

# PICKERING AND AJAX DYKES REHABILITATION

## Class Environmental Assessment

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**PUBLIC INFORMATION CENTRE #1**  
**OCTOBER 30, 2019**

# LAND ACKNOWLEDGEMENT

We acknowledge the land we are standing on is the traditional territory of nations including the Mississauga's of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat people and is now home to many diverse First Nations, Inuit and Métis peoples.

# WHERE IS THE PROJECT?

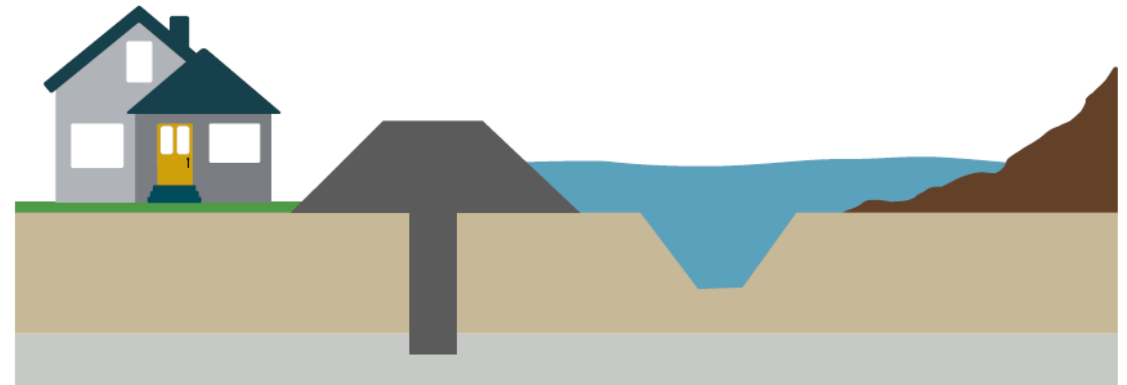


# HISTORY OF FLOODING

- Before the dykes were constructed the adjacent residential areas flooded frequently
- **1980's (approximately) Special Policy Area (SPA) Designation** for Village East and Notion Road Pickering Village communities
- **1984-1985 Pickering and Ajax Dykes constructed**  
Designed to provide flood protection for the communities up to the 500-year storm flood

## WHAT IS A DYKE?

A flood control dyke is a long wall or embankment built to prevent flooding from a river course.



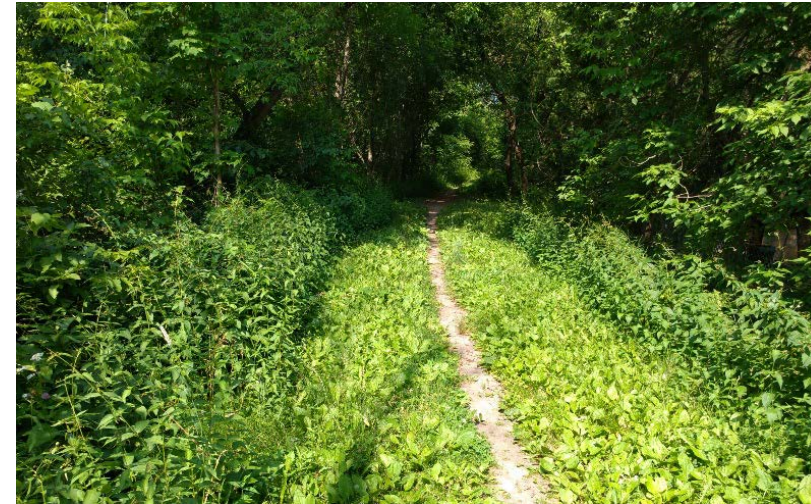
## WHAT IS A SPECIAL POLICY AREA?

A Special Policy Area is a land use planning designation. It acknowledges that there is already development in a flood-vulnerable area, and that only limited changes can be made to the development in the flood plain.

