

Ontario Line

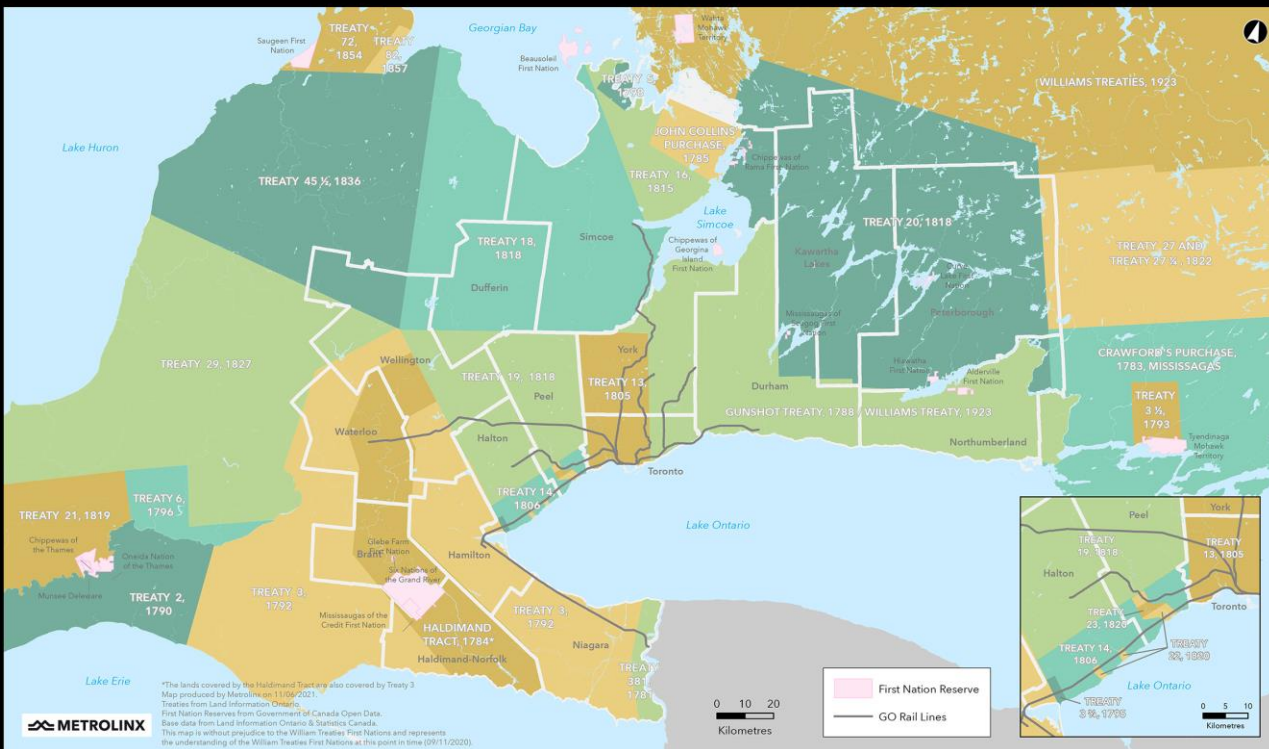
Osgoode Virtual Information Session on Piling Construction

April 24, 2024



Land Acknowledgment

Treaties and Reserves in the Greater Golden Horseshoe



Let us take a moment to acknowledge we are on lands that have been, and continue to be, home to many Indigenous Peoples including the Anishnabeg, the Haudenosaunee and the Huron-Wendat peoples.

We are all Treaty people. Many of us have come here as settlers, as immigrants or involuntarily as part of the trans-Atlantic slave trade, in this generation, or generations past.

We acknowledge the historic and continued impacts of colonization and the need to work towards meaningful reconciliation with the original caretakers of this land.

We acknowledge that Metrolinx operates on territories and lands covered by many treaties that affirm and value the rights of Indigenous communities, Nations and Peoples.

We understand the importance of working towards reconciliation with the original caretakers of this land. At Metrolinx, we will conduct business in a manner that is built on a foundation of trust, respect and collaboration.

Introductions

Speakers

Contracting Authority



Ross Andersen
Senior Advisor,
Community Engagement
Metrolinx



James Francis
Senior Manager,
Subways Sponsor
Metrolinx

Constructor



Juan Mendez Preciado
Deputy Station Manager, Osgoode
Ontario Transit Group



**Francisco Metcalf /
Sara Segten**



Environmental Management
Ontario Transit Group

AGENDA

Welcome Introduction

Presentation

- Ontario Line overview
- Progress to date
- Construction look-ahead
- About piling construction
- Reducing impacts

Q/A and Discussion

Meeting Guidelines

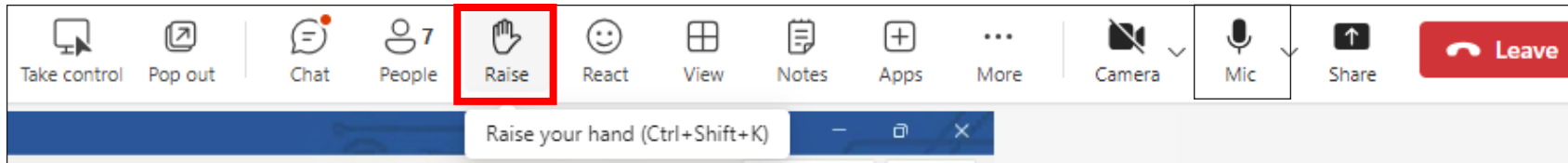
- Please help us create a **respectful space** for both panelists and fellow participants.
- We want to answer as many questions as possible, so **please keep your question brief.**
- Please ask **one question at a time**; if you have a second question, we will loop back to you.
- We'll have **dedicated time for questions**, so please note them down and we'll have an opportunity for you to raise your questions after the presentation.
- Today's meeting will be focused primarily on construction impacts in the Osgoode station area, including **piling**. As such, for other topics, we may connect with you by phone or email after the meeting or speak to those topics at the Osgoode CLC.

