
Project Bulletin for the Expanded Study Area

Dixie-Dundas Flood Mitigation Project

Schedule C Municipal Class Environmental Assessment

<http://www.mississauga.ca/flooding>

PRIME STRATEGY & PLANNING
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Land Acknowledgement

We would like to begin by acknowledging the Treaty Lands and Territory of the Mississaugas of the Credit. For thousands of years, Indigenous peoples inhabited and cared for this land, and continue to do so today. In particular, we acknowledge the territory of the Anishinabek, Huron-Wendat, Haudenosaunee, and Ojibway/Chippewa peoples; the land that is home to the Metis; and most recently, the territory of the Mississaugas of the Credit First Nation who are direct descendants of the Mississaugas of the Credit.

We are grateful to have the opportunity to work on this land, and by doing so, give our respect to its first inhabitant.



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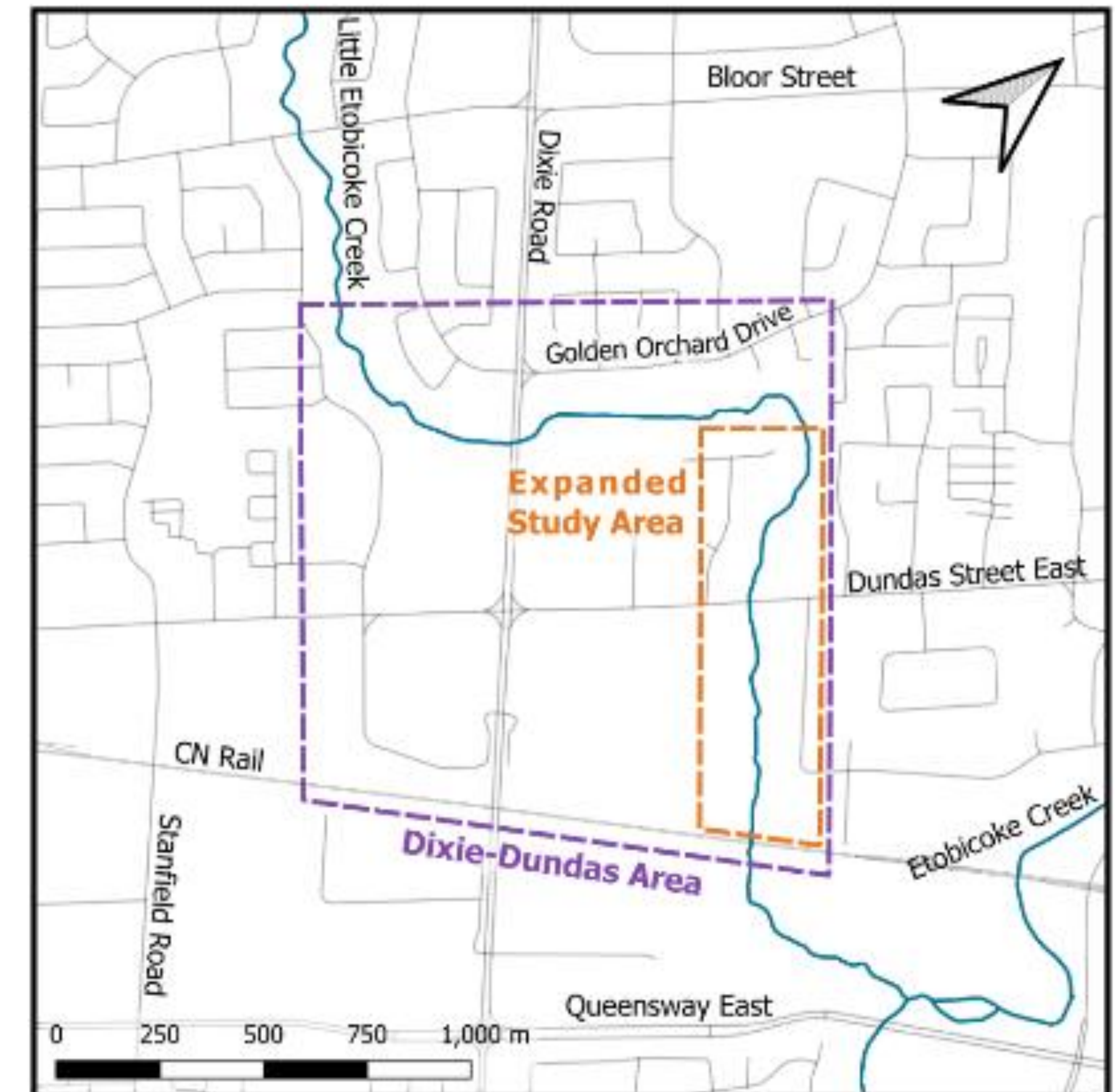
Overview

The purpose of Public Information Centre No. 1 in August 2020 was to:

- Introduce the public to the project.
- Present conceptual alternative flood mitigation solutions centred around Dixie Road.
- Provide opportunity for interested parties to offer input on the evaluation criteria and identify any concerns or local information that will support the Municipal Class Environmental Assessment (EA) process.
- Public Information Centre No. 1 can be viewed on the project website: <http://www.mississauga.ca/flooding>

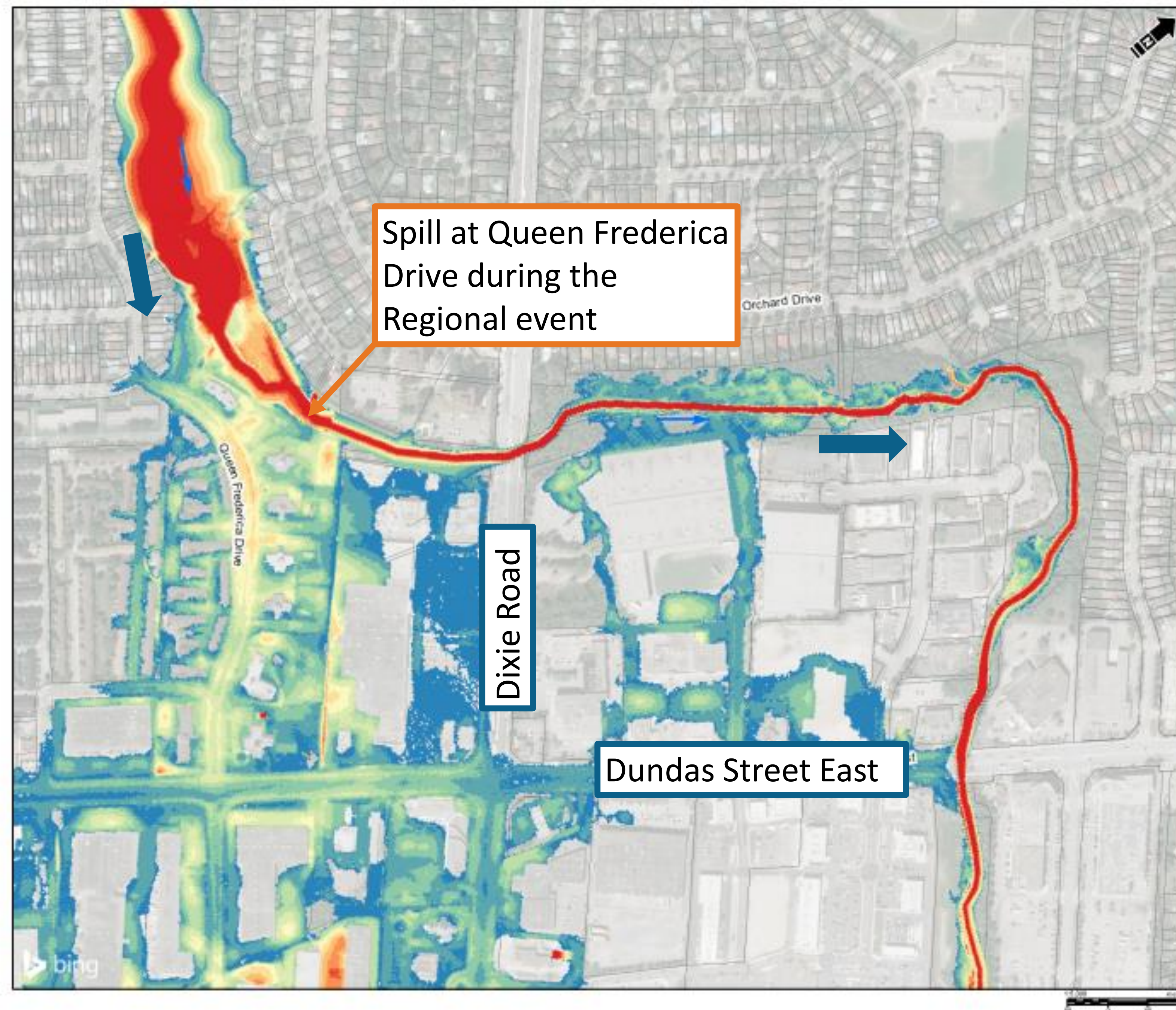
The purpose of this Project Bulletin is to:

