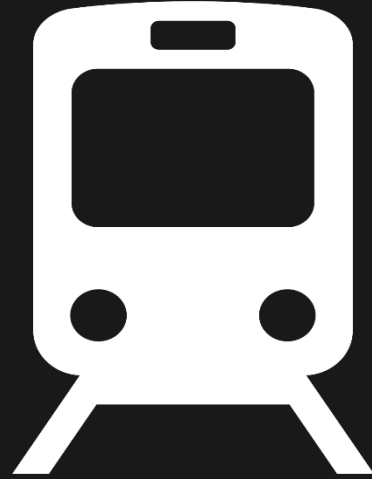




Ontario Line

Leslieville/Riverside Community Working Group, Meeting #5

FEBRUARY 28, 2022

Land Acknowledgement

Let us take a moment to acknowledge that we are on the traditional territory of Indigenous Peoples including the Anishnabeg, the Haudenosaunee and the Wendat Peoples.

We are all Treaty people. Many of us have come here as settlers and immigrants...in this generation or generations past.

Metrolix declares its commitment to building meaningful relationships with Indigenous Peoples.

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

We acknowledge that Metrolix operates on lands covered by 20 Treaties, and that we have a responsibility to recognize and value the rights of Indigenous Nations and Peoples and conduct business in a manner that is built on the foundation of trust, respect and collaboration.

Safety Moment

- Increased use of home computers has led to complaints about eye fatigue, discomfort and difficulty focusing. Other screen use include TV and video games.

Prevention

Get an eye exam by an Ophthalmologist to:

- Rule out any possibility of eye disease as the cause of the symptoms.
- Determine if you need glasses to work on a computer or need to update prescription glasses.

Equipment

- Choose a monitor that tilts or swivels and place it on a stand, if needed. Adjust the monitor for lighting in the room and use glare reduction, if needed.
- Maintain screen distance -- a minimum 20 inches.
- Use an adjustable chair and set the top of chair to eye level.

Rest

Use the 20-20-20 rule. Every 20 minutes, take a 20 second break and look at an object 20 feet away .



4 "O" Clock Eye Fatigue



Rules of Engagement for Virtual Meetings

To help this meeting run as smoothly as possible, please adhere to the following rules of engagement:

- Remain muted at all times, unless you are called upon.
- Questions will be taken in the order they are received.
- Please use the "hands up" icon to raise your hand to speak.
- Please be respectful to all meeting participants.
- Please allow all people the chance to speak before taking a second turn.
- Video is encouraged, but not required.
- This meeting will be recorded and shared online.

Agenda

1. Introduction
2. Noise Barrier Analysis
3. Bridge Parameters
4. Working Group Workback Schedule
5. City Presentation – Park Impacts and Opportunities
6. Next Steps

Engagement Approach | Technical Submission Timelines

Package 01

Early Works Civil

RFP In-Market: April 2022 – August 2022

Construction Start: September 2022

Includes:

- Engineering design of retaining walls (*custom form liner can come late in addendum/ contract change*)
- Engineering design of noise walls (*transparency/opacity/style/finish can come late in addendum/ contract change*)
- 3 GO bridge replacements at Queen, Dundas and Logan
- 2 new Ontario Line bridges at Dundas and Logan
- Rail corridor grading, drainage and utilities
- GO track relocations and construction

Package 02

Urban & Landscape Design

RFP In-Market: 2023 (TBC)

Construction Start: 2024 (TBC)

Includes:

- Noise wall screenings
- Bridge underpass public realm
- Bridge underpass lighting
- Bridge underpass activation
- Landscape and vegetation mitigation
- Tree planting
- Retaining wall mitigation
- Vegetated terraces and/or embankments

