LAND ACKNOWLEDGEMENT

Metrolinx acknowledges that we connect communities by building and operating transit within the traditional lands of the Anishinaabe, the Haudenosaunee and the Huron-Wendat peoples, for whom these lands continue to have great importance.

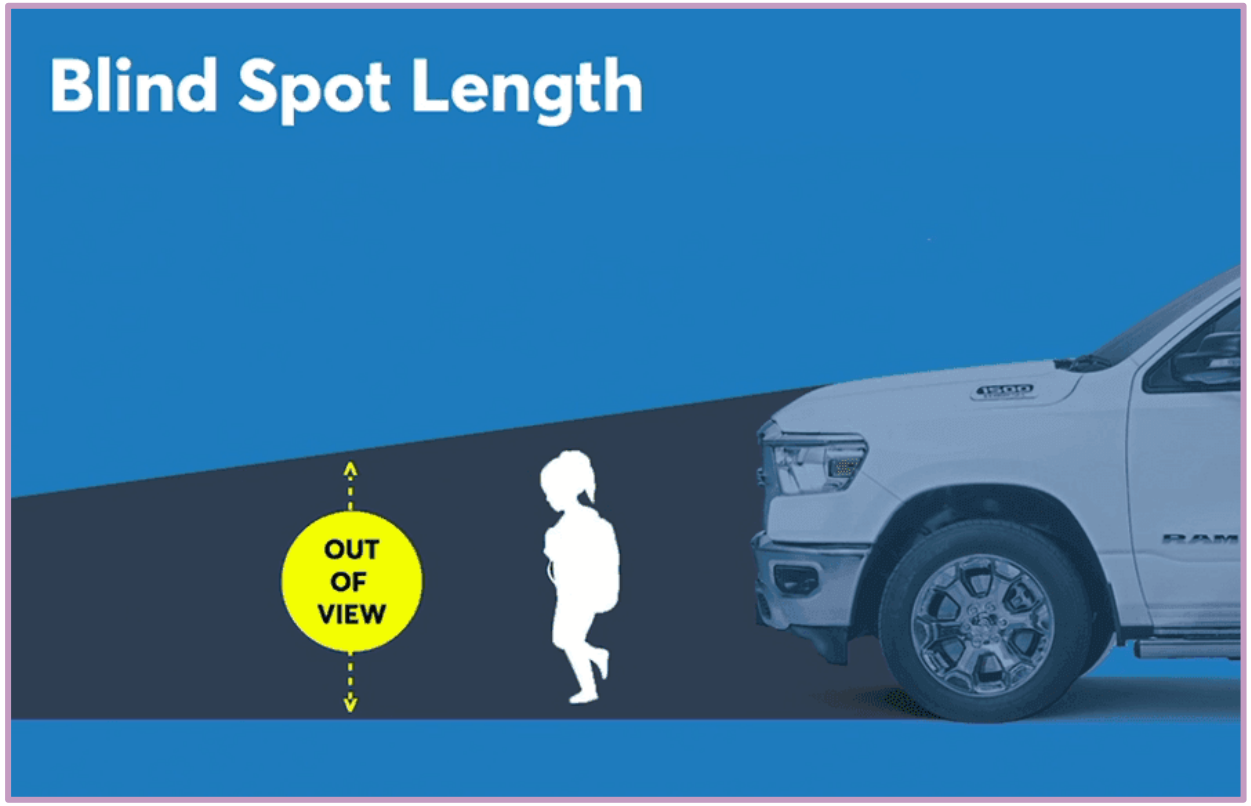
Treaties between First Nations and governments cover these lands, and the promises contained in these Treaties remain relevant to this day.

Metrolinx and its employees are committed to understanding the history of these lands and the continued impacts of colonization and take responsibility for actions to advance reconciliation.

Metrolinx will continue to seek the knowledge, expertise and experience of Indigenous partners and commits to doing business in a manner that is built on a foundation of trust, respect, and collaboration.

Safety Moment – Forward Blind Spots

- Modern pickup trucks have elevated cabs and front-ends that do not slope significantly downward, creating a sizeable blind spot directly ahead of the vehicle.
- While adults are generally tall enough to be visible above the blind spot, children and dogs walking directly in front of the truck may be completely out-of-view to the driver.
- To ensure visibility and safety when crossing in front of an elevated at an intersection or driveway, remember the following:
  - Create as much clearance between you and the truck's front end;
  - Ensure children do not trail behind or rush ahead when walking past a truck, and;
  - Reduce slack in your dog's leash to ensure it remains close by.



Session Guidelines

We greatly appreciate the community members who are here to take part in this public session.

To ensure that everyone can contribute to a positive and safe community experience, all participants shall adhere to the following *Code of Conduct:*

- Treat the presenters and participants with respect and understanding
- Acknowledge and appreciate the diversity of individuals and their situations
- Refrain from supporting or engaging in any form of discriminatory behaviour

Metrolinx is committed to fostering a safe and respectful environment.

We encourage respectful and constructive communication.

METROLINX

Construction Liaison Committee

Pape-Riverdale

April 29, 2025

AGENDA

1. **Jackhammering Incident – April 15** ***(10 mins)***
2. **Noise wall structural safety** ***(5 mins)***
3. **Vibration Overview** ***(10 mins)***
   - Vibration zone of influence
   - Perceptible vibration vs. vibration exceedances
4. **Discussion:** *Vibration Overview* ***(10 mins)***
5. **Progress Updates: Pape-Riverdale** ***(10 mins)***
   - 388-402 Pape/247 Langley access road construction
   - Riverdale launch shaft construction
   - Langley receiving shaft construction
   - Noise & vibration exceedances
6. **Discussion:** *Pape-Riverdale Progress Updates* ***(10 mins)***
7. **Progress Updates: Gerrard Portal & Bain EEB** ***(10 mins)***
   - 449 Carlaw demolitions
   - Bain EEB demolitions and tree removals
   - Noise & vibration exceedances
8. **Discussion:** *Gerrard Portal & Bain EEB Progress Updates* ***(10 mins)***
9. **Community Issues and Responses** ***(5 mins)***
   - Pre-construction condition surveys
   - Pest control measures during demolition
   - Vehicle routes and community safety
   - Future site walks
10. **Discussion:** *Community Issues and Responses* ***(10 mins)***
11. **Appendices**
    - A. Site walk action items
    - B. Microtunnelling receiving shaft – supporting info
    - C. Eight-week lookaheads
    - D. Dust management
    - E. Vibration – supporting info

Jackhammering Incident – April 15

- On the morning of April 15, crews on the receiving shaft site undertook jackhammering work to remove the sidewalk as part of irrigation chamber disconnection works for approximately 30 minutes. **This activity took place prior to the full restoration of the school's noise wall.**
- Jackhammering was required for critical irrigation chamber removal, which needed to be completed prior to construction of the receiving shaft.
- We previously committed to conducting no noisy work prior to noise wall restoration. By undertaking jackhammering when we did, we broke this commitment and caused a disturbance to the school environment, for which we apologize.

- **Upon recognition of this incident, we spoke to the contractor and undertook the following steps to address this occurrence:**
  - Stood down all work until the conclusion of class in the afternoon.
  - Double-checked all noise monitoring data to ensure *Leq* noise levels were not exceeded during the period in question.
  - Undertook a formal discussion with Clearway on the issue to ensure understanding and prevent future similar occurrences.

