

# Stouffville Rail Corridor Grade Separations Project

## Natural Environment - Study Results

A Natural Environment study looks at existing terrestrial and aquatic conditions, to assess the potential environmental effects on species (Wildlife) and habitat (including Trees and Vegetation). A sample of these potential effects are summarized below.

Environmental Components	Potential Effects	Proposed Mitigation Measures
Trees and Vegetation	<ul style="list-style-type: none"> <li>• Tree/vegetation removal or injury</li> <li>• Establishment of invasive species</li> </ul>	<ul style="list-style-type: none"> <li>• If a tree requires removal or injury, compensation and permitting/approvals will be undertaken in accordance with the Metrolinx Vegetation Guideline (2020) including measures to reduce establishment of invasive species.</li> <li>• All applicable bylaws and regulations for tree removals outside of Metrolinx properties will be adhered to.</li> <li>• Vegetation removals will also consider and mitigate potential impacts to migratory birds, Species at Risk, and features (e.g., Designated Natural Areas and Significant Wildlife Habitat).</li> </ul>
Wildlife	<ul style="list-style-type: none"> <li>• Disturbance, displacement or mortality of wildlife (due to permanent loss of habitat)</li> <li>• Disturbance or destruction of migratory bird nests</li> </ul>	<ul style="list-style-type: none"> <li>• All works will comply with the Migratory Birds Convention Act (1994) and the Endangered Species Act (2007).</li> <li>• Prior to construction, an investigation of the Project Footprint for wildlife and wildlife habitat will be undertaken to confirm findings of previous surveys, as appropriate.</li> <li>• If wildlife is encountered, measures will be implemented to avoid destruction, injury, or interference with the species, and/or its habitat.</li> <li>• If construction occurs during the nesting season (April 1 to August 31), a nest search will confirm whether migratory birds are nesting in the Project Footprint prior to vegetation removal.</li> <li>• If removal/replacement of structures/buildings are determined to be required during detailed design, they will be inspected for potential use by Barn Swallow or Species at Risk bats prior to removal.</li> </ul>
Aquatic	<ul style="list-style-type: none"> <li>• Disturbance to wetland habitat (Kennedy Road) and aquatic habitats and in-water impacts to fish (Progress Avenue)</li> </ul>	<ul style="list-style-type: none"> <li>• All requirements of the Fisheries Act (as amended 2019) and the Endangered Species Act, 2007 (ESA) will be met.</li> <li>• Buffers established during detailed design will be maintained during construction to minimize potential negative impacts to wetlands (Kennedy Road) and waterbodies (Progress Avenue).</li> <li>• In-water works will be planned to respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.</li> </ul>

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## Archaeology - Study Results

A Stage 1 Archaeological Assessment (AA) was undertaken for this project to assess archaeological potential and avoid any impacts to archaeological resources.

- Based on recommendations from the Stage 1 AA, a Stage 2 AA was recommended for parts of Denison Street, Kennedy Road, McNicoll Avenue, Havendale Road, Huntingwood Drive and Progress Avenue, which pending receipt of Permission to Enter, will occur in 2020.
- Based on results of the Stage 2 AA, further Archaeological Assessments may be required.
- Indigenous communities have been engaged since the pre-planning phase of the Project and will continue to be engaged regarding any future archaeology work.

Potential Effects	Proposed Mitigation Measures
<ul style="list-style-type: none"><li>• Potential for the disturbance of archaeological resources</li></ul>	<ul style="list-style-type: none"><li>• If unexpected archaeological materials are encountered (or suspected), all work will stop. The site will be protected from impact until assessment by a licensed archaeologist.</li><li>• If the Project Footprint is altered and falls outside of the assessed area, additional Archaeological Assessments will be conducted by a professionally licensed archaeologist prior to disturbance.</li><li>• If human remains are encountered or suspected of being encountered, all work will cease. The local police/coroner as well as the Bereavement Authority of Ontario on behalf of the Ministry of Government and Consumer Services will be contacted.</li><li>• All Archaeological Assessment findings will be shared with Indigenous communities, as per Metrolinx procedures.</li></ul>

Archaeological Assessments are undertaken in accordance with the Standards and Guidelines for Consultant Archaeologists (MHSTCI 2011).

