

Virtual Open House: Environmental Project Report Addendum



March 2, 2022










Open House Series

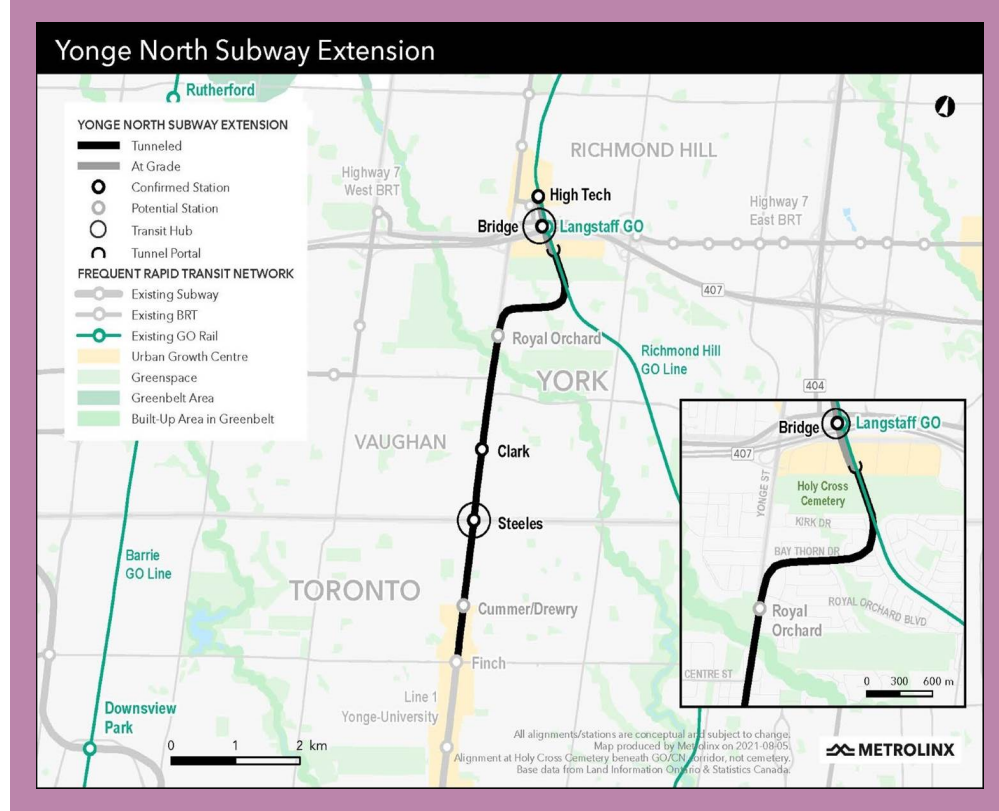
MEETING	TOPICS	DATE
EPR Virtual Open House #1	Overview of the Environmental Project Report Addendum, summary of findings	February 17
EPR Virtual Open House #2	Tunnelled segment Focus topics include: Noise and vibration, natural environment, cultural heritage, and soil and groundwater	February 23
➔ EPR Virtual Open House #3	Surface segment Focus topics include: Noise and vibration, natural environment, and air quality	March 2
EPR Virtual Open House #4	Engagement overview	March 10