- During this work, there were no exceedances and noise levels at the school stayed within the limits outlined within the Health and Safety plan.
- Noise wall modifications were completed during the April 15 night shift. No further modifications or changes to the wall are planned.

Noise Wall Structural Safety

Recently the TDSB engaged a third-party engineer to complete a visual inspection of the newly modified noise wall.

The recent wall modifications were completed to create additional space for receiving shaft construction for storm sewer microtunneling. Site conditions and constraints were factored into the design of these modifications and the modifications were certified by our contractor's engineer. The contractor for the noise wall is Aluma.

On the evening of Friday April 25, 2025, the TDSB third-party engineer raised concerns about anchoring stability of the wall. As a result, the TDSB elected to close the south playground. Metrolinx took this concern seriously and has investigated it as a priority.

The constructor's engineer, who is responsible for the wall design, visited the site on April 29, 2025, and confirmed the wall is safe and was built in accordance with their engineer-stamped design. There is sufficient counter-weight to ensure noise wall stability, and the noise wall complies with the Ontario Building Code.

Next steps:

Metrolinx will provide a formal response to the third-party engineer engaged by the TDSB.

We will continue our practice of consistent and ongoing communication with the TDSB to ensure we are responsive to any items that are raised related to the construction activities and site safety.

In addition to our general ongoing communication with the board, Metrolinx and the TDSB have regular briefing meetings on a bi-weekly basis regarding construction activities, impacts and questions or concerns that the school board may have.

Vibration Overview

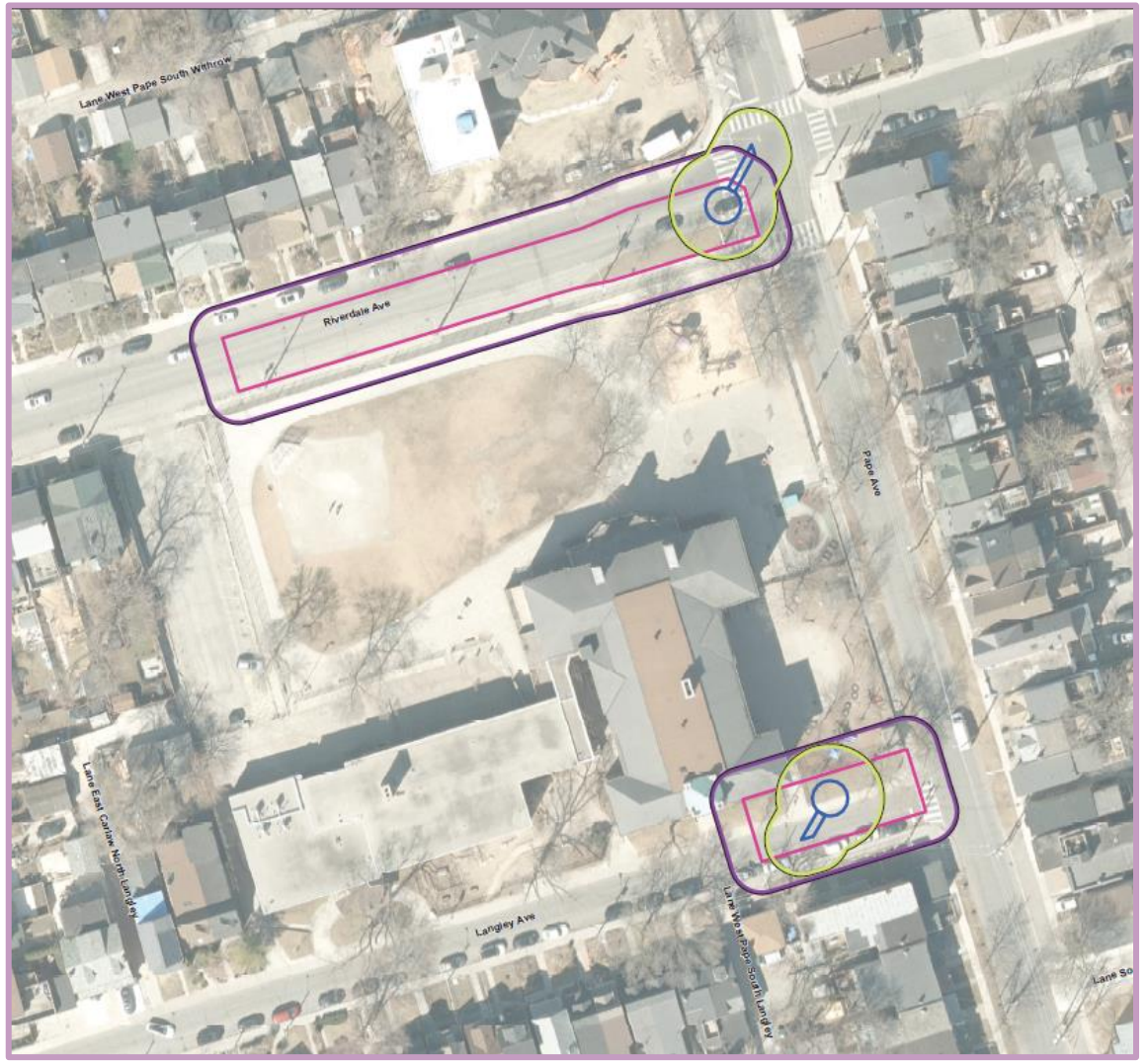
Vibration and Construction: Vibration Zone of Influence

What is Vibration?
Vibration is a back-and-forth motion of an object or particles in physical medium (e.g., structures, soil, etc.). The motion can happen in any direction. The vibration is typically described in terms of its velocity – how fast the movement is happening.

What is a Vibration Zone of Influence (ZOI)
The construction vibration ZOI is an area around a construction site where vibrations may be strong enough to affect nearby buildings and/or structures. The "setback distance" marks the boundary of this zone.

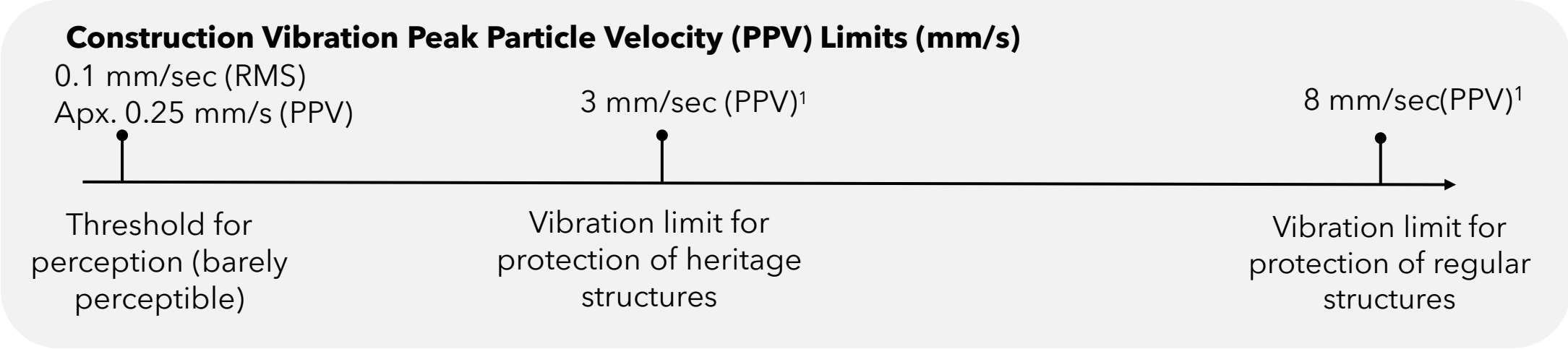
How Do We Measure Vibration That Might Damage Buildings?
Structural damage from vibration is measured using a metric called peak particle velocity (PPV), which is the highest instantaneous movement of object or particles in all three perpendicular directions. It's measured in millimeters per second (mm/s) at a specific frequency (Hz).

