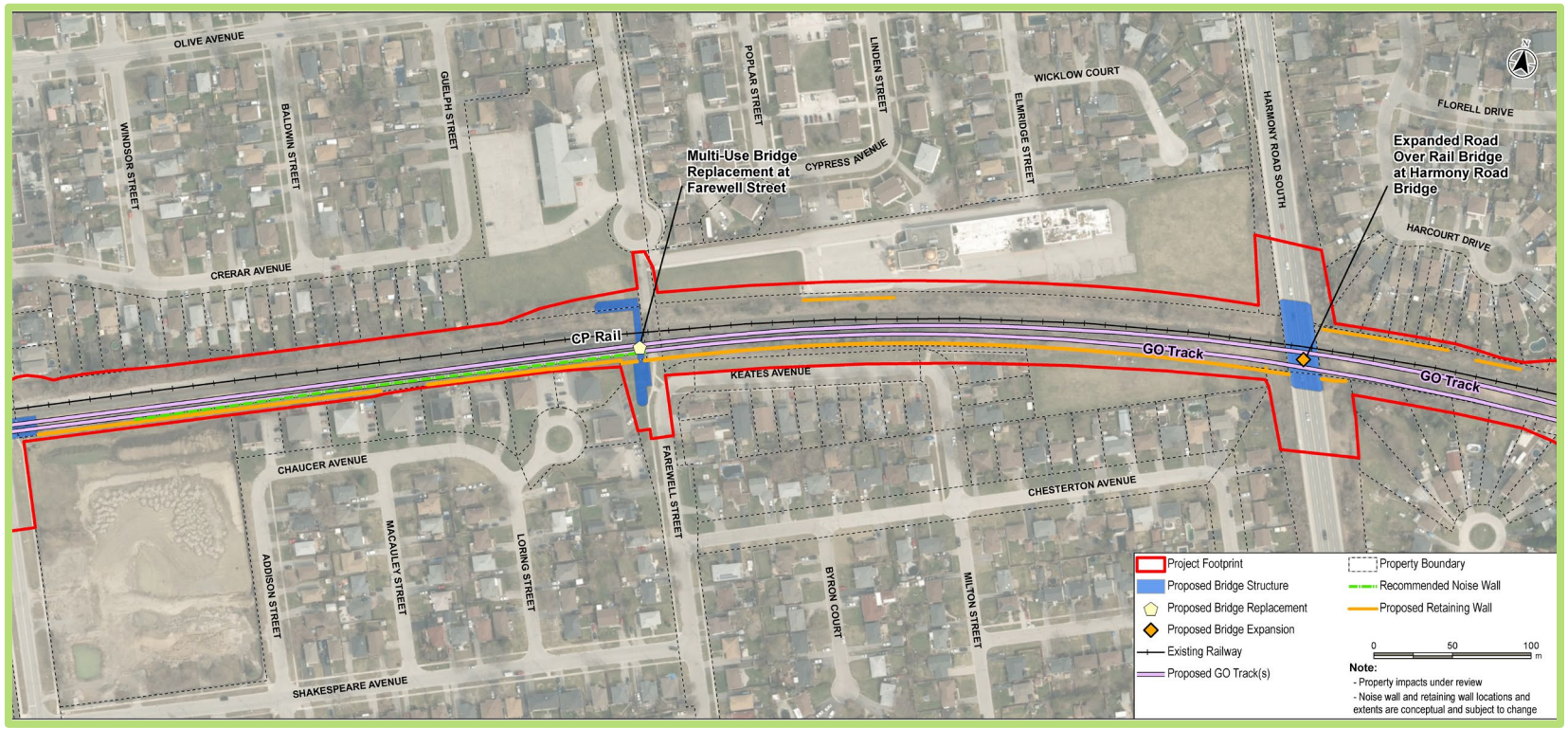

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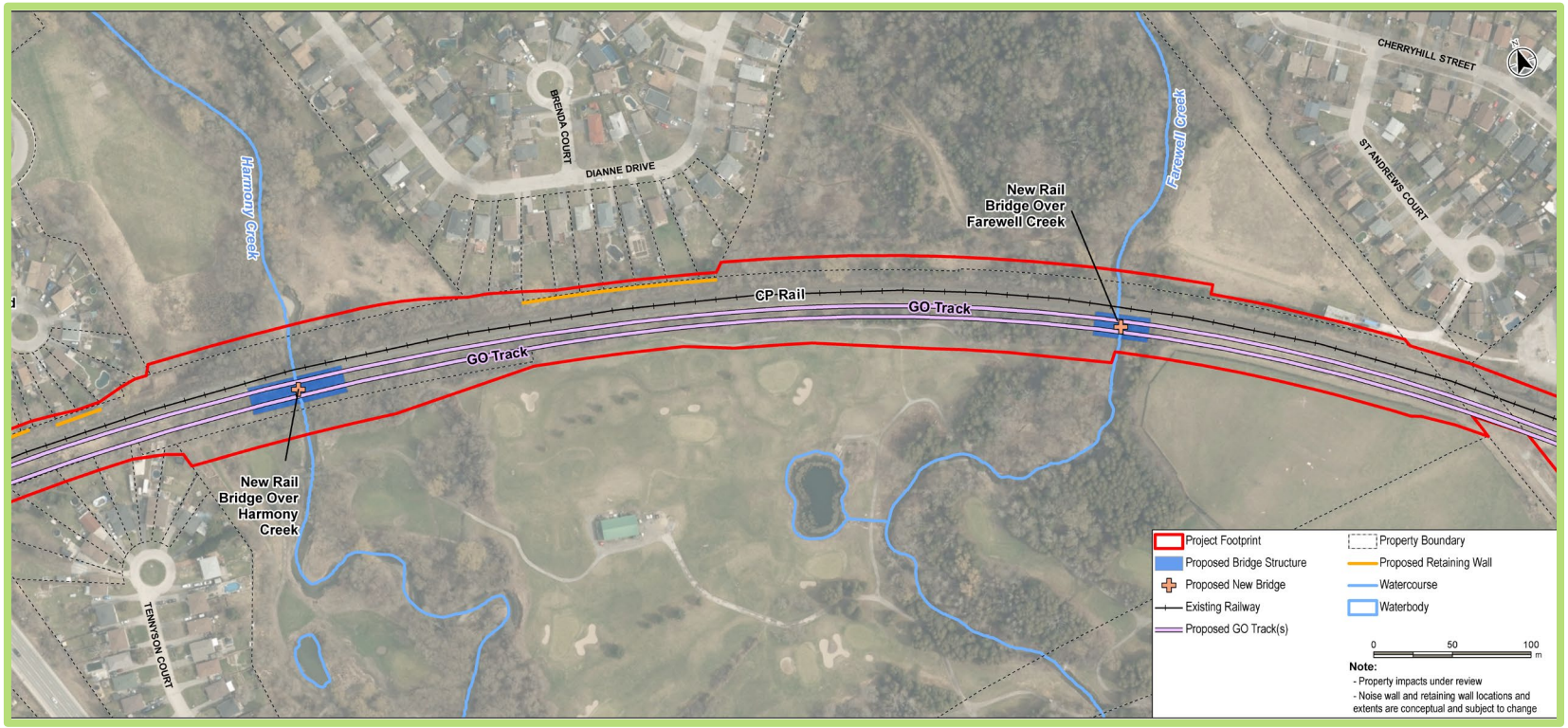

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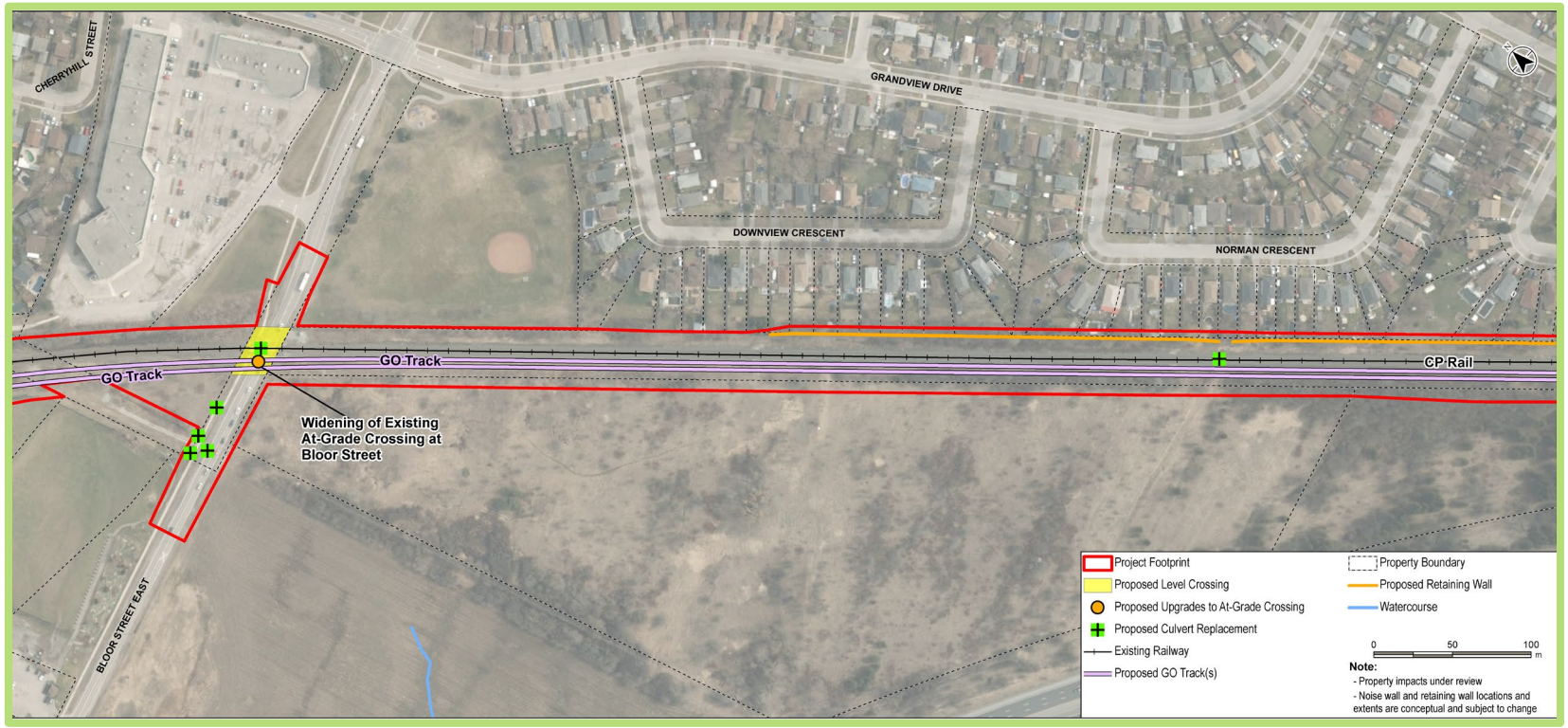

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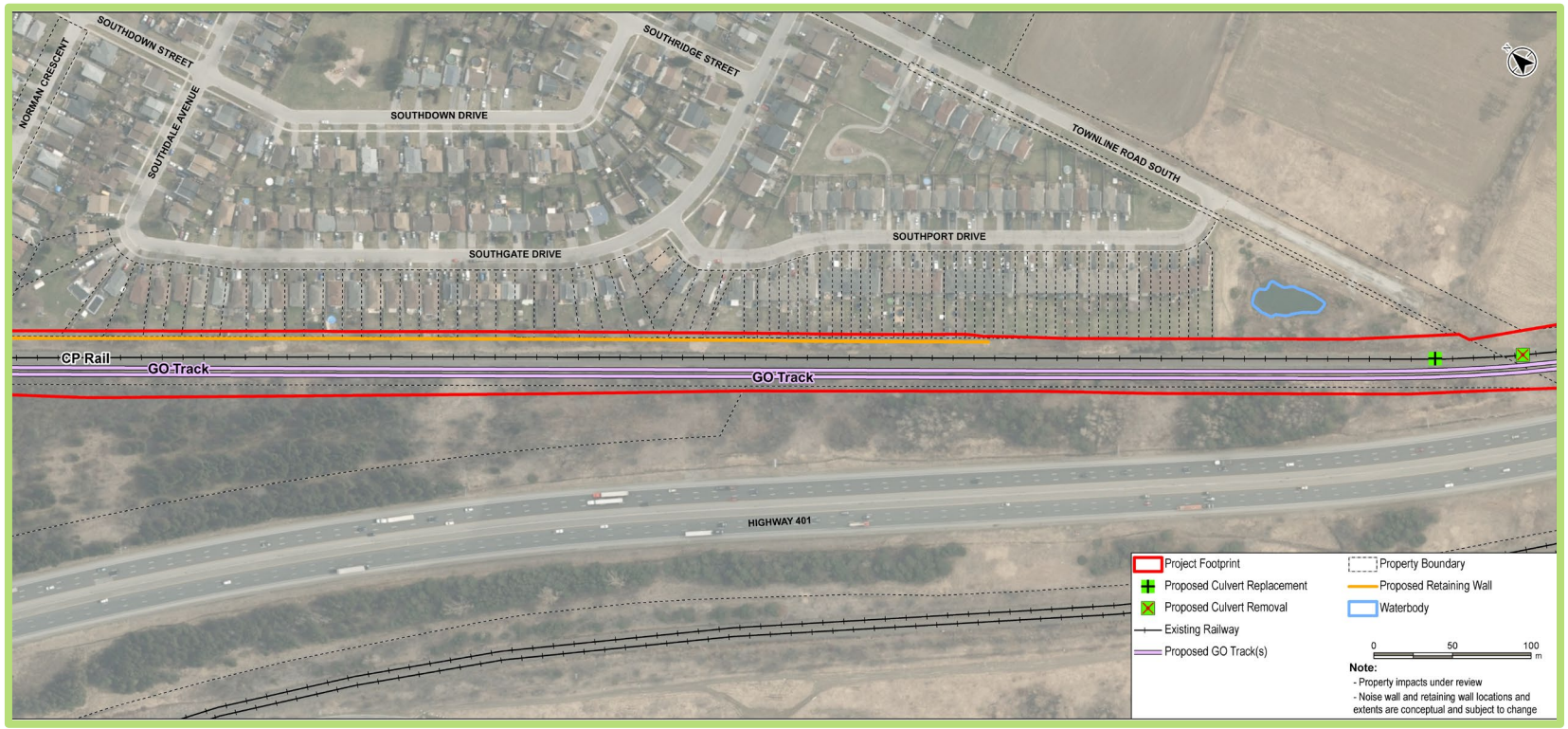

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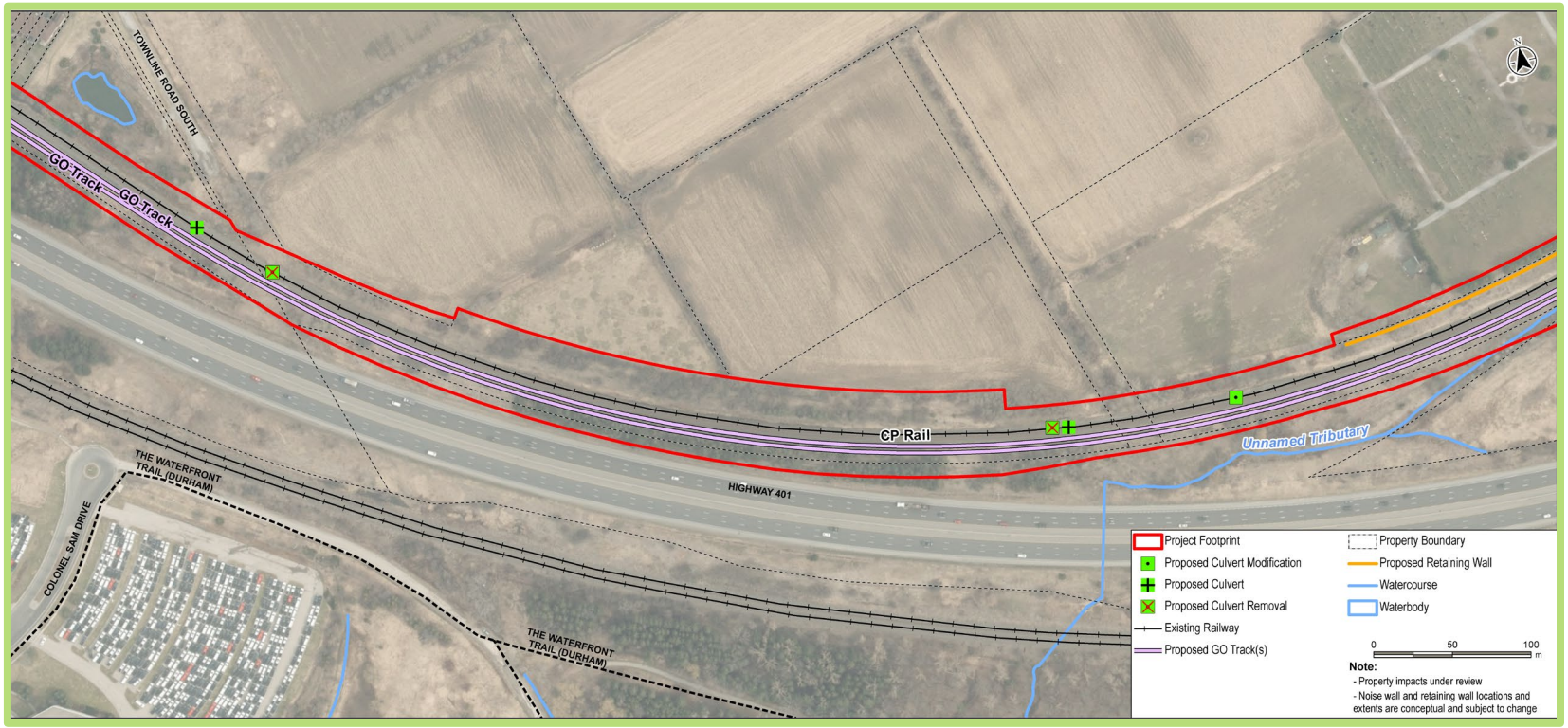