- Introduce the public to the expanded study. The study has been expanded downstream to the Canadian Pacific (CP) railway crossing. This expanded study area includes the Dundas Street East crossing.
- Present conceptual alternative flood mitigation solutions in the expanded study area near Dundas Street East for input.
- Provide opportunity for interested parties to offer input on the evaluation criteria for the alternative solutions and identify any concerns or local information that will support the Municipal Class EA process.



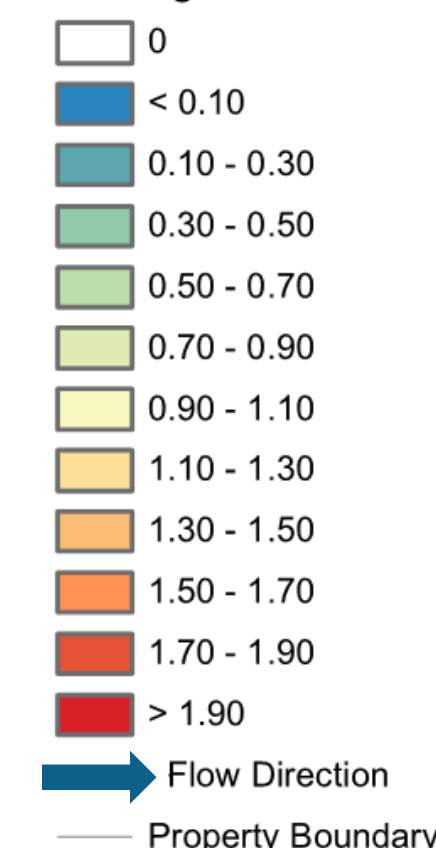
Background

Existing Flood Risks

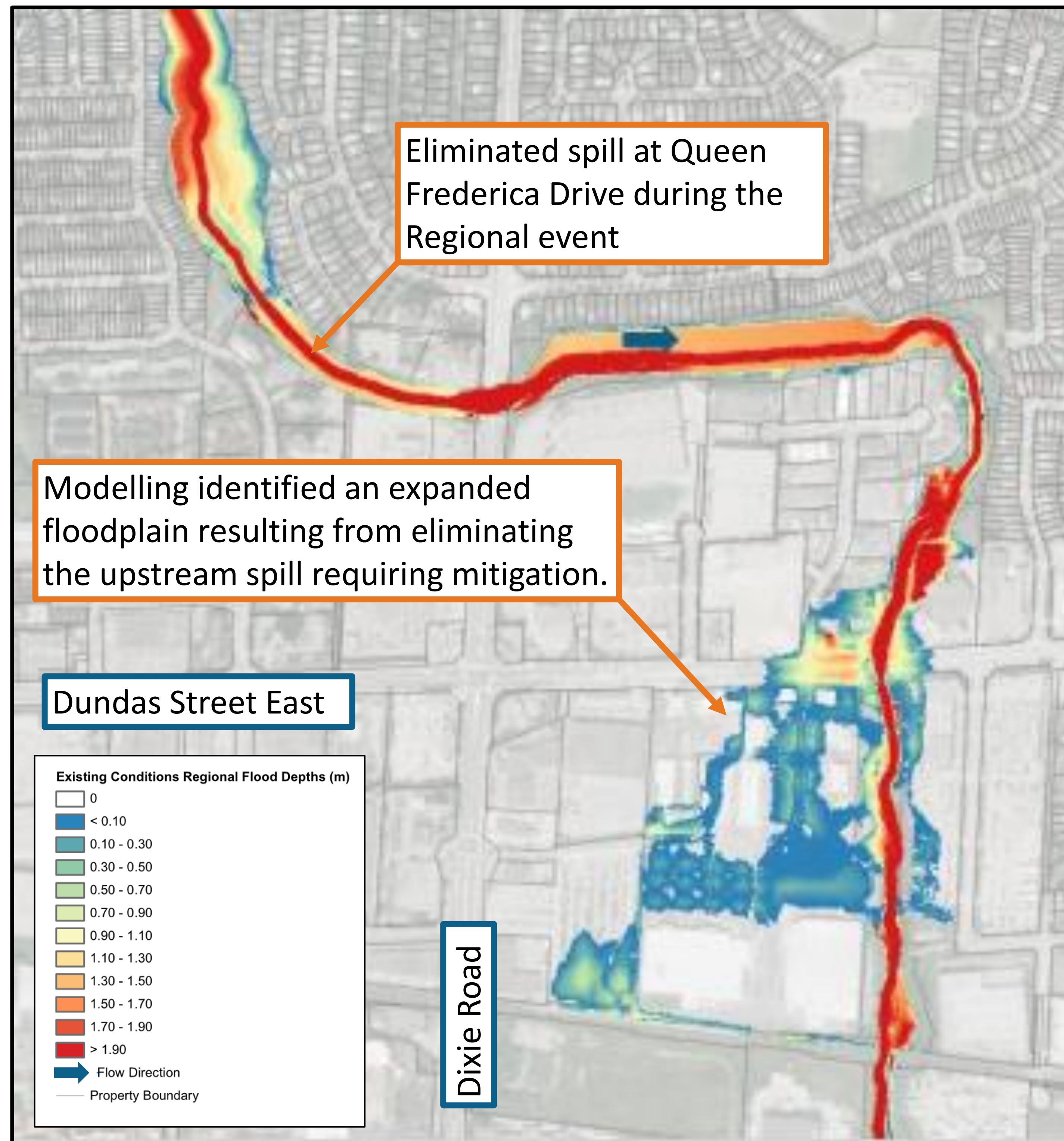


- Approximately 130 m³/s of the total 200 m³/s Regional event flow spills at Queen Frederica Drive and exits the Little Etobicoke Creek valley corridor.
- The Regional event, which is derived from Hurricane Hazel (1954), is recognized as the regulatory flood in the study area.
- The area that floods during the Regional event (i.e., the regulatory floodplain) expands over a wide urbanized area.
- Public Information Centre No. 1 (August 2020) presented alternative solutions to eliminate the upstream spill at Queen Frederica Drive.
- Ongoing study information is available at: <http://www.mississauga.ca/flooding>

Existing Conditions Regional Flood Depths (m)



Flood Risks – Expanded Study Area



- Following Public Information Centre No. 1, hydraulic modelling was updated to better represent flooding and water levels experienced at the Dundas Street East crossing for the “full flow” condition.
- The full flow condition would result from implementing a flood mitigation solution upstream near Dixie Road that eliminates the spill at Queen Frederica Drive.
- The updated modelling identified an expanded floodplain extent near Dundas Street East that was not identified in previous studies that assessed and considered the full flow condition. This expanded floodplain requires mitigation.
- As part of the expanded study, alternative solutions were identified to mitigate impacts of the expanded floodplain near Dundas Street.
- Hydraulic analysis shows that the alternative solutions near Dundas Street East **do not** impact the alternative solutions identified upstream near Dixie Road.
- A preferred alternative solution near Dundas Street East is required to be **combined** with a preferred alternative solution near Dixie Road.

