WELCOME

Colborne Street (East) Slope Stabilization
Municipal Class Environmental Assessment

Public Information Centre No. 1

Mohawk Park Pavilion
September 13, 2018
4:00 pm - 6:00 pm

PLEASE SIGN IN AND TAKE A COMMENT SHEET

THE CORPORATION OF THE CITY OF BRANTFORD

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ARCHAEOLOGY | HERITAGE | OUTREACH | EDUCATION

PINCHIN

ecosystem recovery inc.
PROFESSIONAL ENGINEERS

The Purpose of this Information Centre

- ❑ Provide information on the Environmental Assessment (EA) study purpose and background
- ❑ Describe the process that will be followed for the EA study
- ❑ Indicate EA activities now in progress
- ❑ Provide a characterization of the study area and its elements
- ❑ Provide an opportunity for your input

Study Purpose

The EA study follows the **Municipal Class Environmental Assessment** under Schedule ‘C’ for the slope area situated between Colborne Street (East) and the north bank of the Grand River at a road section between Calvin Street to the west, and Johnson Road to the east in the City of Brantford.

Problem Statement:

Since the landslide event that occurred in 1986, several studies have been completed to determine cause and effects. Monitoring shows that slope movement continues to occur. Slope stability concerns revolve around soil type and moisture issues as well as toe erosion.

The EA is being initiated to develop feasible alternatives to address stability concerns and to create a management strategy for the area.

Background Information and Timeline

Beach Road after 1986 landslide

1987
First Environmental Study Report (ESR) completed by Golder for GRCA. Landslide was determined to be primarily caused by ongoing riverbank erosion and high groundwater levels. First slope stability analysis completed as part of report.

1988
Canadian Pacific Railway removed.

951 Colborne Street (East) after 1986 landslide

1986
Major slope failure on South side of Colborne Street, Initiates investigations into slope failure within study area. Slope monitoring begins with installation of monitoring equipment.

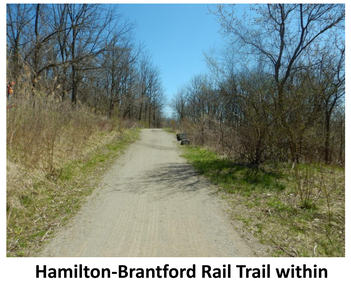
1995
Second ESR completed by Golder; presented the preferred alterative as toe erosion protection with minor regrading of the slope.

1996
Former railbed converted to Hamilton-Brantford Rail Trail.

Railway along Beach Road after 1986 landslide

1999
Grand River bank failure along toe of slope.

929 Colborne Street (East) after 1986 landslide



Hamilton-Brantford Rail Trail within Study Area, April 2016

2012
Update to 1995 ESR including revisiting slope stability, no change to the preferred alternative. A detailed Environmental Assessment was noted as required to adopt a preferred solution.

2015/2016
Additional studies to review slope monitoring data and collect additional field observations undertaken by Ecosystem Recovery Inc.

Evidence of toe erosion, including bare banks and fallen trees, April 2016

2018 (Today)
First PIC for Municipal Class Schedule 'C' EA for Colborne Street (East) Slope Stabilization.

2019 (June)
Anticipated final draft of Environmental Study Report for Municipal Class EA delivered to City of Brantford.

Slope monitoring in 2016, unstable slope evidence (left) and slumping near property line (right)