How Do We Measure Vibration That People Can Feel?
Human perception of vibration is measured using root mean square (RMS), which is a metric of the averaged vibration level (e.g., over 1 second), as the human body needs time to react to the transmitted vibration into the body.



Perceptible Vibration vs. Vibration Exceedance

- Human perception of vibration is measured by the averaged vibration level over a period of time (e.g. one second), as the human body needs time to react to the transmitted vibration into the body.
- The vibration exceedance level for heritage structures is **12 times more than the perception level** where people may start to notice vibrations.
- Vibration may be felt even when there has been no exceedance of structural damage limits.



[1]Reference: City of Toronto By-Law No. 514-2008, PPV limits at <4Hz vibration frequency

Discussion:
Vibration Overview

Progress Updates: Pape-Riverdale

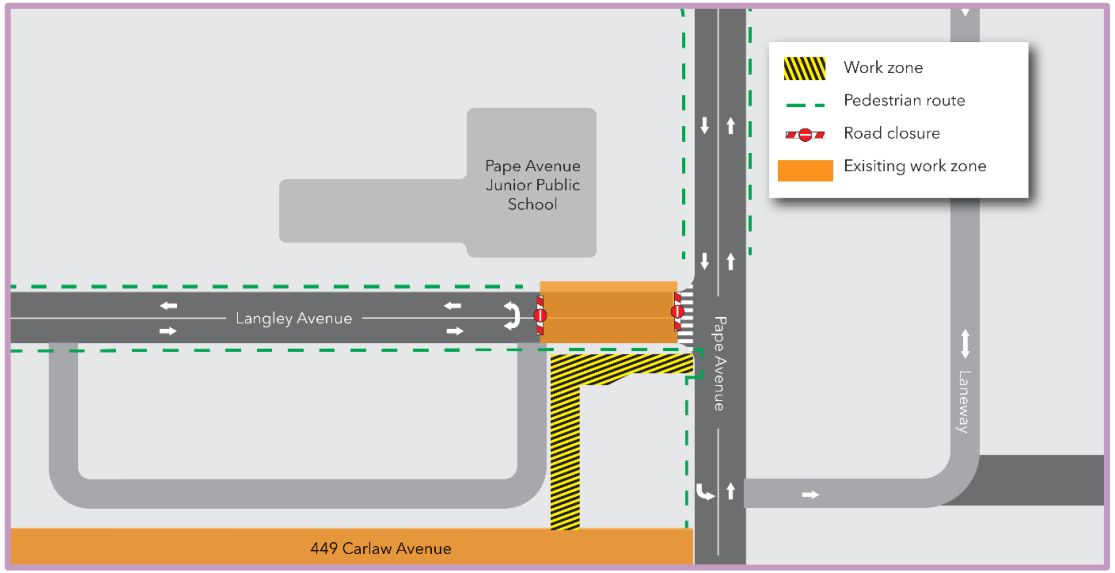
388-402 Pape and 247 Langley Demolitions

Progress to-date:

- In late March, Clearway completed the demolition of the properties at 388 – 402 Pape Avenue and 247 Langley Avenue.
- Prior to structural demolition, the properties underwent abatement and utility disconnections.

Upcoming Work

- Clearway will construct an access road on the demolition site, creating a new connection from further north on Pape Avenue to the northern section of 449 Carlaw. This will allow Clearway to access their laydown area from further north on Pape Avenue while Pape North Connect conducts work that will close the southern end of Pape Avenue to vehicular traffic (pedestrian access will be maintained).
    - Work is expected to start in mid-May and will take approximately two weeks.
    - Work will involve grading and asphalting on the property.
    - Prior to asphalting, 1-2 days of ground compaction will be required to prepare the road base. This will produce noticeable vibrations.
    - Traffic and pedestrian routes will not be affected by laneway construction.



Access road location shown in yellow/black hatching

Microtunnelling: Riverdale Launch Shaft Construction

Progress to-date:

- Caissons have been drilled and poured to form the exterior and foundation of the shaft.
- Crews began excavation the week of April 14 and will excavate until mid-May.

What's next?

- Once excavation for the launch shaft is complete, microtunnelling equipment will be delivered and installed. This will include a diesel generator which will be used to power the slurry plant used to maintain forward pressure during the microtunnelling process.
- Microtunnelling is currently expected to start in June and will take approximately two months to complete.
- Following the completion of microtunnelling, crews will connect the new sewer to the existing infrastructure under Riverdale Avenue and Langley Avenue, backfill the shafts, restore the roads, and reopen Riverdale Avenue and Langley Avenue. This is anticipated to be completed in fall 2025.

Microtunnelling: Langley Receiving Shaft Construction

Progress to date:

- **Maintenance hole construction:** In late March, crews relocated a manhole west of its current location to eliminate a conflict with future shaft construction.
- **Sound wall modifications**: In early April, Aluma worked evenings and weekends to modify the existing noise wall on Langley Avenue, reducing the footprint of its scaffolding to allow more room for shaft construction.
- **Irrigation chamber disconnection:** In mid-April, Clearway disconnected an out-of-service underground irrigation chamber from the water main. This resulted in a 30-minute shutoff the week of April 14.
- **Beanfield cable work:** On the weekend of April 12, Beanfield performed minor civil works to support their fibre optic cables.

What's next?

- With conflicts out of the way, Clearway is now proceeding with caisson drilling for receiving shaft support of excavation. Following completion of the shaft's outer walls and foundation, excavation will begin.

Noise and Vibration Exceedance Data – March 2025

No.	Date/Time of Exceedances	Detail	Location	Source	Corrective action	Complaint received (Y/N)
1	Saturday March 22, 2025 – afternoon	Noise	343 Pape Ave	• Tree removal and equipment	• All equipment on site is equipped with broadband backup alarms	N
2	Tuesday March 25, 2025 – afternoon	Vibration	Langley Ave Right-of-Way	• Backfill of demolition properties • Manhole construction	• Vibratory setting disabled on roller to minimize vibration during compaction	Y
3	Wednesday March 26, 2025 – afternoon	Vibration	Langley Ave Right-of-Way	• Backfill of demolition properties • Manhole construction	• Vibratory setting disabled on roller to minimize vibration during compaction	Y
4	Thursday March 27, 2025 – afternoon	Vibration	Langley Ave Right-of-Way	• Manhole construction	• Vibratory setting disabled on roller to minimize vibration during compaction	Y

- The above table provides information on noise levels measured over 10-minute intervals (10-minute average).
- **No vibration exceedances were identified at vibration monitors within the school building.**
- Vibratory compaction is required to ensure backfilled areas are properly compressed to form a safe foundation for future activities on top and to minimize settlement risk.
- Stantec to complete inspection to verify no cosmetic damage caused by March 25-27 vibration exceedances.
- Exceedances unrelated to construction are not reflected in this table.