Asking questions on Microsoft Teams

Please follow the below steps to ask questions:

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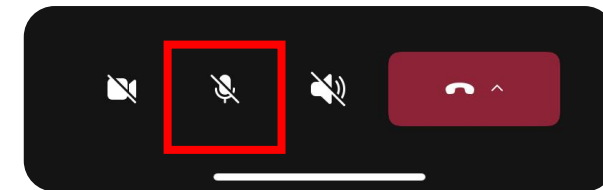
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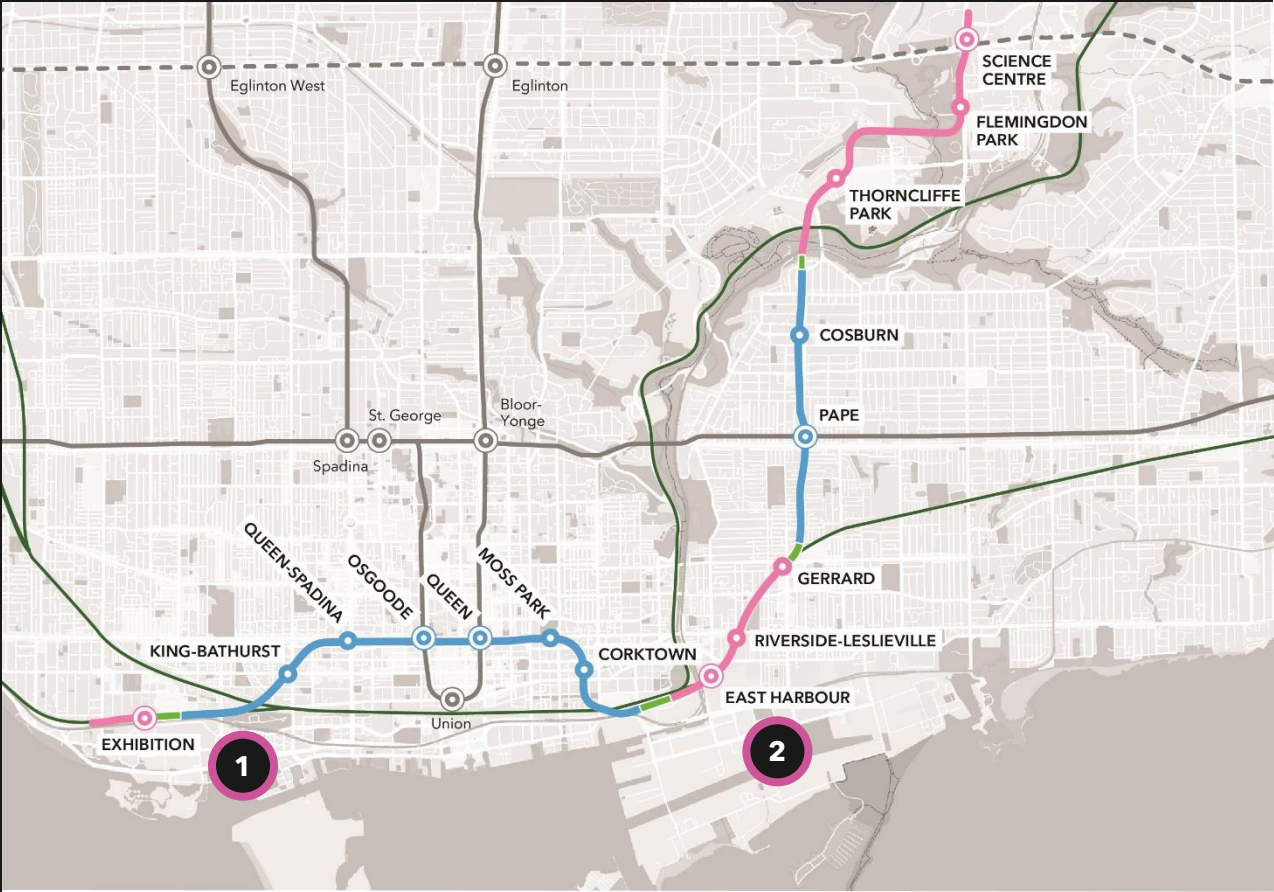
Ontario Line

About the Ontario Line



Note: Initial concept rendering. Designs – including finishings, signage, and accessibility features – to be informed by further planning.

ONTARIO LINE SUBWAY



— At Grade / Elevated
 ● Station
 — Existing GO Rail
 - - - Future Line 5 Eglinton

 0 0.5 1 km
 METROLINX
— Tunnelled
 ● Interchange Station
— Tunnel Portal
 — Existing Subway

1 South Alignment of Ontario Line
(Exhibition to Corktown/Don Yard)

2 North Alignment of Ontario Line
(East Harbour to Science Centre)



15.6 kilometres long



15 stations



As frequent as every 90 seconds during rush hour



227,500 more people within walking distance to transit



388,000 daily boardings



40+ connections to other transit options



Up to 47,000 more jobs accessible in 45 minutes or less, on average



28,000 fewer cars off the road each day

About Ontario Transit Group (OTG)

Ontario Transit Group (OTG) is a joint venture between **Ferrovial Construction** and **Vinci Construction Grands Projects** to design, build and deliver the **southern portion of Ontario Line Subway** - Southern Civil, Stations and Tunnel work. The contract was awarded in November 2022.

Stations:

- **One above-ground station** to be integrated with the existing GO Transit Exhibition Station.
- **Two underground stations** to be integrated with the existing TTC Osgoode and Queen subway stations.
- **Four new underground stations** (King/Bathurst, Queen/Spadina, Moss Park, Corktown).

Tunnel:

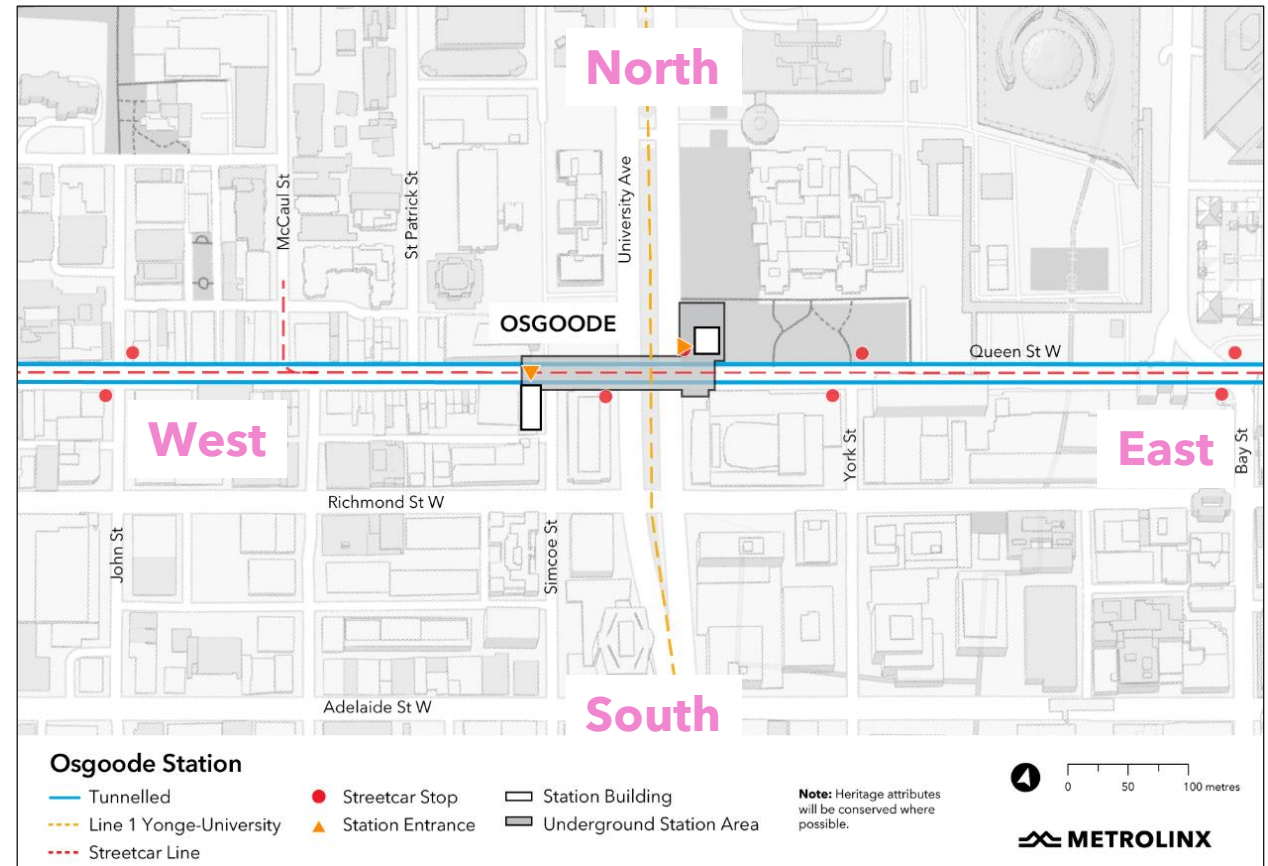
- **6-kilometre tunnel** and associated tunnelling works from Exhibition to Don Yard portal.



Ontario Line South Civil spans Exhibition to Don Yard portal (west of the Don River), shown in yellow.

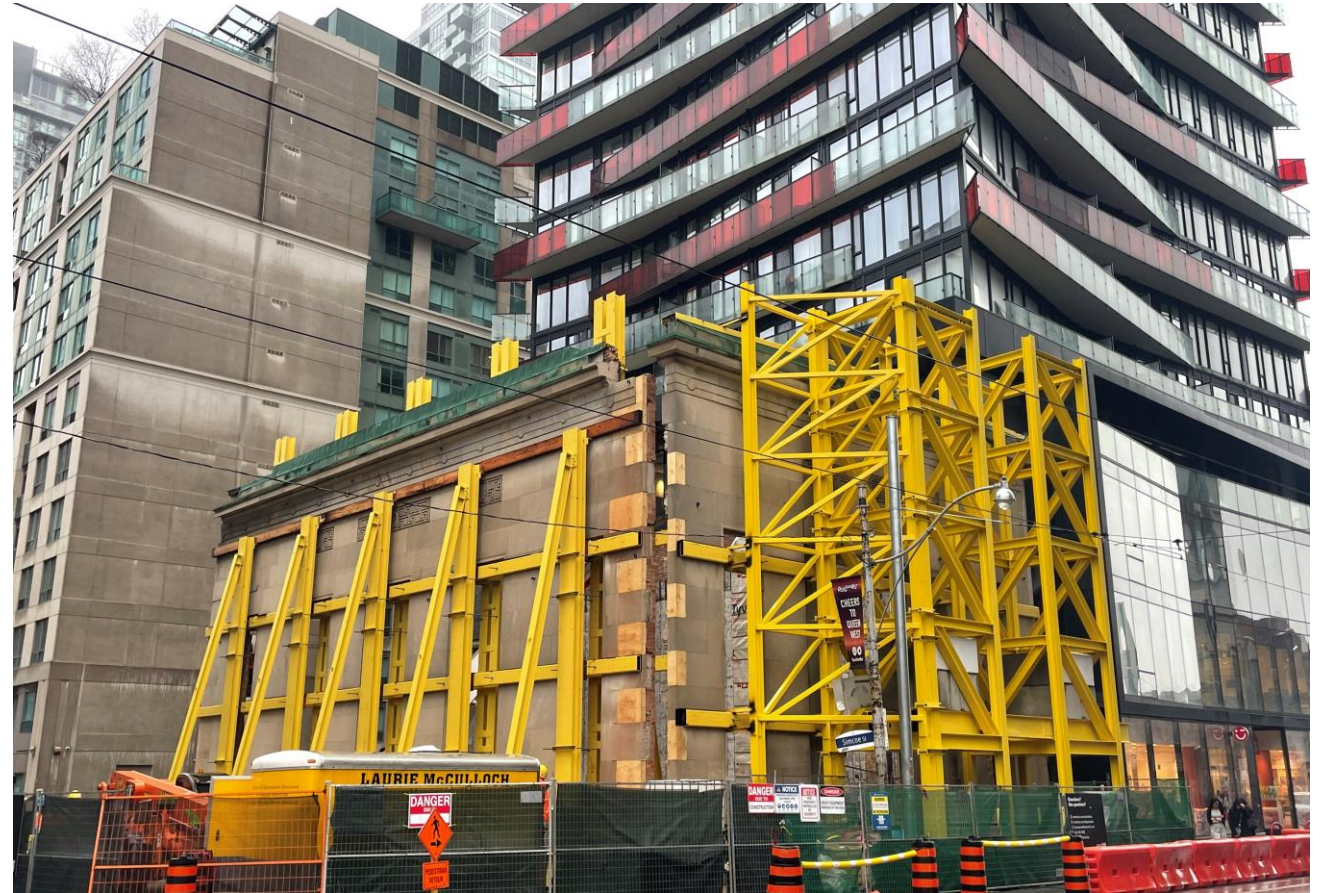
Overview of Osgoode Station

- **Two station entrances** will be built along Queen Street West.
- **Station entrances** are placed a few steps away from streetcar stops.
- One station entrance is located on the **northeast corner** of the University/Queen intersection.
- One station entrance is located on the **southwest corner** of the Simcoe/Queen intersection.