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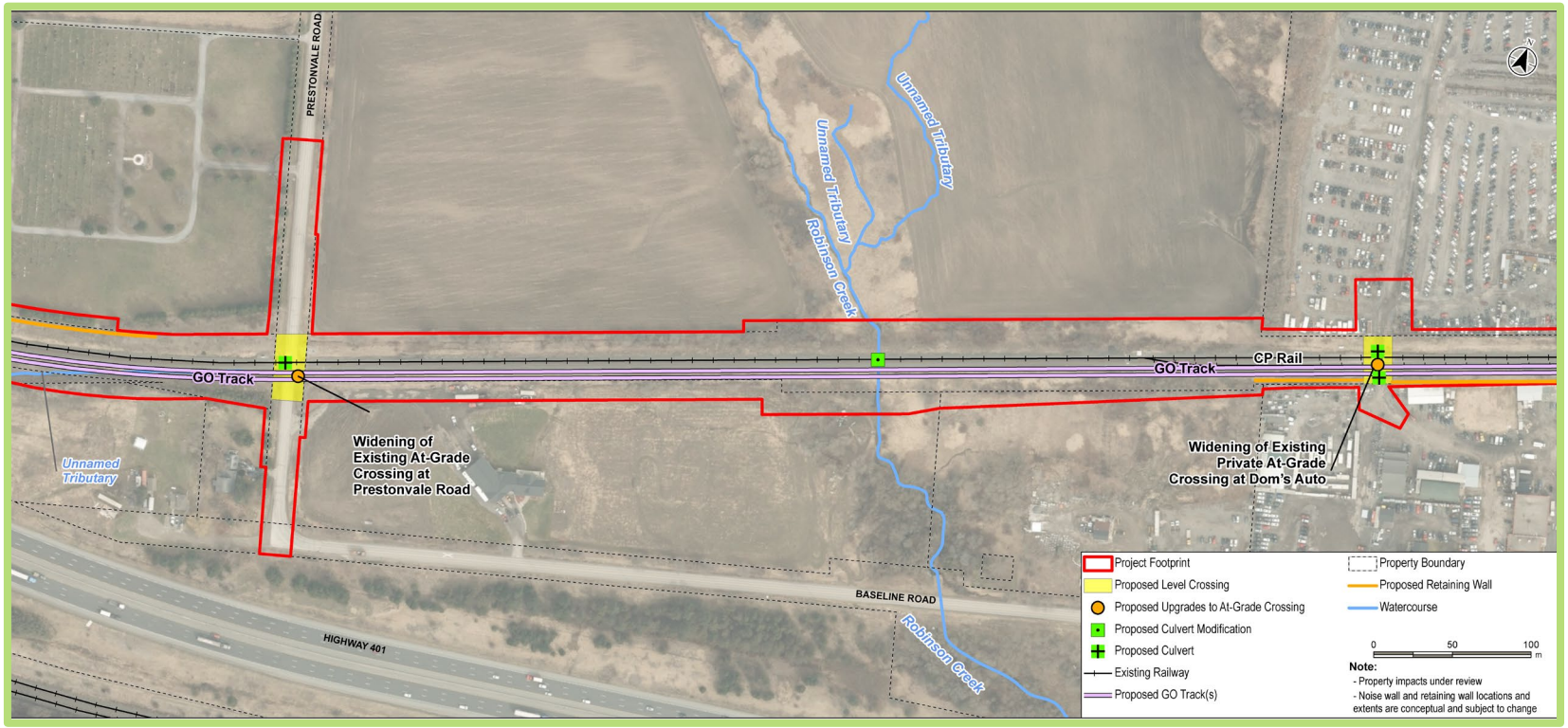

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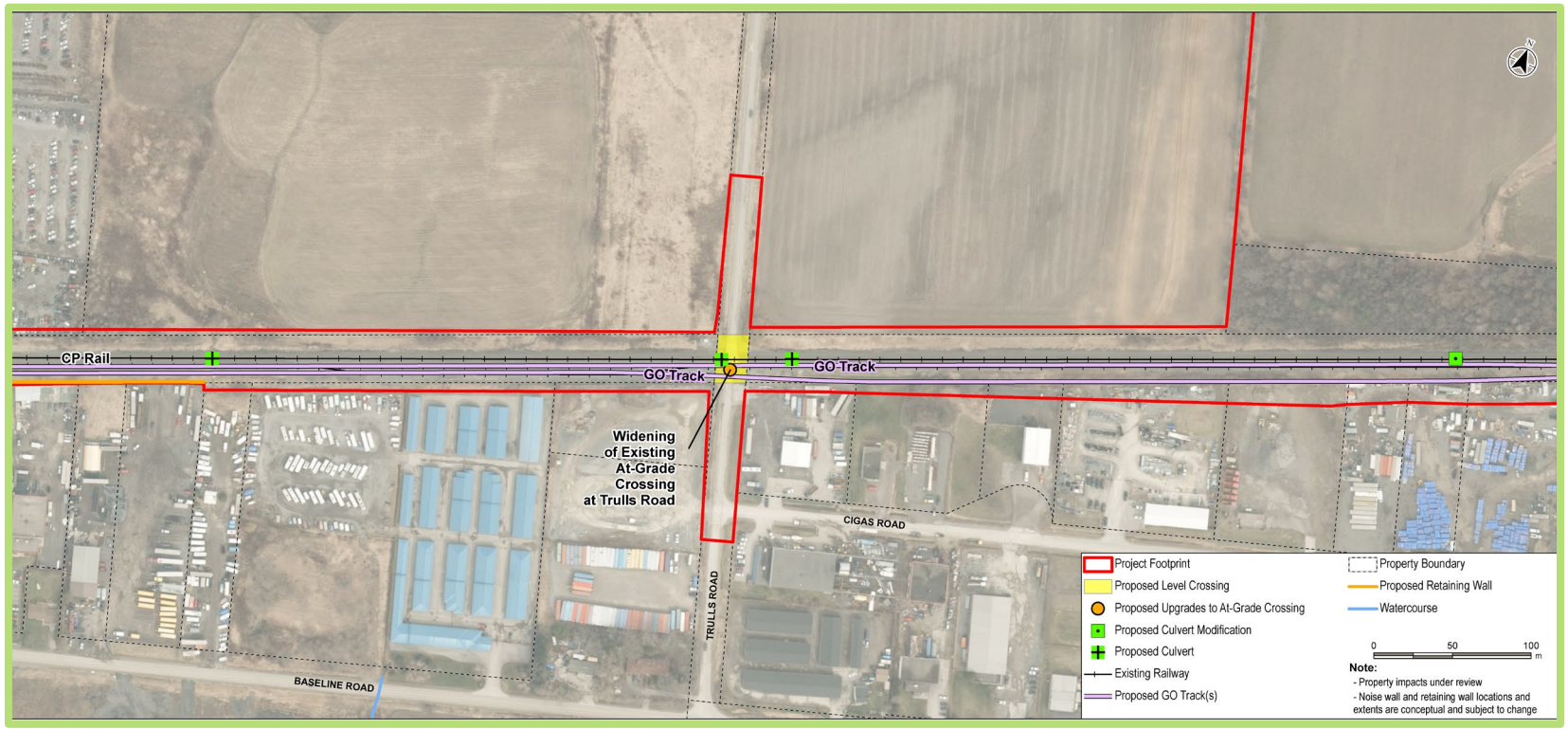

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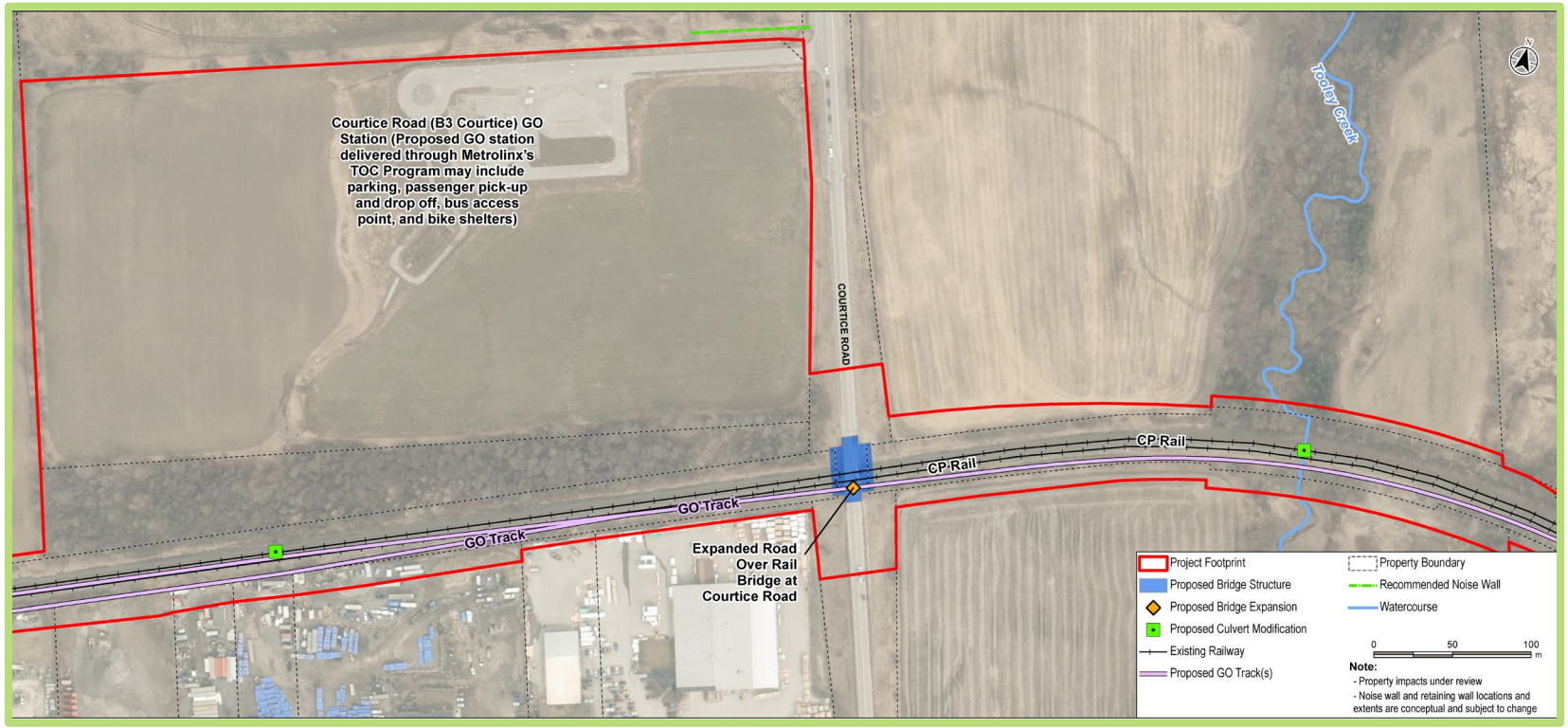

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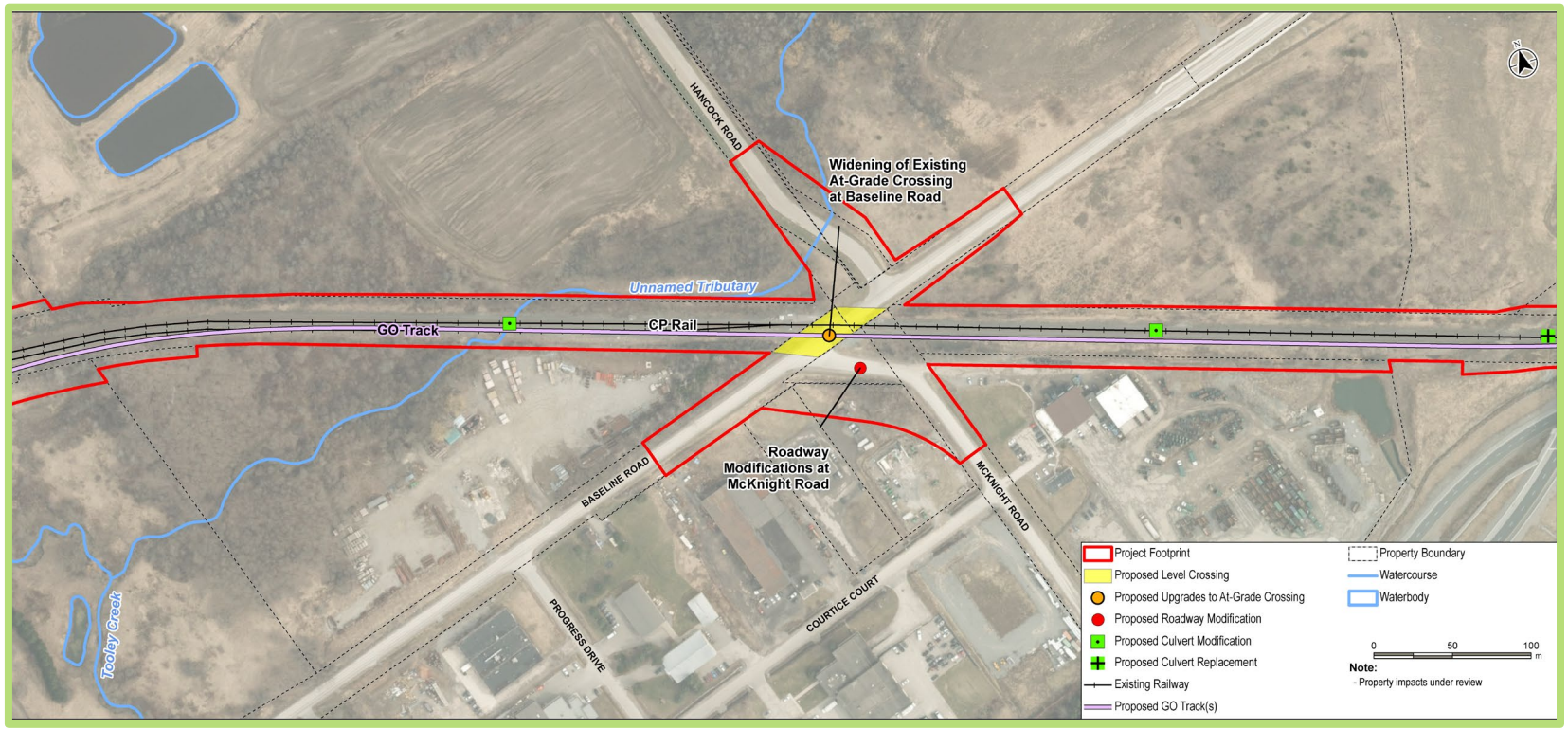

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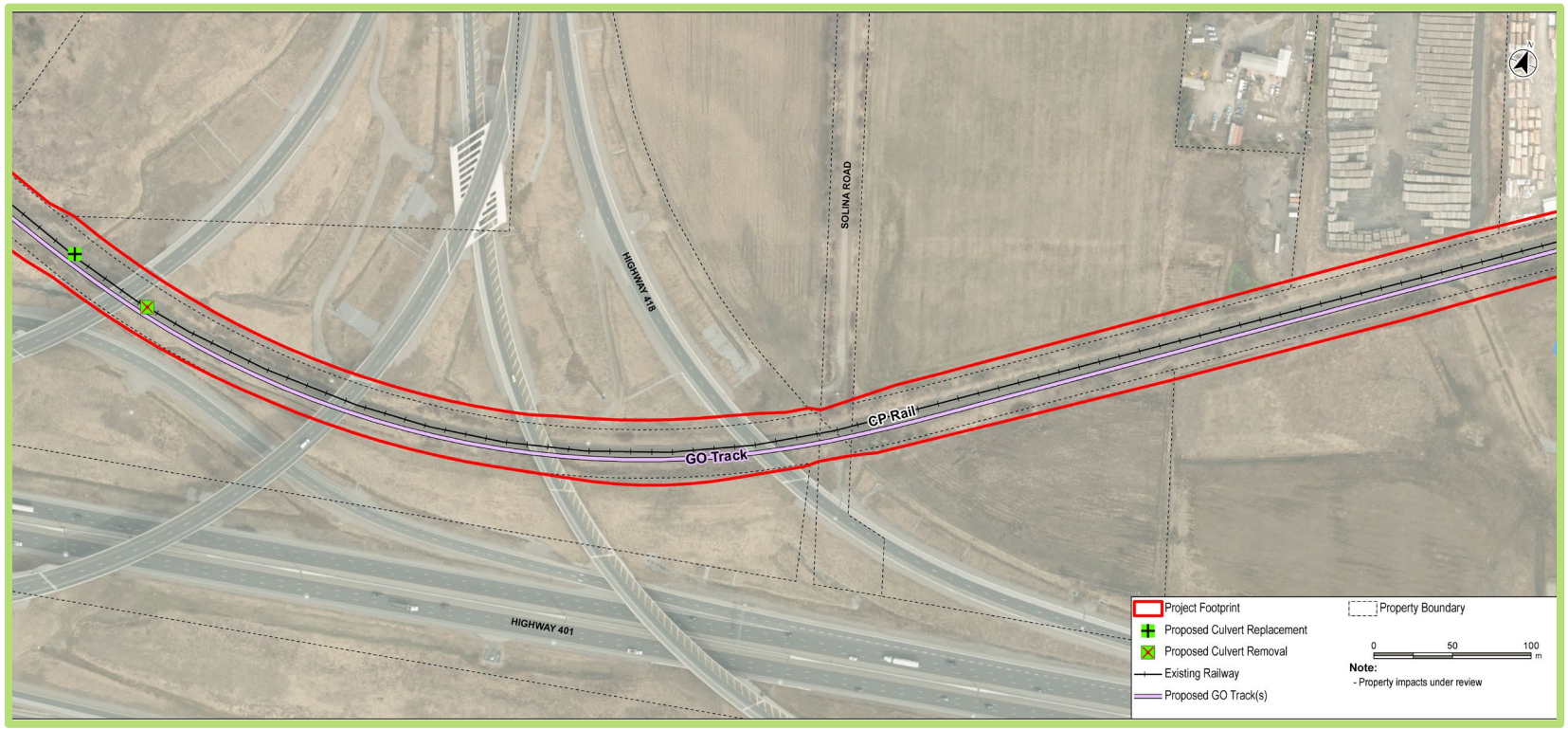