Yonge North Subway Extension

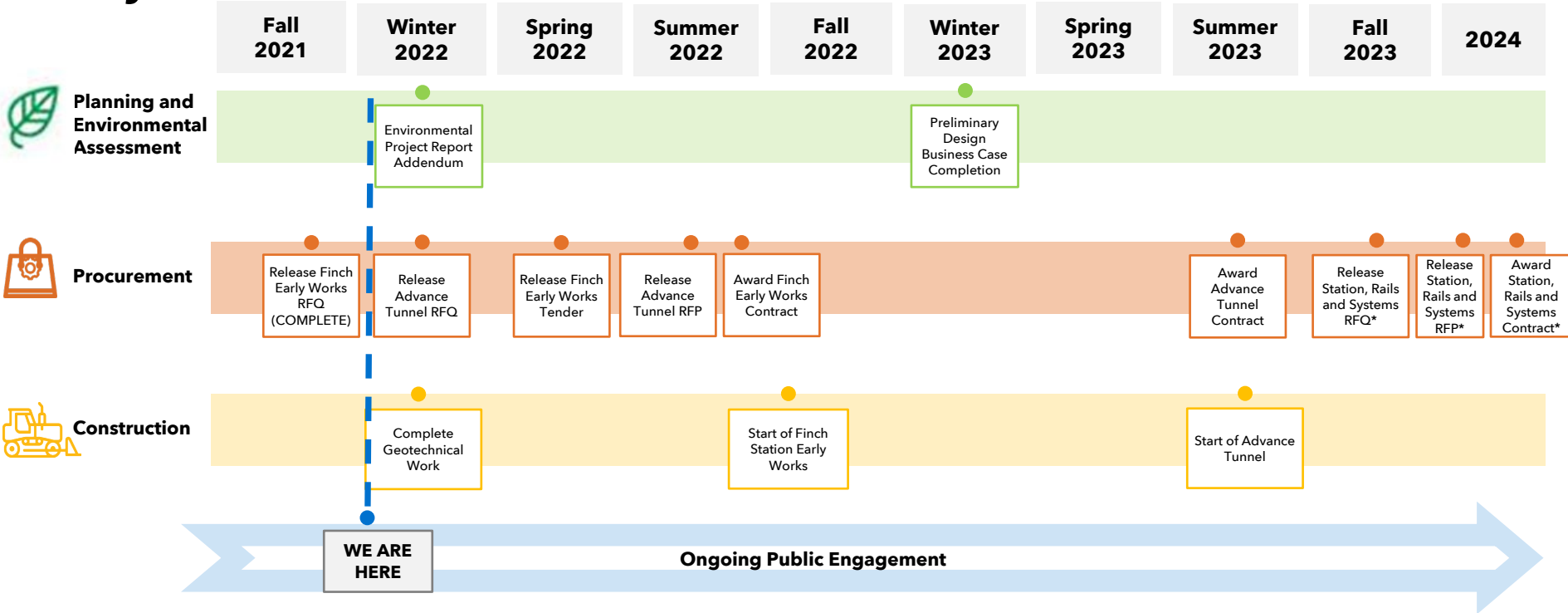
By the Numbers

-  ~8 km route
-  4* new stations
-  94,100 daily riders
-  Up to 22 minutes saved on a trip from York Region to downtown Toronto
-  4,800 tonnes in yearly greenhouse gas emission reductions
-  26,000 more people with in 10-minute walk to transit
-  7,700 fewer km traveled by cars during morning rush hour

* We're exploring opportunities with our project partners that could support additional stations as the analysis is refined.



Project Timeline



What is an Environmental Assessment?

- Environmental Assessment (EA) is a process to identify the potential environmental effects of a proposed project. This process happens before construction begins and ensures that the potential environmental effects are considered and addressed during construction and operation.
- Key EA components include:
 - Characterization of existing environmental conditions and identification of potential environmental effects and how to manage them
 - Consultation with government/review agencies, Indigenous Nations, the public and other interested parties
- In Ontario, transit project EA process and findings are documented in an Environmental Project Report (EPR) and subsequent EPR Addenda
 - EPR/EPR Addendum assesses the potential environmental effects of a project alignment/design as selected through the Metrolinx Business Case process
 - EA commitments captured in an EPR/EPR Addendum - mitigation measures, monitoring activities and future studies to manage and refine environmental effects - are binding and included in the project contractual documents