Preservation progress to date at Osgoode

- The future Osgoode Station site has seen a great deal of activity to ensure heritage structures are preserved, in advance of piling and excavation.
- At the south site, the east façade of the building has been panelized; this process ensure components can be removed safely. The façade was moved South on Simcoe Street in one piece, where it will be stored for the duration of the project. Retention walls are also in place, to ensure the remaining heritage walls are in place and secure on site, as excavations occur.
- At the future North station entrance site, several heritage elements were specially removed and stores, including sections of the heritage fence and cobblestones at Osgoode Hall.
- In the median of University Avenue, the South African War Memorial was protected, removed and will be stored during the project.



View of the future Osgoode South entrance site on April 11th, prior to movement of the East Heritage façade wall. Heritage retention towers are visible on the North façade.

Osgoode Station 2024 construction look-ahead

Major construction milestones to propel the Ontario Line subway forward.

| Time | Activity | Details & Purpose |
|-------------------------|---|--|
| Spring 2024 | Hoarding and signage installed | Structures to define the long-term construction zone during tunnel and station works will be installed to assist with site safety, noise mitigation and site protection. |
| | Traffic realignment - University Avenue | Traffic to be shifted on University Avenue to accommodate construction activities. |
| Spring - Fall 2024 | Piling (South, North) | Piling work around the perimeter of the future station sites ensures structural support before heavy digging begins. |
| Fall 2024 - Winter 2025 | Excavation | Soils will be dug to create shafts from the street level to the station level 30m underground. Heavy digging of the station cavern to connect the station shaft and the tunnels. |

All timelines estimated and subject to change based on weather or other unforeseen circumstances.

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Focus on: Pile drilling



How does piling work?

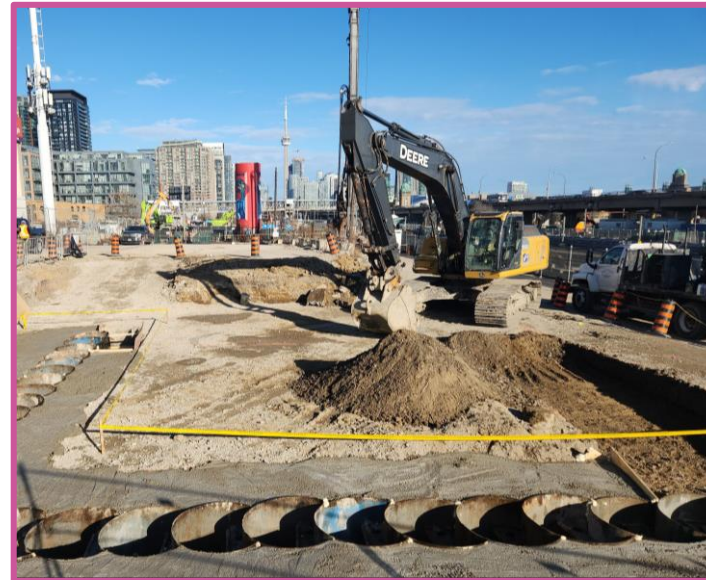
- Piling is a foundational technique used to construct underground structural support systems.
- Piling ensures stability and support for the surrounding infrastructures and buildings during the construction of stations and other subway structures, until the permanent concrete structure of the station is completed. Pile walls will be installed around the perimeter of the future station footprints.
- A pile wall consists of overlapping (secant) piles to form structural walls and achieve the required water tightness. Some of the piles are reinforced with steel beams. This activity is performed before excavation of the station shaft.



Drilling machine used in pile construction

How does piling work?

- To install the pile walls, a drilling machine will create holes of 10m and 14m in depth, at 1m in diameter, around the perimeter of the north and south sites, respectively.
- Piles will be constructed alternating primary (filler piles) and secondary (reinforced piles).
- A drilling rig machine will install the casing (a hollow tube) by rotating into the ground until it reaches the bedrock, section by section. Excavated material will then be removed from the casing using the auger.
- Once the drilling process is completed, reinforcements to the pile walls will be added using a crawler crane and concrete will be poured to ensure no gaps in solid materials, reinforcing the ground.



Typical example of guide wall installation to properly align the secant piles for installation.

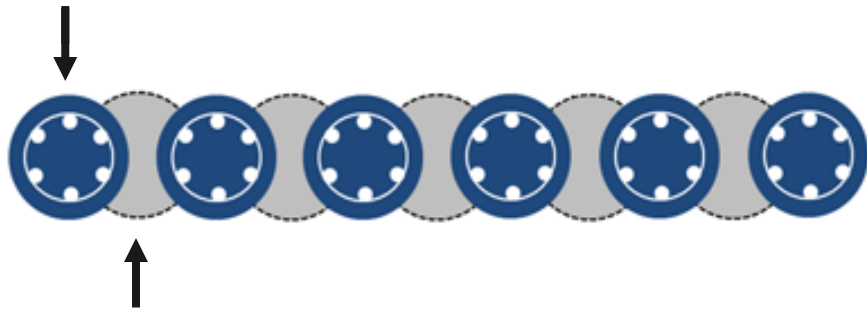
How does piling work? (continued)