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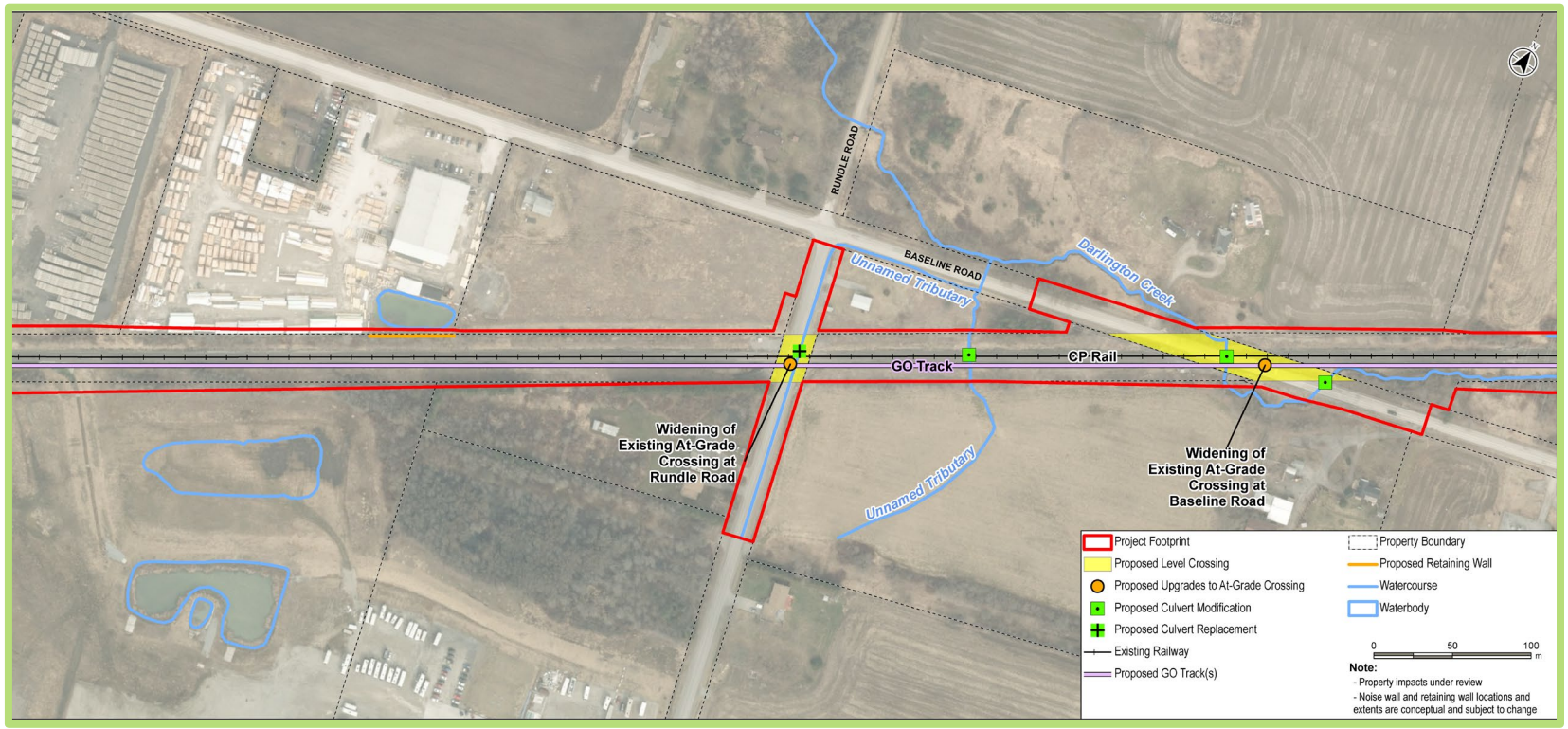

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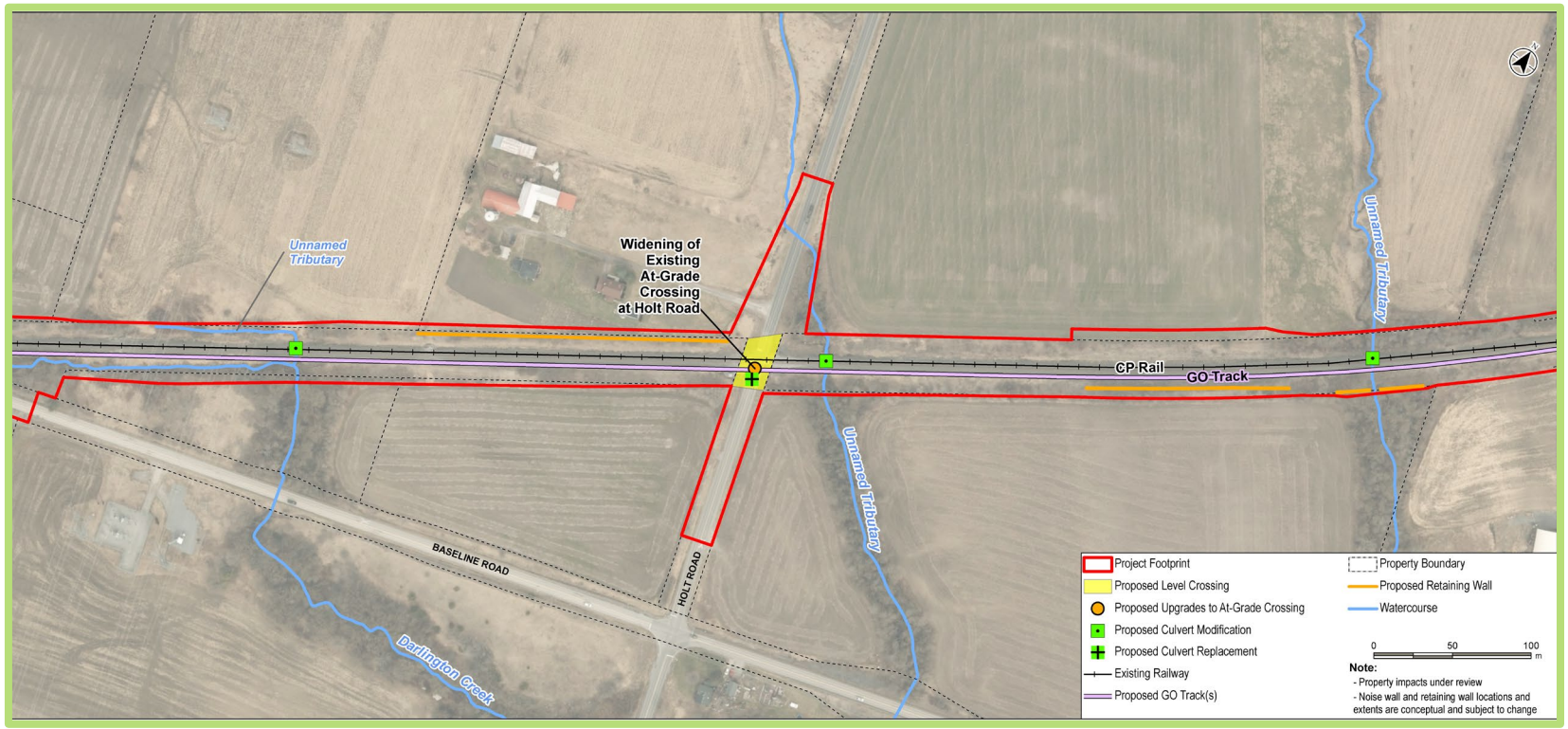

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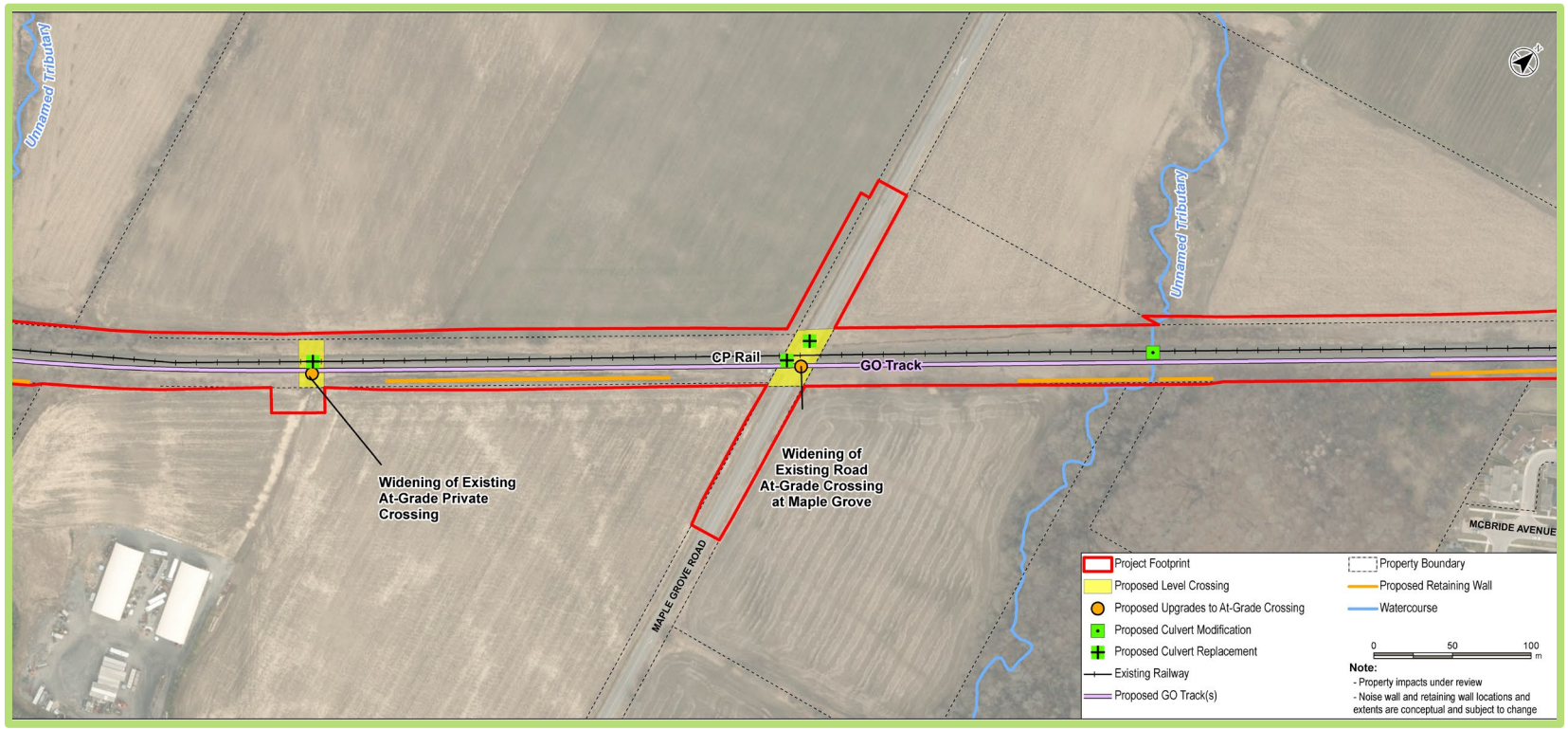

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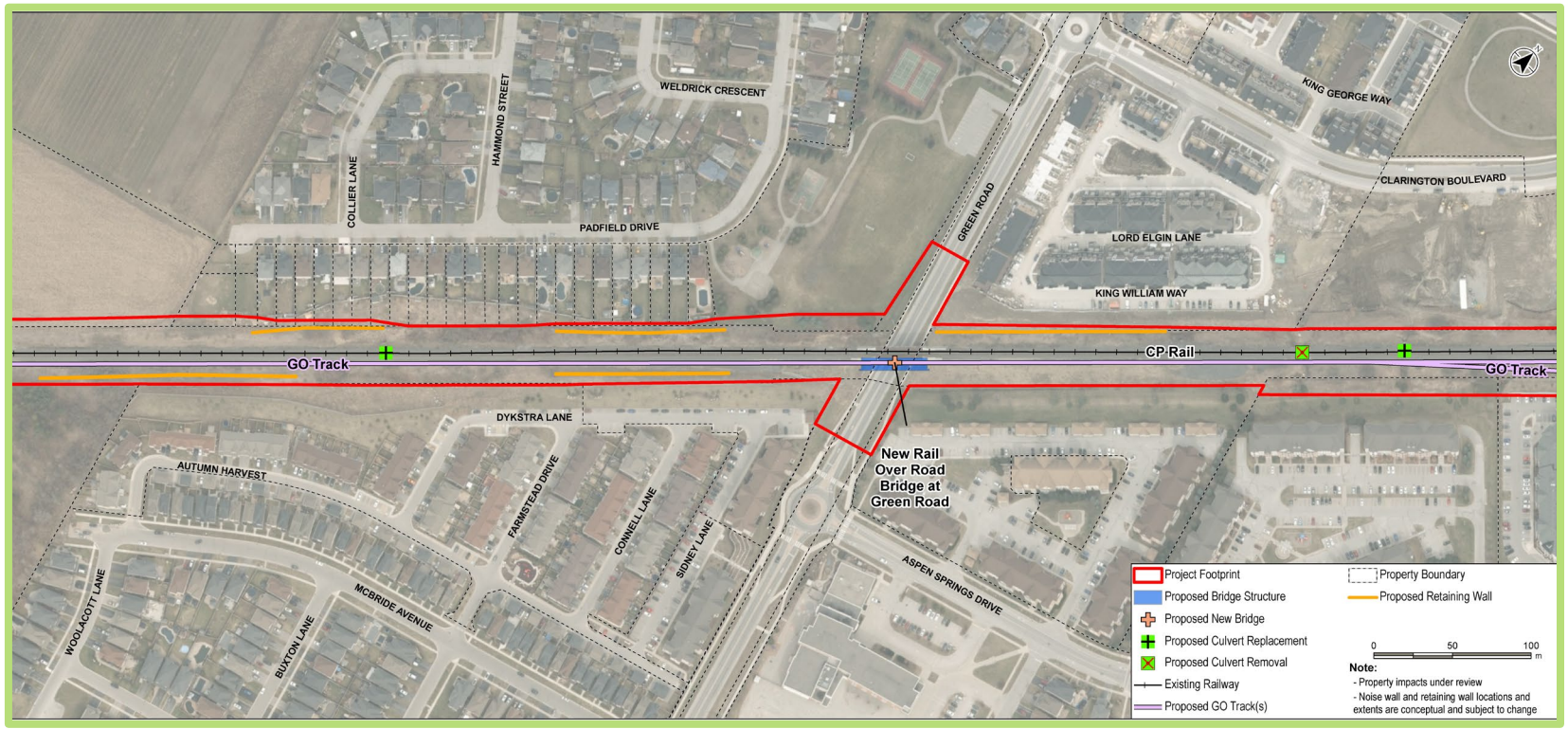

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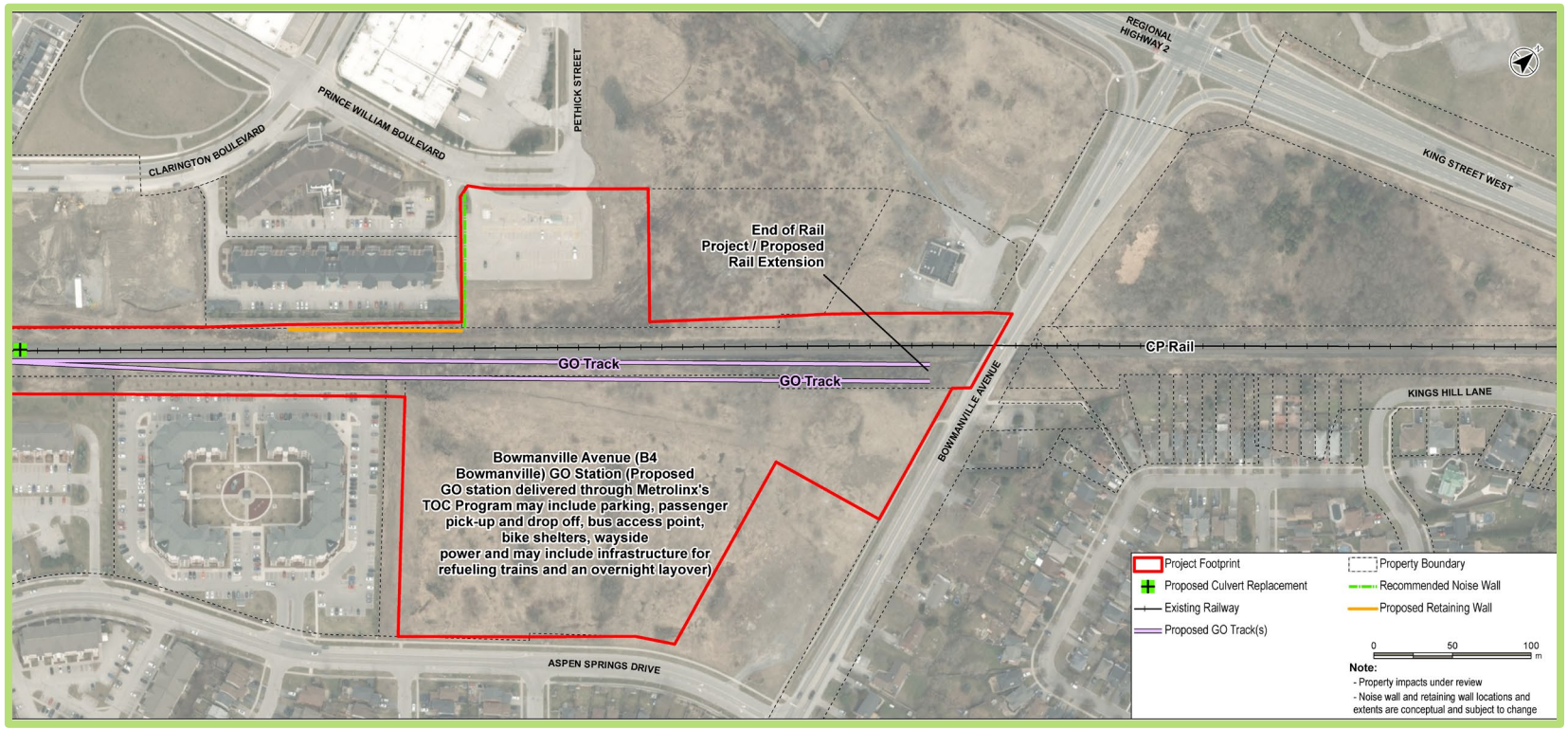

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Indigenous Communities and Nations Engagement

Metrolinx is committed to building meaningful and long-term relationships with Indigenous communities and Nations. Engagement is particularly important with regards to potential impacts to Aboriginal and treaty rights, environmental and archaeological impacts.