Discussion:
Progress Updates: Pape-Riverdale

Progress Updates: Gerrard Portal and Bain EEB

449 Carlaw Demolitions

- The site of the former Riverdale Shopping Centre is the construction site of the Gerrard Tunnel Portal.
- Abatement of the buildings is complete. Structural demolitions are underway and will take approximately 3 to 4 months.
- The former Riverdale Shopping Centre parking lot is closed to pedestrian and vehicle traffic.
- Increased noise and vibration from heavy equipment being used for demolition and transport of materials. Possible increase in dust to the surrounding areas.
- Site trailers for construction personnel are in place.

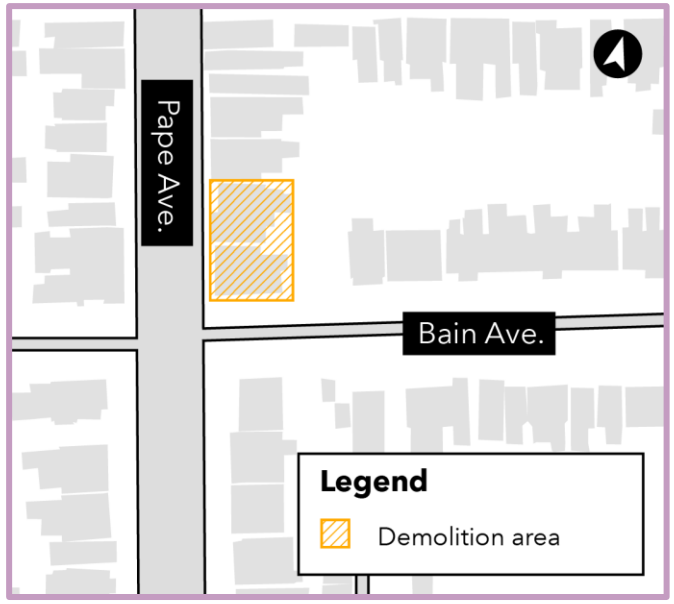
What's Next?

- The Gerrard Portal site will be excavated, and a launch shaft will be built to prepare for the delivery of the Tunnel Boring Machines (TBMs). The TBMs will be lowered into the launch shaft and begin boring from the Gerrard Portal going north along Pape Avenue to the Don Valley Parkway.

Properties to be demolished are highlighted in yellow. Safety reminder: There is no public access to Pape Ave through the shopping centre parking lot.

Bain Emergency Exit Building Updates

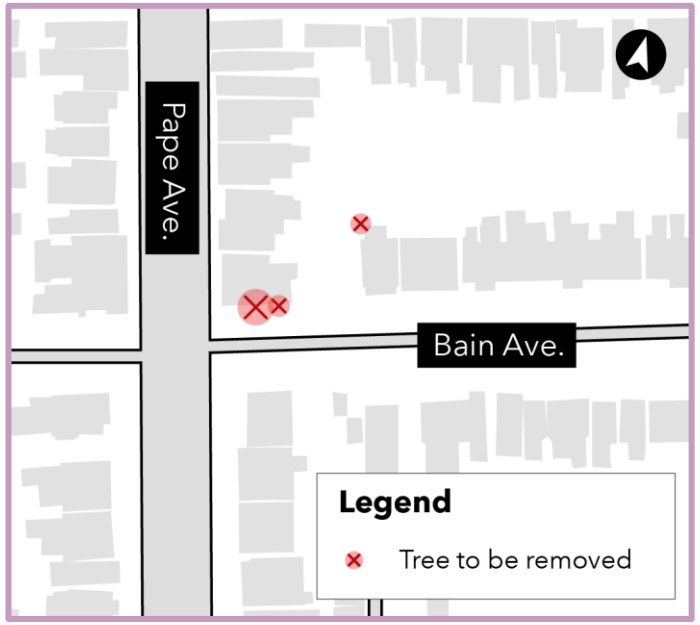
Demolitions



Demolished properties are highlighted in yellow.

- The northeast corner of Pape Avenue and Bain Avenue is the future site of an emergency exit building (EEB) for the Ontario Line.
- Demolition activities at the Bain site are complete. Temporary fast fencing is installed at this site.
- Minor activities will take place near the site, including well monitoring and tree removal.
- The site will experience a temporary slow down in activity until fall 2025 when support of excavation activities begin.

Tree Removals



- Three trees will be removed from the northeast corner of Pape Avenue and Bain Avenue.
- Tree removal work is anticipated to take approximately two to three days. Work is expected to take place in May.
- During the tree removal, a section of sidewalk on the north side of Bain Ave will need to close during working hours.

Noise and Vibration Exceedance Data – March 2025

No	Day/Time of Exceedances	Detail	Location	Source	Corrective Action	Complaint Received (Y/N)
1	Tuesday, March 11th - noon	Noise	495 Pape Ave / 280 Bain Ave	Demolition activities and heavy equipment at the site.	Contractor investigated and confirmed exceedances were minor. Contractor continued to monitor while work continued	N
2	Friday, March 14th – early morning to noon	Noise	495 Pape Ave / 280 Bain Ave	Demolition activities and heavy equipment at the site.	Contractor investigated and confirmed exceedances were minor. Contractor continued to monitor while work continued	N
3	Monday, March 17th – morning to afternoon.	Noise	495 Pape Ave / 280 Bain Ave	Demolition activities and concrete being placed in disposal trucks.	Contractor investigated and confirmed exceedances were minor. Contractor continued to monitor while work continued	N
4	Tuesday, March 18th – morning to afternoon	Noise	495 Pape Ave / 280 Bain Ave	Demolition activities and heavy equipment at the site.	Contractor investigated and confirmed exceedances were minor. Contractor continued to monitor while work continued	N
5	Tuesday, March 18th – morning and late afternoon	Noise	495 Pape Ave / 280 Bain Ave	Demolition activities and concrete being placed in disposal trucks.	Contractor investigated and confirmed exceedances were minor. Contractor continued to monitor while work continued	N

Noise and Vibration Exceedance Data – March 2025

No	Day/Time of Exceedances	Detail	Location	Source	Corrective Action	Complaint Received (Y/N)
6	Wednesday, March 19th – morning	Noise	495 Pape Ave / 280 Bain Ave	Demolition activities and concrete being placed in disposal trucks.	Contractor investigated and confirmed exceedances were minor. Contractor continued to monitor while work continued	N
7	Thursday, March 20th – noon	Noise	495 Pape Ave / 280 Bain Ave	Demolition activities for property foundation.	Contractor investigated and confirmed exceedances were minor. Contractor continued to monitor while work continued	N
8	Thursday, March 20th – afternoon	Vibration	495 Pape Ave / 280 Bain Ave	Backfilling and compaction activities at the site.	Contractor used the drum roller without the vibrator	Y
9	Friday , March 21st – morning	Vibration	495 Pape Ave / 280 Bain Ave	Backfilling and compaction activities at the site.	Contractor used the drum roller without the vibrator	Y
10	Friday, March 27th – morning to afternoon	Noise	Gerrard – Pape Avenue side	Demolition activities from the Kal tire building	Contractor investigated and confirmed exceedances were minor. Contractor continued to monitor while work continued	N
11	Friday, March 28th - Afternoon	Noise	Gerrard – Pape Avenue side	Vacuum truck performing emergency activities for water main issue	Contractor investigated and confirmed exceedances were minor. Contractor continued to monitor while work continued	N

Discussion:

Progress Updates:
Gerrard Portal and Bain EEB

Community Issues And Responses

Pre-Construction Condition Surveys

PNC is now undertaking pre-construction condition surveys (PCCS) of properties near the Gerrard Portal. Precondition surveys are already completed by Clearway for sewer and water main relocation work.