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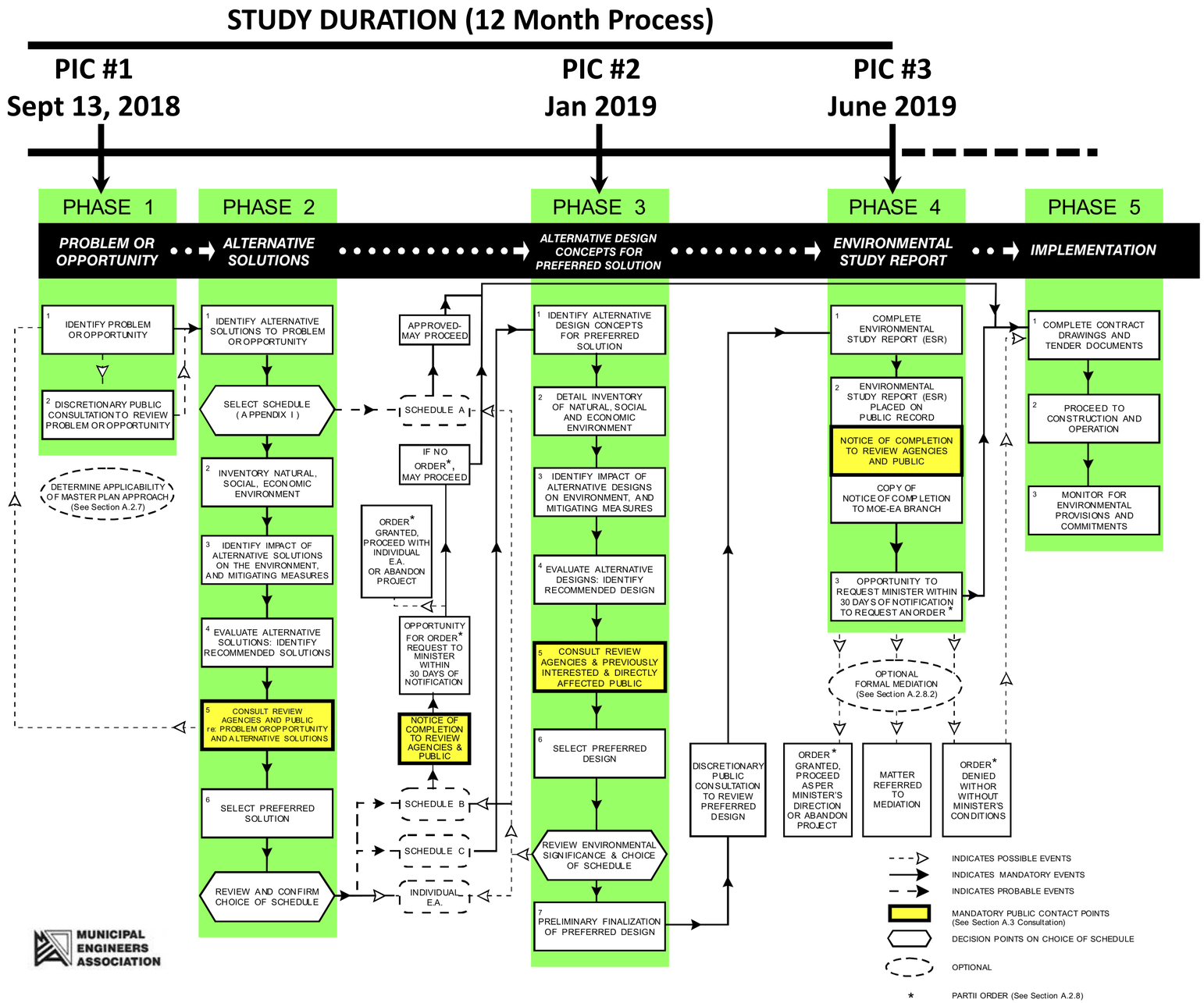
Municipal Class EA Process Overview

- The Municipal Class EA process provides opportunities for **public and stakeholder involvement** throughout the study
- Ensures that all **reasonable alternatives** are considered and that a selected alternative would have minimal impact on the surrounding environment
- The Colborne Street (East) Slope Stabilization EA study is being undertaken as a **Schedule 'C'** Class EA Project, which provides the most opportunity for public input



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Characterization of Existing Conditions

Site Geometry

Description: General description of the slope area

Quick Facts:

- Study area spans approximately 1.1km along the Grand River.
- Slope height is an average of 31m.
- Currently six (6) private properties are located adjacent to the slope.