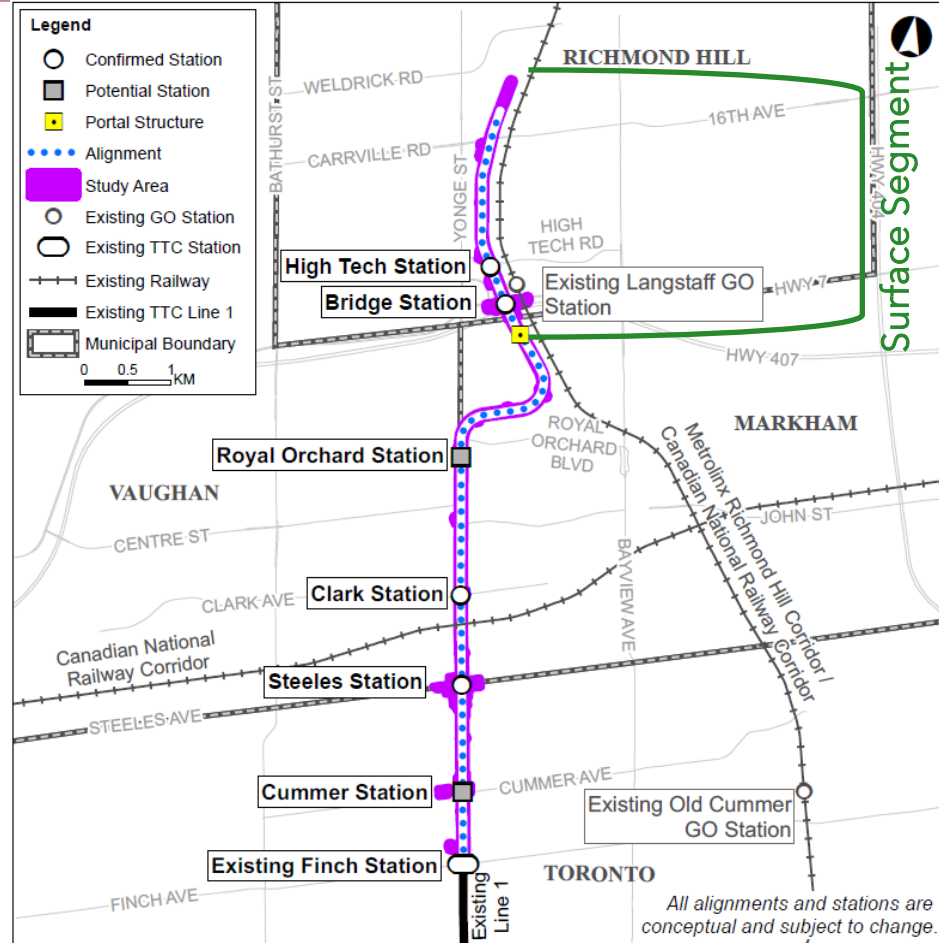
Yonge North Subway Extension

2022 EPR Addendum: Surface Segment

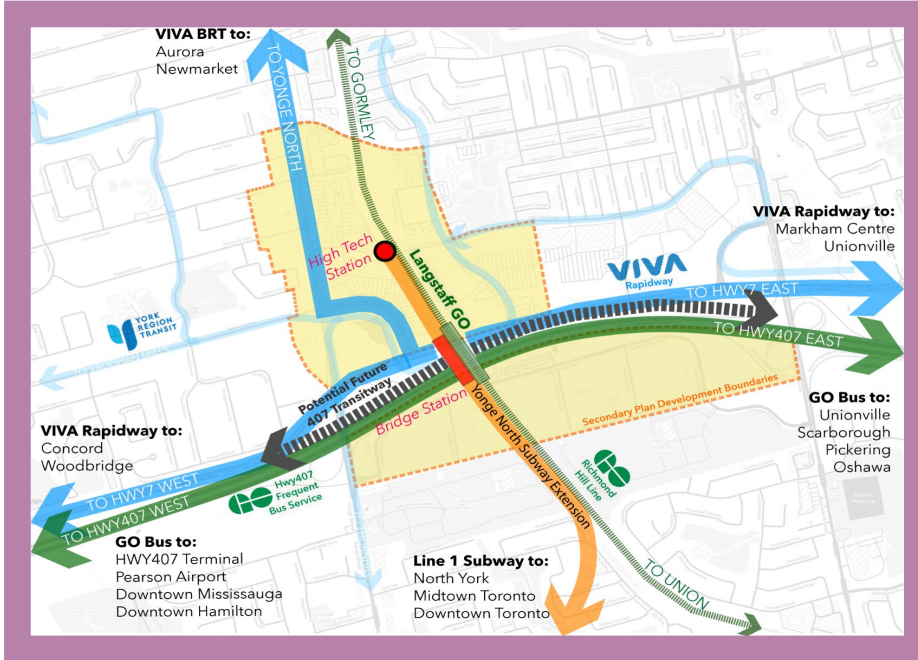
The surface segment is approximately 1.6 km long, extending from the portal structure to the Train Storage Facility.