Expanded Study Area

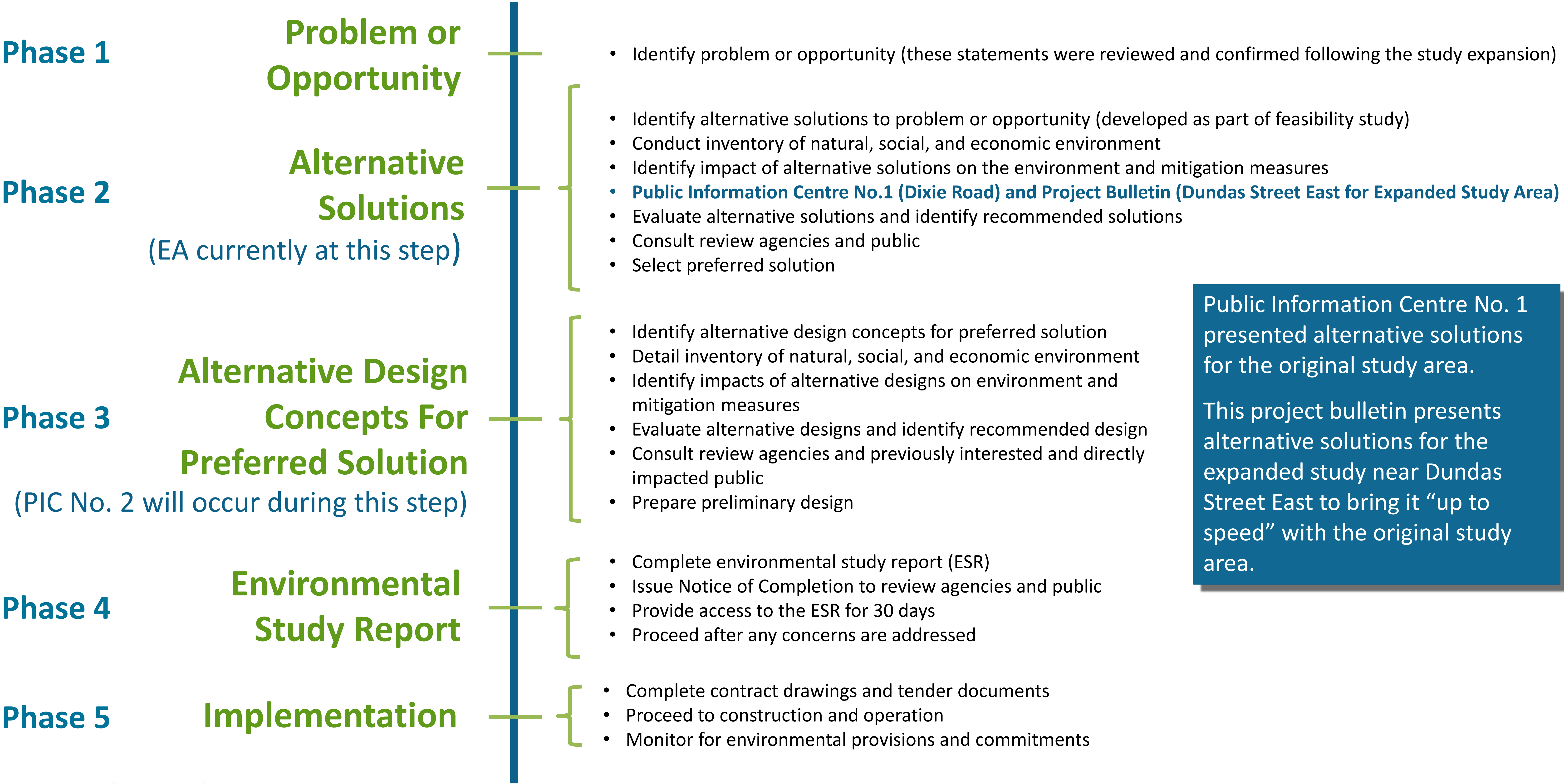


Existing Dundas Street East Crossing (Matrix 2021)

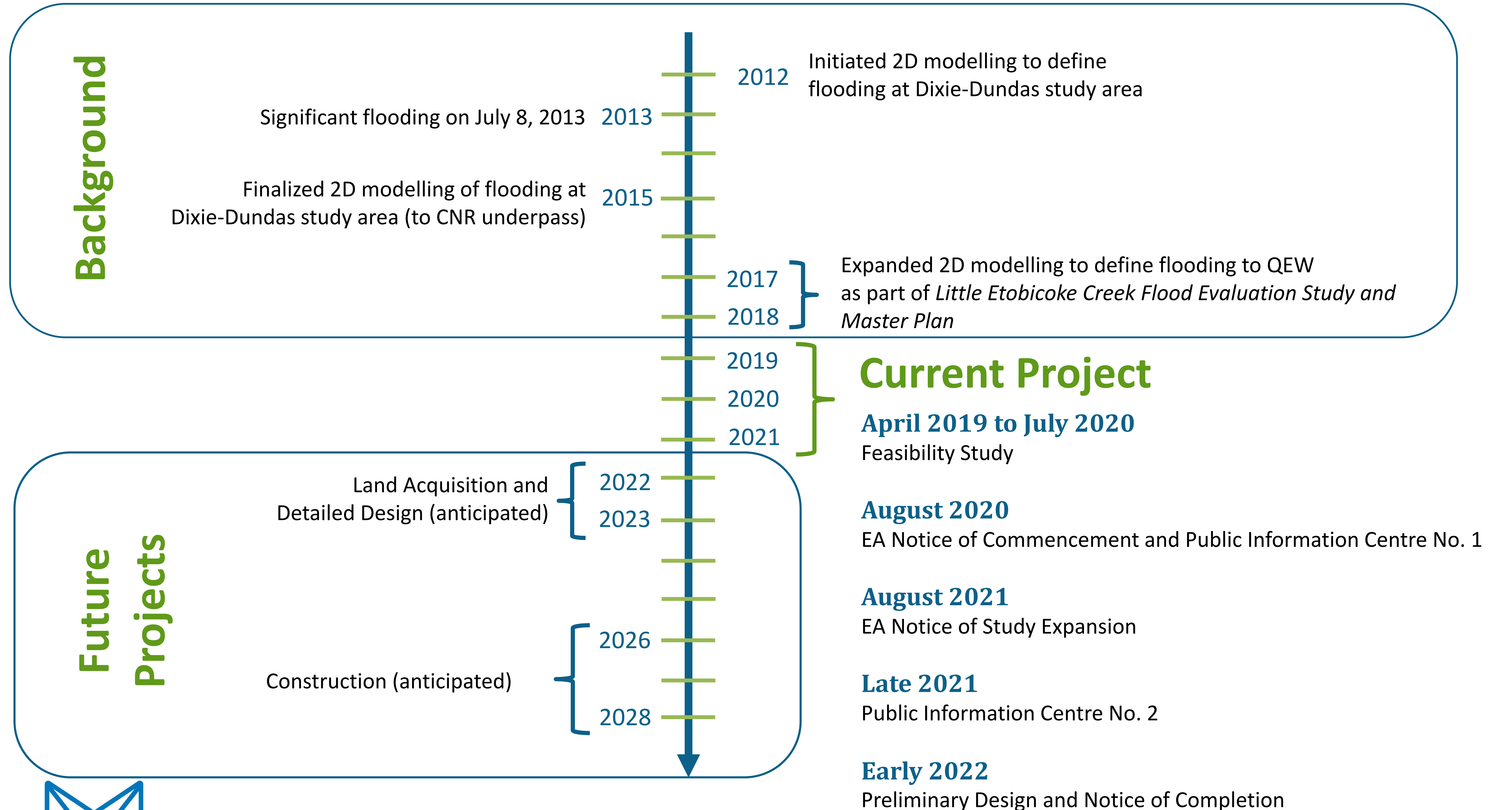


Little Etobicoke Creek downstream of Dundas Street East (Matrix 2021)

Schedule C Municipal Class Environmental Assessment



Project Timeline



Alternative Solutions

Alternative Solutions – Expanded Study Area

Hydraulic analysis concluded that replacing the Dundas Street East crossing (existing span length 6.1 m) with a larger bridge structure is hydraulically feasible and determined to be the best approach to mitigate the expanded floodplain associated with eliminating the spill upstream at Queen Frederica Drive. The alternatives will be evaluated against the “Do Nothing” option as part of the next steps in the EA process.

