

GAP PLATE COVER, ROLLED CURB, PERMEABLE UNIT PAVERS

Accessibility-Focused Site Visits

August 2023

CONTENTS

page **3** **Acknowledgements**

page **4** **Introduction, Vision,
and Goals**

page **5** **Executive Summary**

page **6** **Accessibility Features and
Associated Feedback**

ACKNOWLEDGEMENTS

The Accessibility-Focused Site Visit represents a collaborative effort from City staff and members of the accessibility community. Transportation Services is thankful for the insights and time of all participants.

The tour was led by the Transportation Services Cycling and Pedestrian Projects team consisting of Becky Katz, Maili Sedore, Igor Samardzic, Sonya De Vellis, and other City of Toronto staff.

Introduction, Vision, and Goals

The City of Toronto's Transportation Services Division organized this site visit in August 2023. The purpose of the visit was to receive accessibility-focused feedback on new infrastructure implemented at three sites, including a gap plate cover, permeable unit pavers and rolled curbs. Participants included a blind person who uses a guide dog and cane, those using mobility aids, including power and manual wheelchairs, and an individual with varied mobility needs.

The goals of the site visit were to learn about the effectiveness of certain accessibility features, determine how safe and comfortable the participants felt in navigating the area, and to utilize the feedback to inform future designs.

SITE VISIT PLANNING

Transportation Services collaborated with four people with disabilities to provide feedback at three site locations to review various infrastructure elements.

Staff led a site visit to three different locations. Staff aided in navigating the sites and features, along with detailed note taking and photography. Staff gathered feedback, key takeaways and insights. After the site visit, the feedback was then summarized by City staff and reviewed by participants.

SITE VISIT

Four individuals with disabilities attended the site visit on August 11, 2023. The group started at Ossington subway station and travelled east on Bloor Street West to the first site in front of Ossington Medical Pharmacy to explore a City of Toronto designed 'gap plate cover' that bridges an accessible loading platform and the adjacent sidewalk. Next, the group travelled east and explored permeable unit pavers at Callaghan Lane and Berkeley Street. Finally, the group travelled south to Cherry Street and Commissioner Street to explore a rolled curb separating a multi-use trail and sidewalk.

Executive Summary

EXECUTIVE SUMMARY

The site visit gathered accessibility insights from participants about a gap plate cover, permeable unit pavers and rolled curb.

For wheelchair users, the gap plate cover was effective but raised concerns for partially-sighted individuals due to the misleading yellow tactile indicators, which were proposed as an additional solution. A distinctively-coloured plate was suggested as an alternative.

In evaluating permeable unit pavers (Eco-Optiloc), participants found them challenging to navigate, causing physical and emotional strain. Asphalt was the preferred material for larger areas, and wide concrete bays were favored overall for accessibility.

Lastly, rolled curbs with a 33% slope were identified as safer and more functional than traditional barrier curbs, particularly for wheelchair users and those using canes.

The findings emphasize the need for considering factors like cost, safety, and practicality, as well as the importance of inclusive design for all users.

PERMEABLE UNIT PAVERS (ECO-OPTILOC)



Executive Summary

CONCERN LEVEL

 Minimal

 Low

 Med

 High

The chart below evaluates six different features tested with individuals who are blind, use manual and power wheelchairs, and have varied mobility needs. It identifies potential solutions for the challenges encountered, providing an easy-to-access reference guide.

	Low-or-No Vision	Manual Wheelchair	Power Wheelchair	Additional Notes
Gap Plate Cover	Misleading Yellow Tactile Indicator.	Smooth transition over gap plate cover.	Smooth transition over gap plate cover.	Install a distinctively coloured plate.
Permeable Unit Paver	White canes get caught on pavers, and "confusing" to orient oneself.	Sound, vibration, and uneven joints.	Sound, vibration, and uneven joints.	Asphalt is preferred. If Unit Pavers is required, refer to page 8.
Turf Stone	White canes get caught on pavers, and "confusing" to orient oneself.	Wheel casters get stuck.	Wheel casters get stuck.	Asphalt is preferred. If Turf Stone is required refer to page 8.
Asphalt and Concrete	Smooth surface suitable for white canes and shoreline navigation.	A smooth and optimal surface for travelling.	A smooth and optimal surface for travelling.	N/A
Rolled Curbs (33% slope)	Provides sufficient differentiation for shoreline navigation with a white cane.	Enables manual wheelchairs to traverse the rolled curb when needed.	Enables power wheelchairs to traverse the rolled curb when needed.	Ensure right slope is used for optimal safety and functionality.
Barrier Curb (6")	Provides clear differentiation for shoreline navigation with a white cane.	Accidentally rolling off.	Accidentally rolling off.	N/A