Through its Indigenous Relations Office (IRO), Metrolinx is engaging the following Indigenous communities and Nations on this project, on an ongoing basis:

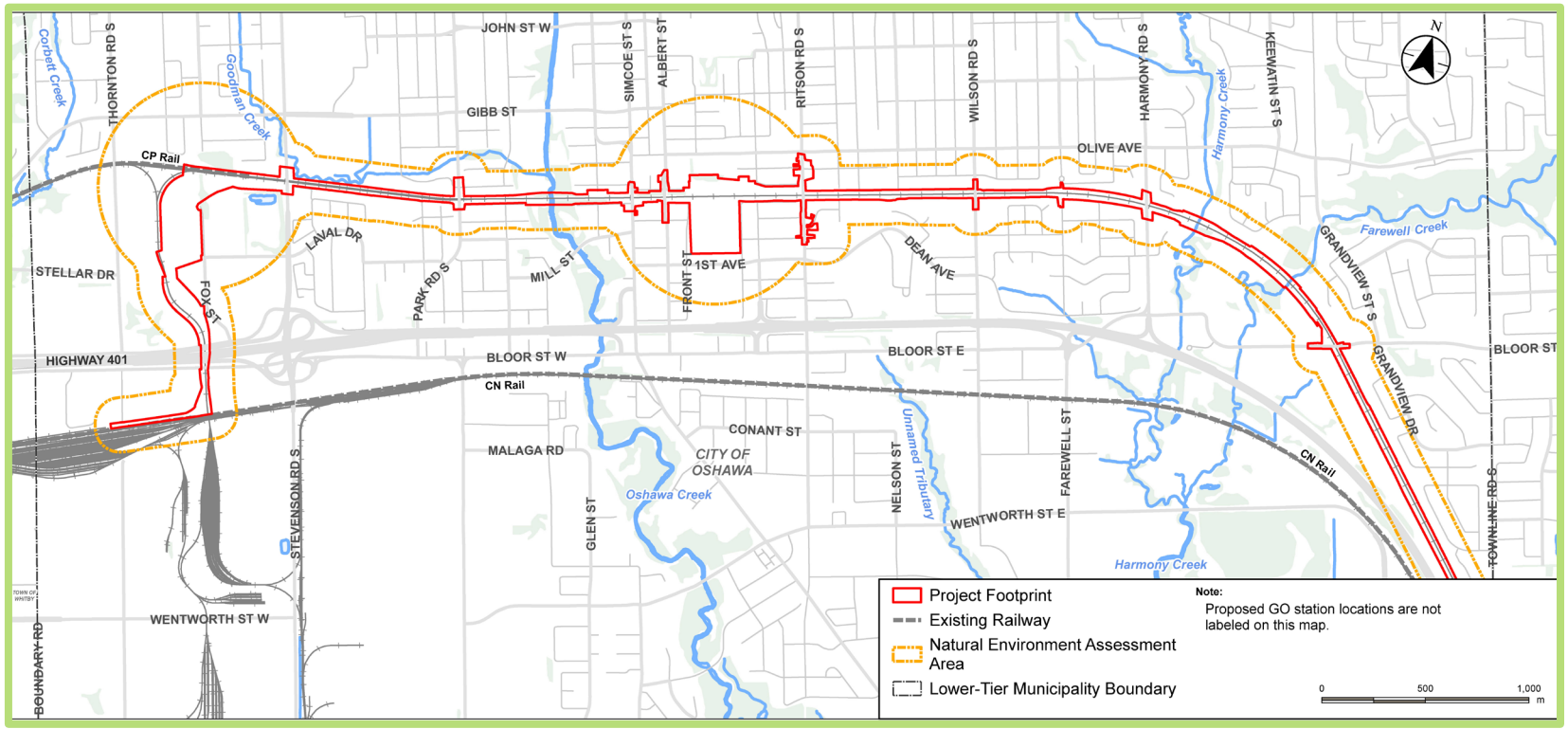
- Alderville First Nation
- Beausoleil First Nation
- Chippewas of Georgina Island
- Chippewas of Rama First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Mississaugas of Scugog Island First Nation
- Huron-Wendat Nation
- Kawartha Nishnawbe First Nation
- Métis Nation of Ontario

Natural Environment – Key Findings

- The Natural Environmental Assessment Area is comprised of the Project Footprint plus an additional 120 metres from the perimeter of the Project Footprint and an additional 500 metres from the approximate centre point of the GO station locations.
- Field work was carried out in spring and summer of 2021 and 2022. This work included surveys of the terrestrial and aquatic environments including habitat assessments, wildlife inventories and species at risk targeted surveys.
- Fish and fish habitat observations were completed at 14 watercourse crossing locations. Several of the rivers and tributaries provide habitat for fish migration, feeding and refuge.
- The Species at Risk confirmed through direct observations during site visits in the Project Footprint include: Little Brown Myotis, Bobolink, Eastern Meadowlark and Butternut.
- Potential pure Butternut trees (a Species at Risk) may be present within the Project Footprint. Genetic testing is planned to confirm if the trees are pure Butternut or hybrids.
- Blanding's Turtle and American Eel are Species at Risk that have a medium to high probability of occurring in the Assessment Area.
- Two watercourses in the Assessment Area (Farewell and Harmony Creeks) connect to the Oshawa Second Marsh PSW and an unnamed watercourse west of Prestonvale Road connects to the McLaughlin Bay Coastal PSW Complex (the PSWs are located outside of the Assessment Area).

Bobolink

Natural Environment – City of Oshawa Assessment Area



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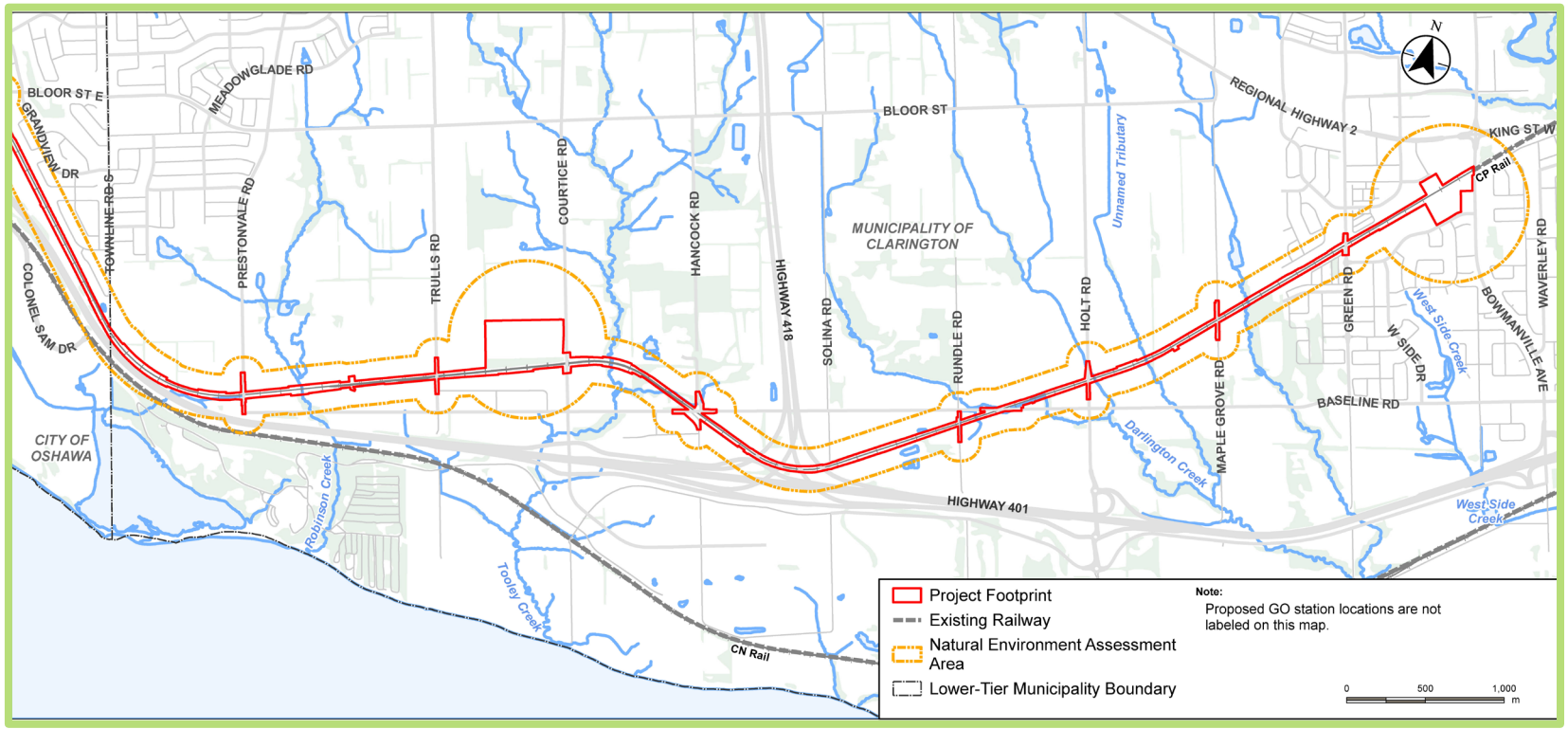
Natural Environment – Municipality of Clarington Assessment Area



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Natural Environment – Potential Effects

- Disturbance, displacement, or mortality of wildlife.
- Reduction in ecological function, habitat quality and integrity.
- Removal of and/or damage to trees, terrestrial vegetation and wildlife habitat.
- Introduction or spread of invasive species.
- Removal of/damage to aquatic/riparian vegetations and wetlands.
- Potential for harmful impacts to fish and fish habitat related to culverts and bridge work over watercourses.
- Soil erosion and increased surface water/stormwater run-off resulting in changes to stormwater quality and quantity.
- Soil or water contamination as a result of spills (e.g., grease and/or fuel) from equipment use during maintenance activities.

Natural Environment – Mitigation Measures

- Sensitive wildlife timing restrictions will be followed for construction activities (e.g., removal of vegetation outside of the breeding bird season).
- Wildlife exclusion measures will be implemented as required to avoid destruction, injury or interference with wildlife species and their habitat.
- All requirements of the *Migratory Birds Convention Act*, *Endangered Species Act, Species at Risk Act* and *Fisheries Act* will be met.
- Compensation for tree removals and vegetation will be undertaken in accordance with the Metrolinx Vegetation Guideline (2022) and subsequent amendments.
- New culverts or bridges will be designed to accommodate fish passage
- Temporarily disturbed areas will be re-vegetated using non-invasive, preferable native plantings and/or seed mix.
- An erosion and sediment control plan will be developed and implemented.
- A Spill Prevention and Response Plan and an Integrated Vegetation Management Plan will be developed.
- Sensitive wildlife timing restrictions will be followed for operational maintenance activities (e.g., removal of vegetation outside of the breeding bird season).
- Vegetation removal will be avoided and reduced to the extent possible and limited to Metrolinx properties and right-of-way (RoW).

Barn Swallow

Tree Inventory – Key Findings & Potential Effects

- The Tree Inventory Assessment Area is comprised of the Project Footprint plus any tree dripline that intersected with the plane of the area impacted.
- Over 3,800 trees and numerous vegetation units were inventoried during the fieldwork. Western portions of the Project Assessment Area had larger numbers of trees with agricultural land being more predominant than the urbanized eastern portion of the Project Assessment Area. Species in 15 tree families were observed plus one (1) large shrub family.
- Potential pure Butternut trees (a Species at Risk) are within the Project Footprint; genetic testing is planned to confirm whether the trees are pure Butternut or hybrid.

Butternut tree

Project's Potential Effects

- Tree removal and damage to trees during construction, including soil compaction and root damage.
- Disturbance or displacement of wildlife during vegetation maintenance activities.

Tree Inventory – Mitigation Measures

- An Arborist will be retained and appropriate measures will be carried out in the event that roots from retained trees are exposed or if it is necessary to remove limbs or portions of trees.
- Pruning of branches will be conducted through the implementation of proper arboricultural techniques.
- Tree Protection Zone fencing will be established.
- An Arborist Report will be prepared to meet appropriate regulatory requirements.
- Compensation and permitting/approvals (as required) will be undertaken in accordance with Metrolinx's Vegetation Guideline (2022) and subsequent amendments.
- Vegetation restoration and planting plans will be developed.
- Removals and trees designated for preservation must follow *Migratory Bird Convention Act* guidelines which outlines restrictions for conducting work during bird nesting season (April 1 to August 31).
- Upon completion of the tree removals, all felled trees are to be removed from the site. Any chipping, cutting or brush cleanup are to be completed outside of the restricted timing window, which will be routinely monitored by qualified individuals (i.e., wildlife biologists or ornithologists).
- Vegetation removal will be avoided and reduced to the extent possible and limited to Metrolinx properties and right-of-way (RoW).

Geology & Groundwater – Key Findings

- The Limited Phase I Environmental Site Assessment Area is comprised of the Project Footprint plus an additional 100 metres from the perimeter of the Project Footprint and an additional 250 metres from the approximate centre point of the GO station locations.
- Lake Ontario is located close to the Assessment Area, while Goodman Creek, Oshawa Creek, Farewell Creek, Harmony Creek, an Unnamed Tributary, Robinson Creek, Tooley Creek, Darlington Creek and Darlington Creek Tributaries intersect the Assessment Area.
- Several highly vulnerable aquifers* were identified along the rail corridor and at the four proposed GO station locations.
- Two Event Based Areas** were identified, one at the proposed Thornton's Corners East GO Station location and one at the segment of CP Railway corridor crossing Oshawa Creek.
- The Assessment Area consists primarily of Darlington loam and Whitby loam, sandy silt to silt till and/or silt and clay with minor sand. Bedrock in area of the Project consists of shale, limestone, dolostone and/or siltstone.

- A Limited Phase I Environmental Site Assessment (ESA) was conducted to determine if current and/or former Potentially Contaminating Activities (PCAs) have contributed to potential environmental contamination within the Assessment Area. The findings suggest that there are PCAs that may have contributed to soil and/or groundwater contamination within the Phase I ESA Assessment Area.

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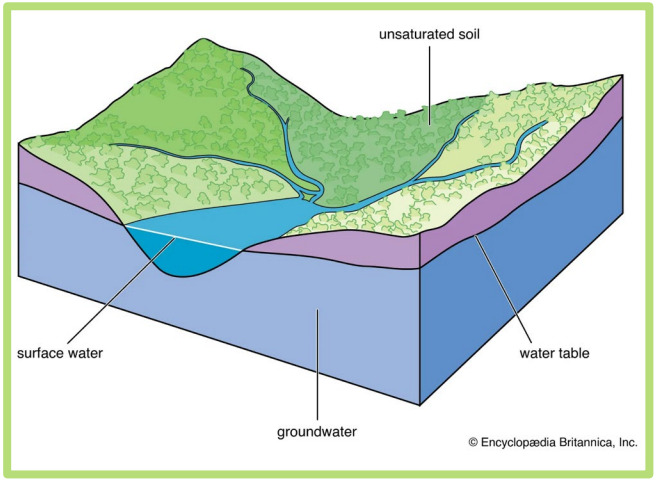
* An aquifer (underground layer of permeable soil and/or rock) susceptible to contamination due to its location near the ground surface or the surrounding soils.
** Areas in a watershed where a spill could pollute the drinking water supply.

Geology & Groundwater – Potential Effects

- The Project is not expected to result in changes to landforms, physiography, soils and bedrock geology. There is a potential for temporary effects to groundwater during construction and operations (i.e. accidental spills).
- Construction activities could release existing contaminated groundwater, if present.
- Accidental spills and releases may affect groundwater through contamination.
- No effects to landforms or physiography / geology components are anticipated as a result of construction activities.
- No direct or indirect effects to groundwater, landforms and physiography are anticipated during operations as there will be no changes to the overall landscape once construction is complete.



Geology & Groundwater – Mitigation Measures

- Non-soil materials (e.g., railway bedding, railway ties, or ballast materials) and contaminated soils exposed during construction will require waste classification as documented by testing where applicable to determine management and disposal requirements.
- Potential impacts to groundwater-dependent natural features and/or private groundwater supply wells (if present) can be mitigated with measures such as avoidance of dewatering requirements, limiting dewatering and/or utilizing groundwater cut-off techniques to physically exclude groundwater from flowing into excavations in advance of construction.
- Refueling of equipment will occur at least 30 metres away from any watercourse and refueling itself will be done within refueling stations lined with appropriate material to prevent seepage and fuel discharge.
- No mitigation measures are required during operations as no potential effects are anticipated.
- Plans to be developed and implemented include:
  - Soil and Excavated Materials Management Plan
  - Groundwater Management and Dewatering Plan
  - Spill Prevention and Contingency Plan

Stormwater Management – Key Findings

- The review of existing stormwater conditions included identification of watersheds overlapped by the Project Footprint and existing Stormwater Management (SWM) ponds within 500 metres from the perimeter of the Project Footprint.
- The Assessment Area intersects nine watersheds:
  - Corbett Creek, Oshawa Creek, Harmony Creek and Farewell Creek in the City of Oshawa
  - McLaughlin Bay, Robinson Creek, Tooley Creek, Darlington Creek and West Side Creek in the Municipality of Clarington
- Within the City of Oshawa, there is an existing flood hazard condition along Oshawa and Goodman Creeks upstream of the Canadian Pacific (CP) Railway crossing due to the existing CP Railway Bridge and embankment. This is independent of the proposed Bowmanville Extension scope of work.
  - Approximately 712 buildings or structures are at risk of flooding with 326 of the buildings/structures being vulnerable to flooding due to the existing Oshawa Creek CP Rail bridge and embankment.
- The Robinson Creek watershed (located in the Farewell Creek watershed), drains into Lake Ontario through the McLaughlin Bay Wetland Complex.
- The Tooley Creek watershed (located in the Farewell Creek watershed), drains into Lake Ontario through the Tooley Creek Coastal Wetland.
- The Darlington Creek watershed (located in the Farewell Creek watershed), drains into Lake Ontario at the Darlington Nuclear Generating Station.
- Seven stormwater management ponds were identified within the Natural Environment Assessment Area but are outside of the Project Footprint:

1. 680 Laval Drive, Oshawa
2. Adjacent to the intersection of Southport Drive and Townline Road South, Oshawa
3. 1350 Durham Regional Road 34, Courtice
4. 1100 Hancock Road, Courtice
5. 570 Rundle Road, Bowmanville
6. 2021 Baseline Road, Courtice
7. 1 McKnight Road, Courtice

Stormwater Management – Key Findings

Watersheds	Proposed Watercourse Crossing Structures*
Oshawa Creek	• Oshawa Creek - New single track rail bridge
Farewell Creek	• Harmony Creek - New double track rail bridge • Farewell Creek - New double track rail bridge
Robinson Creek	• Robinson Creek - Existing culvert to be extended or replaced
Tooley Creek	• Tooley Creek & two unnamed tributaries - Existing culverts to be retained, extended or replaced
Darlington Creek	• Darlington Creek & four unnamed tributaries - Existing culverts to be removed, extended or replaced
Lake Ontario (through McLaughlin Bay Coastal PSW Complex)	• Unnamed Tributary (west of Prestonvale Rd) - Existing culvert to be extended or replaced

* Proposed bridges and culvert removals, modifications or replacements are subject to change as supported by hydrologic and hydraulic assessments.

Stormwater Management – Potential Effects

- New and modified watercourse crossing structures (bridges and culverts) have the potential to affect currently impacted floodplain areas.
- There is a potential to impact flooding conditions in the Central Lake Ontario Conservation Authority (CLOCA) Regulatory Floodplain.
- Potential for flooding impacts on-site during construction.
- Sediment transport into adjacent natural areas including watercourses, wetlands and municipal drainage infrastructure.
- Increase in impervious areas, with potential effects to water quantity and quality.
- Alterations to the local drainage system, both overland (major drainage system) and storm sewers (minor drainage system).