- PCCS' are used by contractors to document the condition of properties within the "zone of influence" (ZOI), an area around the site of construction activities that may experience vibratory impacts from works.
- When a property is found to be within the ZOI for upcoming work, Pape North Connect will reach out to offer a PCCS.
- A property's eligibility for a PCCS is dependent on proximity to the work area and the construction methods being used.
    - Given a property's proximity, it could qualify to receive multiple PCCS' throughout construction as work progresses.
- As certain work finishes and new activities begin, we may provide specific construction monitoring to help us identify and monitor issues (if any arise) as early as possible.

PNC is actively reaching out to identified properties. If you are curious about your property's eligibility, you can reach out, however all properties identified will receive a notice and follow-up in-person visit.

Pest Control Measures During Demolition

- Cage traps are installed at strategic locations including potential burrow sites. Bait traps are also installed throughout the site.
- Crews perform daily inspections of traps. Pests caught in cage traps are relocated at least 4 km away from the site, to prevent return.
- The site is also monitored daily for signs of pest activity (tracks, droppings, chew damage)
- Sites will be visited weekly by an exterminator and adjustments to the trap locations, refilling and methodology will be made accordingly.

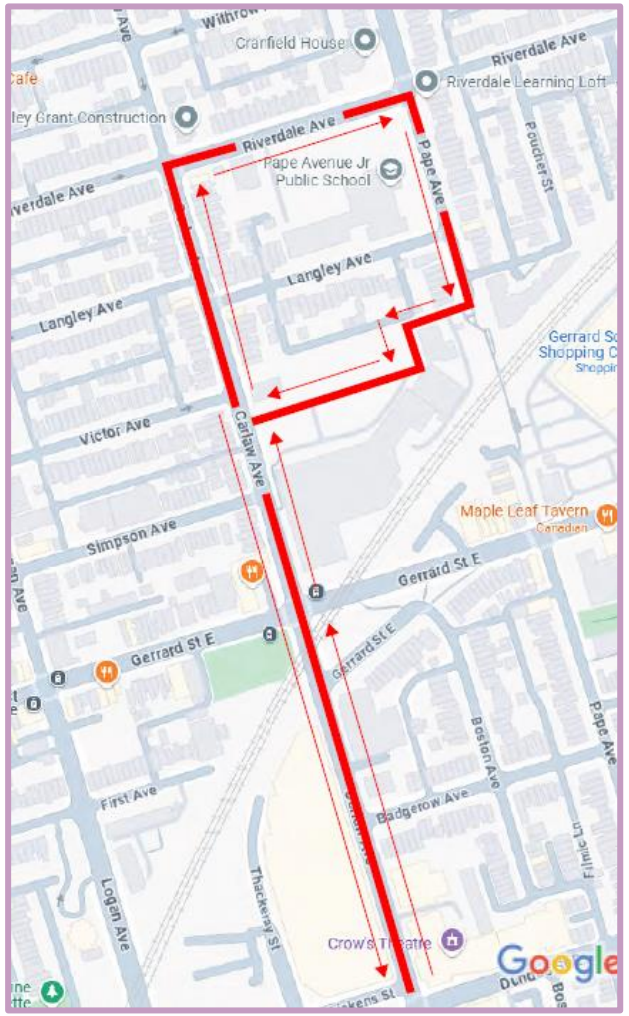
Photo taken of pest tracks during inspection of the 449 Carlaw site.

Vehicle Routes – Pape-Riverdale Sewer Work

Construction Vehicles

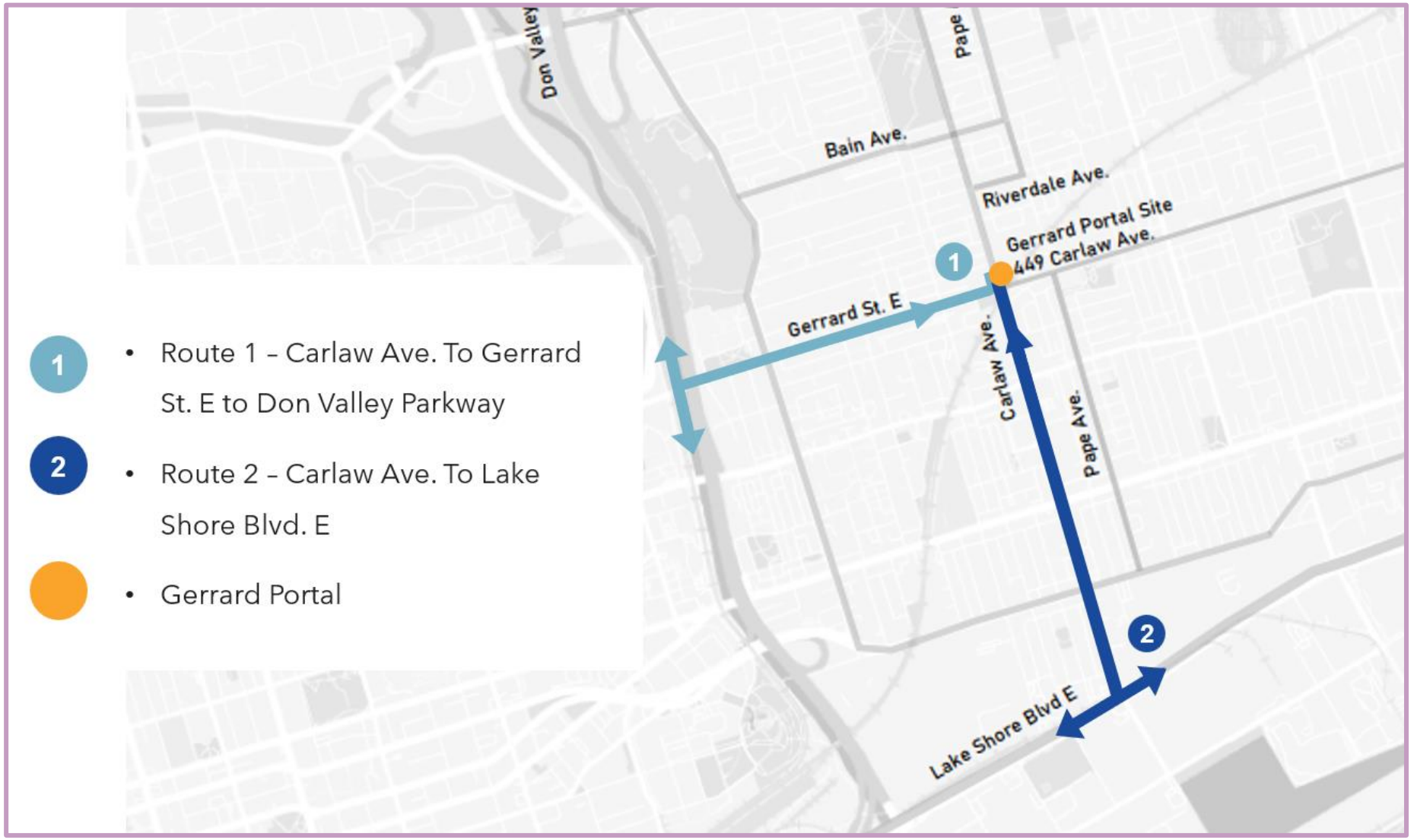
- Subcontractors for both Clearway and PNC are briefed ahead of time on haul routes, and drivers are required to sign an acknowledgment form of haul routes prior to departing site.
- A zero-tolerance policy has been implemented for drivers who violate the prescribed routes.
- Construction signage and vehicle restriction signage is posted on Pape Avenue advising of proper routing.
- Clearway has established two haul routes: one for arrivals and departures to/from the north, and one for arrivals and departures to/from the south (depicted right).
- See following slides for PNC vehicle routes for both the Bain EEB and Gerrard Portal.