- **Option 1 – 25 m Span Length Bridge with Downstream Floodplain Conveyance Improvements**
- **Option 2 – 38 m Span Length Bridge without Downstream Floodplain Conveyance Improvements**
- **Option 3 – 38 m Span Length Bridge with Downstream Floodplain Conveyance Improvements**
- **Option 4 – Do Nothing**

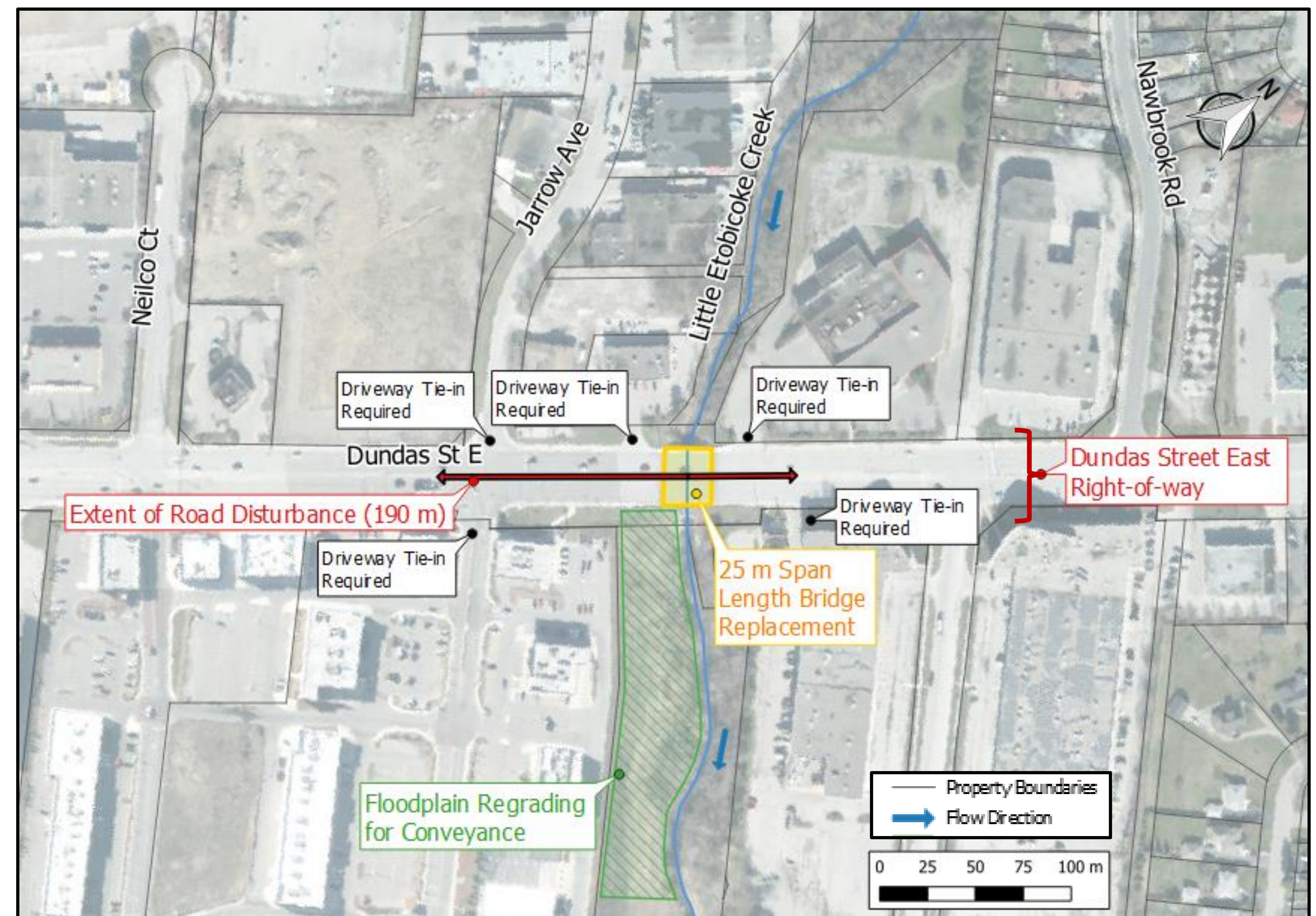
Each of the alternative solutions, options 1 to 3, mitigate the expanded floodplain identified downstream of Dundas Street East by keeping flows within the Little Etobicoke Creek valley corridor.

For each of the alternative solutions, alternative design approaches will be explored, as part of the study's next steps, to further mitigate flood impacts upstream of Dundas Street East.

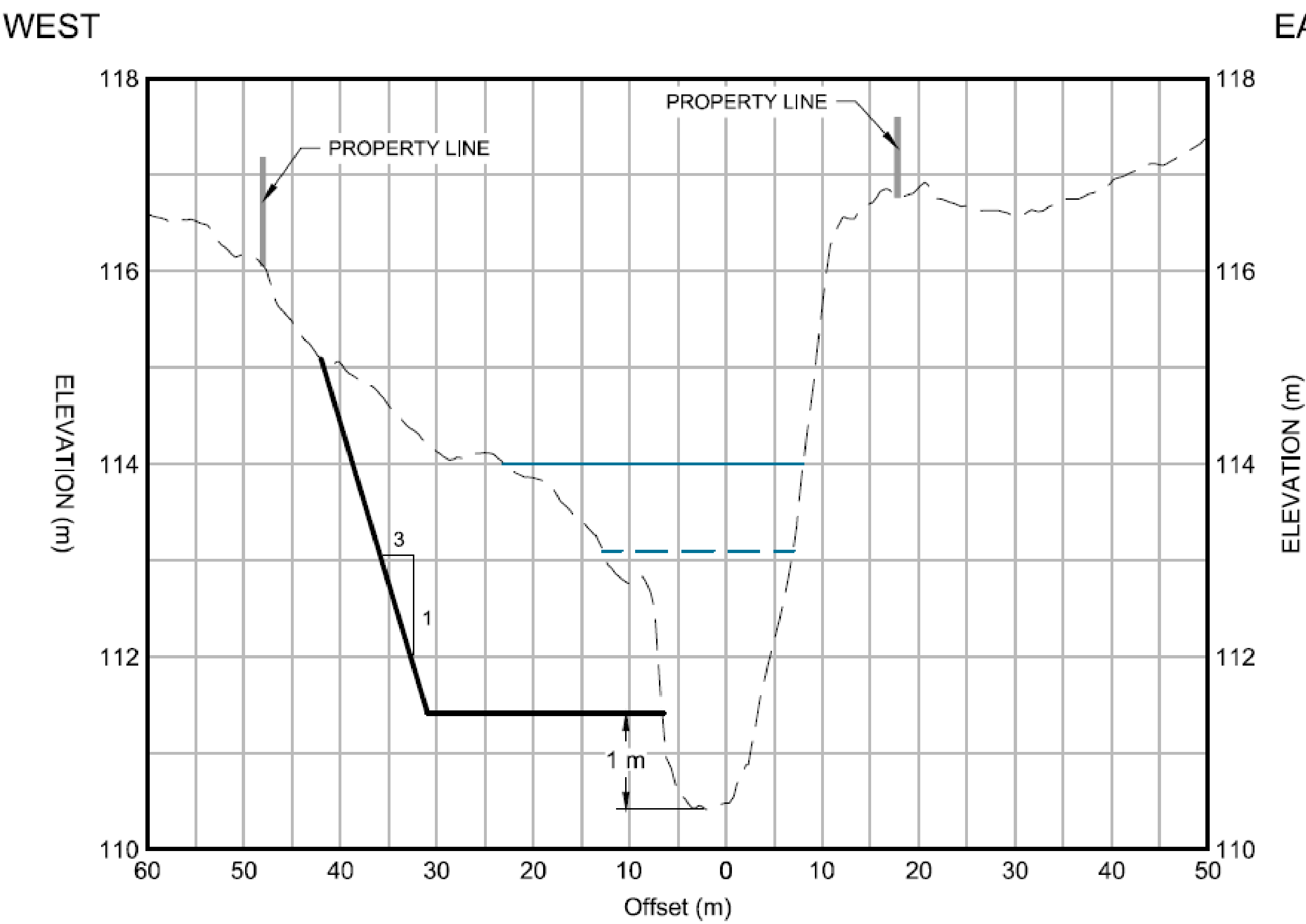
Option 1 – 25 m Span Length Bridge with Downstream Floodplain Conveyance Improvements