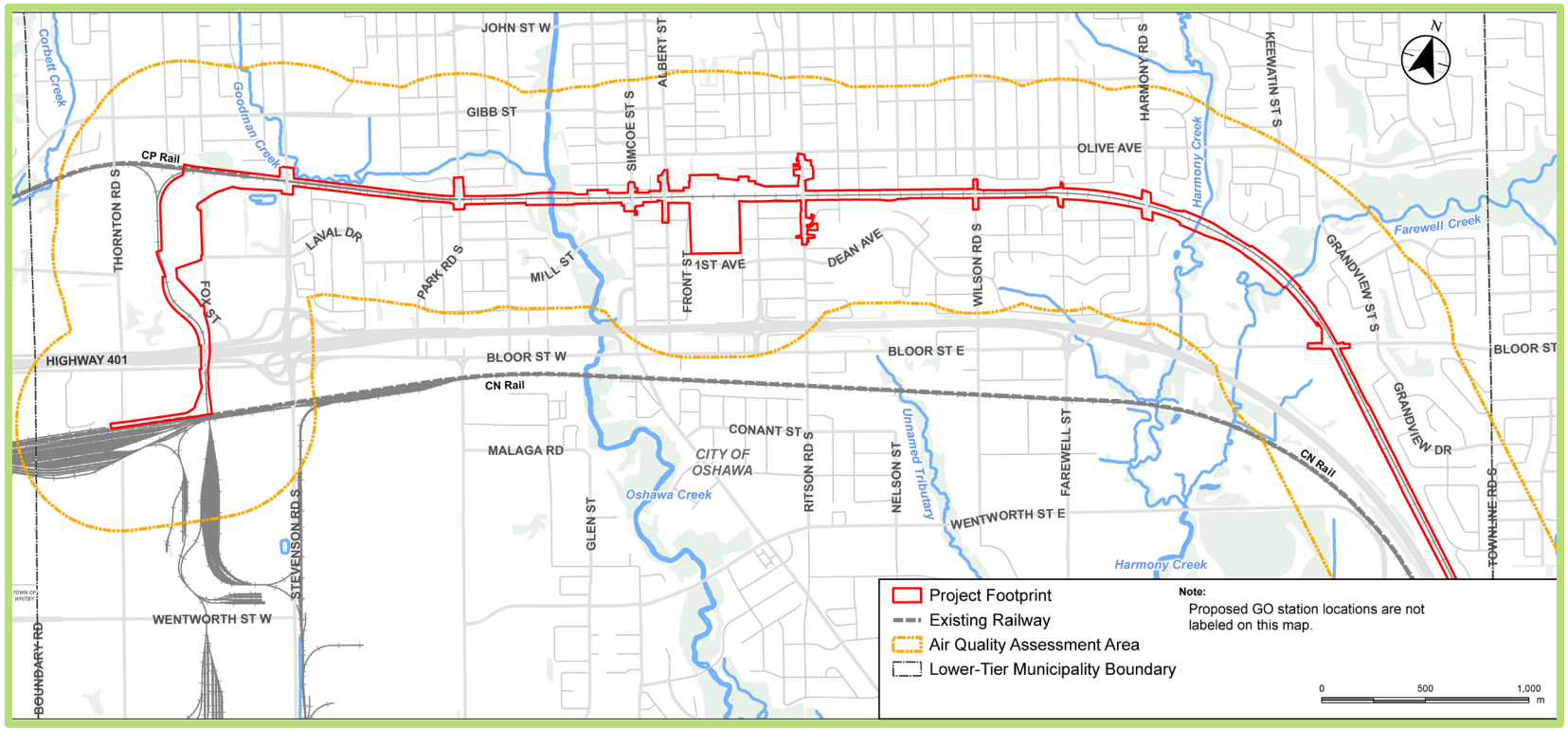
Stormwater Management – Mitigation Measures

- A detailed assessment of proposed ditches along the rail corridor is required to provide adequate drainage conveyance.
- Infiltration requirements will be determined as per the applicable municipal, provincial, and CLOCA design guidelines and standards.
- Any proposed bridges and culvert modifications and replacements will be sized to maintain or improve local flood levels and supported by hydrologic/hydraulic calculations and/or models. Creek bed and banks design will include geomorphological input for scour and erosion prevention, and creation of appropriate fish habitat.
- A floodplain impact assessment will be conducted during detailed design following CLOCA guidelines, and Metrolinx will continue to consult with CLOCA.
- Monitor CLOCA's Flood Warning and Forecasting messages to prepare construction sites in advance of possible flood events.
- The Project will be designed and constructed within hydraulic assessment recommendations to minimize impacts on existing flood hazards and risks.
- Plans to be developed and implemented include:
  - Stormwater Management & Drainage Design Report
  - Erosion and Sediment Control Plan
  - Spill Prevention and Response Plan
  - Flood Contingency Plan

Air Quality – Key Findings

- The Air Quality Assessment Area is comprised of the Project Footprint plus an additional 500 metres from the perimeter of the Project Footprint.
- Ambient air quality in the Assessment Area is influenced by emissions from residential, commercial and industrial sources, as well as vehicular traffic.
- Ambient background concentrations of Contaminations of Interest such as NO_2, benzene, and Benzo(a)pyrene (B(a)P) exceed the 2025 Canadian Ambient Air Quality Standards and Ambient Air Quality Criteria. Background concentrations of these contaminants are generated by major industrial sources such as the iron and steel industry and combustion of petroleum products.
- Vehicle movement, dust generation, exposure of contaminated sites, increased train traffic volumes and fuel combustion at existing GO stations were identified as sources of emissions impacting air quality in the Assessment Area.
- There is potential for temporary increases in air quality emissions associated with the Project's construction and operations.
- Ambient air monitoring will be conducted to confirm the effectiveness of the mitigation measures and allow for adaptive management, as required.

Air Quality – City of Oshawa Assessment Area



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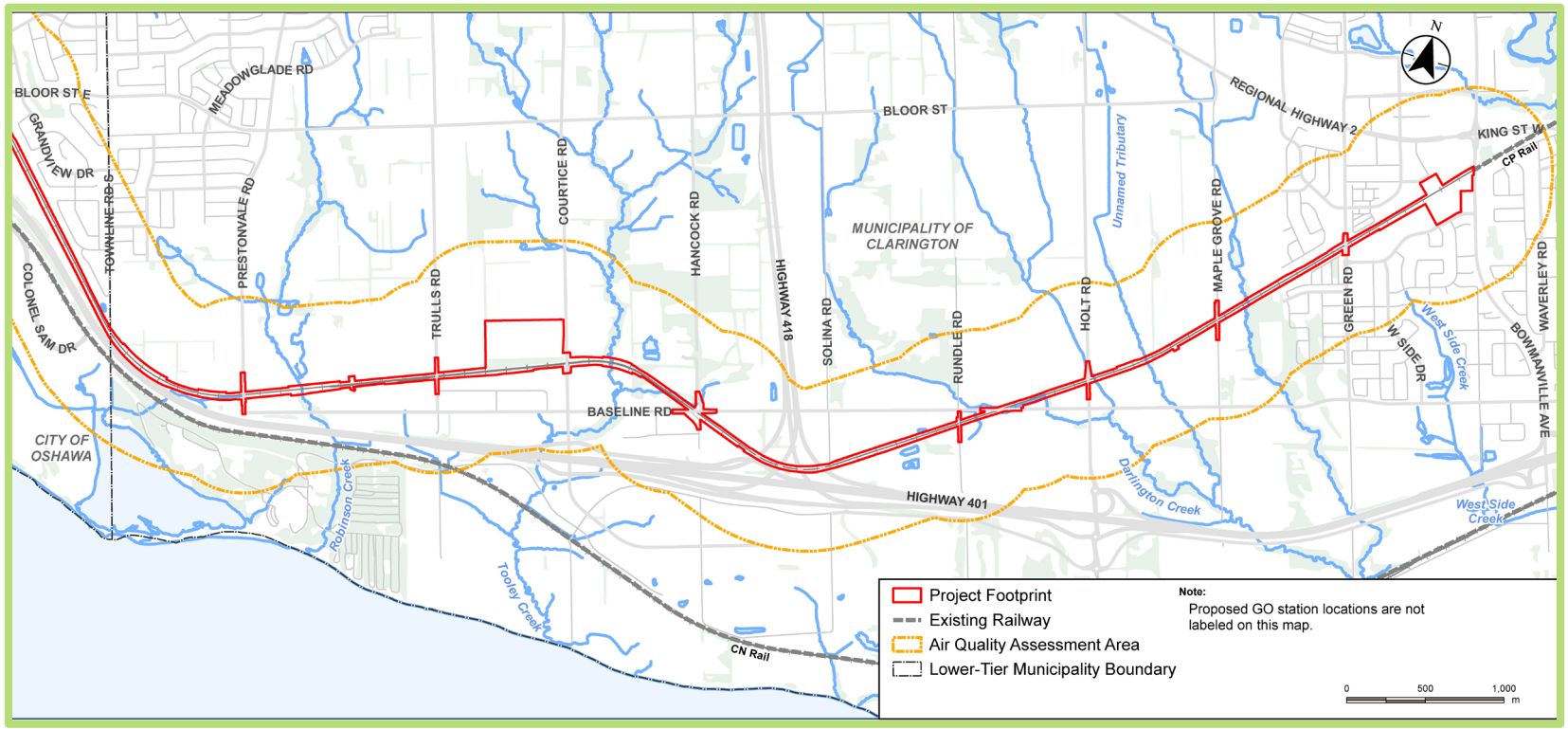
Air Quality – Municipality of Clarington Assessment Area



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Air Quality – Potential Effects

- Temporary impacts to local air quality due to fugitive dust emissions, construction equipment tailpipe emissions, vehicle emissions and associated dust.
- Construction activities may expose contaminated soils/materials and/or result in the spreading of contaminated materials through dust.
- Operational air quality effects are predicted to exceed NO_2 concentrations of the Canadian Ambient Air Quality Standards but meets the provincial criterion.
- Increase in emissions from GO train operation and increased GO bus traffic volumes.
- Air quality effects from fuel combustion at proposed GO stations, train operations, maintenance activities, GO bus service and parking.

Air Quality – Mitigation Measures

- The Project's air quality impact zone will be defined and all sensitive/critical* receptors will be identified within this area.
- Nearby sensitive/critical receptors will be notified of construction activities anticipated to impact air quality prior to commencement of the activities.
- Dust suppressants such as water sprayers and limiting on-site vehicle speed to less than 20 km/hr will be implemented.
- Installation and maintenance of mud mats at entrances to the project site to manage fugitive dust.
- Preventive maintenance programs will be implemented to engines and emission control equipment.
- In areas where the highest dust emissions are expected, the option of planting of trees and vegetation will be explored.
- Plans that may be developed and implemented include:
  - Air Quality Management Plan
  - Weekly Air Quality Monitoring Reports to effectively prevent unacceptable rates of air emissions

*A sensitive receptor is a building in which a person resides on a permanent or semi-permanent basis, such as a house or an apartment. A critical receptor is a location where sensitive populations reside or spend a significant amount of time daily, such as schools, retirement homes, hospitals, or day cares.

Noise and Vibration – Key Findings

Noise

- The Noise and Vibration Assessment Area is comprised of the Project Footprint plus an additional 500 metres from the perimeter of the Project Footprint.
- The acoustical environment in the Assessment Area is dominated by road traffic noise from Highway 401 to the south, Highway 418 in Clarington, major roadways, stationary noise sources and the existing Canadian Pacific (CP) Railway corridor.
- The Project has the potential to result in noise effects at nearby sensitive receptors* during construction activities such as heavy equipment operation.
- Mitigation to reduce operational noise generated by future rail activities located at 80 and 84 Aspen Springs Drive, Clarington is not feasible as these receptors are high-rise buildings.
- Potential for exceedances will be addressed by implementing appropriate mitigation measures and through development and implementation of a plan to manage construction noise before it begins.

Vibration

- Sources of vibration in the Assessment Area include commercial and industrial activities, road traffic and passing freight trains.
- The Project has the potential to result in vibration effects during construction activities such as heavy equipment operation.

*A sensitive receptor is a building in which a person resides on a permanent or semi-permanent basis, such as a house or an apartment. A critical receptor is a location where sensitive populations reside or spend a significant amount of time daily, such as schools, retirement homes, hospitals, or day cares.

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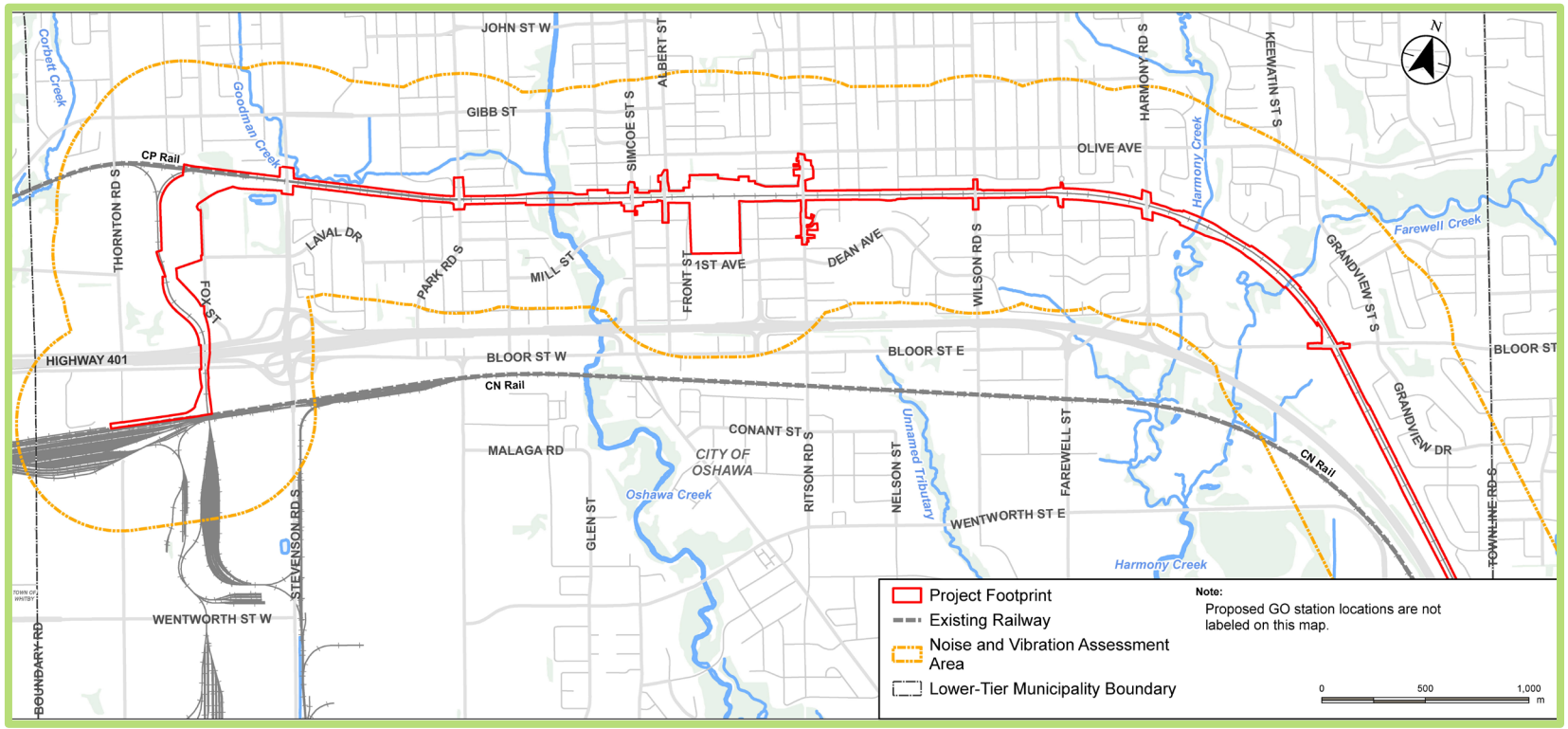
Noise and Vibration – City of Oshawa Assessment Area



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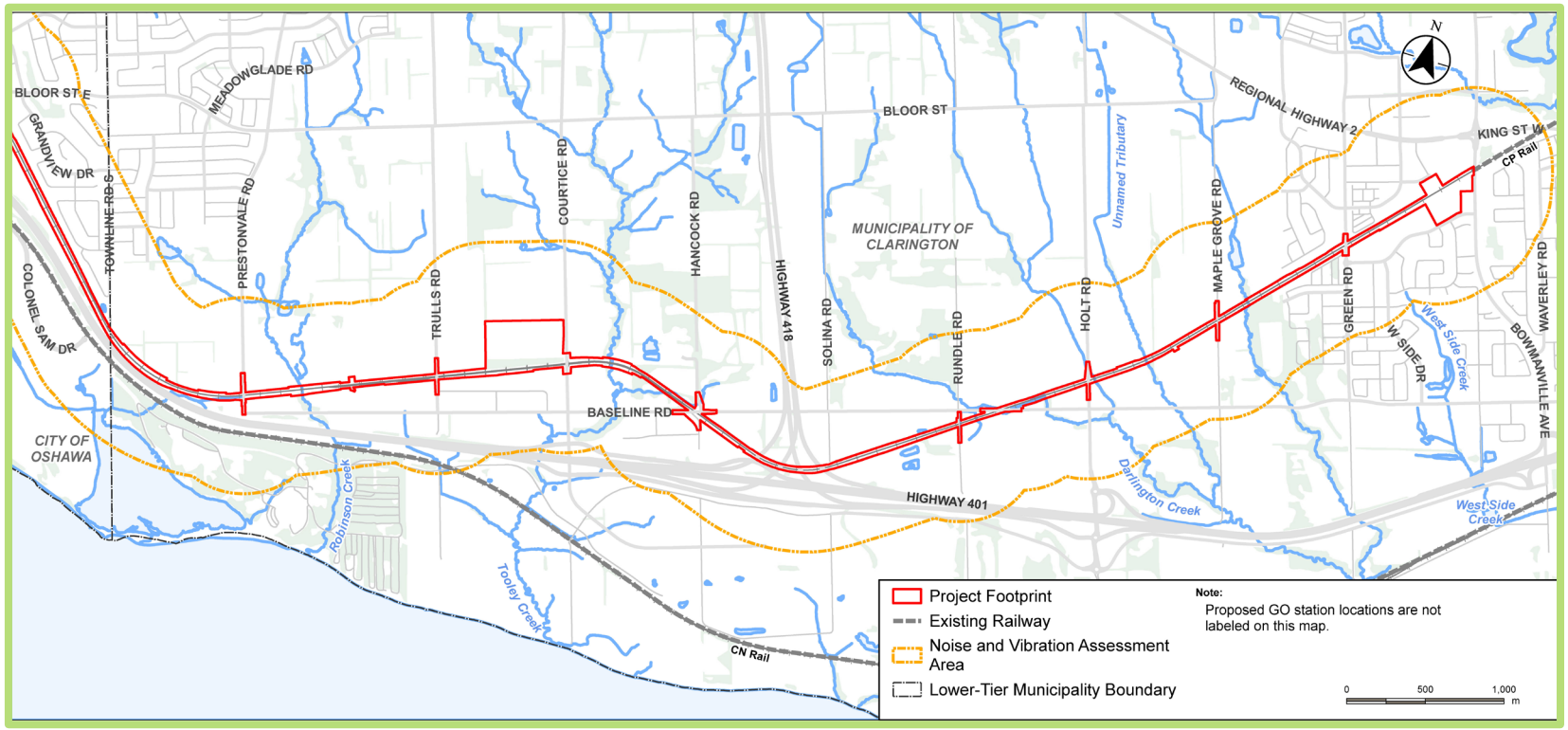
Noise and Vibration – Municipality of Clarington Assessment Area



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Noise – Potential Effects & Mitigation Measures

Project's Potential Noise Effects:

- Construction and operational noise may cause disturbance and/or annoyance.