Clearway North Route

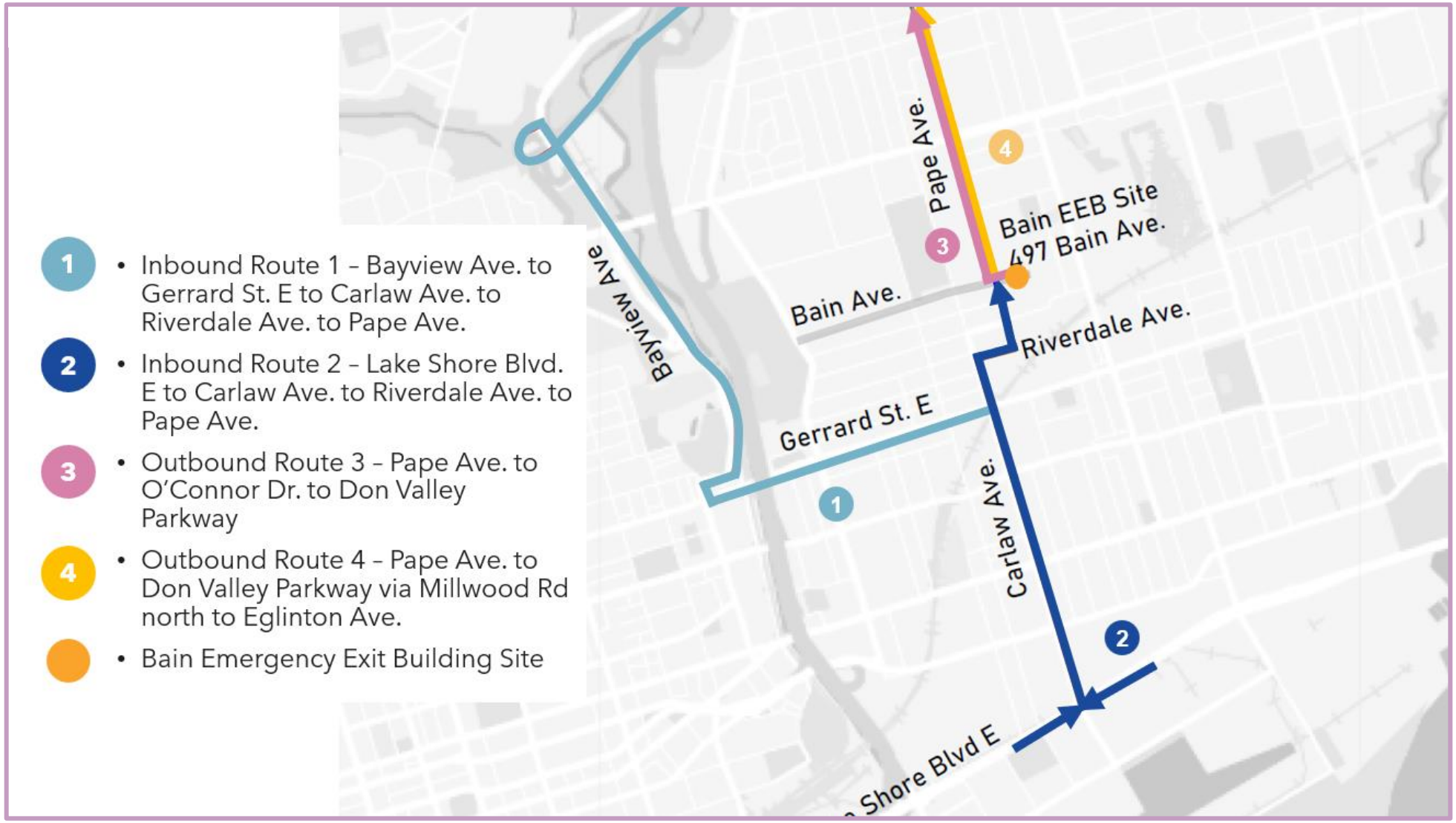


Clearway South Route

Vehicle Routes – Gerrard Portal



Vehicle Routes – Bain EEB



Site Walks for the Pape-Riverdale CLC

- **As per previous discussions**, Metrolinx will move forward with conducting a site walk in place of every-other CLC.
- **Purpose of site walk:**
  - Support greater understanding of the works from a practical and “on-the-ground” perspective.
  - Ask questions and raise concerns directly viewed at the site.
- **Please note** that for safety reasons CLC members will not be entering any part of the site that is generally not accessible for members of the public. Rather we would view the site from just outside of the hoarding or fencing.
- **Action items** from the site walk will be generated and shared with the group.
- **General construction updates** will be shared with the CLC members prior to the site walk. Those updates would be shared briefly at the site walk itself.
- The site walk would **replace the virtual meeting** for that month.

Discussion:
Community Issues and Responses

Appendices

Appendix A: March 25 Site Walk Action Log

Category	#	Action Item	Response/Resolution
Site Set-Up	**1**	"Child-proof" receiving shaft (Langley) site layout to prevent children from entering or injuring themselves.	Used plywood to cover corners and hazards. Bolted noise panels down to create a continuous seal around site.
	2	Investigate stray wiring at top of noise wall at Riverdale/Pape intersection.	Black and MacDonald were contacted, wiring is not causing a safety issue at present. Will be removed in the future if required.
	3	Investigate solutions for pedestrian safety at west-side Pape-Riverdale crossing for pedestrians approach northbound, due to lack of sight lines.	Additional signage has been added to advise both drivers and pedestrians to be on the lookout upon approach to intersection. PDO and traffic control person, as well as crossing guard during PUDO times, are available to assist movements through the intersection. Urban barriers have been installed.
	4	Investigate if Toronto Hydro connection can be established at Bain EEB to minimize generator use.	Team is working with Toronto Hydro to determine feasibility of grid connection (OPEN ITEM).
	5	Ensure that equipment is properly scaled to size of construction site (cited example: compactor at Bain EEB).	PNC acknowledges that the compactor was oversized and will factor this knowledge into future procurement.

Appendix A: March 25 Site Walk Action Log

Category	#	Action Item	Response/Resolution
Signage	**1**	Install advance signage north on Pape to advise of both Riverdale and Langley closures.	Langley closure: Advance sign at Pape-Riverdale for southbound traffic is installed. Sign at Riverdale for westbound traffic is installed. Riverdale closure: signage installed at Dingwall Avenue and Danforth Avenue advising drivers of upcoming Riverdale closure.
	2	Install additional 'pathway closed' signage leading up to the 449 Carlaw worksite to deter pedestrians from trying to cut through plaza.	Additional signage has been installed on both sides of the plaza (Carlaw and Pape). CCI and PNC are keeping gates and fencing closed whenever possible on either side of the plaza.
	3	Remove "Through Traffic" signage on Pape pointing towards Riverdale Avenue as it is no longer applicable.	Sign was bagged.
	4	Remove 'No Exit' sign that conflicted with traffic circulation plan (allowing vehicles to turn east off of Pape to circulate through Poucher St).	Sign was bagged.