The EPR Addendum studied:

- Surface segment from the portal structure south of Langstaff to the end of the extension
- Bridge Station and High Tech Station and corresponding bus facilities
- One traction power substation
- The Train Storage Facility (TSF)



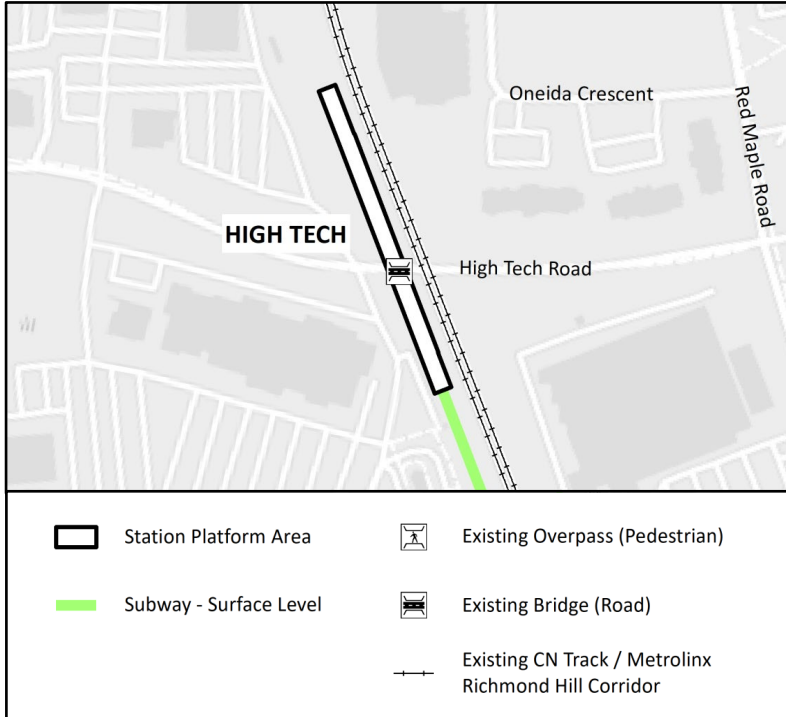
Bridge Station - A Launchpad to Explore the Region



- A new transit hub at Bridge Station will open up new travel possibilities in York Region and beyond.
- Brings **convenient transit access** to the heart of the Richmond Hill Centre and Langstaff Gateway development areas
 - This will lead to less traffic congestion as these communities grow
- Offers **fast and convenient transfers** to as many as **five** existing and future regional transit lines:



High Tech Station

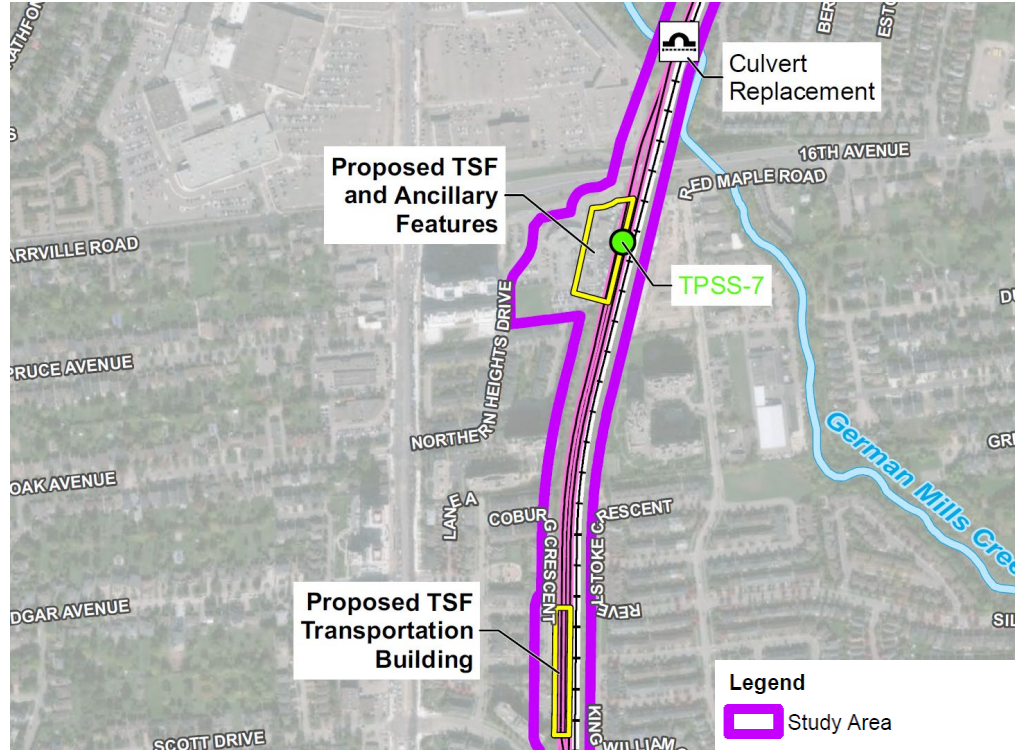


- High Tech Station will serve future communities envisioned within the Richmond Hill Centre area, putting the subway within walking distance of **2,300** jobs and **5,500** people - more than half of the residents expected to live in this designated urban growth centre by 2041.
- The station will be built at surface level, beneath the bridge along High Tech Road that spans the CN Railway corridor.

Train Storage Facility

A train storage facility for the Yonge North Subway Extension is proposed to be built at grade partially alongside and within the existing CN Railway lands.

- This important facility will have capacity for 15 trains for overnight storage. It will be built north of the station proposed at **High Tech Road**
- It's where subway trains will be stored, inspected and cleaned overnight, then dispatched into service
- Planning and design in close coordination with the TTC and the City of Richmond Hill



Environmental Focus Topics: Surface Segment



Archaeological Resources



Built Heritage Resources & Cultural Heritage Landscapes



Noise & Vibration



Natural Environment



Soil & Groundwater



Socio-Economic & Land Use Characteristics



Air Quality



Traffic & Transportation



Noise and Vibration Approach

Noise and vibration is one of the key areas of environmental management for Metrolinx projects, addressed in a step-by-step approach:

- Environmental assessment (EA) studies identify recommended mitigation and monitoring requirements
- Noise and vibration limits are included in contracts that reflect project-specific sensitivities and EA commitments and current regulatory requirements
- Contractors develop noise and vibration management plans
- Monitoring to confirm effectiveness of mitigation measures and inform adaptive management, as required



Noise and Vibration Criteria

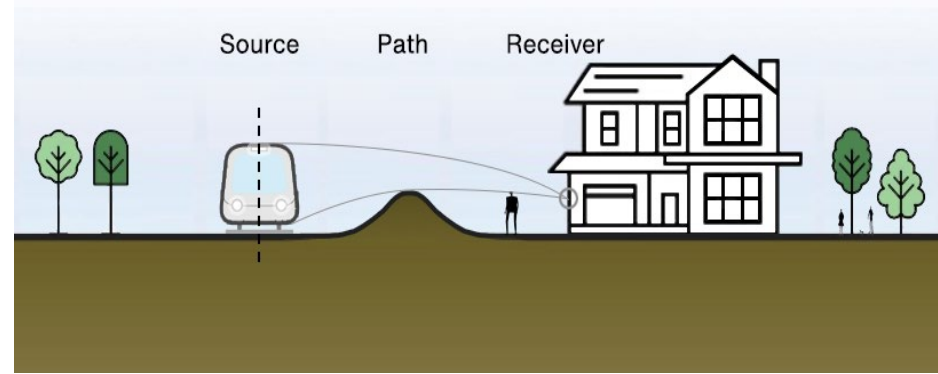
Main source of noise and vibration associated with subway trains is interaction between rail infrastructure (tracks) and trains (wheels).