Secant piled wall

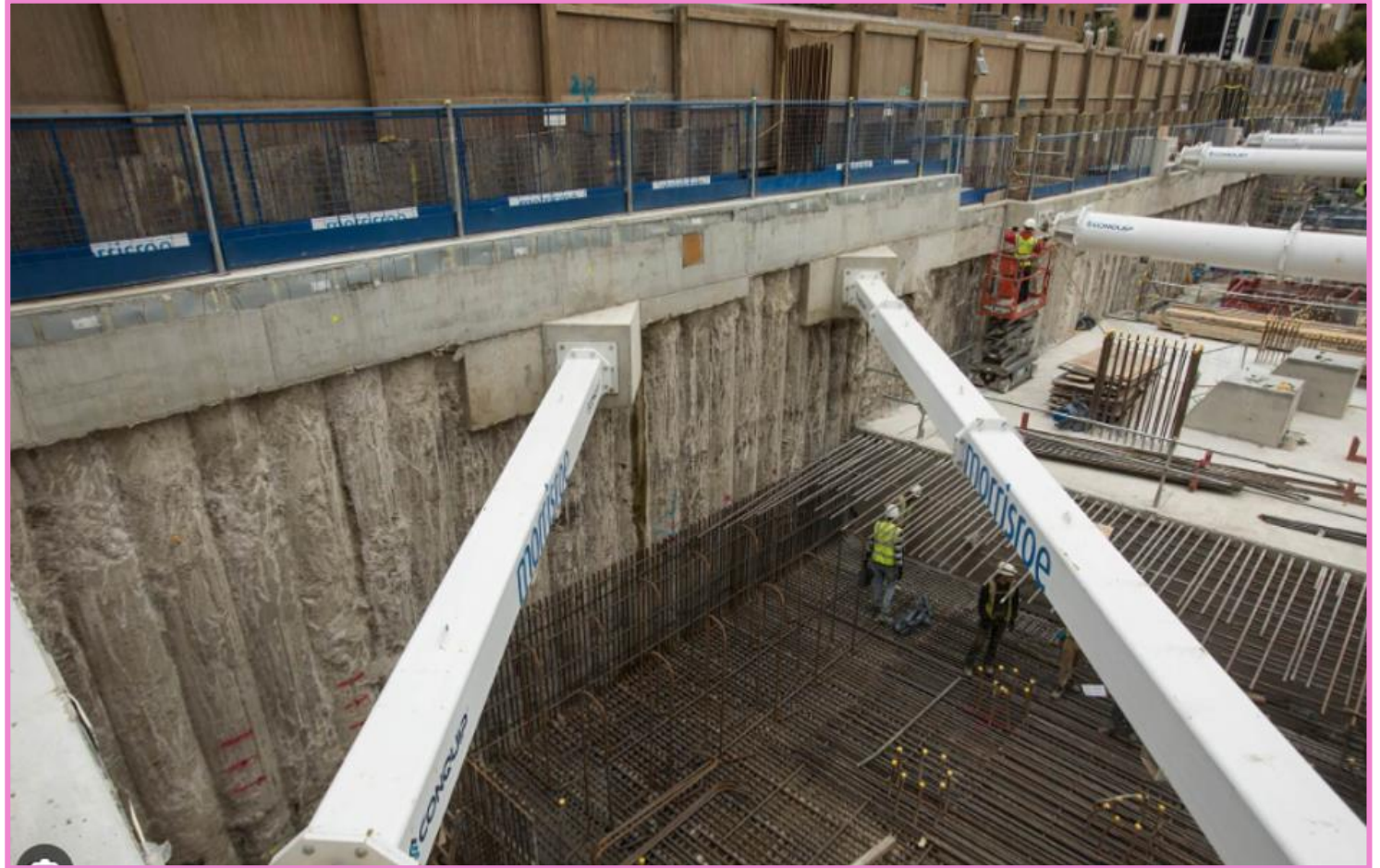
Visualization of what a secant pile system provides upon excavation.

The concrete secant piles can be seen supported by struts (white steel), in the open excavation.

Reinforced pile



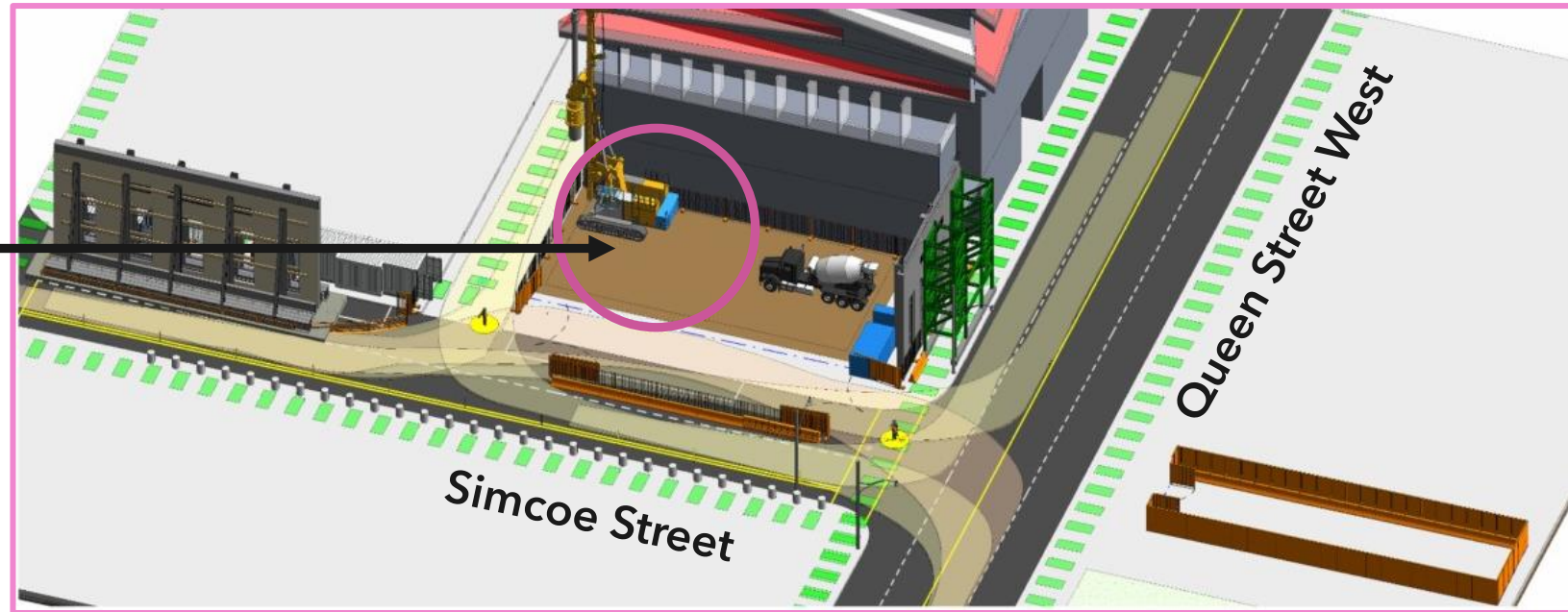
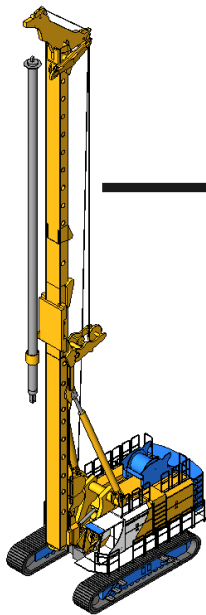
Filler pile



Example of secant pile wall

Pile drilling site set-up & layout

- The diagram illustrates the mobile drill rigs in relation to the site layout and their size.
- The machines will move around the site executing pile drilling in preparation for excavation.