The 25 m length bridge option spans the existing Little Etobicoke Creek valley corridor at Dundas Street East to mitigate expanded floodplain.

- The bridge replacement option requires Dundas Street East to be raised 0.75 m at the crossing location. This elevation increase corresponds to a road disturbance length of 190 m.
- The Dundas Street East right-of-way width is being coordinated with the requirements of the Transit Project Assessment Process for the Dundas Bus Rapid Transit (BRT) Project.
- Driveways adjacent to the road disturbance are required to tie-into the raised Dundas Street East road elevation.
- The floodplain conveyance improvements lower water levels at Dundas Street East during flood conditions which in return reduces the required road elevation increase.
- Potential watermain and sanitary sewers impacts associated with the bridge replacement are being coordinated with Peel Region.



Option 1 – 25 m Span Length Bridge with Downstream Floodplain Conveyance Improvements

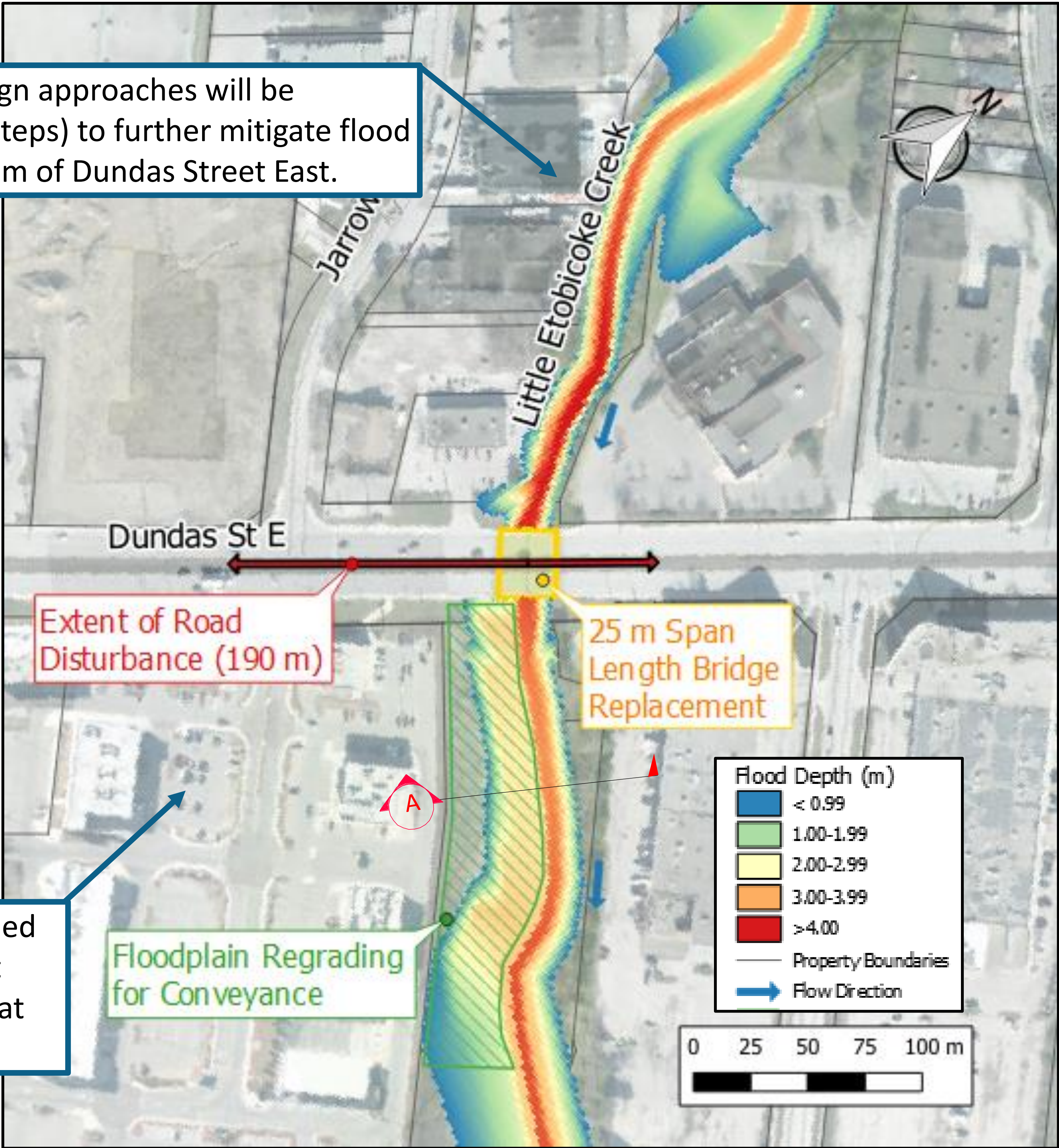


Conceptual Floodplain Conveyance Improvements (Section A)

- LEGEND**
- EXISTING GROUND
 - FLOODPLAIN CONVEYANCE IMPROVEMENTS
 - - - EXISTING REGIONAL WATER LEVEL
 - DESIGN REGIONAL WATER LEVEL
 - PROPERTY BOUNDARY

The alternative solution mitigates the expanded floodplain downstream of Dundas Street East resulting from eliminating the spill upstream at Queen Frederica Drive.