Along surface segment:

- Air-borne noise: sound that travels through the air
- Vibration: movement that can be felt
- Ground-borne noise: sound that results from train-induced vibration that travels through the ground and causes building structures to vibrate

Other sources of noise (air-borne) along the surface segment include stationary facilities like the train storage facility.

Air-borne Noise





Noise and Vibration Criteria

- Trains and stationary facilities (train storage facility, stations, traction power substations and bus terminals) are assessed in accordance with the provincial guidelines.
- As there are no provincial requirements or standards for ground-borne noise, the criteria from the US Federal Transit Administration are used.
- Mitigation measures will be determined and implemented if a project is predicted to exceed any of the applicable criteria



Noise barrier example - images are examples only, noise wall materials to be determined



Noise and Vibration Findings

Trains

- Between the portal and Bantry Avenue, insignificant (1-2 dBA) sound level increases predicted for the surface segment
 - Electric subway trains are quieter than the freight trains operating along the existing CN Rail corridor
- With proven mitigation measures such as ballast mats, the vibration levels are predicted to meet or be lower than the applicable criteria.

Stationary Facilities (e.g., portal ventilation fan(s))

- With mitigation measures such as silencers on ventilation fans, no predicted sound and vibration level increases expected from stationary facilities.



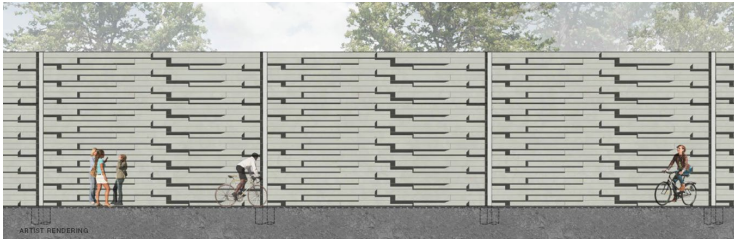
Example of ballast mat installation



Noise and Vibration Findings

Train Storage Facility (TSF)

- With proven mitigation measures such as noise barriers and moveable point frogs, the noise and vibration levels associated with the TSF are predicted to meet or be lower than the applicable criteria.
- A 5.5 m noise barrier will provide sound attenuation, security and visual screening to neighbouring properties



Noise barrier example



Moveable point frogs eliminate the gap between rails at crossovers, reducing the noise and vibration from trains passing over those crossovers



Standard crossover or frog showing gaps between the rails that generate additional noise and vibration



Noise and Vibration Findings

Key elements of our approach to managing noise and vibration during construction are:

- Before construction starts:
 - Establish a comprehensive communications program to inform local communities about the project's scope, schedule, noise and vibration management strategies, and communication and complaint resolution protocols.
 - Implement all necessary noise and vibration mitigation measures.
- During construction:
 - Monitor noise and vibration to inform implementation of additional mitigation measures, as necessary.
 - Address public issues in a timely manner.



Example of a long-term construction sound level monitoring station



Noise and Vibration Findings

Construction noise mitigation measure examples:

- Keep equipment in good working order.
- Provide smooth surfaces for vehicles.
- Use broadband backup alarms.
- Maximize the separating distance from stationary equipment such as generators.
- Use temporary noise barriers, noise-absorbing hoarding and/or acoustic enclosures.

Construction vibration mitigation measures examples:

- Complete pre-construction and post-construction condition surveys.
- Select methods and equipment with the least vibration impacts.