Appendix A: March 25 Site Walk Action Log

Category	#	Action Item	Response/Resolution
Site Management	**1**	Confirm frequency of structural inspections for the noise wall.	Inspections occur on a weekly basis.
	2	Investigate if microtunnelling works can be delayed until after the school year ends in June.	Due to schedule constraints, microtunnelling cannot be pushed any further. Current estimates have microtunnel boring starting in early-mid June.
	3	Request to have two crossing guards at Pape-Carlaw.	Three crossing guards are currently staffed in the area: one at Carlaw-Riverdale, one at Pape-Riverdale, one at Pape-Langley. MX is connecting with City manager in charge of crossing guards to discuss placement (OPEN ITEM).
	4	Request for additional vibration information to be presented outlining how vibrations are managed, how limits are determined, and overall vibration impacts.	Information on vibration provided by Metrolinx Environmental staff earlier in presentation.
	5	Request for explanation of dust mitigation measures and standards across Pape Segment.	Information on dust management provided by Metrolinx Environmental staff earlier in presentation.
	6	Request for PNC to provide an overview of pest control services/measures employed to managed rats & mice.	Information on pest management provided by PNC staff earlier in the presentation.

Appendix A: March 25 Site Walk Action Log

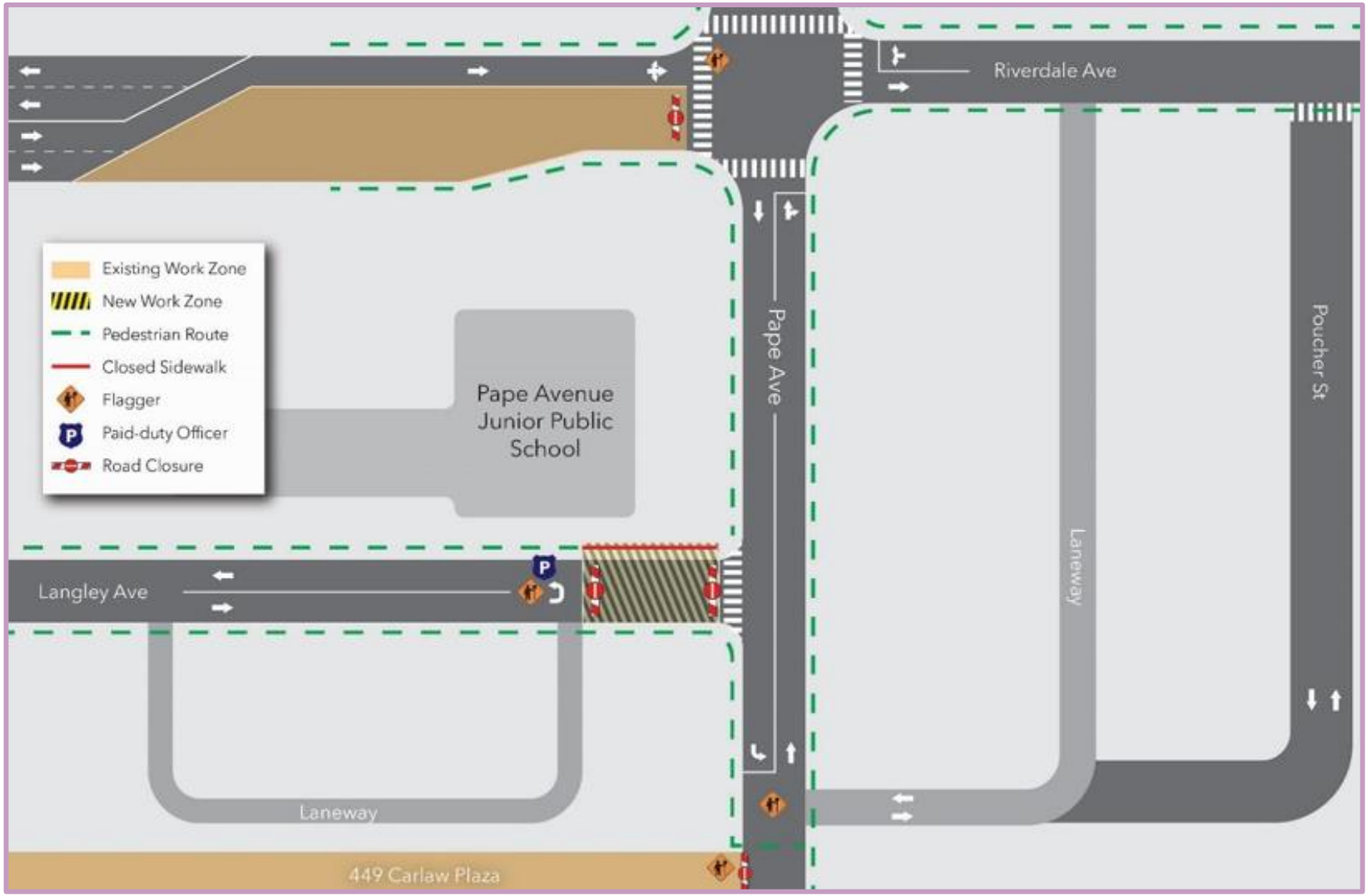
Category	#	Action Item	Response/Resolution
Miscellaneous	**1**	Organize Bain Avenue community meeting to have more in-depth conversations about upcoming work and future state with Bain residents.	Metrolinx is working to organize this meeting for later in the spring.
	2	Provide conceptual renderings or drawings of future Bain EEB and examples of existing EEBs located beside residential communities.	Metrolinx and PNC to provide available graphics and EEB examples during community meeting (item 1).
	3	Request for better understanding of Metrolinx tree replacement program in light of tree removals at Bain EEB.	Metrolinx to bring details about tree replacement program to community meeting (item 1).

Appendix B: Microtunnelling Receiving Shaft – Prep Works Photos

Maintenance hole construction

Sound wall modifications

Appendix B: Microtunnelling Receiving Shaft – Traffic Setup



Appendix C: Eight-Week Lookahead – Pape-Langley/Riverdale

#	Activity	Location	Expected Start	Expected Duration	Impacts	Hours of Work	Mitigations
1	Launch Shaft – Excavation	Riverdale	April 14	5 weeks	Noise, Vibration, Dust	Weekdays: 7 a.m. to 7 p.m. Saturdays: 9 a.m. to 7 p.m.	Noise Wall, Water Suppression, Monitoring
2	Receiving Shaft – Piling	Langley	April 23	2 weeks	Noise, Vibration		Noise Wall, Monitoring
3	Receiving Shaft – Excavation	Langley	May 7	2 weeks	Noise, Vibration, Dust		Noise Wall, Water Suppression, Monitoring
4	Access Road Construction	Pape-Langley (SW Corner)	May 5	2 weeks	Vibration		Monitoring, static rolling during compaction
5	Launch Shaft – Equipment Mobilization	Riverdale	Early June	1 week	Noise		Noise Wall, Monitoring
6	Launch Shaft – Microtunnelling	Riverdale	Early-mid June	1 month	Vibration		Vibration Monitoring
7	Microtunnel bypass installation	Riverdale	Late-June	5 weeks	Noise		Noise Wall