Package 03

Ontario Line North Contract

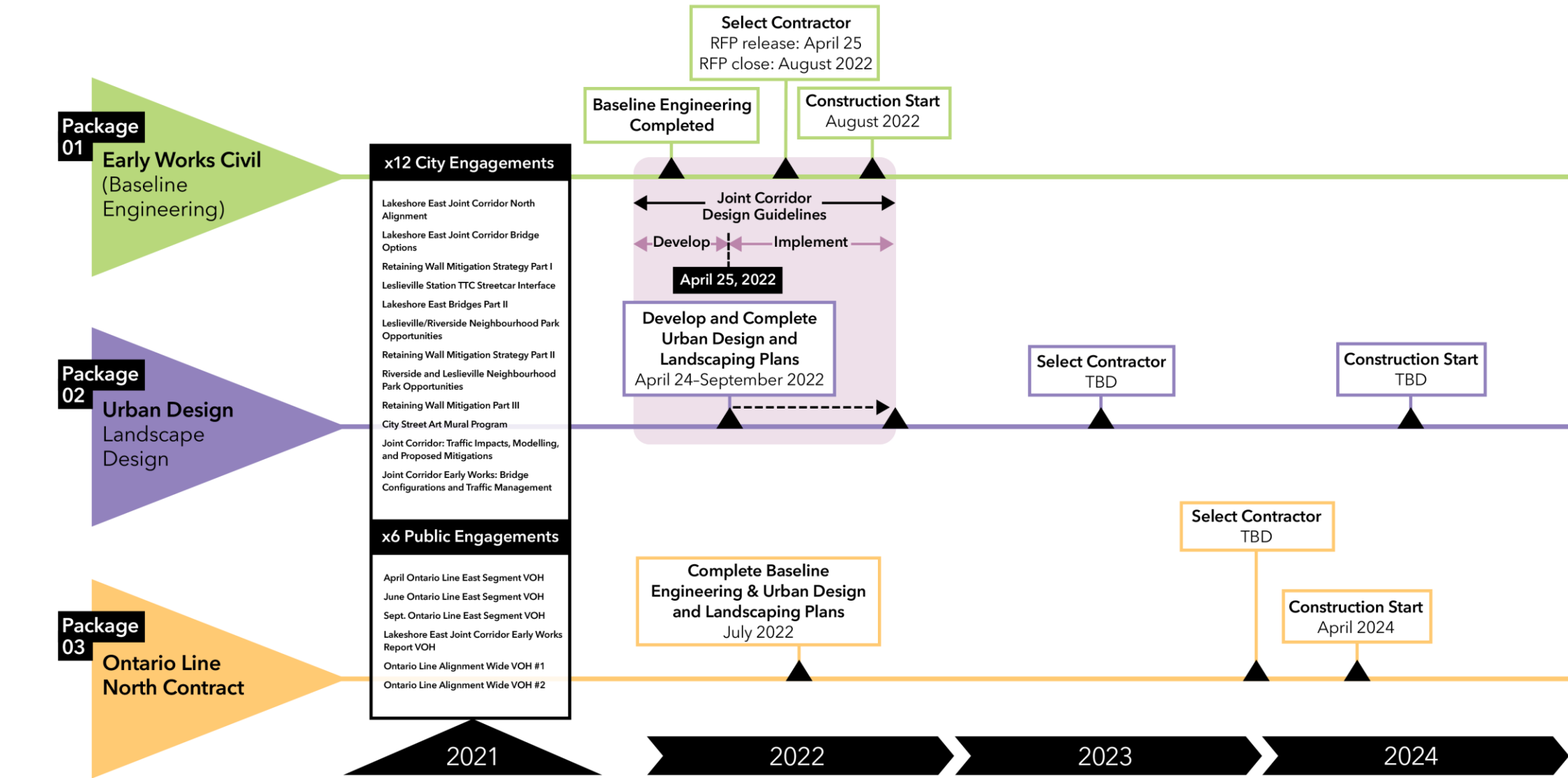
RFP Issue: January 2023 – February 2024

Construction Start: April 2024

Includes:

- Riverside/Leslieville and Gerrard Stations integrate with Ontario Line bridges at Queen St and Gerrard St/Carlaw Ave

Estimated Schedule



Engagement Approach | Milestone Workback Schedule Options

Design Competition

- Week of February 28th: Establish Terms of Reference *
- Week of March 7th: Conduct outreach to qualified firms for solicitation, develop and release invitation to participate
- Week of March 14th: Conduct Q&A w/ industry, and define jury requirements and criteria for winning team *
- Week of March 21st: Visioning Public Engagement and walking tour *
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* CAC Stakeholder and Public Engagement leads to detailed design

** Detailed design and engineering to follow outcome of either design competition or design charrette

Noise Barriers | Opportunities & Constraints

Examples



Transparency / Opacity



Colour



Wood



Screens

Opportunities / Constraints

Fixed Engineering Constraints

Height

Post and Panel Assembly

Post Spacing

Opportunities for Design

Material

Transparency / Opacity

Colour

Screens

Bird-collision deterrent decals

Noise Barriers | Types

There are two types of noise barriers: Reflective or Absorptive

Reflective Barriers

Reflective barriers use materials that bounce sound waves away from sensitive areas. A variety of materials can be used, but transparent/translucent acrylic will **minimize visual impact and allow light to pass through**.



Benefits

- Options for transparency
- Minimizes visual impact of walls
- Allows sunlight to pass through
- Resistant to weathering
- Single unit panels are easier to fix



Disadvantages

- Needs protection from graffiti



Transparent



Translucent + Coloured



Opaque + Designed

Noise Barriers | Types

There are two types of noise barriers: Absorptive or Reflective

Absorptive Barriers

Absorptive barriers have noise dampening materials that diffuse and absorb sound. These walls can be clad in a wide variety of materials but will always be opaque and will **maximize visual impact** and **will cast shadows**.



Benefits

- Increased noise reduction
- Several material options
- Fully hides trains and tracks



Disadvantages

- Only opaque options
- Increases scale of walls
- Blocks views of sky
- Casts shadows
- Ages with weathering
- Multiple units per panel
- Needs protection from graffiti