Sample site set-up - South station entrance

Pile drilling schedule at Osgoode

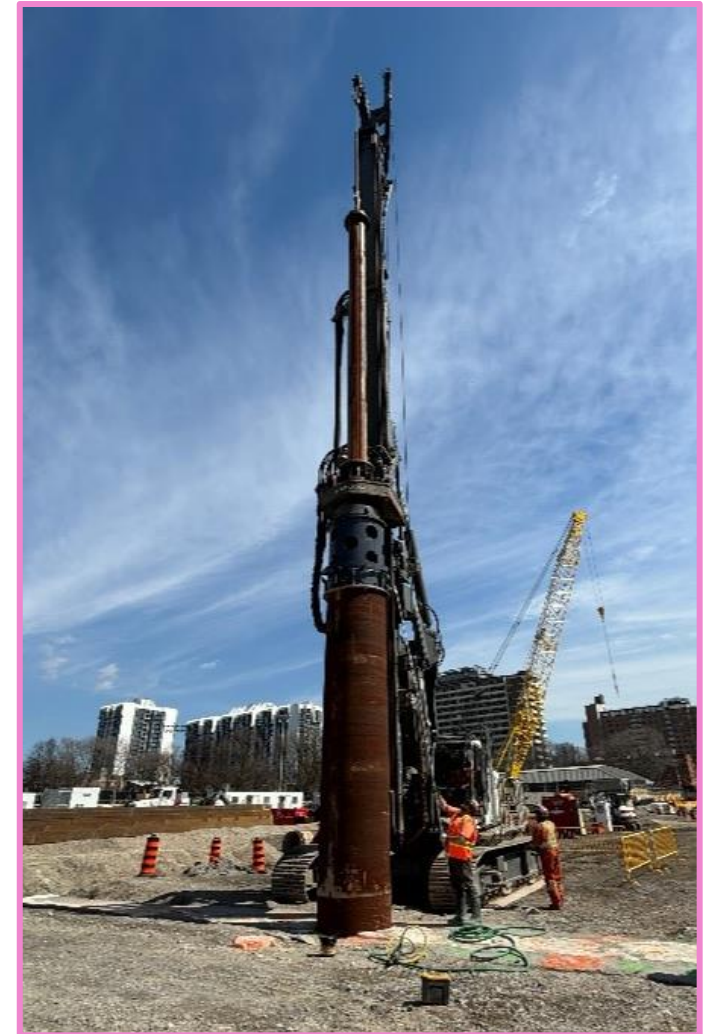
- Piling is estimated to take place at Osgoode from **May 2024 through October 2024**.
- Piling works will be phased beginning with the future **South entrance** in **May 2024**. Work is expected to take place weekdays from 7:00 a.m. – 7:00 p.m.
- Work in the future **North entrance** is expected to start in **July 2024**. More information about this work will be shared closer to the start date.
- Weekend work and/or extended hours may occur as needed.



Façade retention work at the south station

What to expect in the community

- Noise from equipment drilling piles, loading of excavated material, deliveries of steel beams and concrete is expected.
- Equipment used during this operation includes drilling machines, cranes, excavators, concrete pumps, and concrete trucks on-site.
- Several trucks entering and leaving worksites daily, following a specified route.
- Certified flag-persons in place to ensure safety for the community and workers on-site.
- Piling equipment will remain within the work site for the duration of the piling process.



View of piling works at Moss Park – another Ontario Line station in progress

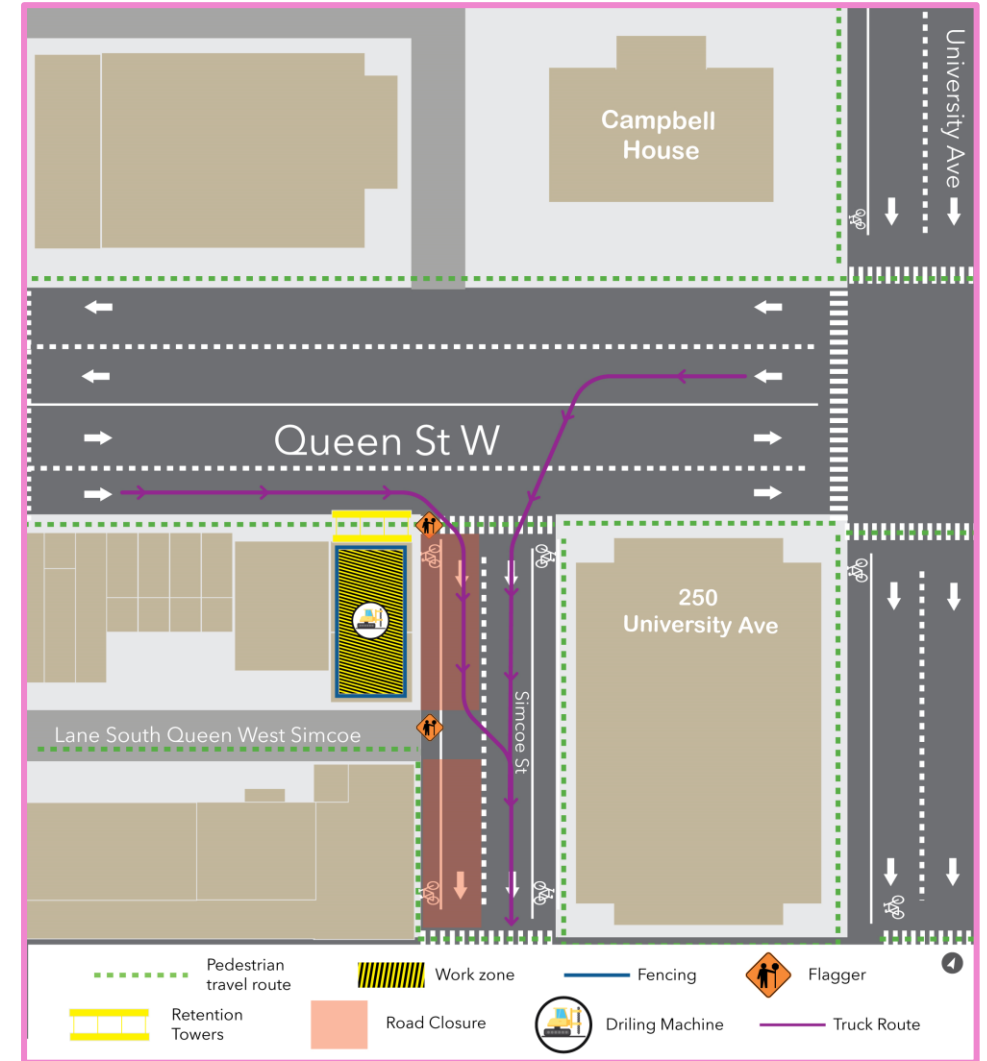
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Reducing impacts to the community