Geotechnical

Description: Slope condition and hydrogeologic factors

Quick Facts:

- Slope is defined with an upper slope, table land and lower slope.
- Overburden is approximately 40m thick with two silty clay layers intersected by a sand layer.
- Groundwater measured within 1m of lower slope and rises to 3m below table land surface.
- Main influencing factors affecting slope stability are high groundwater levels and toe erosion.

Geomorphological

Description: Grand River impacts on slope

Quick Facts:

- Previous ESR suggests toe erosion from Grand River is a factor in slope instability.
- Slope toe movement tends to be greater in lower zones due to erosion impacts.
- Grand River width was reduced to half as a result of the 1986 slope failure. Since 2012 it has returned to its pre-failure width.

Surface Runoff

Description: Impact of overland flow and hydrologic conditions on slope

Quick Facts:

- Surface runoff from Colborne Street increases soil moisture at top of slope, increasing potential for slope failure.

Natural Heritage

Description: Potential impacts on natural environment

Quick Facts:

- Study area includes lowland deciduous forest and mineral cultural thicket.
- No species at risk have been identified; however significant plant, fish and mussel species are known to be in the area.
- Potentially suitable bat habitat exist.
- Vegetation includes native and non-native species.

Social

Description: Impacts on communities

Quick Facts:

- Relocation of eight (8) properties within the study area occurred between 1995 and 2012, currently six (6) private properties are located adjacent to the slope.
- Hamilton-Brantford Rail Trail, which begins along Beach Road within the study area, is a well-used recreational asset.

Economic

Description: Costs and life cycle impacts

Quick Facts:

- Colborne Street (East) is a major arterial road.

Archaeological

Description: Archaeological significance of Study Area

Quick Facts:

- Study area meets the Ministry of Tourism, Culture and Sport's (MTCS) criteria for requiring a Stage 1 Archaeological Assessment.
- Proximity to known archaeological sites, water sources, early historic settlements and transportation routes.
- The study area is within 1 km of 43 registered archaeological sites.
- Area is within the historic community of Cainsville.
- Colborne Street is a historic transportation route.

Built and Cultural Heritage

Description: Built heritage and cultural heritage landscapes

Quick Facts:

- The criteria from the Ministry of Tourism, Culture and Sport suggests that the proposed EA meets the criteria for evaluation.
- The study area is within a Canadian Heritage River watershed.
- The study area contains structures over 40 years old.
- The study area contains the Hamilton-Brantford Rail Trail which follows a section of the old Toronto, Hamilton and Buffalo Railway.