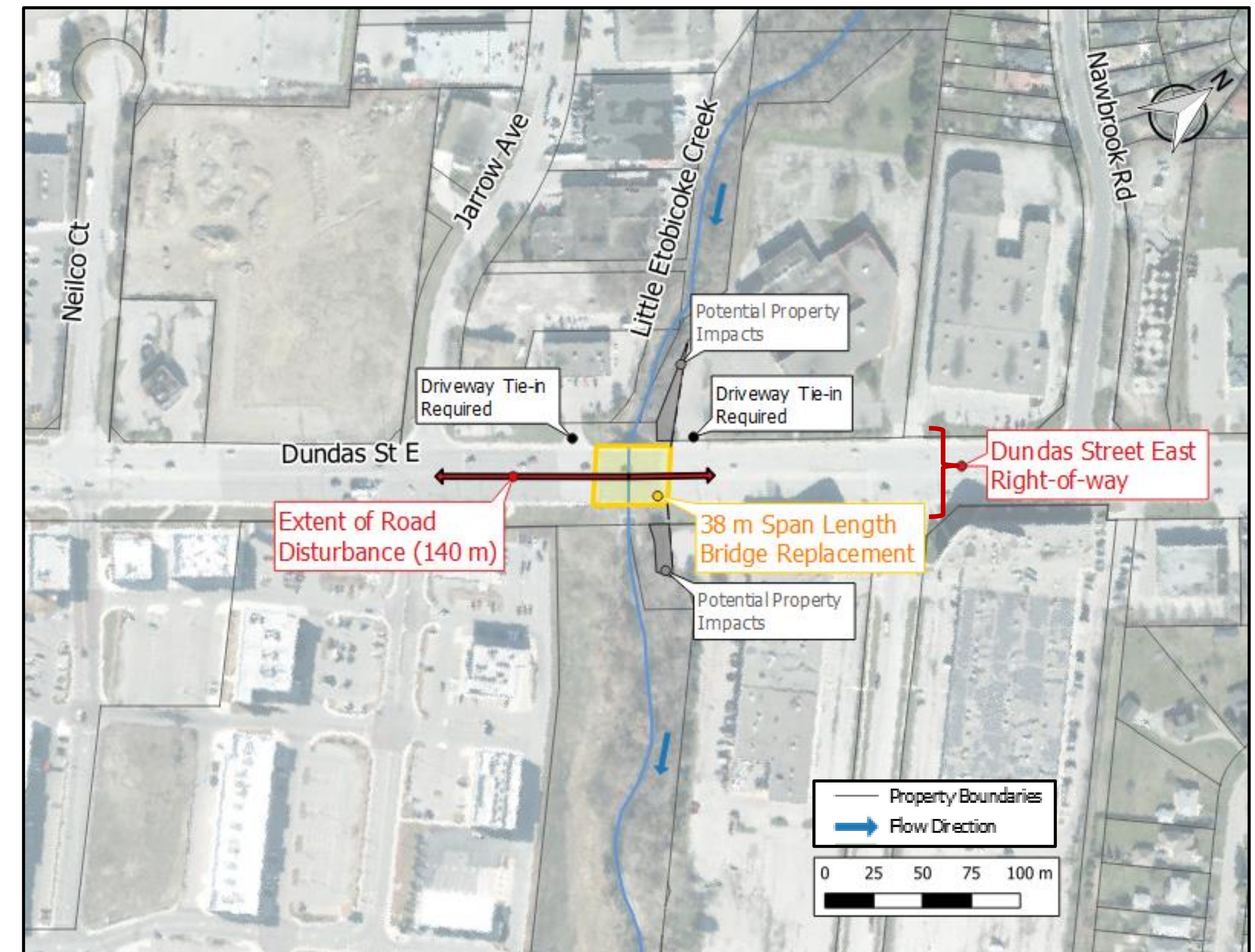
Alternative design approaches will be explored (next steps) to further mitigate flood impacts upstream of Dundas Street East.



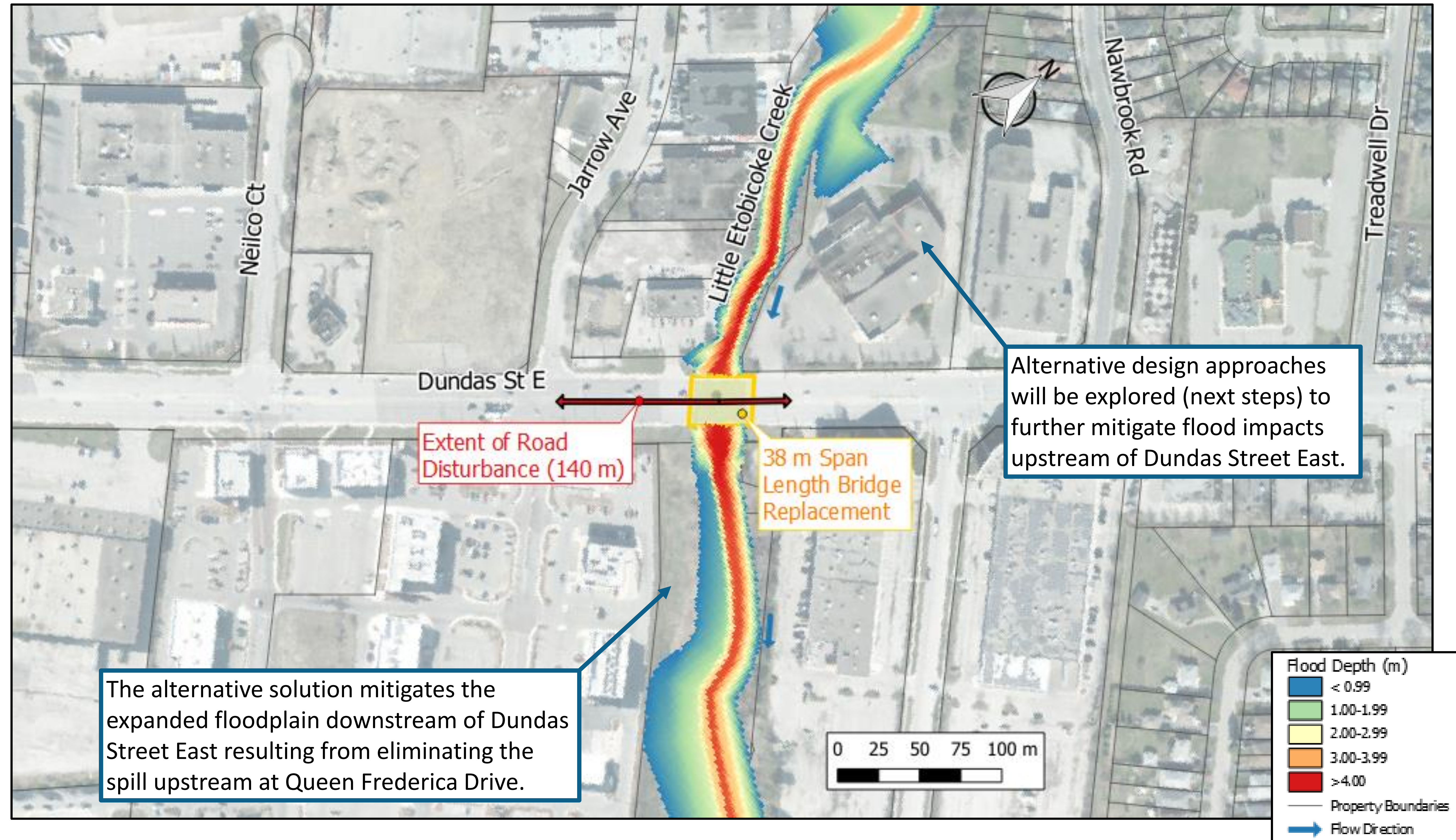
Option 2 – 38 m Span Length Bridge without Downstream Floodplain Conveyance Improvements

The 38 m length bridge option requires widening of the Little Etobicoke Creek valley at Dundas Street East to mitigate the expanded floodplain downstream.

- The bridge replacement option requires Dundas Street East to be raised 0.5 m at the crossing location. This elevation increase corresponds to 140 m of road disturbance.
- The Dundas Street East right-of-way width is being coordinated with the requirements of the Transit Project Assessment Process for the Dundas Bus Rapid Transit (BRT) Project.
- Driveways adjacent to the road disturbance are required to tie-into the raised Dundas Street East road elevation.
- Property acquisition is required to widen the Little Etobicoke Creek valley corridor at Dundas Street East.
- Potential watermain and sanitary sewers impacts associated with the bridge replacement are being coordinated with Peel Region.