Gap Plate Cover

GAP PLATE COVER

The gap plate cover was designed by the City to facilitate a smooth transition from the sidewalk to the loading platform. These plates can be lifted for maintenance purposes, allowing for easy removal of debris and other materials that accumulate in the gutter.

Participants observed that the hinged cover functioned well for wheelchair users, allowing for smooth passage over the plate. It provides a passable surface that is flush with the adjacent sidewalk that is "barely detectable" when travelling over in a wheelchair.

Some expressed concerns about the yellow tactile walking surface indicator that was proposed as a potential addition to the gap plate cover. Such indicators can be misleading for people who are blind and those with sight loss, suggesting potential hazards and urging caution.

The pick-up and drop-off areas, along with the gap plate cover, would likely be used by individuals who are partially-sighted only when they have been previously introduced or guided to them, as it is not an intuitive feature for first-time encounters.

Therefore, instead of the yellow tactile warning indicator, suggestions were made to employ a metal plate of a distinct colour, ensuring it contrasts clearly with the sidewalk.

In addition, participants stressed the importance of a thorough evaluation in selecting the sites, aiming to find a balance between cost, safety, installation ease, and the practicality of other alternatives that may be safer and more efficient, like using the intersection curb cuts or side street drop-offs and pick-ups.

GAP PLATE COVER



Permeable Unit Pavers

PERMEABLE UNIT PAVERS

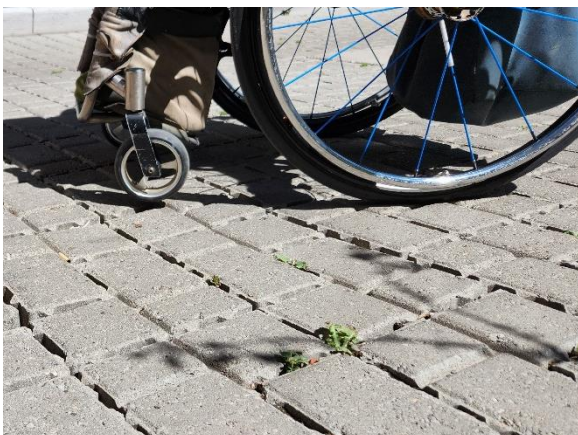
Permeable unit pavers can pose challenges for people using manual wheelchairs and those using a white cane, particularly when newly-installed. The larger gaps between the pavers before the joint material has fully settled, along with the lack of accumulated dirt and debris, make it difficult for people that use white canes to navigate. This unsettled state can be difficult for individuals who are blind or who have sight loss, who rely on a clear shoreline for orientation.

Additionally, the noise and vibrations caused by wheelchairs travelling over these pavers can have both physical and emotional impacts compared to the smoother surface of a concrete sidewalk. Some participants also reported difficulties wheeling over expansive sections of these pavers, making them less ideal for large areas.

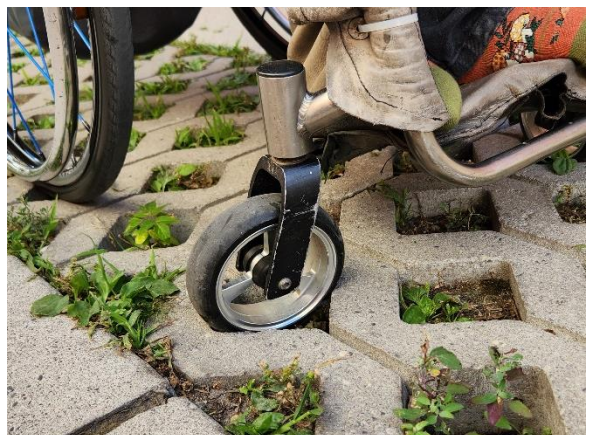
Turf Stone

Turf stone presents the most significant maneuverability issues, particularly for those in manual wheelchairs. Wheel casters and canes may become stuck in the uneven surface and larger gaps, making it difficult to navigate.