Appendix C: Eight-Week Lookahead – Gerrard Portal

#	Activity	Location	Expected Start	Expected Duration	Impact	Hours of Work	Mitigations
1	Short term fencing and mesh dust screen installation	Gerrard Portal	Completed	N/A	Minor Noise	7:00 am -7:00 pm	N/A
2	Geotechnical investigations	Select sites along Pape Ave	Nov 2024	10 months	Noise, vibration, lighting during the evening, temporary street parking closures	7:00 am -7:00 pm (unless otherwise notified)	Dust mitigation includes misting, sweeping and hydrovac trucks. Erosion and sediment control.
3	Subsurface utility investigations	Select sites along Pape Ave	Oct 2024	10 months	Noise and vibration	7:00 am -7:00 pm	
4	Utility disconnections	Gerrard Portal	Oct 2024	10 months	Work to take place within construction site	7:00 am -7:00 pm	N/A
5	Building Abatement	Gerrard Portal	Completed	N/A	Work to take place within construction site	7:00 am -7:00 pm	
6	Demolition	Gerrard Portal	Mar 2025	4 months	Vibration, noise, air quality, traffic, lane and sidewalk closures	7:00 am -7:00 pm	Noise, vibration and air quality monitoring. Temporary fencing with mesh dust screens. Dust mitigation includes mud mats, street spraying and sweeping, work stoppage during high winds
7	Support of Excavation	Gerrard Portal	Summer 2025	8 to 10 months	Vibration, noise, air quality, traffic, lane and sidewalk closures	TBD	Noise, vibration and air quality monitoring. Dust mitigation includes mud mats, street spraying and sweeping. Traffic mitigations include designated hauling routes.

Appendix C: Eight-Week Lookahead – Bain EEB

#	Activity	Location	Expected Start	Expected Duration	Impact	Hours of Work	Mitigations
1	Tree/ vegetation removal	Bain EEB	May 2025	1 week	Noise and sidewalk closures	7:00 am - 7:00 pm	N/A
2	Utility relocation	Bain EEB	April 2025	Ongoing	Vibration, noise, air quality, traffic, lane and sidewalk closures	7:00 am - 7:00 pm	Dust mitigation includes misting, sweeping and hydrovac trucks. Erosion and sediment control.

Appendix D: Dust Management

Dust contributing factor	Mitigation Options
Construction activities [ie. Drilling, cutting, demolishing]	• Daily wetting of soft and hard surfaces. • Regular inspection, maintenance, and repair of construction equipment and vehicles; minimizing exhaust • Wet cutting of concrete and asphalt surfaces • Using a vacuum attachment when cutting. • Minimize the drop height for loading/unloading of loose materials.
Materials transportation	• Reducing on-site vehicles speeds to 5 – 10 km/hr. • Pre-watering and covering dust-producing materials during transportation. • Installing wheel washing stations onsite where feasible to prevent mud traction during transportation. • Wetting down unpaved roads and cleaning of paved roads.
Dry and/or windy weather conditions	• Adjustment of construction activities or construction timing when unfavorable conditions result in air quality levels above limits. • Surface watering of stockpiles and site area. • Locating of stockpiles away from downwind site boundaries.
Excavation	• Daily wetting of excavation face
General	• Street sweeping. • Adjustment of construction activities or construction timing when unfavorable conditions result in air quality levels above limits. • Installation of temporary fencing with mesh dust screens where feasible. • Air quality monitoring which produces alerts for levels of PM2.5 and PM10.

Appendix E: Vibration – Limits

- The sewer and water main relocation works contract outlines limits for construction vibration with which the contractor must comply.
- Maximum construction PPV limits for damage to buildings and structures are identified, with more stringent limits for heritage buildings as they are more susceptible to damage from vibration:

Frequency of Vibration (Hz)	Maximum Vibration Peak Particle Velocity Limit for Standard Construction (mm/s)	Maximum Vibration Peak Particle Velocity Limit for Built Heritage Resources (mm/s)
Below 4H	8	3
4Hz and below 10Hz	15	3
10Hz and below 50Hz	25	8
50Hz and above	25	10

- These limits were developed based on technical research conducted by the City of Toronto (2007).
- Vibration limits align with City of Toronto Code (2021) for buildings and structures and a German Standard (DIN 4150-3) for heritage buildings.

Appendix E: Vibration – Management

Monitoring Approach

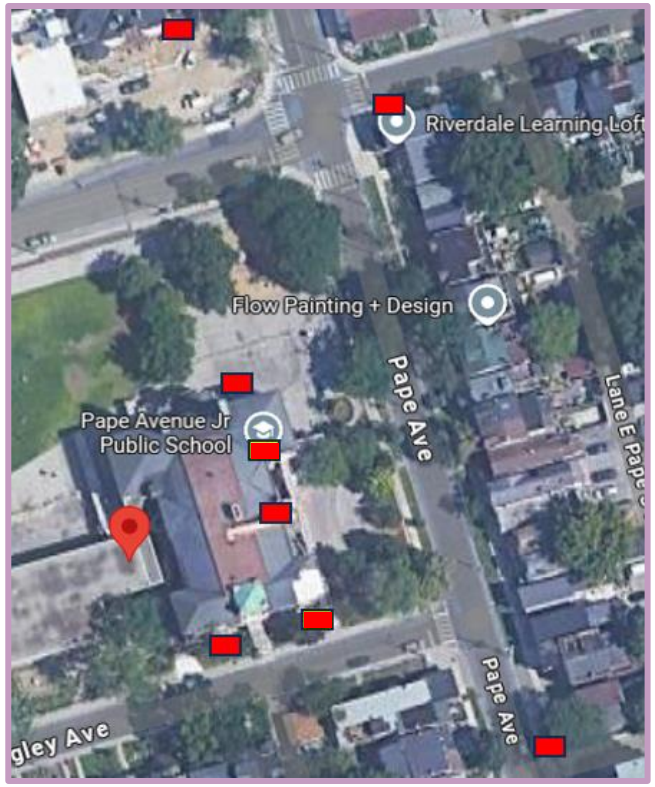
- Vibration monitors are installed at buildings and structures within the ZOI for a given stage of works (the ZOI and monitoring locations are reassessed as construction progresses).
- Vibration limits are based on City of Toronto Code (2021) for regular buildings and structures and a German Standard (DIN 4150-3) for heritage buildings.
- Metrolinx and the contractor continuously monitor vibration levels in real-time to ensure levels stay within safe limits.

Protocol for Exceedances

- When vibration approaches or exceeds the contractual vibration limits:
  - A real-time alert is sent to the contractor and Metrolinx;
  - The contractor confirms if the high vibration level is related to their construction activities; and,
  - If confirmed, they investigate and take action to implement additional mitigation measures as necessary to ensure compliance with vibration limits.

Mitigation Options

- Proactive monitoring of vibration warnings when vibration is approaching limits and adjusting construction on-site accordingly.
- Reducing vibratory roller settings during compaction or shutting off vibratory setting and conducting static rolling.
- Sequencing the use of equipment to avoid multiple vibration-generating activities occurring concurrently.



Current vibration monitoring locations: launch and receiving shaft works