Concrete



Steel



Wood

Noise Barriers | Summary of Noise Modelling Study

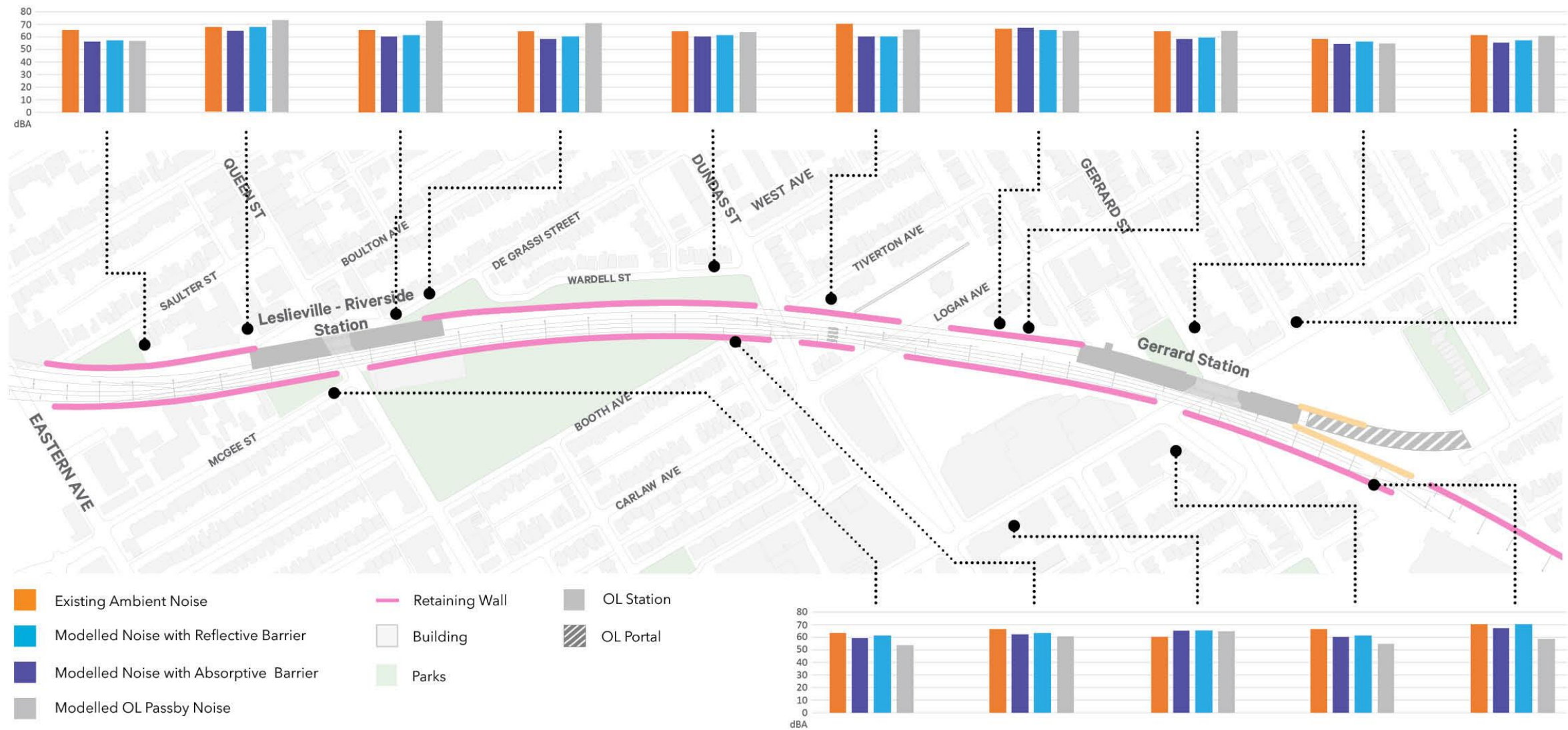
- Noise modelling is typically based on the MOEE/GO Transit Draft Protocol and the MOEE/TTC Protocol, which is the ambient noise level + 5dBA
- The noise modelling standards in the joint corridor adopt a more stringent criteria whereas:
 - Between Eastern Ave and Pape Ave, noise mitigation must be equal to or less than the higher of 55dBA during the day and 50dBA during the night or baseline levels.
 - The noise model doesn't allow for the + 5dBA variation
- Analysis and optimization is based on achieving:
 - The average noise level across day (07:00-23:00) and night (23:00-07:00) periods
 - The instantaneous pass-by noise level of 80 dBA
- Barrier heights range from 5.0 to 7.0 metres (minimum height of 5.0m)
- Noise barriers will be installed in a phased approach during construction and will be in place by the completion of Early Works (Package 1)

Noise Barriers | Summary of Noise Modelling Study

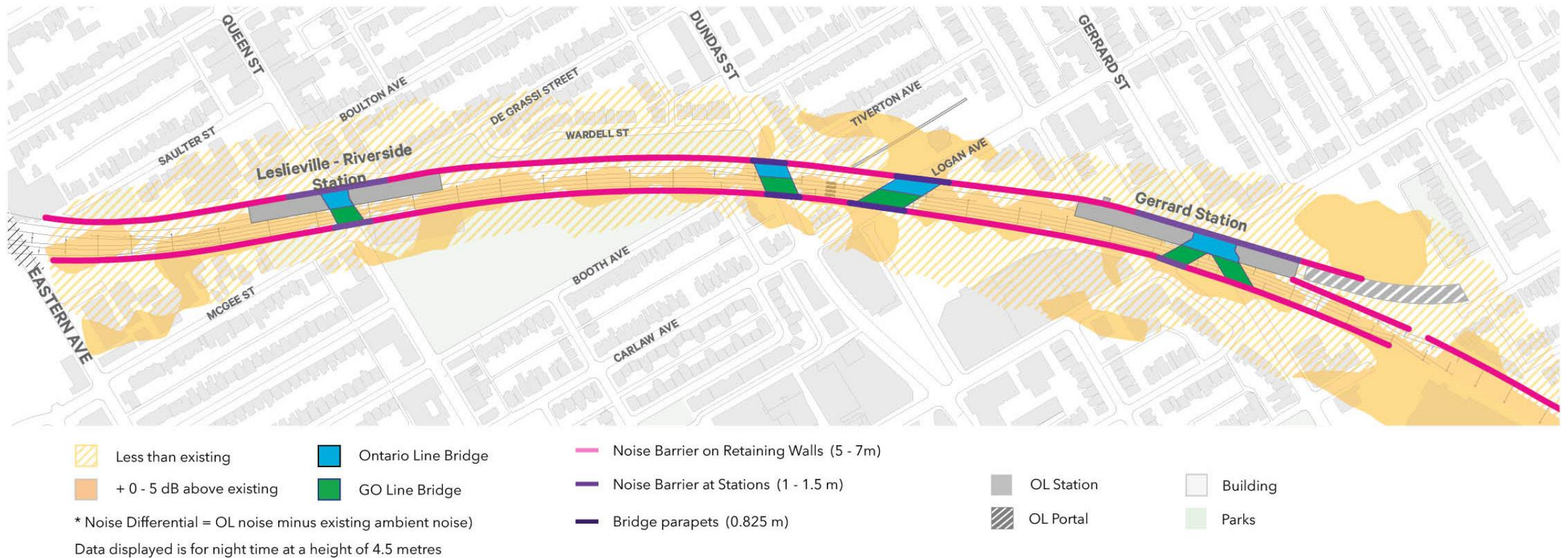
- Employs the US Federal Transport Administration (US FTA) method (common across North America).
Completed using CadnaA (MECP approved noise modeling software package)
- The noise barriers are modelled as close to the tracks as possible with approved spacing
- Elevation contours from the latest grading profiles are applied to model
- Existing ambient noise levels include contributions from existing train traffic only except for high rises close to the corridor where road traffic has been included.
- Noise Modelling Study was reviewed by three expert firms Hatch, AECOM and Stantec