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## Cultural Heritage - Study Results

The *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* looks at properties (structures and/or landscapes) with known or potential cultural heritage value or interest. It assesses the potential effects from the proposed infrastructure and recommends mitigation measures to minimize any adverse effects.

- No known or potential built heritage resources and cultural heritage landscapes were identified in the Study Area.
- As there are no anticipated impacts to CHRs, it is not anticipated that mitigation measures will be required.
- Should the project design change and an impact to a CHR be identified, Metrolinx will implement and comply with monitoring requirements and commitments pertaining to Cultural Heritage Resources/properties as per the recommendations contained in any/all of the following documents: Cultural Heritage Reports, Cultural Heritage Evaluation Reports, Heritage Impact Assessments and Strategic Conservation Plans.

Potential Effects	Proposed Mitigation Measures
<ul style="list-style-type: none"><li>• For any additional potentially affected cultural heritage resources, properties and/or landscapes not previously identified due to changes in project design post-TPAP</li></ul>	<ul style="list-style-type: none"><li>• If there is a change in project design post-TPAP that interacts with any identified CHRs, additional impact assessment work and heritage studies will be undertaken in accordance with applicable legislation.</li><li>• Selection of construction staging and laydown areas will follow Metrolinx selection procedures, which include avoiding CHRs wherever possible or effectively mitigating impacts where not possible.</li></ul>

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## Socio-Economic and Land Use - Study Results

A Socio-Economic and Land Use study looks at current and future land use conditions in the study area. A sample of these potential effects are summarized below.

Potential Effects	Proposed Mitigation Measures
<ul style="list-style-type: none"> <li>Property acquisition - permanent and temporary</li> <li>Access disruption</li> <li>Loss of privacy</li> </ul>	<ul style="list-style-type: none"> <li>Specific property requirements will be confirmed during detailed design. Where access to property is required, ongoing consultation with affected landowners will help identify appropriate site-specific mitigation measures.</li> <li>During construction, access to businesses during working hours will be maintained, where feasible. Where regular access cannot be maintained, alternative access and signage will be provided.</li> <li>New public streets to provide continued frontage and access off a public streets for existing businesses.</li> </ul>
<ul style="list-style-type: none"> <li>Nuisance effects from construction activities</li> <li>Aesthetics / visual effects during construction and operation</li> </ul>	<ul style="list-style-type: none"> <li>Options to increase the visibility/transparency of the Havendale Road multi-use crossing structure will be considered.</li> <li>Appropriate finish(es) for the retaining walls will be determined based on municipal planning and urban design policies and objectives, surrounding land uses, adjacent built form, and pedestrian, cycle and automobile traffic levels.</li> <li>Staging/laydown areas will be selected in accordance with Metrolinx procedures. Staging/laydown areas will be located in areas that minimize adverse effects to sensitive receptors.</li> <li>Construction schedule delays will be avoided to the greatest extent possible in order to minimize the duration of construction and corresponding visual impacts.</li> <li>The surrounding community will be notified of initial construction plans, as well as any future modifications as they occur.</li> <li>A Communications Protocol and a Complaints Protocol will be developed, during construction.</li> </ul>

- In addition, where necessary, electrification protection barriers will be placed along the corridors, including on top of retaining walls (at Progress Avenue and Havendale Road if the bridge option is selected), to prevent access to the tracks and the electrified overhead contact system wires.
- The removal of at-grade crossings will eliminate conflicts between vehicles and trains, improving traffic flow and pedestrian / cyclist movement.

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## Transportation / Traffic - Study Results