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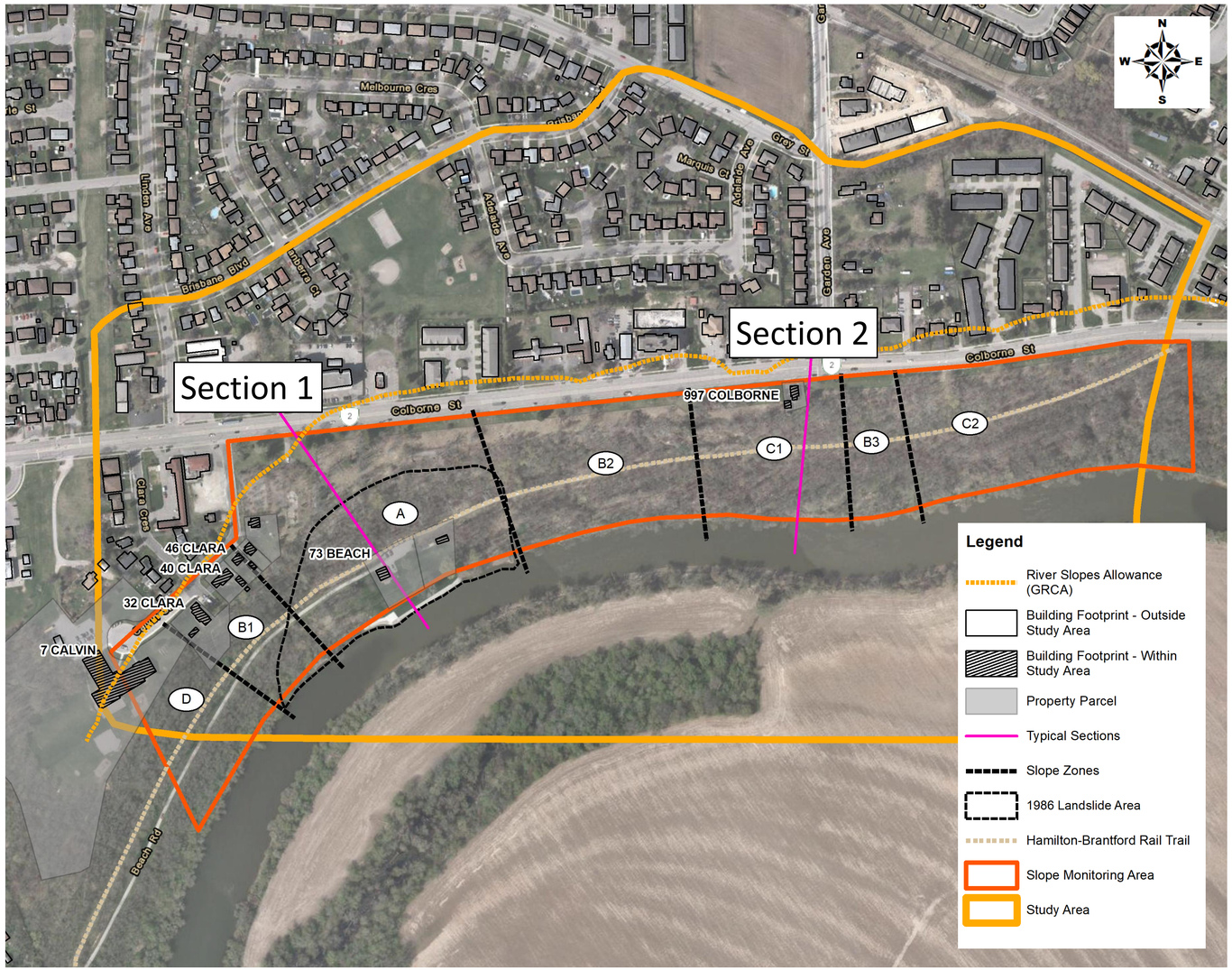
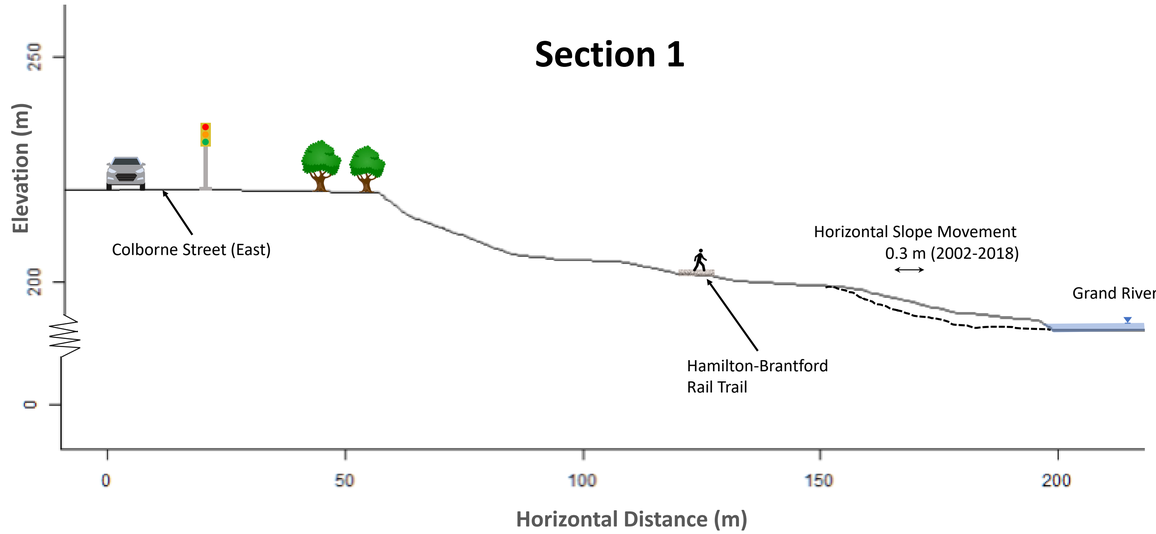
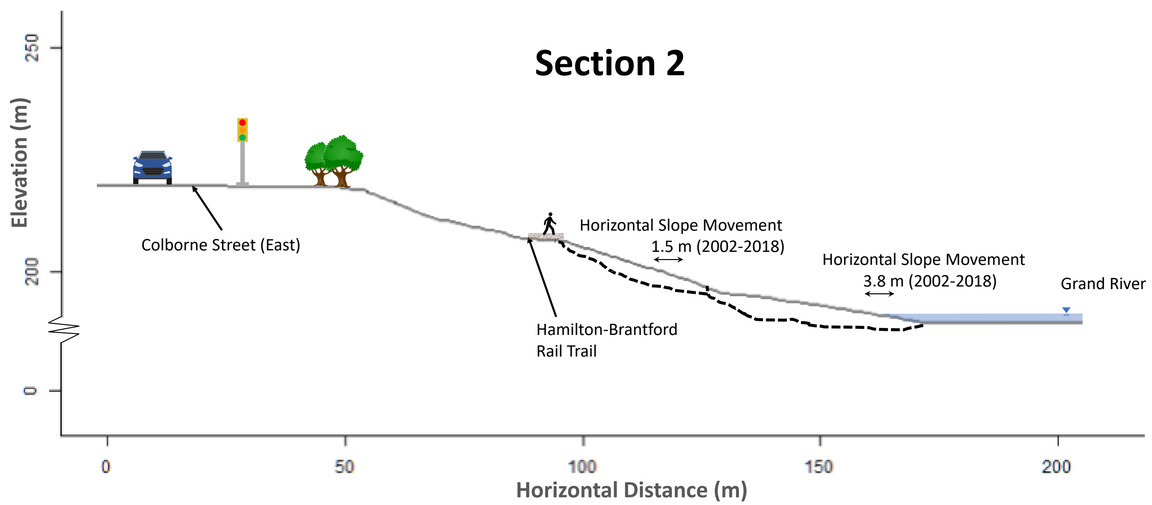
Colborne Street (East) Slope Study Area