Source: <https://www.commodious.co.uk/knowledge-bank/noise/measuring-levels>

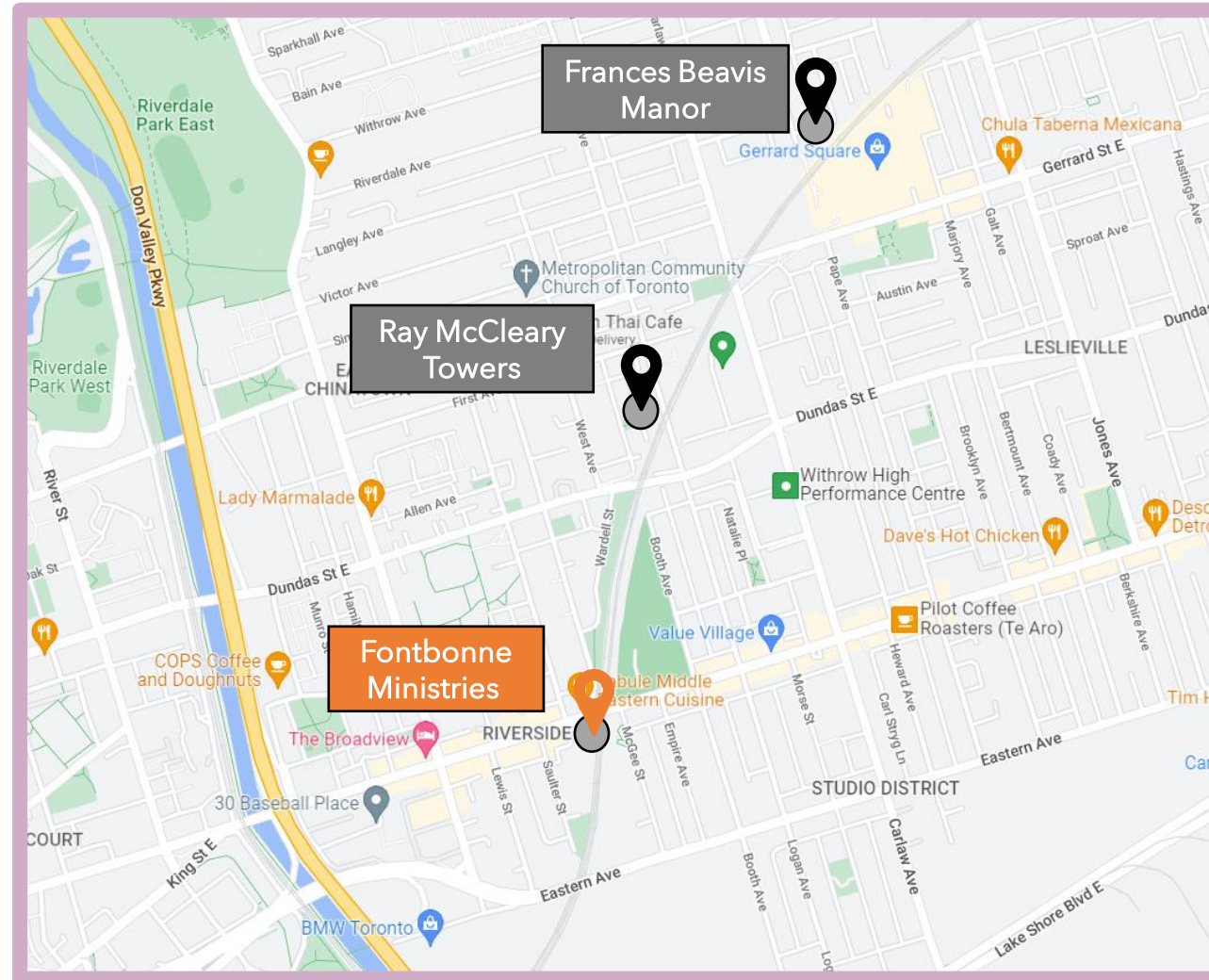
Noise Barriers | Comparative Analysis (Acrylic vs. Absorptive)



Noise Barrier | Noise Differential (modelled noise minus existing ambient noise)