Mitigation Measures:

- A Construction Noise Management Plan will be developed prior to construction.
- Nearby sensitive receptors will be notified of construction activities anticipated to create noise disturbance prior to commencement of the activities.
- Noise emissions of the construction equipment should be within the MECP* NPC* -115 and NPC-118 limits.
  - NPC-115 applies for construction equipment such as bulldozers, backhoes, loaders, etc. which usually have a maximum noise level from 83-85 decibels A (dBA).
  - NPC-118 applies for heavy vehicles with diesel engines and/or that weigh more than 4,500 kg and usually have a maximum noise level of 95 to 100 dBA.
- Noise control options, such as silencers/mufflers for specific equipment and noise shrouds for piling should be considered during construction.
- Temporary noise barriers for construction hoarding should be considered when the minimum setback distances cannot be maintained.
- GO trains are expected to stop and/or move at a reduced speed near/ at proposed GO stations during operations. At the proposed Thornton's Corners East GO Station, the curved portion of the track could be susceptible to wheel squeal, however the use of rail lubrication in accordance with Metrolinx standards would reduce the noise.
- Noise barriers are recommended along various portions of the rail corridor and in proximity to proposed GO stations.
- Locomotives should be positioned at the east end of the future tracks at the proposed Bowmanville GO Station.

*MECP - Ministry of Environment, Conservation and Parks
NPC - Noise Pollution Control

Vibration – Potential Effects & Mitigation Measures

Project's Potential Vibration Effects:

- Exposure to vibration may cause disturbance and/or annoyance.
- Noise and vibration associated with construction activities may occur on evenings and weekends.
- Vibration may cause damage to buildings, utilities and other structures during construction.

Mitigation Measures:

- A Construction Vibration Management Plan will be developed. It will indicate structures where continuous vibration monitoring is required.
- The owners of properties within the Zone of Influence* will be notified in advance of construction activities.
- Construction planning such as maintaining setback distance and switching to less impactful equipment are recommended.
- Ballast mats or other feasible mitigation measures will be explored to mitigate effects from vibration during operations.

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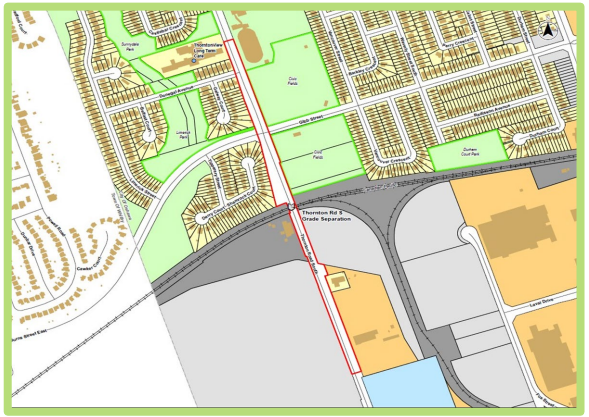
* Zone of Influence: Land in or adjacent to a construction site, which is potentially impacted by construction vibration equal or greater than the vibration exposure limits outlined in the Metrolinx Guide for Noise and Vibration Assessment (2019).

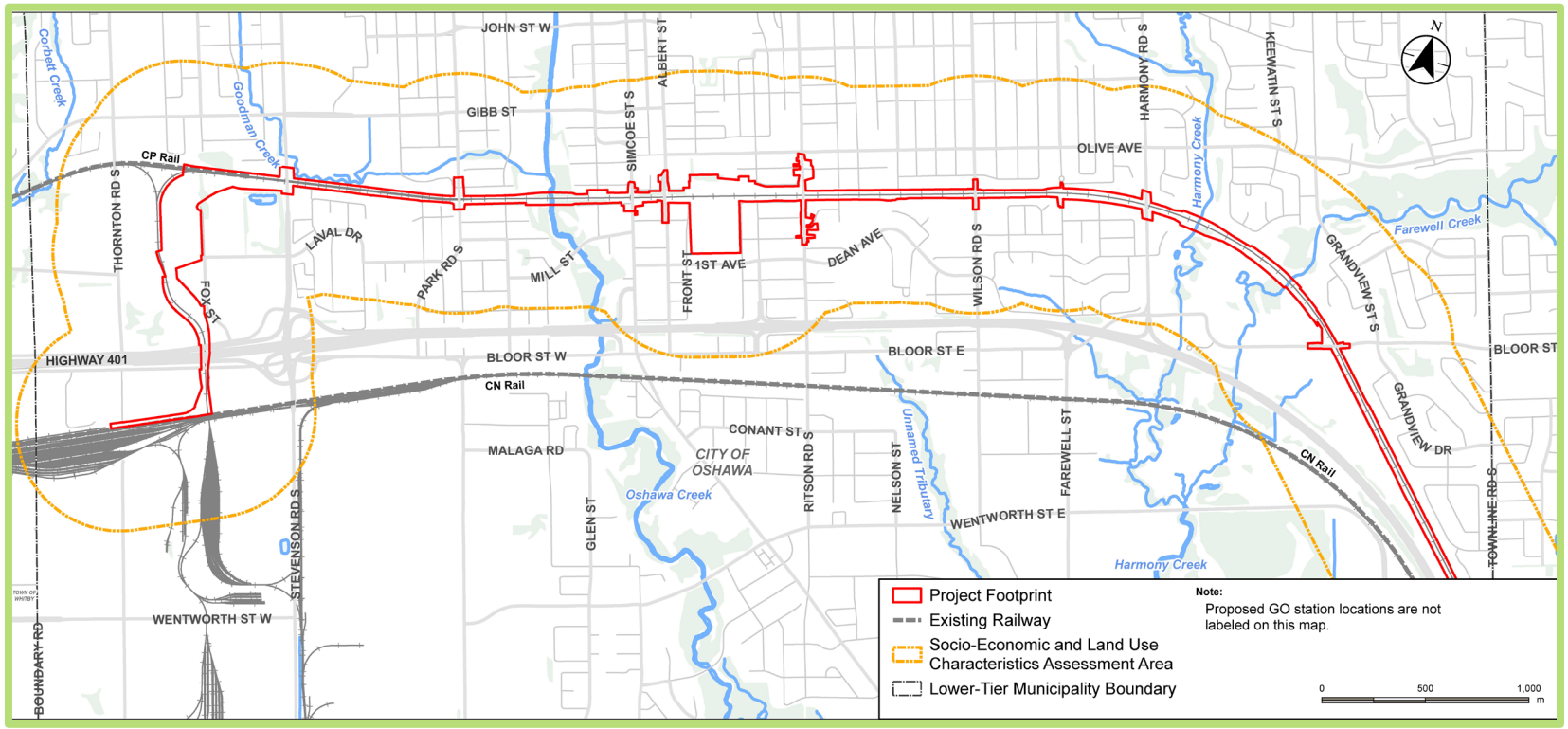
Socio-Economic and Land Use – Key Findings

- The Socio-Economic and Land Use Characteristics Assessment Area is comprised of the Project Footprint plus an additional 500 metres from the perimeter of the Project Footprint.
- The Project will have long-term benefits to the Assessment Area through improved access to public transit.
- Land uses in the Assessment Area include neighbourhoods, core and general employment areas*, mixed-use areas, parks and natural areas, industrial and commercial areas, agricultural areas, institutional areas and utility corridors.
- The Assessment Area includes elementary and secondary schools, libraries, one major hospital, a provincial park, a Nuclear Generating Facility and community resources (community centers).
- All four proposed GO stations will be delivered through Metrolinx's Transit Oriented Community (TOC) Program.
- The configuration of the proposed GO stations will be confirmed as discussions with landowners and developers progress.



* Core employment areas contain businesses and economic activities such as offices. General employment areas are places for business and economic activities such as restaurants, retail, service uses, etc.

Socio-Economic and Land Use – City of Oshawa Assessment Area



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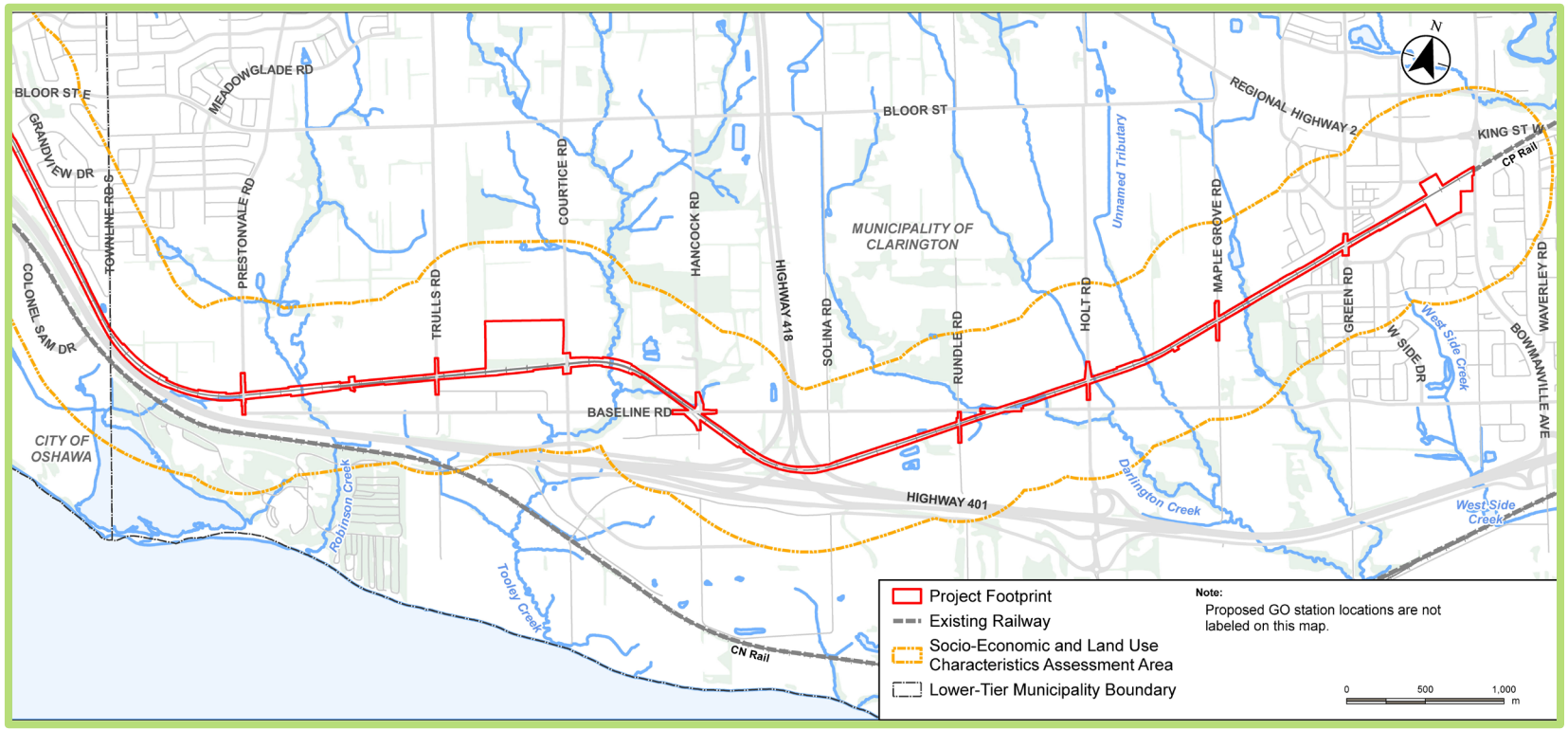
Socio-Economic and Land Use – Municipality of Clarington Assessment Area



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Socio-Economic and Land Use – Potential Effects

- Residential, institutional, and commercial properties may experience effects such as noise, vibration and fugitive dust.
- There may be a loss of privacy due to the increased number of workers and traffic within the Assessment Area and increased lighting required for construction activities.
- Sediment may be released onto neighbouring properties and adjacent roadways.
- Passengers at Durham College Oshawa GO Station and GO Transit Park & Rides at Courtice Road and Bowmanville Avenue may be temporarily inconvenienced as parking facilities are reduced and vehicular and pedestrian access is temporarily altered or relocated.
- Temporary service interruptions related to utility relocations including communication cables, fibre optic cables, gas, hydro, sewer lines and watermains.
- Proposed retaining walls and noise barriers will affect sightlines of nearby properties.
- The four proposed GO stations and some bridges will be more visually prominent than the existing site conditions and surrounding land uses.
- There is a potential for spills or releases from machinery and equipment to nearby highly vulnerable aquifers, as well as potential for road salt contamination.
- There is a potential for access effects related to lack of sightlines when traversing the multi-use crossing tunnel at Front Street (Michael Starr Trail).

Socio-Economic and Land Use – Potential Property Effects

Specific property requirements and effects will be determined as design progresses.

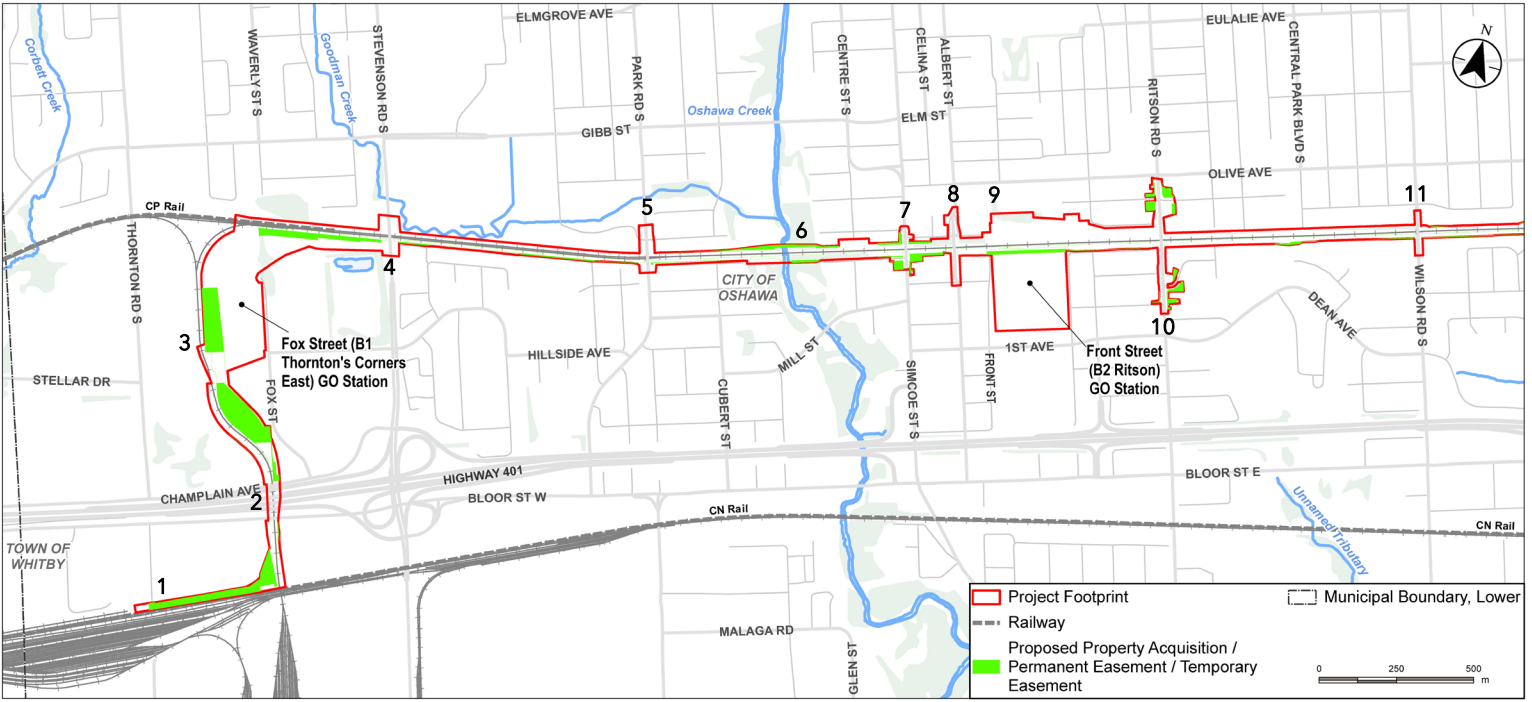
- Permanent and temporary property acquisitions:
  - Property needed for staging/laydown areas
  - Metrolinx acquisition of property
- Land use and access disruption:
  - Traffic (including vehicular, pedestrian and cyclists) will be re-routed along alternative existing routes.
  - Closure of Albert Street bridge during removal to support construction of new tracks.
- Potential for safety concerns based on visual distractions and sight lines associated with detours and land use restrictions for construction.
- Proposed GO Transit rail service may result in increased frequency and magnitude of noise, vibration and/or dust effects to properties adjacent to the rail corridor.
- Operational activities at the four proposed GO stations have the potential to increase noise, vibration, dust, light and traffic.
- Noise from train whistling, idling vehicles and crossing signals will increase at at-grade crossings.
- Safety concerns related to the proposed multi-use crossing at Front Street (Michael Starr Trail).

Socio-Economic and Land Use – Mitigation Measures

- To address the potential effects on property acquisitions and easements, ongoing consultation with landowners will be maintained when access to property is required.
- A Communications Protocol will be developed indicating how and when surrounding property owners and tenants will be informed of upcoming construction.
- Construction schedule delays will be avoided to the extent possible to limit the duration of construction and corresponding visual effects.
- Construction will comply with all applicable municipal and provincial bylaws and legislation for lighting areas near highways, roadways and residential areas.
- To address the potential effects on utilities, a detailed Utility Infrastructure Location Plan will be developed and implemented to protect, support, safeguard, remove and relocate all utility infrastructure.
- A Complaints Protocol will be implemented to address the potential effects of operational inconvenience and community concerns.
- Winter maintenance activities will be undertaken by persons who are certified by Smart About Salt, and best management practices for salt and snow.
- To address the concerns related to the proposed multi-use crossing at Front Street (Michael Starr Trail), the Crime Prevention Through Environmental Design* principles will be implemented.

*Philosophy that encourages the use of design to eliminate or reduce criminal behaviour.

Property Effects – City of Oshawa



No.	Crossing Details
1	Pedestrian Bridge Extension at the Existing Durham College Oshawa GO Station
2	New Rail over Road Bridge at Highway 401
3	New Rail Over Rail Bridge (GO Track over Realigned GM Spur Track)
4	Expanded Road Over Rail Bridge at Stevenson Road
5	Expanded Road Over Rail Bridge at Park Road
6	New Rail Bridge over Oshawa Creek
7	Road Over Rail Bridge Replacement at Simcoe Street
8	Road Over Rail Bridge Removal at Albert Street
9	New Multi-Use Crossing at Front Street (Michael Starr Trail)
10	Road Over Rail Bridge Replacement at Ritson Road
11	New Rail Over Road Bridge at Wilson Road

Property impacts are preliminary and subject to change and will be assessed as the Project progresses.