# WHAT IS THE PROBLEM?

## THE DYKES ARE AT RISK OF FAILURE

- The dykes do not meet the current engineering design standards
- Significant erosion of the creek banks in areas adjacent to the Pickering Dyke
- Other issues
  - Tree growth and root systems compromising integrity
  - Narrow crest width limits access for maintenance



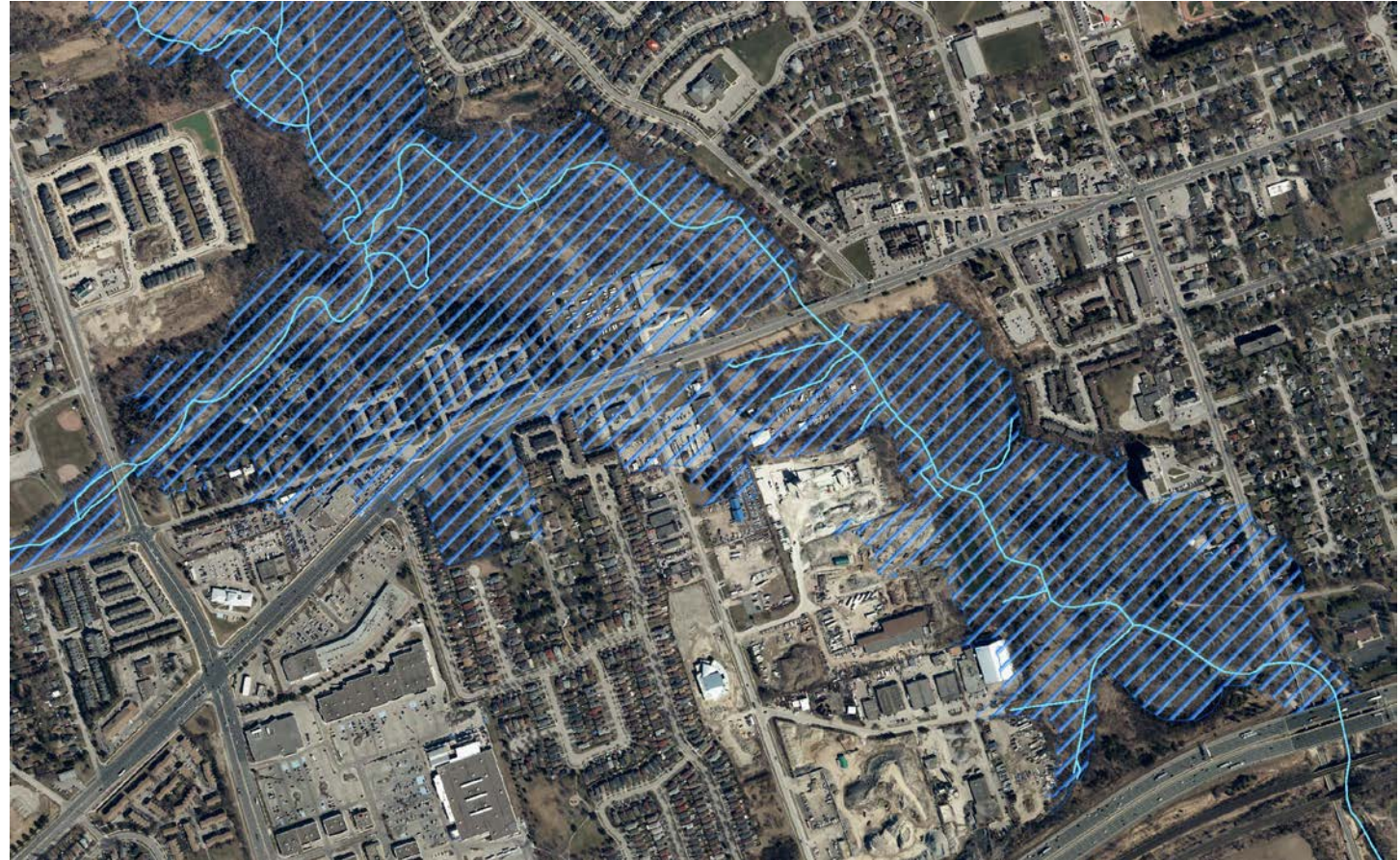
Narrow dyke crest and tree growth on dyke.



Creek bank erosion repair.

# WHAT IS THE OPPORTUNITY?

- **Meet current design standards**
  - Ensure performance of flood protection at the current crest levels at minimum.
- **Protect the dykes against channel bank erosion**
- **Enhance the natural environment**
- **Allow for future improvements**