Noise Barrier | Areas of Concern



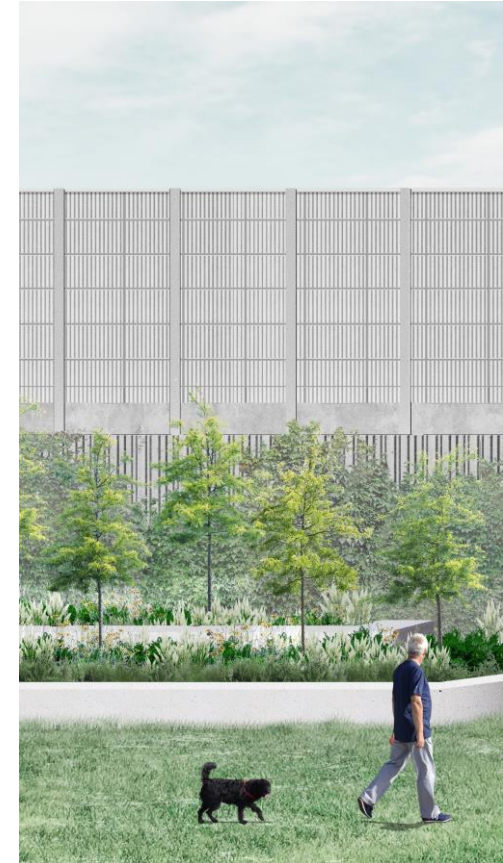
Noise Wall | Examples



Transparent



Translucent



Opaque

Noise Wall | Examples



**Rendering depicts vegetation 3-6 years after opening day.*

Noise Wall | Examples



**Rendering depicts vegetation 3-6 years after opening day.*

Noise Barriers | Opportunities & Constraints

Examples



Transparency / Opacity



Colour



Wood



Screens

Opportunities / Constraints

Fixed Engineering Constraints

Height

Post and Panel Assembly

Post Spacing

Opportunities for Design

Material

Transparency / Opacity

Colour

Screens

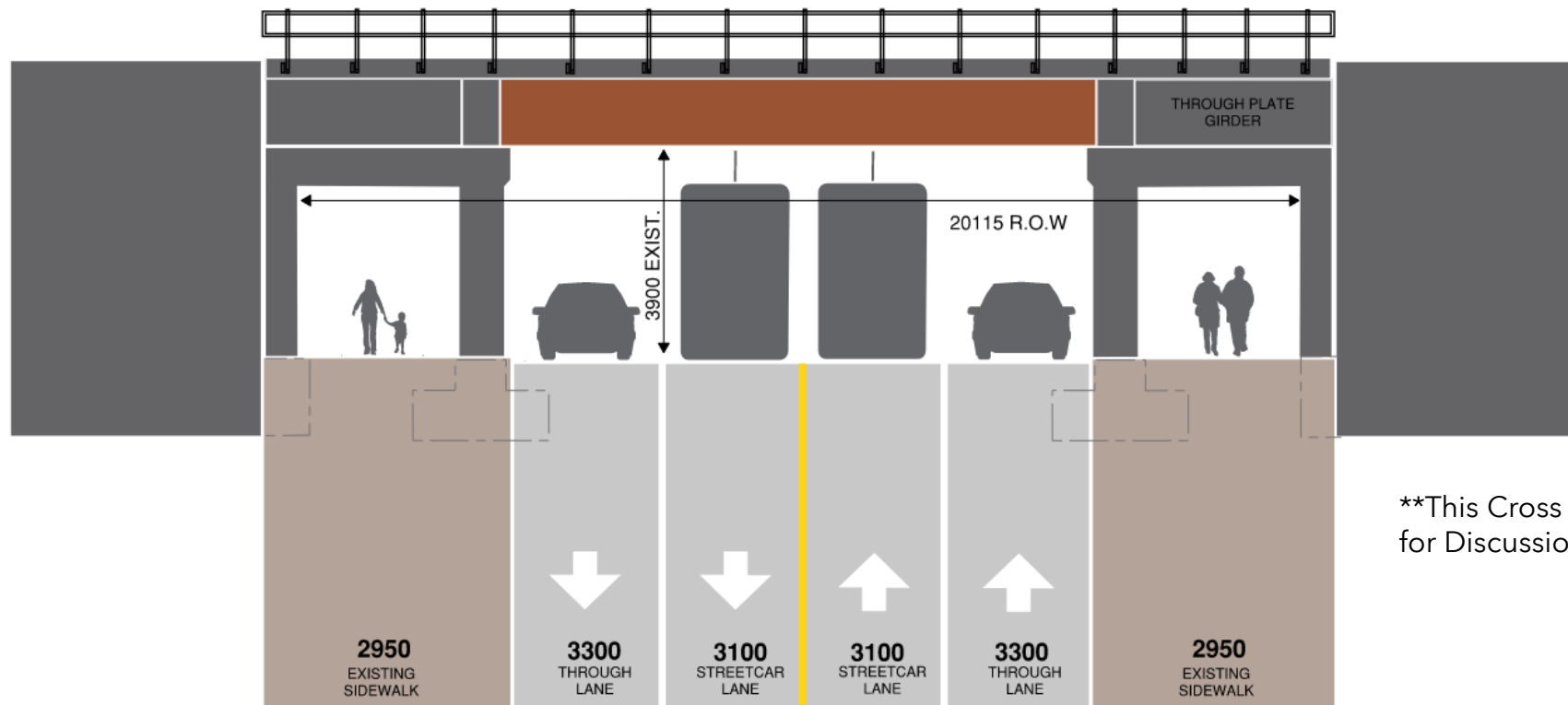
Bird-collision deterrent decals

Bridge Design | Key Considerations and Principles

1. **Context:** Integrating the structural bridge elements into the existing environment.
 - i.e., Dundas and Logan bridges should be visually quiet compared to main streets based on location and existing atmosphere.
2. **Maintaining Neighborhood Character:** The community has provided feedback that all new infrastructure should blend into or enhance the Victorian, warm, quiet, family-oriented neighborhood character.
3. **Meet City Standards:** The bridge specification are based on safety and accessibility standards:
 - i.e., vertical clearance of 5m, minimum sidewalk widths
4. **Reduce Impacts:** The current bridge design is planned to reduce the project footprint and minimize impacts to homes, business and nearby community facilities.
5. **Connectivity:** The underpasses and public realm elements are being further developed, with this group, to connect the community on both sides of the existing rail corridor and to ensure safe, accessible, and efficient transfers.
6. **Continuity:** The bridge design should meet a level of continuity to help with wayfinding and visual appeal.