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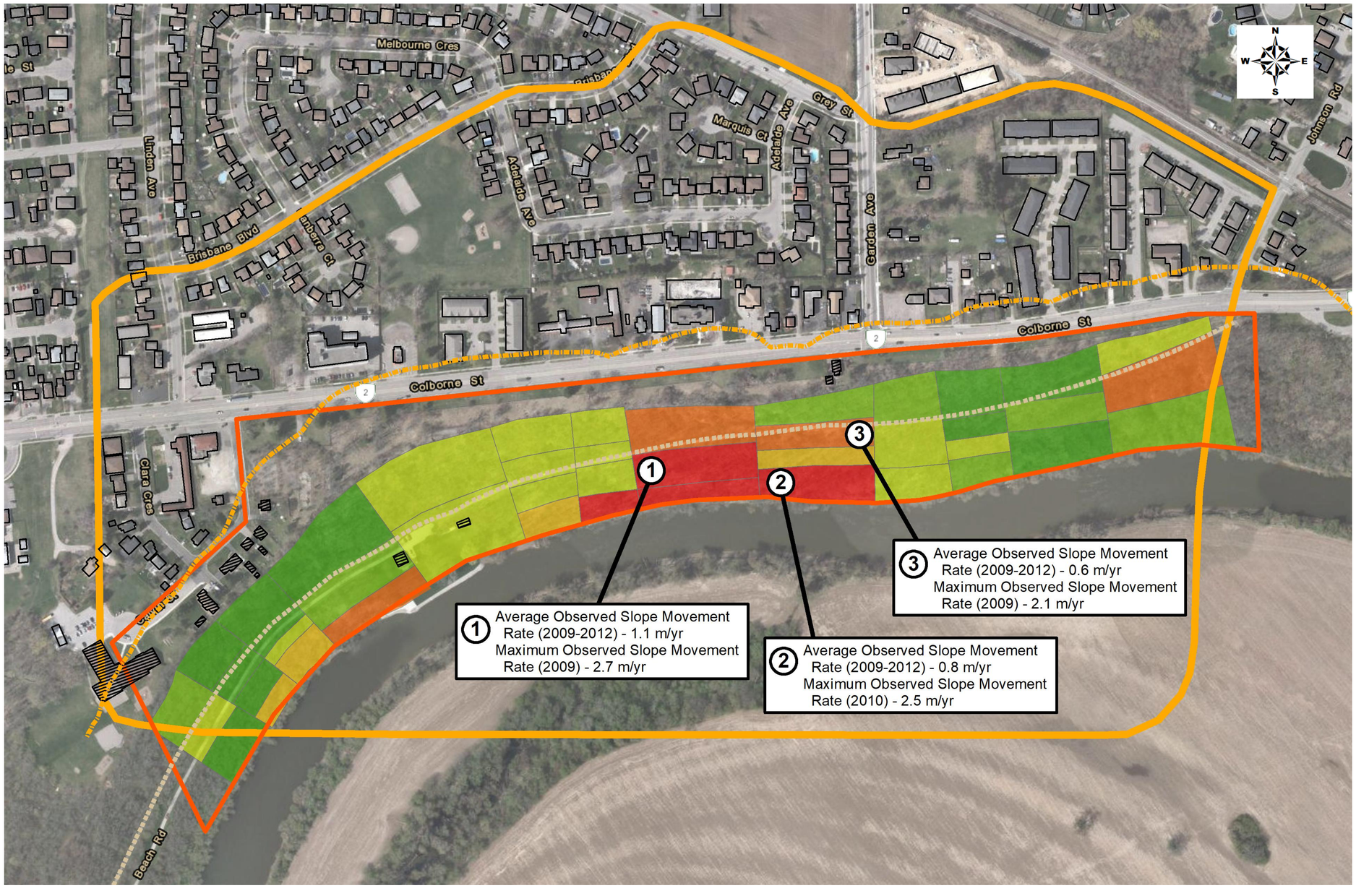
Colborne Street (East) Slope Movement Rates