Site traffic and pedestrian impacts - South station entrance

- The southbound lane on Simcoe Street will remain closed.
- Pedestrians travelling on Simcoe Street will continue to use the East sidewalk to travel between Queen Street West and Richmond Streets.
- Pedestrians travelling in front of the site on the South sidewalk of Queen Street West will travel through a walkway created by the heritage retention towers.
- Flag-persons will assist with passage when trucks approach the entrance and exit points to the site.



Site traffic and pedestrian impacts - North station entrance

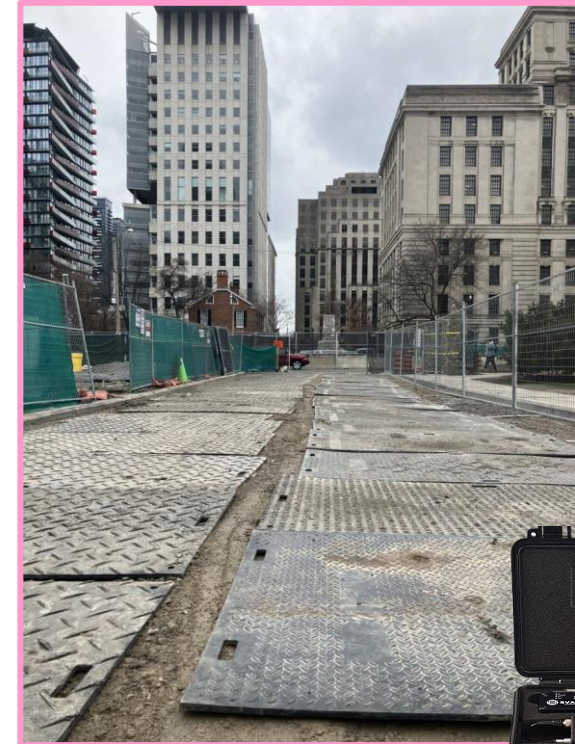
- Pedestrian access will be maintained in all directions.
- The TTC entrance on the northeast corner of University Avenue and Queen Street West will remain closed for the duration of Ontario Line work (closure began April 22, 2024).
- Flag-persons will assist with passage when trucks approach the entrance and exit points.
- More information about this work will be shared closer to the expected start date.



Reducing impacts

To reduce impacts to residents and businesses in the area, mitigations will be in place including:

- Air quality monitoring to track dust debris and vehicle emissions to ensure that construction activities don't impact the quality of the environment.
- Site hoarding where possible to help reduce noise.
- White noise back up alarms on machines like loaders or trucks.
- Continuous loop truck routes, reducing need for trucks to reverse using back-up alarms.
- Street sweepers and wheel cleaning as needed to ensure soil and sediment is kept off city streets and sidewalks.