Bridge Design | Existing Bridge Conditions - Queen St

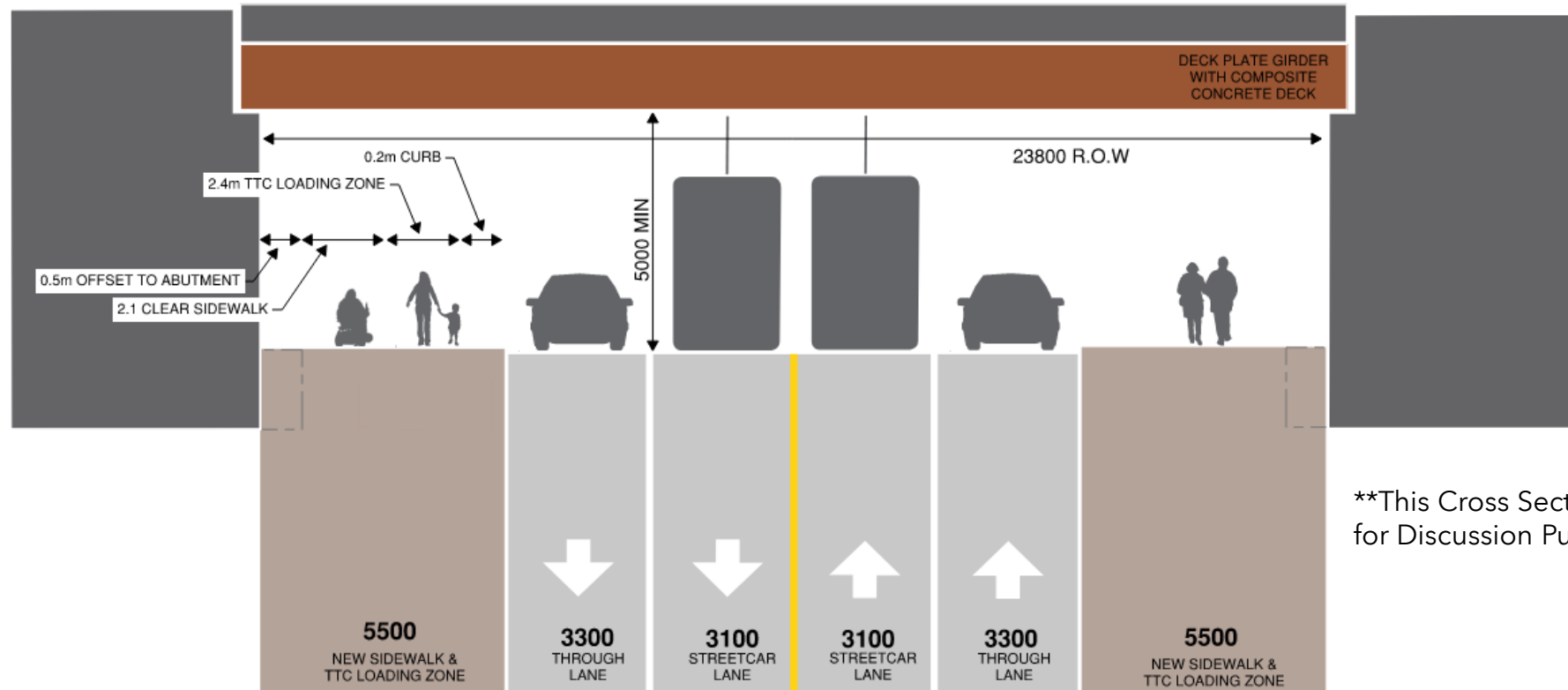
- ❶ Sub-standard vertical clearance (3.9m)
- ❷ Design does not meet CPTED standards (Crime prevention through environmental design)
- ❸ 3-span bridge (Piers adjacent to through lane)



**This Cross Section is Indicative for Discussion Purposes Only

Bridge Design | New Bridge Conditions – Queen St

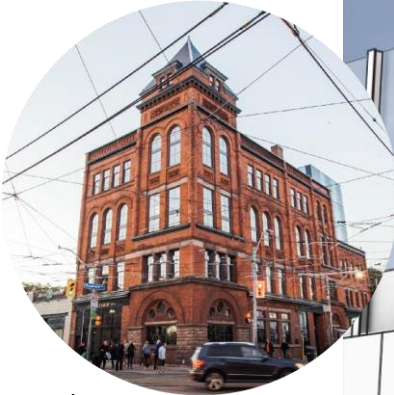
- 1 Improved vertical clearance (5.0m) reducing vehicle impacts and TTC dewirements
- 2 Opportunity for TTC transfers at the new OL Station while maintaining clear sidewalk
- 3 Reduced construction footprint (shorter construction durations and traffic impacts)
- 4 Clear span bridge (No Piers)
- 5 Design meets CPTED standards (Crime prevention through environmental design)
- 6 Opportunity for lighting improvements
- 7 Better sightlines, public realm, pedestrian experience, and safety
- 8 Narrow bridge footprint (no impacts to JSRC)



**This Cross Section is Indicative for Discussion Purposes Only

Bridge Design | Concept Options

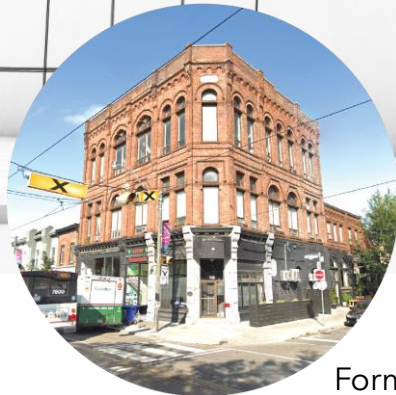
Neighbourhood Character



Broadview Hotel



Toronto Public Library



Former
Masonic Lodge



Design Potential



Weathering Steel



Murals



Lighting

Bridge Design | Opportunities & Constraints

Examples



Opportunities / Constraints

Fixed Engineering Constraints

Height (Vertical Clearance)