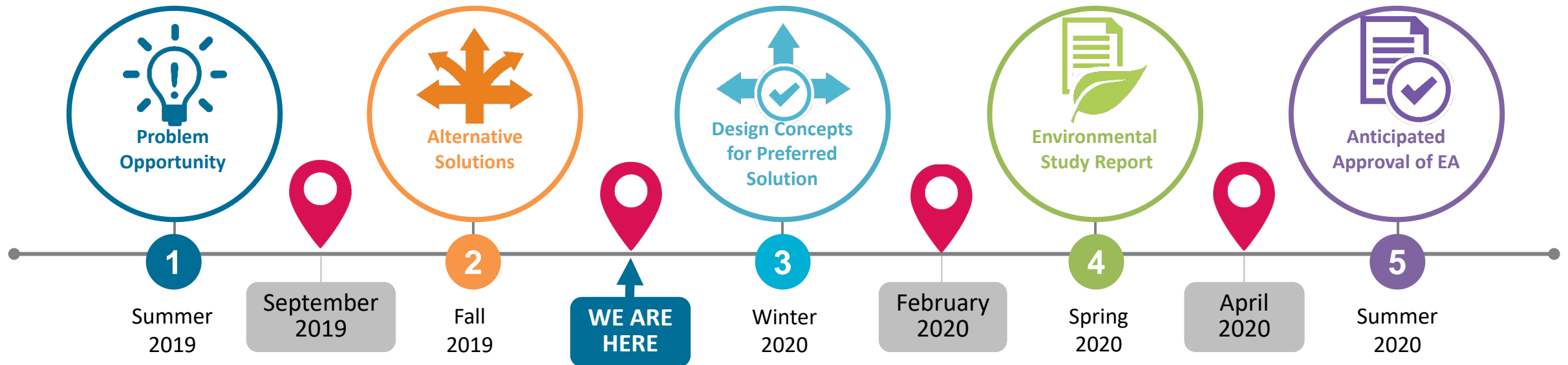


Potential extent of flooding without dykes (100 year storm event).

# CLASS ENVIRONMENTAL ASSESSMENT PROCESS

## Conservation Ontario Class Environmental Assessment

 PUBLIC CONSULTATION



**The Pickering and Ajax Dykes Rehabilitation Project is following the Class EA process for Remedial Flood and Erosion Control Projects outlined by Conservation Ontario.**

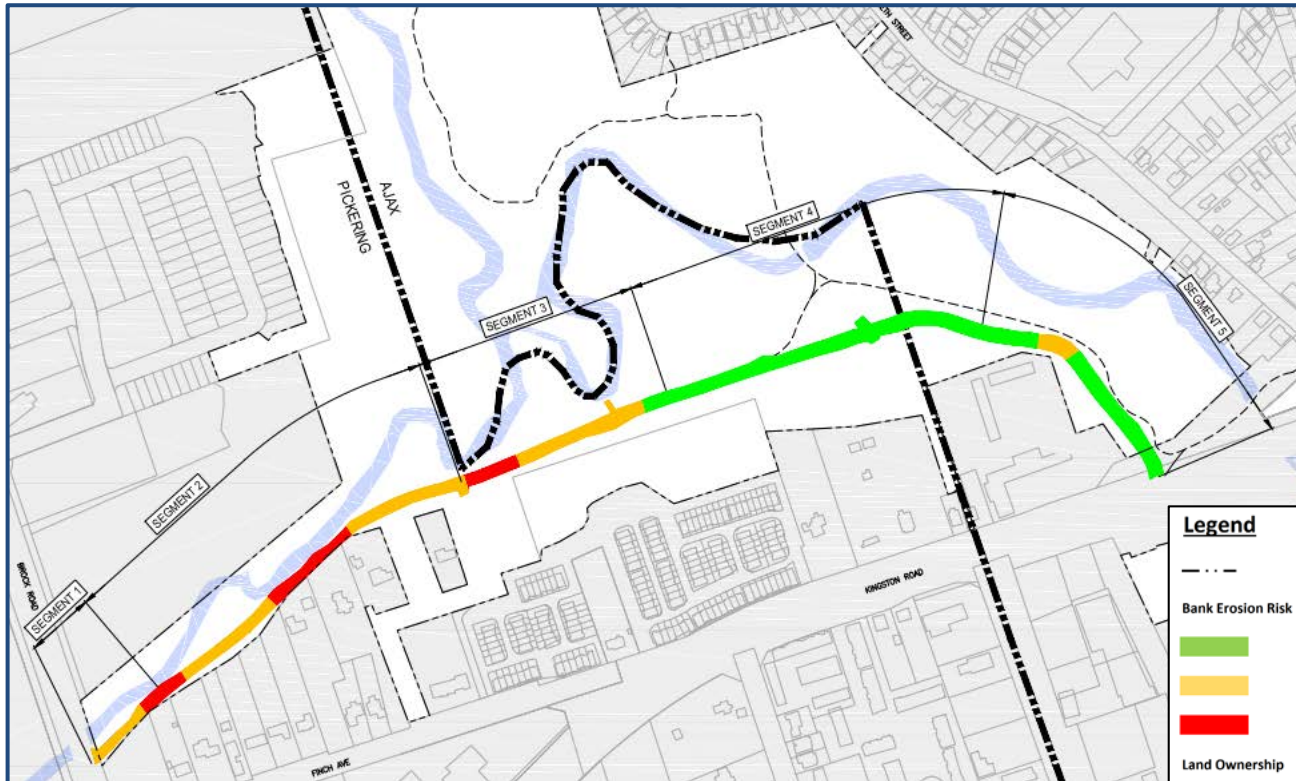
### Project Tasks Completed:

- ✓ Define the problem & opportunity.
- ✓ Prepare initial stakeholder list. Publish Notice of Commencement.
- ✓ Inventory of baseline conditions within study area.
- ✓ Develop alternatives solutions the address the problem.
- ✓ Evaluate alternative solutions.
- ✓ Stakeholder consultations including meetings with various committees.

# DYKE SEGMENTS

- The dykes were divided into segments based on unique characteristics of the dyke and surrounding area.
- Segmentation allows for a solution unique to each segment.

## PICKERING DYKE



## AJAX DYKE

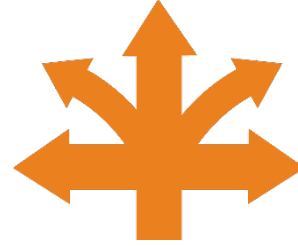


### NOTABLE CONDITIONS

- Does not meet engineering standards
- Space limitations – property impacts
- Channel erosion
- Excessive vegetation / root systems
- Trails
- Utilities
- Protected terrestrial and aquatic species



# WHAT ARE ALTERNATIVE SOLUTIONS?



## ALTERNATIVE SOLUTIONS

are different ways to reduce flood risk to life and property.

### Alternative Solutions must:

- Provide at minimum, the level of flood protection associated with the current dyke crest elevations
- Meet current engineering standards
- Include the Do-Nothing alternative

**This project will not change current limitations on development.** The Special Policy Area designation and planning permit requirements will remain in effect.

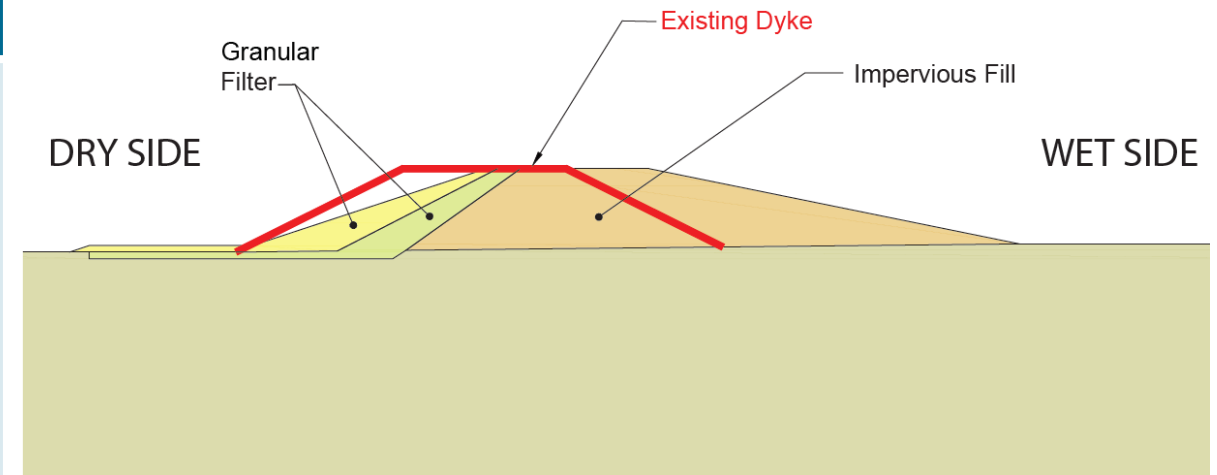
# PRELIMINARY ALTERNATIVE SOLUTIONS

## 1 'Soft' Engineering Solution (Embankment)

Rehabilitation of the existing flood protection structure with a softer, more natural looking, stable berm.