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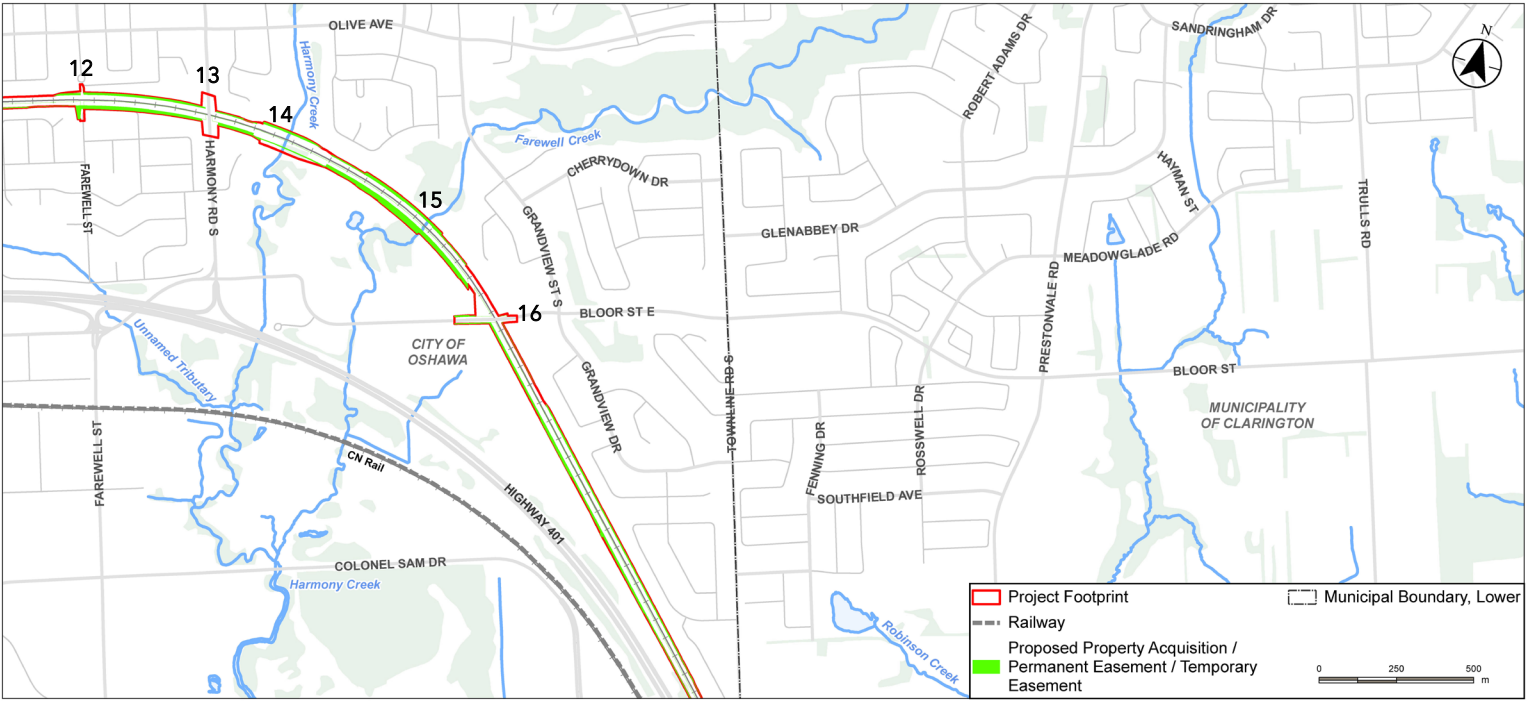
Property Effects – City of Oshawa



No.	Crossing Details
12	Multi-Use Bridge Replacement at Farewell Street
13	Expanded Road Over Rail Bridge at Harmony Road
14	New Rail Bridge over Harmony Creek
15	New Rail Bridge over Farewell Creek
16	Widening of Existing At-Grade Crossing at Bloor Street East

Property impacts are preliminary and subject to change and will be assessed as the Project progresses.

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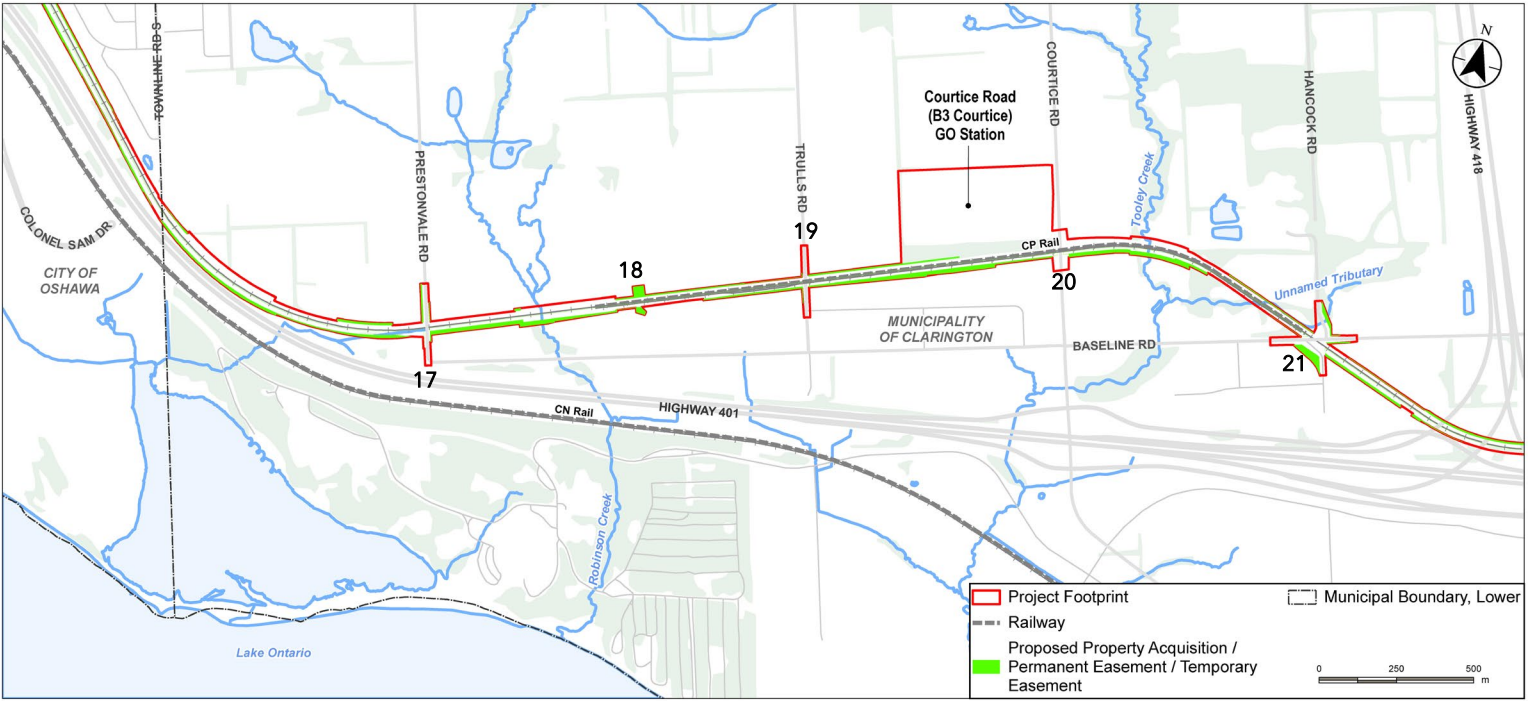
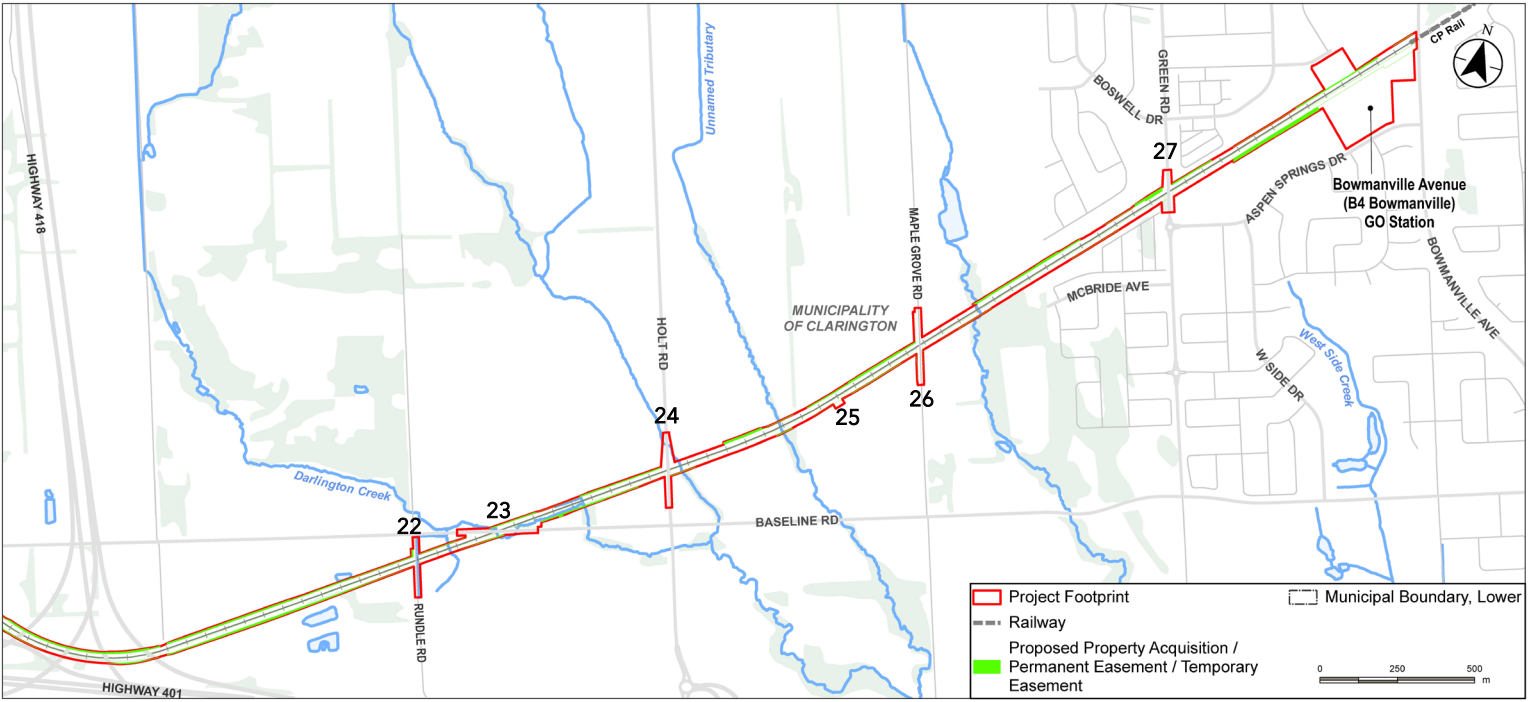
Property Effects – Municipality of Clarington



No.	Crossing Details
17	Widening of Existing At-Grade Crossing at Prestonvale Road
18	Widening of Existing At-Grade Crossing at Dom's Auto Parts
19	Widening of Existing At-Grade Crossing at Trulls Road
20	Expanded Road Over Rail Bridge at Courtice Road
21	Widening of Existing At-Grade Crossing at Baseline Road

Property impacts are preliminary and subject to change and will be assessed as the Project progresses.

Property Effects – Municipality of Clarington



No.	Crossing Details
22	Widening of Existing At-Grade Crossing at Rundle Road
23	Widening of Existing At-Grade Crossing at Baseline Road
24	Widening of Existing At-Grade Crossing at Holt Road
25	Widening of Existing At-Grade Crossing West of Maple Grove Road
26	Widening of Existing Road At-Grade Crossing at Maple Grove Road
27	New Rail Over Road Bridge at Green Road

Property impacts are preliminary and subject to change and will be assessed as the Project progresses.

Traffic and Transportation – Key Findings

- The overall Traffic Impact Analysis Assessment Area was divided into four focus areas around the proposed GO station locations which include:
  - Focus Area B1: Fox Street (B1 Thornton's Corners East) GO Station,
  - Focus Area B2: Front Street (B2 Ritson) GO Station,
  - Focus Area B3: Courtice Road (B3 Courtice) GO Station, and
  - Focus Area B4: Bowmanville Avenue (B4 Bowmanville) GO Station.
- The Project is anticipated to permanently expand and enhance the existing traffic and transportation networks by providing an alternate mode to travel between Durham communities and to the City of Toronto.
- The Assessment Area includes a substantial road network and is served by both local and regional transit networks through a range of train and bus options, including Durham Region Transit, GO Transit bus service and GO Transit Lakeshore East rail service which currently terminates at the Durham College Oshawa GO Station (formerly Oshawa GO Station). Freight trains operated by Canadian National (CN) Railway and Canadian Pacific (CP) Railway are also present.
- An active transportation network is present across the Assessment Area including major and minor multi-use pathways connecting to trails, sidewalks and bike lanes.
- During construction, lane restrictions/closures, travel time delays, realignment of sidewalks and bike lanes, rail service restrictions will be temporary and reduced with appropriate mitigation measures.

Traffic and Transportation – Potential Effects

- Construction activities may require temporary, non-peak period lane reductions where needed.
- Activities such as site preparation, temporary laydown areas and roadworks during construction of the bridges may result in partial road and lane closures that may affect traffic and travel times.
- There is a potential for safety concerns due to visual distractions associated with detours and lane restrictions.
- Construction of the bridges will impact Durham Region Transit bus routes due to rerouting or traffic delays resulting in longer commute times.
- Construction of the proposed multi-use crossing at Front Street (Michael Starr Trail), pedestrian bridge extension at the Durham College Oshawa GO Station and Farewell Street Multi-Use Bridge replacement may result in the temporary closure of the existing crossings to pedestrians and cyclists.

Traffic and Transportation – Potential Effects

- The construction of a multi-use crossing at Michael Starr Trail will result in a positive effect as pedestrian and cyclist movements at the rail crossing can free-flow instead of having trains pass periodically through the current at-grade crossing.
- There is a potential for access effects related to lack of sightlines when traversing the proposed multi-use crossing tunnel at Front Street (Michael Starr Trail).
- Removal of the existing overpass at Albert St will have some impact on traffic as vehicles and cyclists will no longer be able to cross the rail corridor at Albert Street.
- Potential closure of the existing east approach from Mitchell Avenue to Ritson Road South may impact vehicular, cyclist and/or pedestrian connectivity.

Traffic and Transportation – Mitigation Measures

- A Traffic Control and Management Plan will be developed to maintain reasonable access through work zones.
- Access to nearby land uses will be maintained for vehicular, pedestrian and cyclist traffic.
- Potentially affected residents, tenants and business owners will be notified of construction schedules and modifications.
- Local public transit agencies will be consulted to establish suitable mitigation strategies to minimize potential public transit service disruptions.
- Potential effects to pedestrian and cyclist activities during construction will be mitigated through the installation of appropriate wayfinding, regulatory and warning signs.
- Existing sidewalks and crossings will be maintained to the extent possible.
- Temporary pedestrian facilities will comply with accessibility and applicable municipal standards.

Cultural Heritage – Key Findings

- The Cultural Heritage Assessment Area is comprised of the Project Footprint plus an additional 50 metres from the perimeter of the Project Footprint and an additional 500 metres from the approximate centre point of the GO station locations.
- A total of 176 potential Built Heritage Resources* were identified within the Assessment Area.
- All wetlands and watercourses have cultural significance to Indigenous communities and Nations as a Cultural Heritage Landscape**. There is potential for direct impacts to these during construction activities.
- Sixteen (16) cultural heritage resources have the potential for indirect vibration impacts by the Project:

1) CP Railway Bridge over CN Railway corridor, Oshawa
2) 33 Avenue Street, Oshawa
3) 15 Hall Street, Oshawa
4) 394 Simcoe Street South, Oshawa
5) 399 Simcoe Street South, Oshawa
6) 45 Albany Street, Oshawa
7) 435 Albert Street, Oshawa
8) 433 Albert Street, Oshawa
9) 431 Albert Street, Oshawa
10) 371 Albert Street, Oshawa
11) 367 Albert Street, Oshawa
12) 500 Howard Street, Oshawa
13) 356 Ritson Road South, Oshawa
14) 464 Ritson Road South, Oshawa
15) 349 Ritson Road South, Oshawa
16) 393 Wilson Road South, Oshawa

*A Built Heritage Resource is a structure, building, monument or other installation that has or has potential to have cultural heritage value or interest.
** A Cultural Heritage Landscape is a defined area which has been modified by human activities that has or has potential to have cultural heritage value or interest.