Footprint (Location)

Abutment and Pier Locations

Structure Type

Opportunities for Design

Underpass Lighting

Underpass Activation

Public Art

Abutment Finishes

Bridge Span Public Realm

METROLINX DESIGN GUIDELINES EXAMPLE

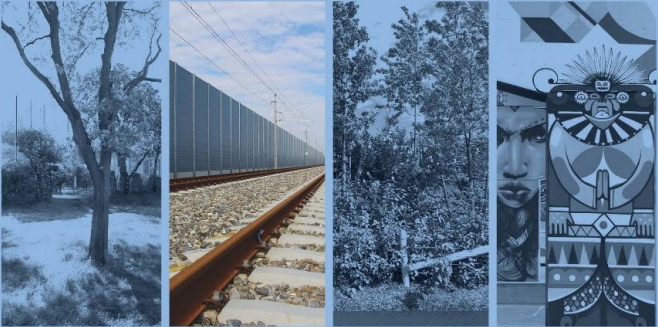
DGL-01

DESIGN GUIDELINE

NOISE AND VIBRATION MITIGATION

VERSION 1.1

NOVEMBER 2021



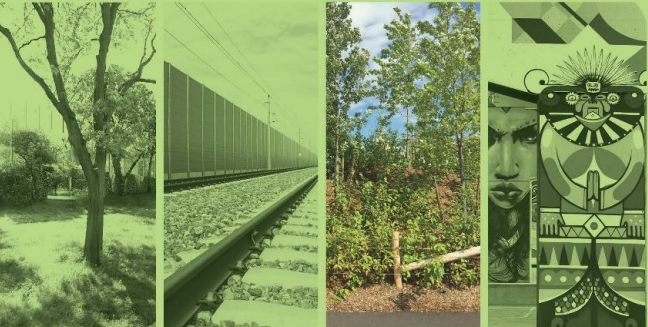
DGL-02

DESIGN GUIDELINE

VEGETATIVE SCREENING FOR NOISE BARRIERS

VERSION 1.1

NOVEMBER 2021



DGL-03

DESIGN GUIDELINE

GRAFFITI MANAGEMENT

VERSION 1.1

NOVEMBER 2021



Category	Noise Barrier Options	Illustrations
1	Base Noise Barriers - Base design specification - Meets commitment outcomes from the Environmental Assessment process - Noise barriers must be technically, administratively, operationally and economically feasible	
2	Aesthetically Enhanced Noise Barriers - Enhanced features to mitigate negative visual impacts - Extended palette of noise barrier components (enhanced design specifications) to counter significant visual impacts in sensitive locations - Meets all the requirements of the Base Design Specification	
3	Third Party Scope Requests - Response to third party scope requests (assessed on a case by case basis) - The objective is to support specific third party requests and/or municipal planning and urban design objectives - Meets all the requirements of the Base Design Specification	
4	Murals & Public Art Treatments - Public art or murals applied as a surface treatment to noise walls - Public art or mural projects are typically procured, implemented, and maintained by municipalities or other third parties - Meets all the requirements of the Base Design Specification	

DESIGN GUIDELINES

Illustrations: Approaches to Vegetative Screening (adjacent to noise barriers)



Figure 2: Vegetative screening can help to conceal, or camouflage, noise barriers and retaining walls.



Figure 3: Plantings can be used to visually soften the edges along the rail corridor.



Figure 4: Plantings should follow the management strategies outlined in Metro's Vegetation Guidelines.



Figure 5: Vegetative screening can restore, or improve, a degraded vegetative screen.



Figure 6: Trees can be used to augment vertically aligned vegetative screens.



Figure 7: Tree plantings must conform to the Vegetation Management Guidelines.



Figure 8: Vegetative screening can serve a dual function of providing vegetative screening and deterring graffiti.



Figure 9: The planting of vines are a proven method of deterring tagging or graffiti on walls and structures.



Figure 10: Metro's policy prohibits the planting of vines on walls and structures.

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6

DESIGN GUIDELINES

Illustrations: Graffiti Deterrence Strategies

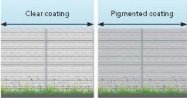


Figure 1: Graffiti resistant coatings (inter coatings result in minor visual impact).



Figure 2: Murals have a successful track record in reducing graffiti vandalism.



Figure 3: Vines and plantings to deter access or limit exposed surfaces.



Figure 4: Clear anti-graffiti coating applied to a pier up to 2.7m above grade (minimum).



Figure 5: Pigmented anti-graffiti coating applied to a pier up to 2.7m above grade (minimum).



Figure 6: Piers and columns can be painted with murals to deter graffiti.



Figure 7: Restrict access to walls, columns, and other vulnerable surfaces.



Figure 8: Lighting and clear sightlines.



Figure 9: An example of lighting design and mural's used in combination to deter graffiti and tagging.