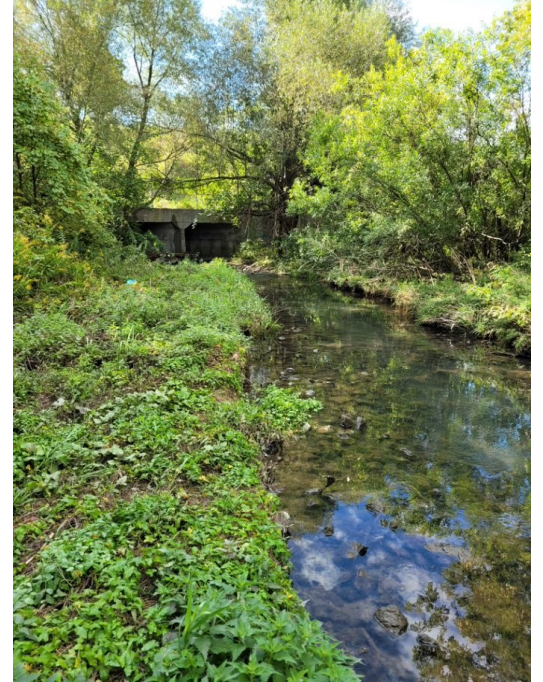
Example of moveable construction noise-absorbing barrier.



Natural Environment Approach

Metrolinx's approach to completing our projects with the least natural environment effects is as follows:

- Environmental assessment (EA) identifies mitigation measures and monitoring requirements (EA commitments)
- Contracts reflect EA commitments and latest regulatory requirements
- Contractors develop natural environment management plans
- Monitor to confirm effectiveness of mitigation measures and inform adaptive management



German Mills Creek, downstream view of crossing location



Natural Environment Findings

- **Natural Heritage Features:** Minimal impacts are anticipated to the German Mills Creek (within the TRCA regulated area) and a woodlot (part of the York Region Woodland and Richmond Hill Greenway Systems) to the north of the proposed TSF. Both features have been heavily disturbed and modified through human activity.
- **Surface water and fish and fish habitat:** No impacts to aquatic ecosystems are anticipated as a result of the German Mills Creek culvert replacement after the implementation of mitigation measures; the work will improve habitat conditions once complete.
- **Vegetation:** Potential impacts to vegetation near surface construction areas like stations and the TSF; impacts anticipated to be low.
- **Wildlife and Wildlife Habitat:** Potential impacts to general wildlife (habitat removal, disturbance, displacement); however, surface segment already susceptible to these activities from the urbanized landscape. No Significant Wildlife Habitat is identified.
- **Species at Risk (SAR):** Potential Barn Swallow and bat SAR habitat identified. Habitat presence will be confirmed prior to construction and all requirements of the *Endangered Species Act* will be met.



Vegetation near the proposed Bridge Station

Natural Environment Findings

German Mills Creek Culvert Replacement

- Existing triple-cell Corrugated Steel Pipe (CSP) culvert
- Replacement with a larger, open-bottom culvert is proposed (with natural stream bed material)
- Replacement will increase hydraulic capacity, improve fish habitat and passage, and reduce flood elevation and erosion risk within the channel
- No impacts to Redside Dace or other aquatic species at risk are anticipated as critical habitat is not present within this reach of German Mills Creek.



Existing triple-cell CSP culvert



Open-bottom culvert example



Natural Environment Findings

Construction natural environment mitigation measure examples:

- Vegetation removal will be reduced to the greatest extent possible and limited to the construction footprint. Tree protection zone fencing will protect/prevent tree injuries. Compensation for vegetation removals will be in accordance with the Metrolinx Vegetation Guideline (2020). Temporarily disturbed vegetated areas will also be restored/re-vegetated.
- Restricting construction activities during sensitive timing windows for wildlife (e.g., removal of vegetation outside of the breeding bird period).
- Prior to construction activities, species-specific surveys will be completed to confirm Species At Risk habitat and presence, meeting all Species at Risk regulatory requirements.



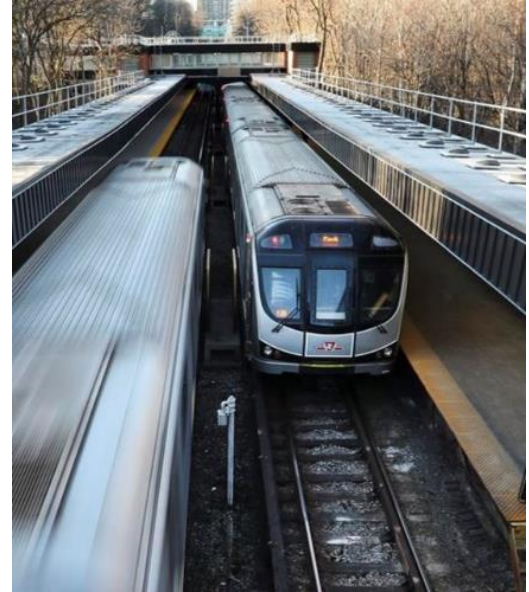
Tree protection fence example



Air Quality Approach

As a key area of environmental management for Metrolinx, air quality is considered and addressed by:

- Environmental assessment (EA) studies that identify recommended mitigation and monitoring requirements
- Contracts that reflect project-specific sensitivities, EA commitments and current regulatory requirements
- Contractors develop air quality management plans
- Monitoring to confirm effectiveness of mitigation measures and inform adaptive management, as required





Air Quality Findings

- Local air quality is characteristic of a highly urbanized area, with existing exceedances of certain air quality parameters.
- Air quality is predicted to improve with the implementation of the YNSE due to the reduction of ground traffic.
- A shift from the use of personal vehicles to the new electric subway extension is expected to reduce Greenhouse Gas Emissions.
- Train Storage Facility operations are limited to storage and cleaning activities, and will not result in adverse air quality effects.
- During construction, temporary potential impacts to local air quality in proximity to surface construction areas will be addressed via application of various mitigation measures and continuously monitored.



Example of construction dust monitor in a fenced enclosure (left side of photo)



Air Quality Findings

Construction air quality mitigation measure examples:

- Develop an Air Quality Management Plan and complaint response protocol prior to construction.
- Frequent watering of construction zones to reduce dust.
- Cover stockpiles of loose materials to prevent dust release.
- Limit idling equipment and control the amount of simultaneously operating equipment on-site.
- Use construction equipment with lower emissions, where feasible.
- Consistently monitor dust and other air quality parameters at construction sites.



Example of watering truck used for dust suppression

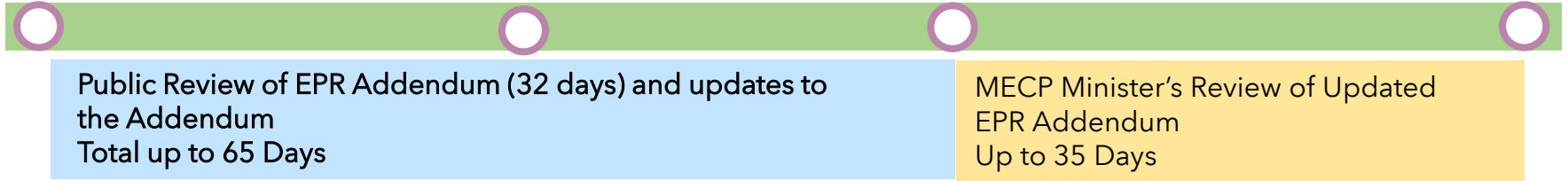
EPR Addendum Review

February 10
Notice of EPR
Addendum

March 14
Public Review Closes

April 16 or earlier
Notice of Updated
EPR Addendum

Up to 35 days
MECP Minister's
Review Ends



- Effective February 10, 2022 an Addendum to the 2009 EPR is available for review on the Project webpage (www.metrolinxengage.com/en/yonge-north-subway-extension).
- Opportunity to comment on the EPR Addendum until March 14, 2022 via email YongeSubwayExt@metrolinx.com or the online feedback forms available at: www.metrolinxengage.com/en/yonge-north-subway-extension.

Share your feedback!

Thank you for taking the time to learn more about the project.

There are multiple opportunities to make your voice heard on the EPR Addendum. Please join us for our next virtual open house on **March 10**. Register at [Metrolinxengage.com/ynse-live](https://metrolinxengage.com/ynse-live)

Please visit **Metrolinx Engage** to submit your comment or question on our *Ask A Question* forum.

You can reach us anytime:

- YongeSubwayExt@metrolinx.com
- 416-202-7000
- Visit our website:
Metrolinx.com/YongeSubwayExt
- Participate online:
MetrolinxEngage.com/YongeSubwayExt

**We Want
To Hear
From You**