Legend

- River Slopes Allowance (GRCA)
- Building Footprint - Outside Study Area
- Building Footprint - Within Study Area
- Hamilton-Brantford Rail Trail
- Slope Monitoring Area
- Study Area

Average Observed Slope Movement Rate (m/yr), 2002-2018

- 0.009 - 0.022
- 0.023 - 0.037
- 0.038 - 0.086
- 0.087 - 0.163
- 0.164 - 0.248
- 0.249 - 0.433

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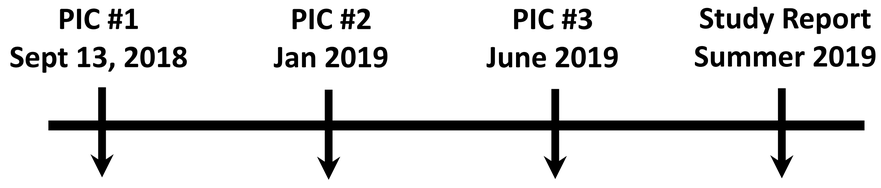
Next Steps before PIC #2

- ❑ Complete the characterization of existing conditions
- ❑ Develop alternative solutions
- ❑ Develop evaluation criteria
- ❑ Conduct evaluation of alternatives
- ❑ Public Information Centre #2 (January 2019)
  - Summarize characterization of existing conditions
  - Present alternative solutions and evaluation
  - Receive public input on alternative solutions



Project Contacts

Please complete a Comment Sheet and leave it here today, or return it to Jeff Prince by Friday, September 28, 2018.

Should you have any questions or concerns at any time during the project, please contact either of the following people:

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