Potential Effects	Proposed Mitigation Measures
<ul style="list-style-type: none"> <li>Construction will result in the need for temporary road / lane closures, changing access to nearby land uses.</li> </ul>	<ul style="list-style-type: none"> <li>Traffic Control and Management Plan(s) will be developed prior to construction.</li> <li>Advance notification signage will be placed along the road network in the vicinity upstream of the affected areas to advise motorists of construction and road disruptions.</li> <li>Access to nearby lands and businesses will be maintained to the extent possible, during construction.</li> <li>Potentially affected residents, tenants and business owners will be notified of initial construction schedules, as well as modifications to these schedules as they occur.</li> <li>Temporary traffic signal timing modifications may be assessed/implemented to optimize traffic operations and capacity of affected and adjacent intersections</li> <li>Municipal paramedic services will be given an opportunity to review emergency response plans and access/egress points to construction sites."</li> </ul>
<ul style="list-style-type: none"> <li>Construction may result in access restrictions to local bus routes, temporary changes in bus stop shelters/locations and temporary disruptions to the existing rail corridor.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that the public is notified in advance of any potential service disruptions.</li> <li>Consult with local transit agencies to establish a suitable mitigation strategy to be implemented.</li> </ul>
<ul style="list-style-type: none"> <li>Temporary effects on cyclists / pedestrians during construction such as temporary, partial or full sidewalk closures.</li> <li>Increased travel time for Havendale multi-use crossing</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Construction schedules will be shared with the public to encourage adjustments to travel patterns and behaviours accordingly and help reduce traffic impacts during peak hours.</li> </ul>

- The removal of at-grade crossings will eliminate conflicts between vehicles and trains, improving traffic flow and pedestrian / cyclist movement

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## Construction Air Quality - Study Results

The Construction Air Quality study looked at potential sources of emissions during the construction of the proposed infrastructure, assessed potential effects on the air quality, and provided recommendations on how to best mitigate and/or reduce these effects. A sample of these potential effects are summarized below.

Potential Effects	Proposed Mitigation Measures
<ul style="list-style-type: none"><li>• Activities that generate airborne dust, fumes, and odours including construction-related activities such as earth moving and materials handling.</li><li>• Exhausts (from tailpipe) from fuel combustion of construction equipment and heavy vehicles.</li></ul>	<ul style="list-style-type: none"><li>• A detailed Construction Air Quality Management Plan will be developed and implemented to limit the generation and dispersion of airborne dust and combustion due to construction activities, as well as monitoring requirements for each of the sites.</li><li>• A Communications Protocol and a Complaints Protocol will be developed.</li><li>• Compliance with the specific air quality criteria and limits in the Metrolinx Environmental Guidance for Air Quality and Greenhouse Gas Emissions Assessment (2019) will be demonstrated.</li><li>• Baseline air quality will be assessed by continuous measurement of local ambient concentrations of solid and liquid particles in the air (such as dust) over a minimum period of one week, where large local sources of pollution, such as highways, directly affect the zone of influence of the Project.</li><li>• Monitor continuously any contaminant that is predicted to exceed its relevant air quality exposure criterion during any phase of the Project and at any receptor.</li><li>• Potential for adverse effects on ambient air quality caused by construction will be minimized through scheduling of construction activities (e.g., staggering activities, limit number of equipment used at the same time).</li><li>• All applicable best practices identified in the Environment Canada document, Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (2005) will be implemented.</li></ul>

## Construction Noise and Vibration - Study Results

The Construction Noise and Vibration assessment looked at current noise and vibration conditions, assessed potential noise and vibration effects, and provided recommendations on how to best mitigate and/or reduce these effects. A sample of these potential effects are summarized below.

Potential Effects	Proposed Mitigation Measures
<ul style="list-style-type: none"><li>Noise during construction may cause annoyance, disturb sleep and other activities, and affect human health.</li></ul>	<ul style="list-style-type: none"><li>A detailed Construction Noise Management Plan will be developed prior to construction.</li><li>Mitigation measures will be proposed for sensitive receptors that fall within the zone of influence and evaluated using noise modelling.</li><li>Meet the noise exposure limits documented on the Metrolinx Guide for Noise and Vibration Assessment (2019)</li><li>Measures designed to reduce noise at the point of reception will be implemented.</li></ul>
<ul style="list-style-type: none"><li>Vibration during construction may result in damage to buildings and other structures, as well as public annoyance and complaints.</li></ul>	<ul style="list-style-type: none"><li>A detailed Construction Vibration Management Plan will be developed prior to construction.</li><li>A 15-metre setback distance will be established between the construction vibration source and nearby buildings, where possible, to minimize impacts.</li><li>Construction/maintenance methods and equipment with the least vibration impacts will be selected.</li></ul>