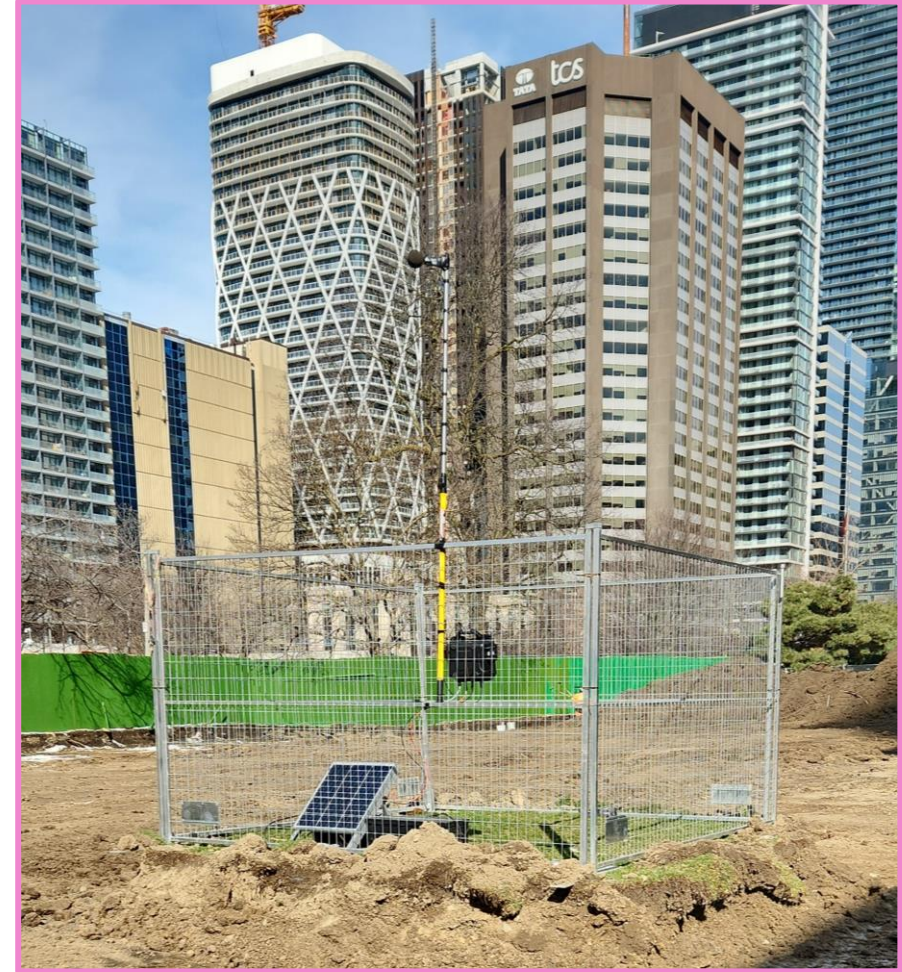
Noise monitor



Vibration monitor

Noise impacts

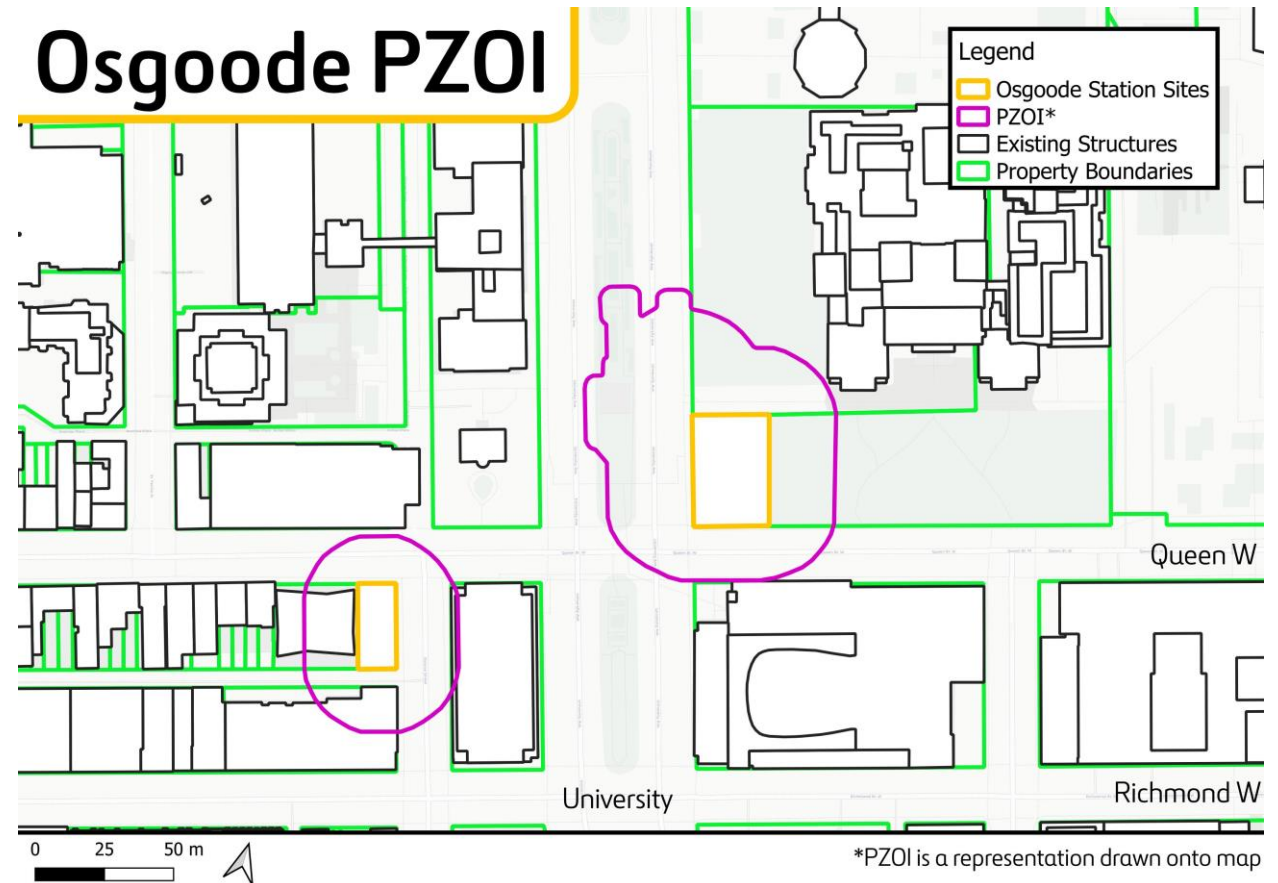
- **Monitoring noise levels:** Utilizing sound metres and real-time monitoring systems, OTG can track and control noise emissions to help minimize disturbances to the community and ensure project regulations compliance.
- **Noise and vibration monitoring devices** placed on-site and in neighbourhood for active tracking of impact to ambient noise levels.
- **Hoarding & noise barriers** serve as effective solutions to absorb and contain some construction noise.



Noise monitor in action for the Ontario Line project

Understanding Zone of Influence

- During construction, a **zone of influence** is identified to project the estimated area of potential impact relative to specific work and factors, like vibration and settlement.
- This zone is calculated from the methods of work, depth, and local conditions; the zone can change depending on the work.
- Instrumentation and monitoring teams use this information to identify the need for monitoring points to track impacts of work.
- Buildings within the zone of influence have been contacted to discuss and conduct additional monitoring measures.



Estimated zone of influence for next phase of work at Osgoode; PZOI subject to change

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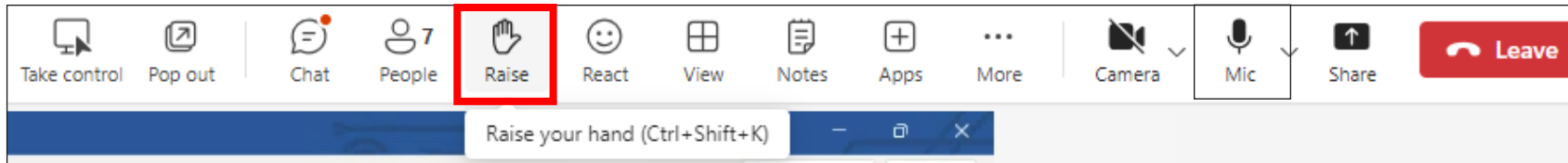
Q&A

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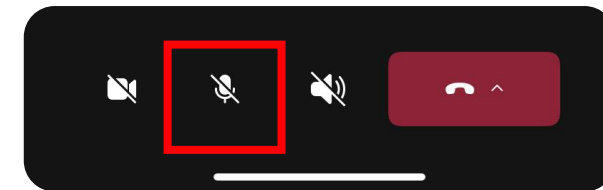
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Community Engagement

Contact Metrolinx and stay connected

Metrolinx will keep the community informed by providing Ontario Line updates and addressing questions and concerns effectively, and quickly.

Connect With Us:

-  Email: OntarioLine@metrolinx.com
-  Telephone 24/7: 416-202-5100
-  Ontario Line e-newsletter: [Metrolinx.com/OntarioLine](https://metrolinx.com/OntarioLine)

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Ontario Line

Station Renderings



View of platform in future Osgoode Ontario Line station – Note: Initial concept rendering. Designs - including finishings, signage, and accessibility features - to be informed by further planning and consultation.

Future South Station entrance



Artist's rendering – subject to change

Future North Station entrance