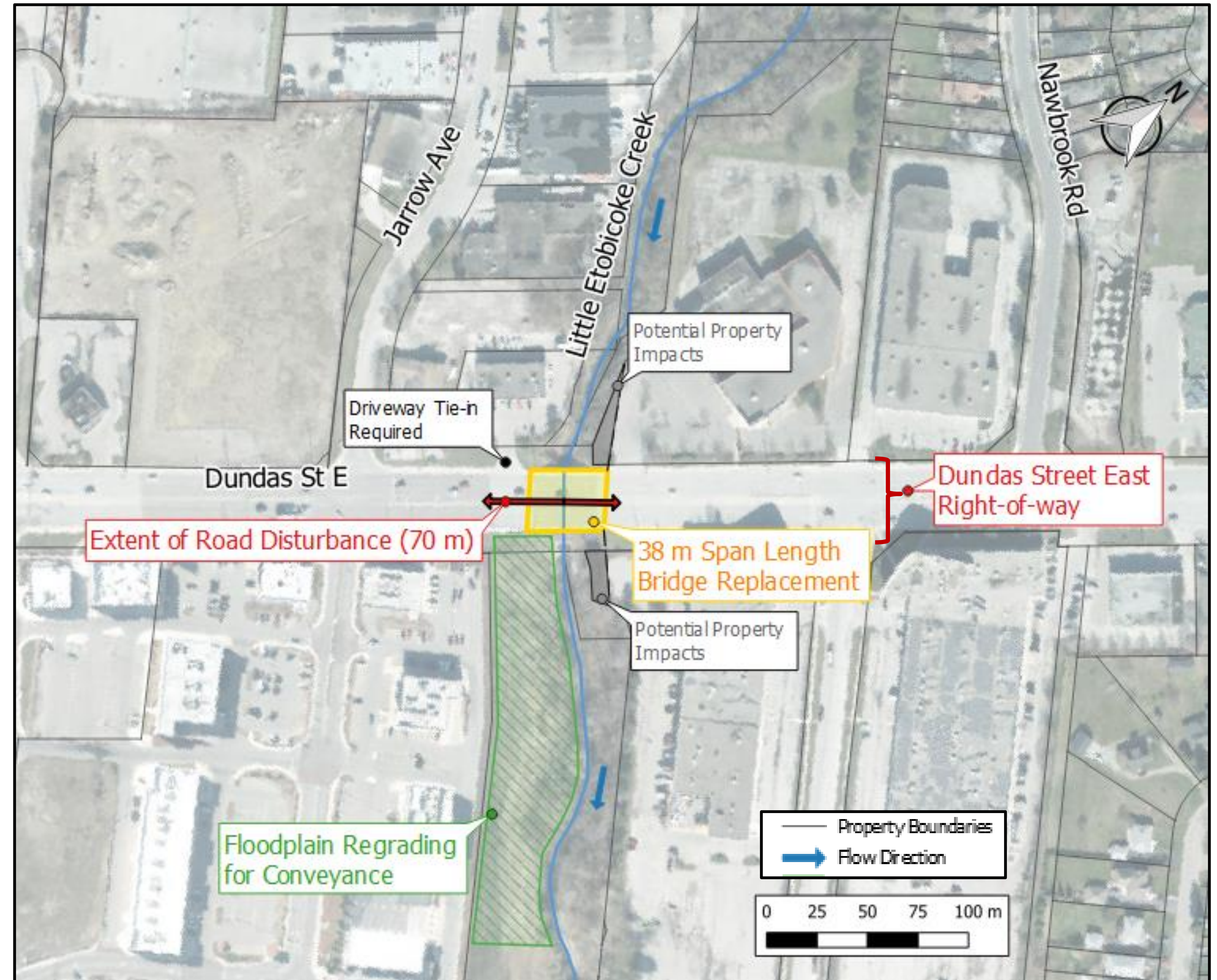
Option 2 – 38 m Span Length Bridge without Downstream Floodplain Conveyance Improvements



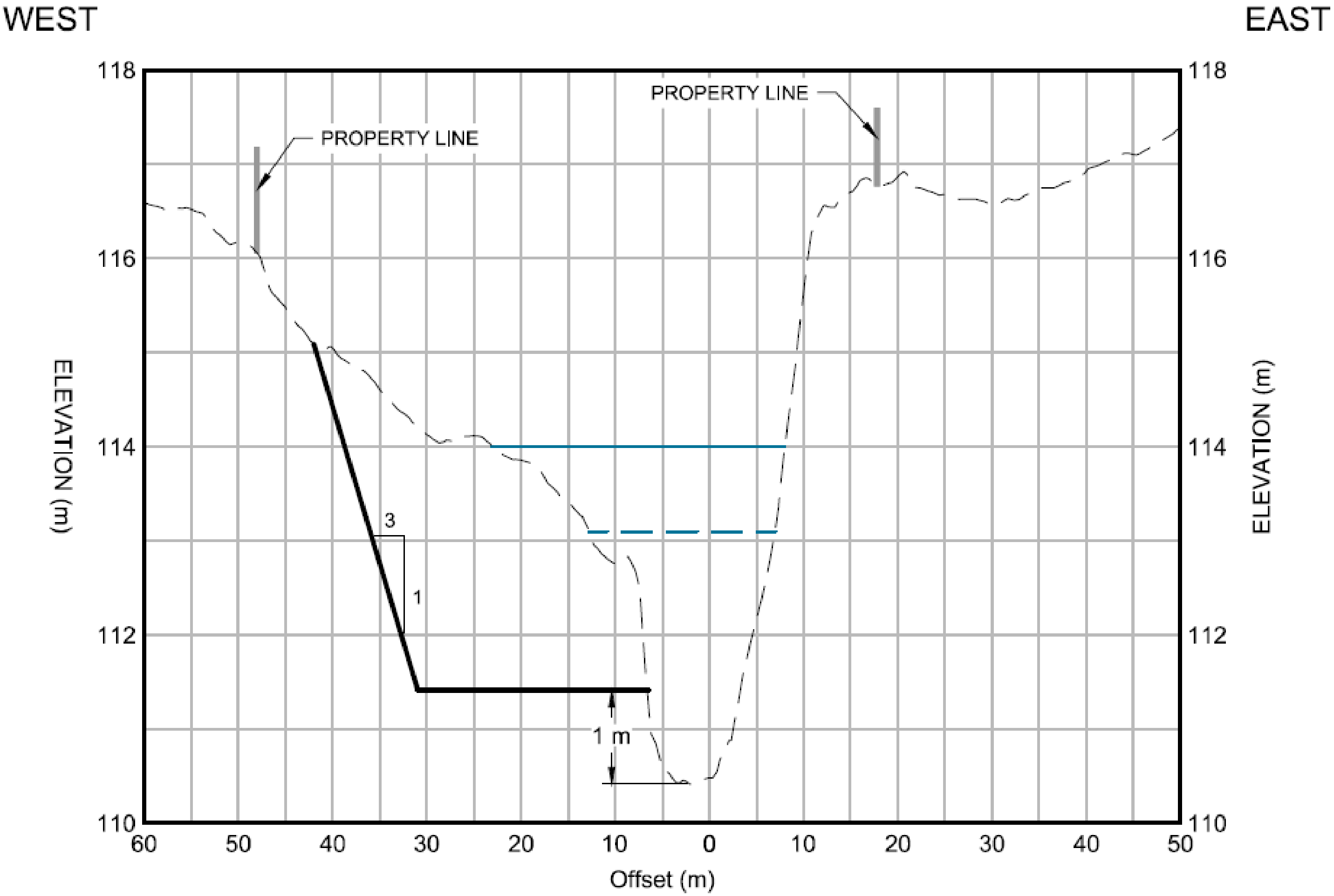
Option 3 – 38 m Span Length Bridge with Downstream Floodplain Conveyance Improvements

The 38 m length bridge option requires widening of the Little Etobicoke Creek valley at Dundas Street East to mitigate the expanded floodplain downstream.

- The bridge replacement option requires Dundas Street East to be raised 0.2 m at the crossing location. This elevation increase corresponds to a road disturbance length of 70 m.
- The Dundas Street East right-of-way width is being coordinated with the requirements of the Transit Project Assessment Process for the Dundas Bus Rapid Transit (BRT) Project.
- The driveways adjacent to the road disturbance are required to tie-into the raised Dundas Street road elevation.
- Property acquisition required to widen the Little Etobicoke Creek valley corridor at Dundas Street East.
- The floodplain conveyance improvements lower water levels at Dundas Street East during flood conditions which in return reduces the required road elevation increase.
- Potential watermain and sanitary sewers impacts associated with the bridge replacement are being coordinated with Peel Region.