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5

Engagement Approach | Methods and Tools

Design Competition



Pros:

- Brings outside perspectives
- Expands the range of knowledge and expertise
- Is informed with CAC input and vision but does not directly include
- Has an independent jury
- Has precedence in the community



Cons:

- Limits iteration
- Condensed schedule

Design Charrette



Pros:

- Community led process
- Iteration with the community is key to successful outcomes
- Includes broader and more frequent engagement
- Leverages existing staff and expertise



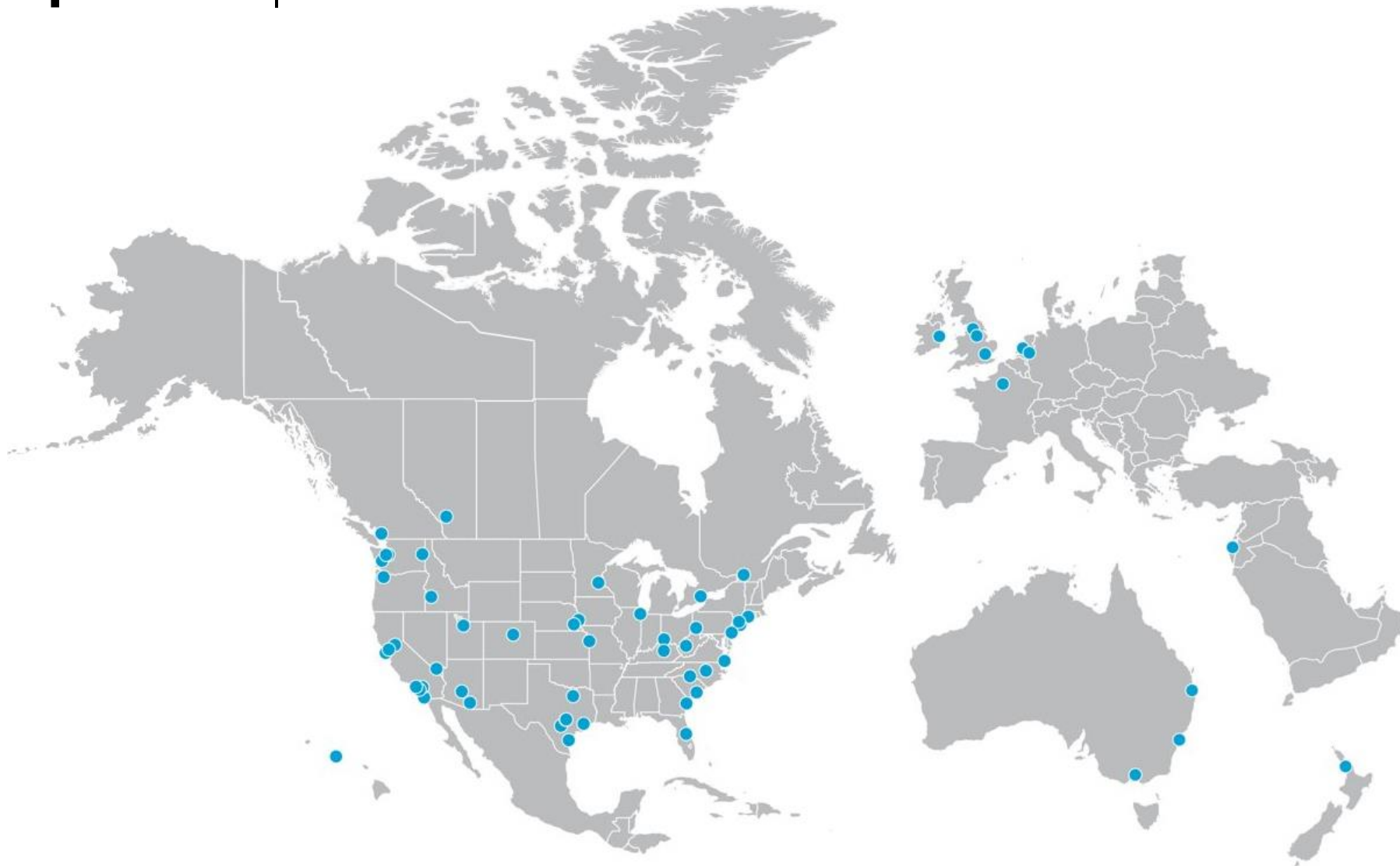
Cons:

- Aggressive schedule and time commitment from all

Other Options

- Community workshops
- Public information meetings
- Pop-up events
- Walking tours
- Street interviews

Global Experience | OLTA



Engagement Approach | Milestone Workback Schedule Options

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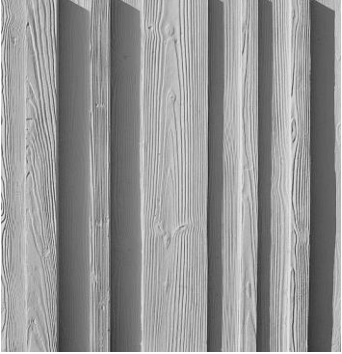
Park Impacts & | City of Toronto

City Presentation



Retaining Wall (T-Wall) | Opportunities & Constraints

Examples



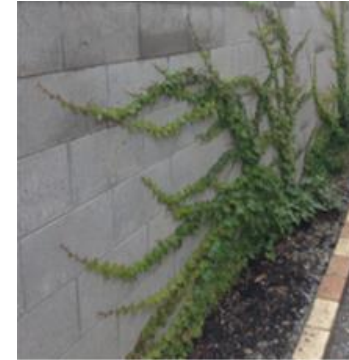
Concrete Pattern



Coniferous Screen



Deciduous Screen



Vines



Programming

Opportunities / Constraints

Fixed Engineering Constraints

Location and Extents
Height
Retaining Wall System
Material

Opportunities for Design

Concrete Pattern
Screening with Vegetation
Trellis with Vines
Programming

Noise Barriers | Opportunities & Constraints

Examples



Transparency / Opacity



Colour



Bird-Collision Deterrent Patterns



Screens

Opportunities / Constraints

Fixed Engineering Constraints

Height

Material

Post and Panel Assembly

Post Spacing

Opportunities for Design

Transparency / Opacity

Colour

Screens

Bird-collision deterrent decals

Noise Wall Example



**Rendering depicts vegetation 3-6 years after opening day.*