PERMEABLE UNIT PAVERS



TURF STONE PAVERS



Permeable Unit Pavers

PERMEABLE UNIT PAVERS

Comparisons and Trade-offs

When comparing the materials, permeable unit pavers are preferred over turf stone for their higher surface quality, though still less ideal than asphalt or concrete. While permeable unit pavers are suggested as an alternative to turf stone, the preference leans towards asphalt or concrete for accessibility and navigability.

PERMEABLE UNIT PAVERS



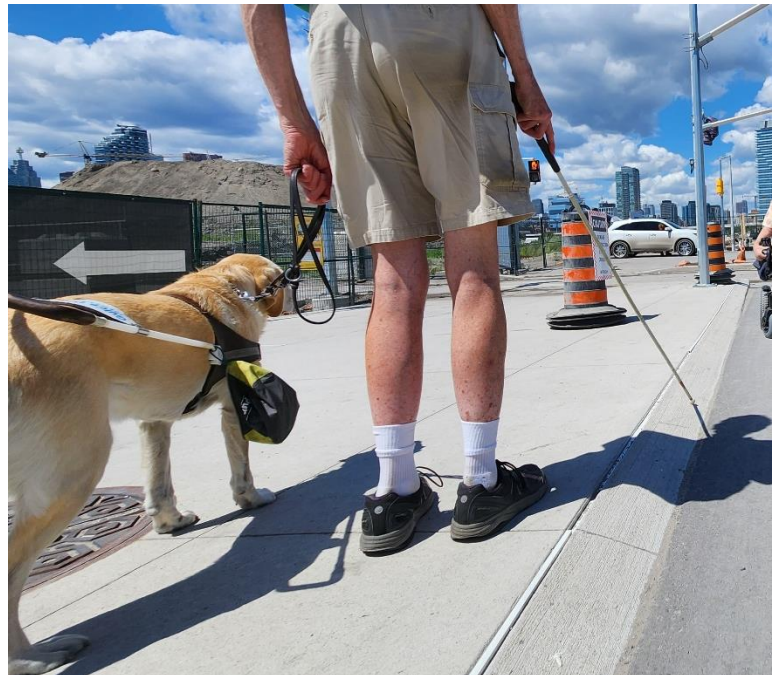
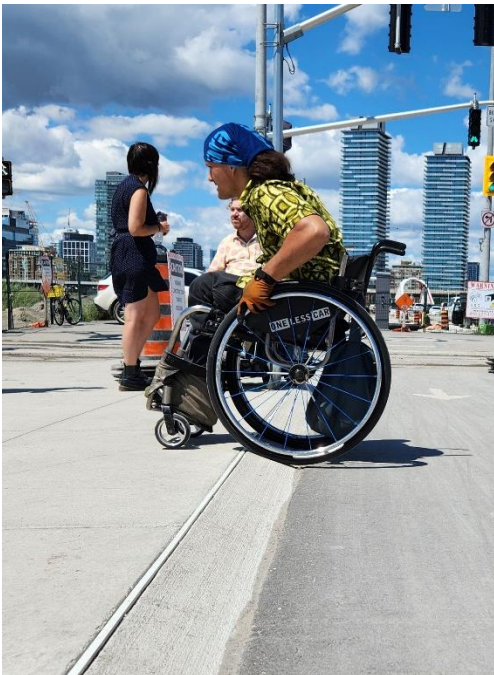
Rolled Curb

ROLLED CURB (33% SLOPE) VS. BARRIER CURB (6" CURB):

Unlike traditional barrier curbs, which are typically 150 mm high and have a sharp drop-off, rolled curbs have a more gradual incline that allows individuals to travel over them easily. Participants using wheelchairs noted that rolled curbs with 33% slope felt safer than a barrier curb, effectively preventing those who use wheelchairs from accidentally rolling off and injuring themselves. Others noted that they still function like traditional curbs, as their design allows for cane detection. It is essential to ensure the right slope is used for optimal safety and functionality.

The two-inch concrete curbs have the right contrast from the road material (in this case asphalt) for a guide dog to detect the difference.

ROLLED CURB – 33% SLOPE



August 2023



For advice, insights and comments please contact
igor.samardzic@toronto.ca and sonya.devellis@toronto.ca.