Cultural Heritage – Key Findings

- Twenty (20) cultural heritage resources have the potential to be directly impacted by the Project :

1) 83 Avenue Street, Oshawa
2) 394 Simcoe Street South. Oshawa
3) 399 Simcoe Street South, Oshawa
4) Albert Street Bridge over CP Railway Tracks, Oshawa
5) 500 Howard Street, Oshawa
6) 356 Ritson Road South, Oshawa
7) 464 Ritson Road South, Oshawa
8) 470 Ritson Road South, Oshawa
9) 359 Ritson Road South, Oshawa
10) 349 Ritson Road South, Oshawa
11) 374 Farewell Street, Oshawa
12) Farewell Street Multi-Use Bridge over CP Railway Tracks, Oshawa
13) St. Wolodymyr and St. Olha Ukrainian Cemetery, Clarington
14) 1558 Baseline Road, Clarington
15) 1580 Baseline Road, Clarington
16) 1598 Baseline Road, Clarington
17) 1604 Baseline Road, Clarington*
18) 2228 Baseline Road, Clarington
19) 1490 Baseline Road, Clarington
20) 1766 Baseline Road, Clarington

Albert Street Bridge

Farewell Street Bridge

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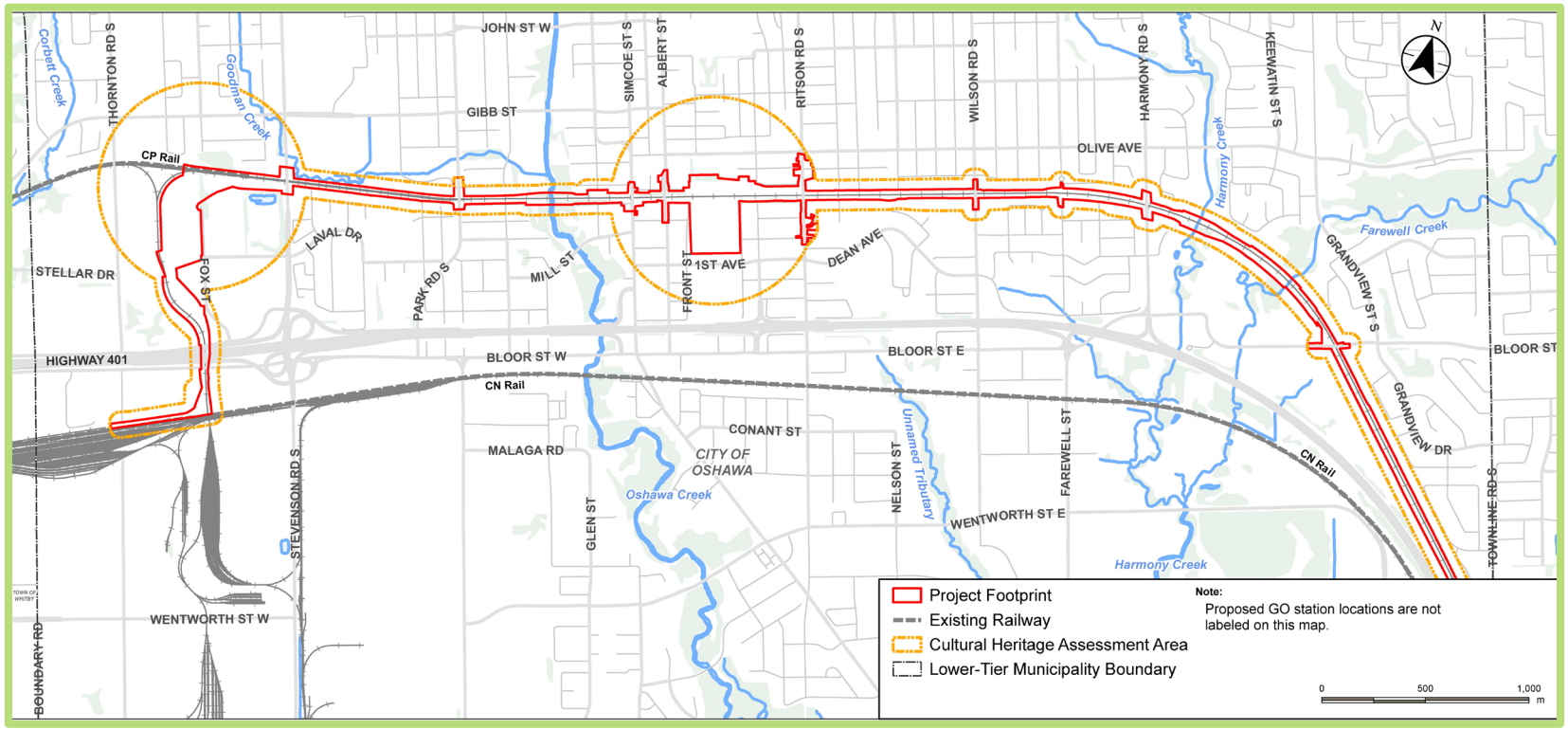
* 1604 Baseline Road was not identified as a Built Heritage Resource (BHR); however, a Cultural Heritage Evaluation Report was completed for this property due to its proximity to other BHRs in the Assessment Area.

Cultural Heritage – City of Oshawa Assessment Area



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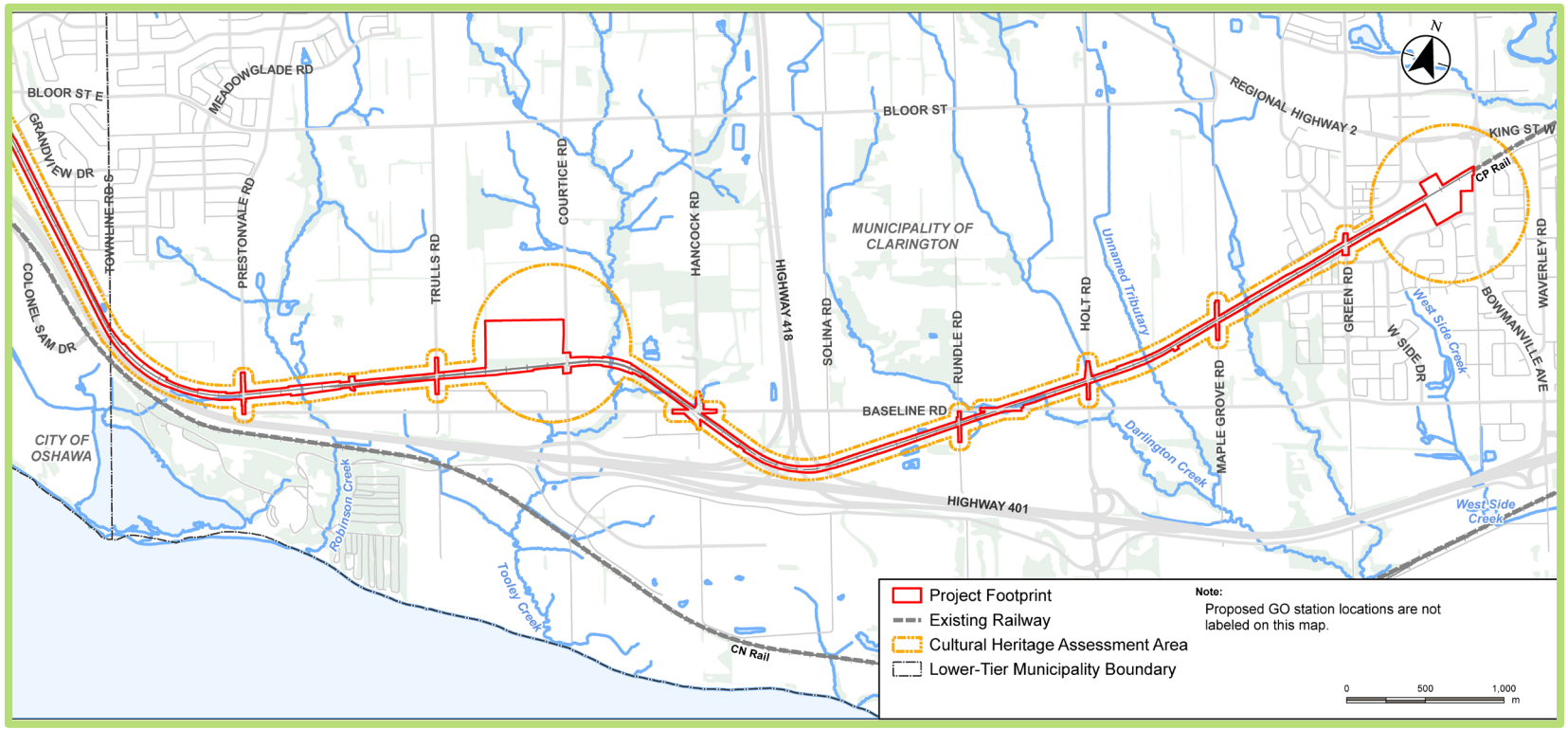
Cultural Heritage – Municipality of Clarington Assessment Area



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Cultural Heritage – Potential Effects

- There is potential for indirect impacts to Built Heritage Resources/Cultural Heritage Landscapes where vibration during construction activities may occur.
- There is potential for direct impacts to the following cultural heritage resources:
  - The Provincial Heritage Property of Provincial Significance located at 500 Howard Street, Oshawa due to potential alteration and demolition.
  - The Albert Street Bridge is currently listed on the *Heritage Oshawa Inventory* as a "Class A" heritage property. The bridge is proposed to be removed.
  - The Farewell Street Multi-Use Bridge proposed to be replaced.
  - Properties at 83 Avenue Street, 394 and 399 Simcoe Street South, 349, 356, 359, 464 and 470 Ritson Road South, and 374 Farewell Street in the City of Oshawa; St. Wolodymyr and St. Olha Ukrainian Cemetery and 1490, 1558, 1580, 1598, 1766 and 2228 Baseline Road in the Municipality of Clarington due to potential property acquisitions and/or easements. Potential property impacts are preliminary and will be assessed as the Project progresses.
    - Cultural Heritage Evaluation Reports (CHERs) of the listed properties are being prepared.
    - A CHER will identify and evaluate provincial heritage properties by applying the criteria outlined in O. Reg. 9/06 (amended by O. Reg. 569/22)* and O. Reg. 10/06**. The Metrolinx Heritage Committee (MHC) reviews the CHER to determine whether it agrees or disagrees with the CHER recommendations.
  - Vibration effects to Built Heritage Resources/Cultural Heritage Landscapes are not anticipated during operations.

* Criteria for Determining Cultural Heritage Value or Interest
** Criteria for Determining Cultural Heritage Value or Interest of Provincial Significance

Cultural Heritage – Mitigation Measures

- Impacts to Built Heritage Resources will be avoided to the extent possible by establishing a buffer zone around the resource. If construction activities are anticipated within the buffer zone, a pre-construction vibration monitoring assessment within the buffer zone is recommended.
- Cultural Heritage Evaluation Reports are being undertaken for all directly impacted Built Heritage Resources.
- Potential vibration effects from construction equipment can be limited by maintaining a larger distance between equipment and heritage resources, or by using equipment with less potential to create vibration impacts when operating closer to resources.
- Consent from the Minister of Citizenship and Multiculturalism is required to remove or demolish a provincial heritage property of provincial significance. Metrolinx is currently seeking Minister's Consent for the partial demolition of the structure at 500 Howard Street, Oshawa.
- All built heritage requirements will be addressed for removal of the Albert Street Bridge and replacement of Farewell Street Multi-Use Bridge.

500 Howard Street

Archaeology – Key Findings

- The Assessment Area for the Stage 1 Archaeological Assessment is comprised of the Project Footprint plus 20 metres from the perimeter of the rail alignment, 70 metres from the perimeter of at-grade crossings and bridges and 500 metres from the approximate centre point of the GO station locations.

- Additional Stage 1 Archaeological Assessment is ongoing for small additional footprint areas east of Ritson Road South around Mitchell Avenue and north of Kitchener Avenue, at Hancock Road north of Baseline Road, and at McKnight Road south of Baseline Road.

- Based on the findings of the Stage 1 Archaeological Assessment, approximately half of the Assessment Area has archaeological potential. The potential of archaeological resources will require further archaeological assessments.

Archaeology – Potential Effects & Mitigation Measures

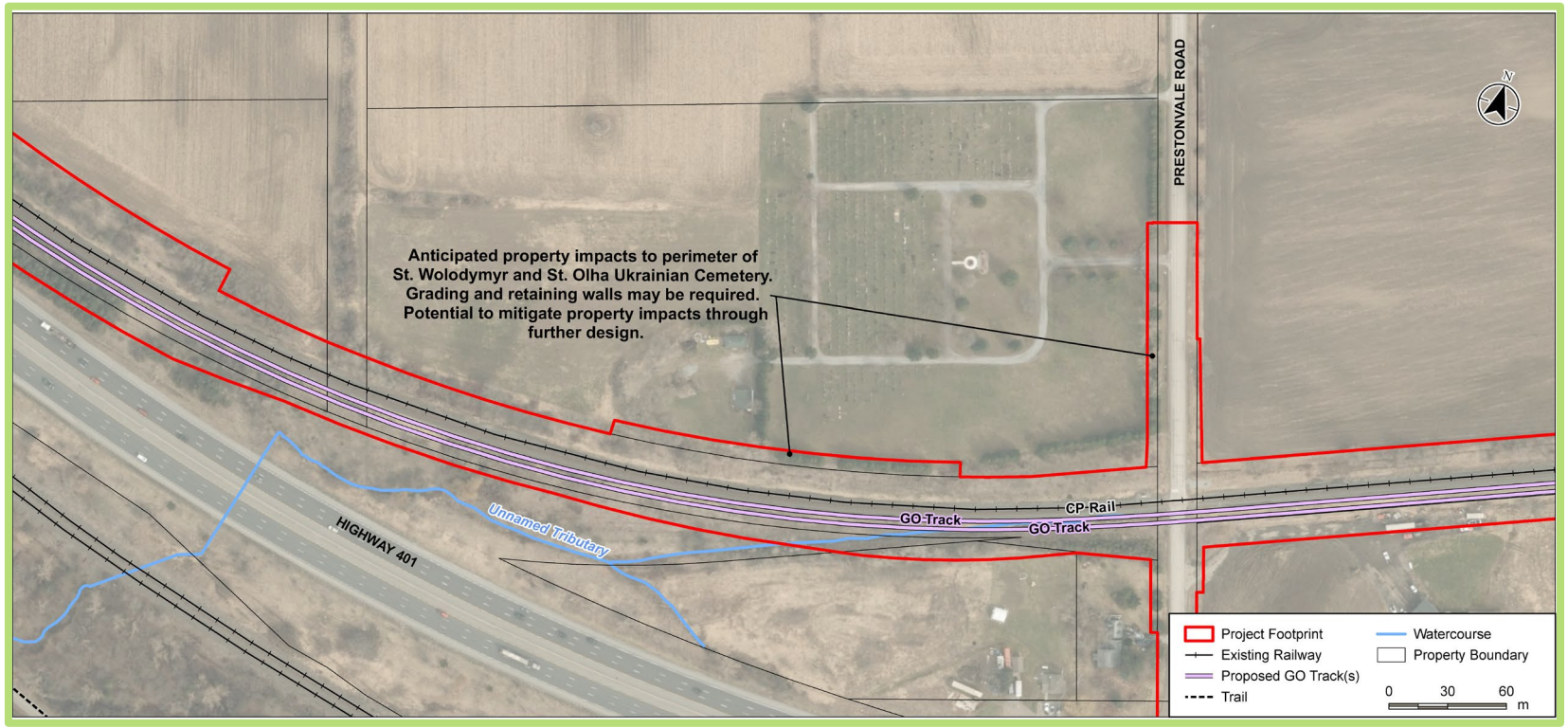
Project's Potential Effects:

- There is potential for the disturbance of unassessed or documented archaeological resources during construction.
- Potential direct impacts to a small area along the boundary of the St. Wolodymyr and St. Olha Ukrainian Cemetery directly adjacent to Prestonvale Road and the rail corridor, which is located within the Project Footprint.
- Impacts to archaeological resources are not anticipated during operations as no additional ground disturbance outside of the previously assessed areas will occur.

Mitigation Measures:

- Further archaeological assessment is currently underway, including Stage 2 Archaeological Assessment.
- Work will stop if unexpected archaeological materials are encountered (or suspected) at a location and the site will be assessed by a licensed archaeologist.

Archaeology – St. Wolodymyr and St. Olha Ukrainian Cemetery



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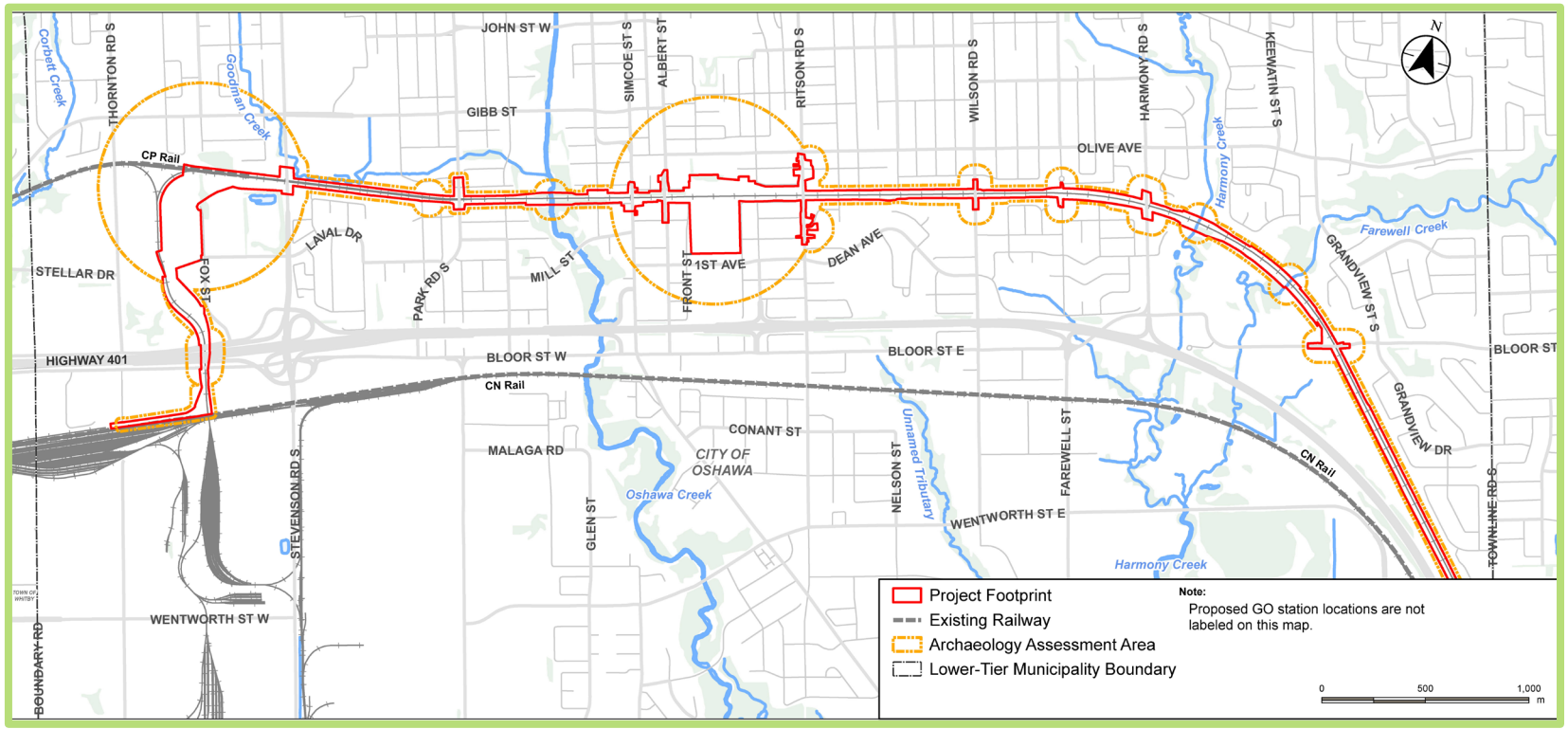
Archaeology – City of Oshawa Assessment Area



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Archaeology – Municipality of Clarington Assessment Area

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Thank You for Reading!

We appreciate the time you have taken to learn about the EPR Addendum, and we value your opinions. Please provide input online from **June 8 to June 21, 2023** via slido or by emailing DurhamRegion@metrolinx.com.

Let us know if you have questions or comments regarding:

- Project Assessment Area
- Existing conditions or potential environmental effects
- EPR Addendum and TPAP process
- A Notice of EPR Addendum is anticipated to be issued in Fall of 2023 where:
  - Final EPR Addendum and supporting technical documents will be made available for a 30-day review period
  - Following 30-day public review period, the Minister of Environment, Conservation and Parks (MECP) has 35 days to review
  - MECP will issue a notice allowing the proposed Project to proceed or a notice requiring further work to address concerns
  - Statement of Completion will be posted on the Metrolinx website

Stay involved with the Bowmanville Extension by reaching out to the Durham Community Engagement Team below:

- Email us at DurhamRegion@metrolinx.com
- Call us at (416) 202-3900
- Visit our website www.metrolinx.com/bowmanville

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