Option 3 – 38 m Span Length Bridge with Downstream Floodplain Conveyance Improvements

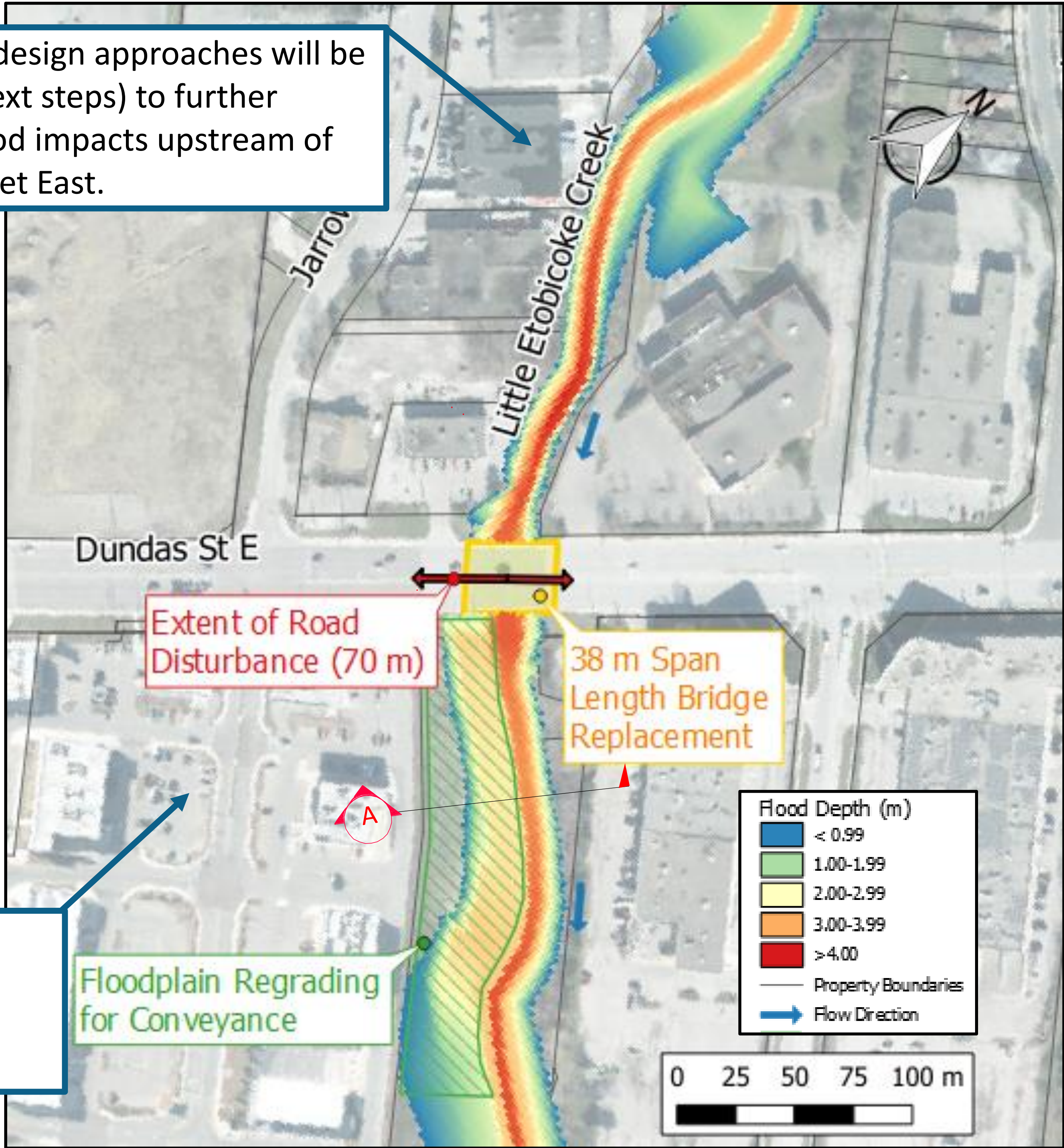


Conceptual Floodplain Conveyance Improvements (Section A)

- LEGEND**
- EXISTING GROUND
 - FLOODPLAIN CONVEYANCE IMPROVEMENTS
 - - - EXISTING REGIONAL WATER LEVEL
 - - - DESIGN REGIONAL WATER LEVEL
 - PROPERTY BOUNDARY

The alternative solution mitigates the expanded floodplain downstream of Dundas Street East resulting from eliminating the spill upstream at Queen Frederica Drive.

Alternative design approaches will be explored (next steps) to further mitigate flood impacts upstream of Dundas Street East.



Alternative Solutions Summary

Option No.	Bridge Span Length (m)	Floodplain Conveyance Improvements	Dundas Street East		High-Level Cost Estimate
			Elevation Increase (m)	Length of Disturbance (m)	
1	25	Yes	0.75	190	\$8,300,000
2	38	No	0.5	140	\$9,500,000
3	38	Yes	0.2	70	\$9,500,000

- The high-level cost estimates include bridge and road works, floodplain improvements (option 1 and 3), and property acquisition required to widen the Little Etobicoke Creek valley at Dundas Street East (option 2 and 3).
- The cost estimates do not include costs associated with impacts to the concurrent watermain and sanitary sewer projects by Peel Region located near Dundas Street East and Little Etobicoke Creek. Preliminary project coordination identified that Option No. 1 would likely result in less impacts to these concurrent infrastructure projects compared to the other options.
- The high-level cost estimates will be refined as the study progresses.

Technical Studies

The project team is conducting four technical studies within the expanded study area to identify constraints and opportunities that will inform the evaluation of the alternative flood mitigation solutions and the development of the preferred alternative solution as part of the next phases in the EA.

Technical Studies

Geotechnical Study (Thurber 2021)

Assessment of existing conditions including:

- Slope stability
- Pavement conditions
- Preliminary recommendations for bridge foundation
- Recommended geotechnical drilling for design



Dundas Street East Bridge (Thurber 2021)

Fluvial Geomorphology Study (Matrix 2021)

Characterization of the Creek's geomorphology including:

- Channel stability and options for erosion mitigation
- Fish habitat considerations
- Channel design recommendations



Little Etobicoke Creek (Matrix 2021)

Stage 1 Archaeology Assessment (ASI 2021)

Assessment of the archaeological potential that:

- Confirmed no known archaeology sites within the expanded study area
- Identified areas where a Stage 2 assessment are required before construction



Little Etobicoke Creek (ASI 2021)

Natural Heritage Study (Matrix 2021)

Inventory of the natural heritage within the study area including:

- Woodlands
- Wildlife habitat
- Fish and fish habitat



Little Etobicoke Creek (Matrix 2020)

Evaluation Criteria

The conceptual alternative solutions including the “Do Nothing” approach will be evaluated based on the following criteria. The criteria will be updated to include input received from the public, Indigenous communities, and other project stakeholders.

Technical	Economic	Environment	Social
<ul style="list-style-type: none">• Flood risk improvement• Construction approaches• Climate change improvements	<ul style="list-style-type: none">• Capital costs• Operation and maintenance• Urban development considerations	<ul style="list-style-type: none">• Ecology• Geomorphology• Archaeology	<ul style="list-style-type: none">• Policy considerations• Public input• Property acquisition• Public safety• Support of parallel planning initiatives

Next Steps

Next Steps

Next Steps in the EA process include:

1. Integrate input from the public, Indigenous Communities, and other project stakeholders
2. Complete a detailed evaluation of alternative solutions in the expanded study area
3. Confirm preferred alternative solution for the original study area at Dixie Road and the expanded study area near Dundas Street East
4. Identify alternative design approaches for the preferred alternative solution
5. Public Information Centre No. 2
6. Advance the preliminary design of the preferred alternative design solution

COVID-19 Community Engagement Update: While we continue to respond to this pandemic, we are working hard to deliver essential services and projects to keep our City moving and safe. While we can't connect in-person at this time, we still want to connect! Please find above how we can connect on this project and for you to share your input.



Reminder

- Further ongoing study information is available at: <http://www.mississauga.ca/flooding>
- To sign up for the mailing list and/or to provide comments, please complete send an email to either of the contacts below
- Input will be received until **November 26, 2021**

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