**Example:** earth embankment with stable slopes.

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"><li>• Less costly to construct</li></ul>	<ul style="list-style-type: none"><li>• Generally will require a larger footprint to accommodate embankment slopes</li><li>• Generally will disrupt a larger area during construction</li></ul>



Example Cross-Section (not the exact solution)

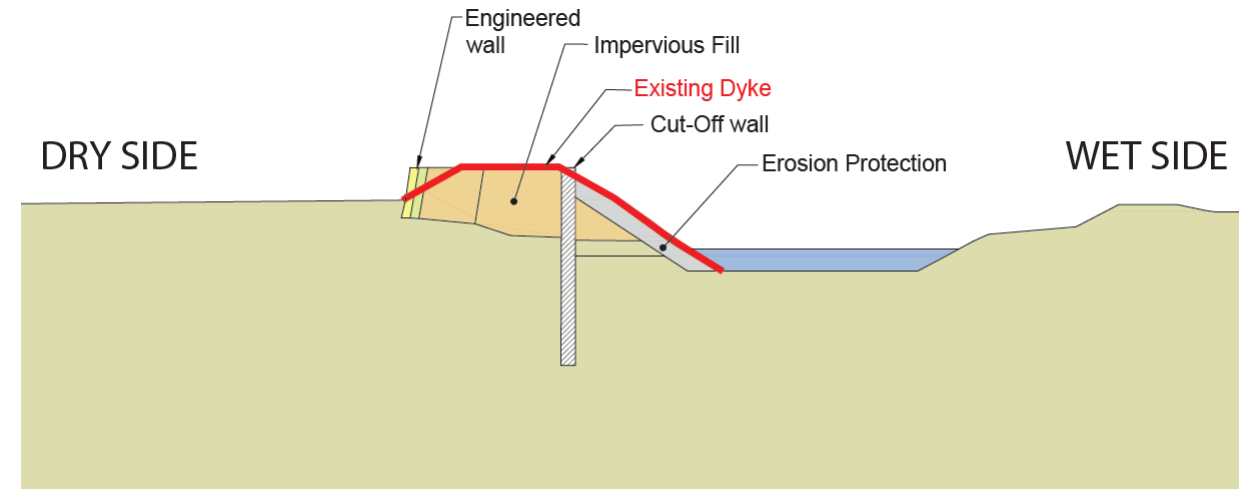
# PRELIMINARY ALTERNATIVE SOLUTIONS

## 2 'Hard' Engineering Solution (Structural)

Rehabilitation of the existing flood protection structure with a highly engineering structural solution.

**Example:** retaining walls and/or seepage-cutoff methods.

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"><li>• Generally will require a smaller footprint (than the embankment alternative)</li><li>• Generally will disrupt a smaller area during construction</li></ul>	<ul style="list-style-type: none"><li>• More costly to construct</li><li>• More complex design and construction</li><li>• Interaction with underground utilities</li></ul>



Example Cross-Section (not the exact solution)

# PRELIMINARY ALTERNATIVE SOLUTIONS

## 3 “Do Nothing”

Does not mitigate current risk of flooding that would occur during a dyke failure.

Ongoing repair works required as conditions degrade.

Impacts of a dyke failure are included in the evaluation.

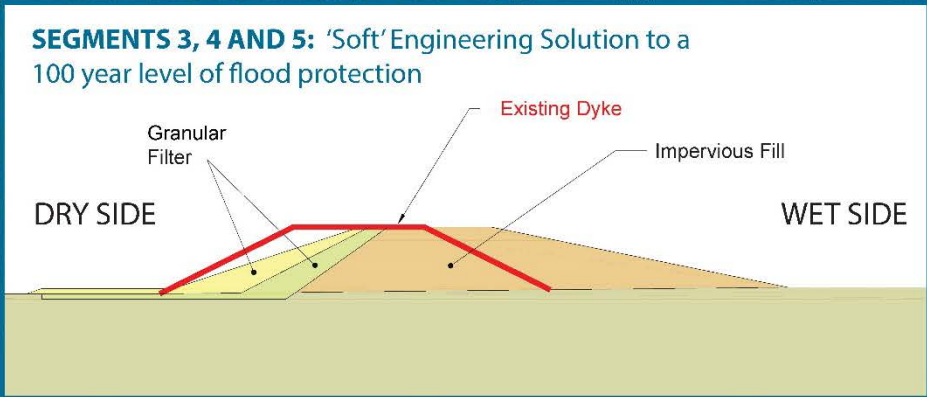
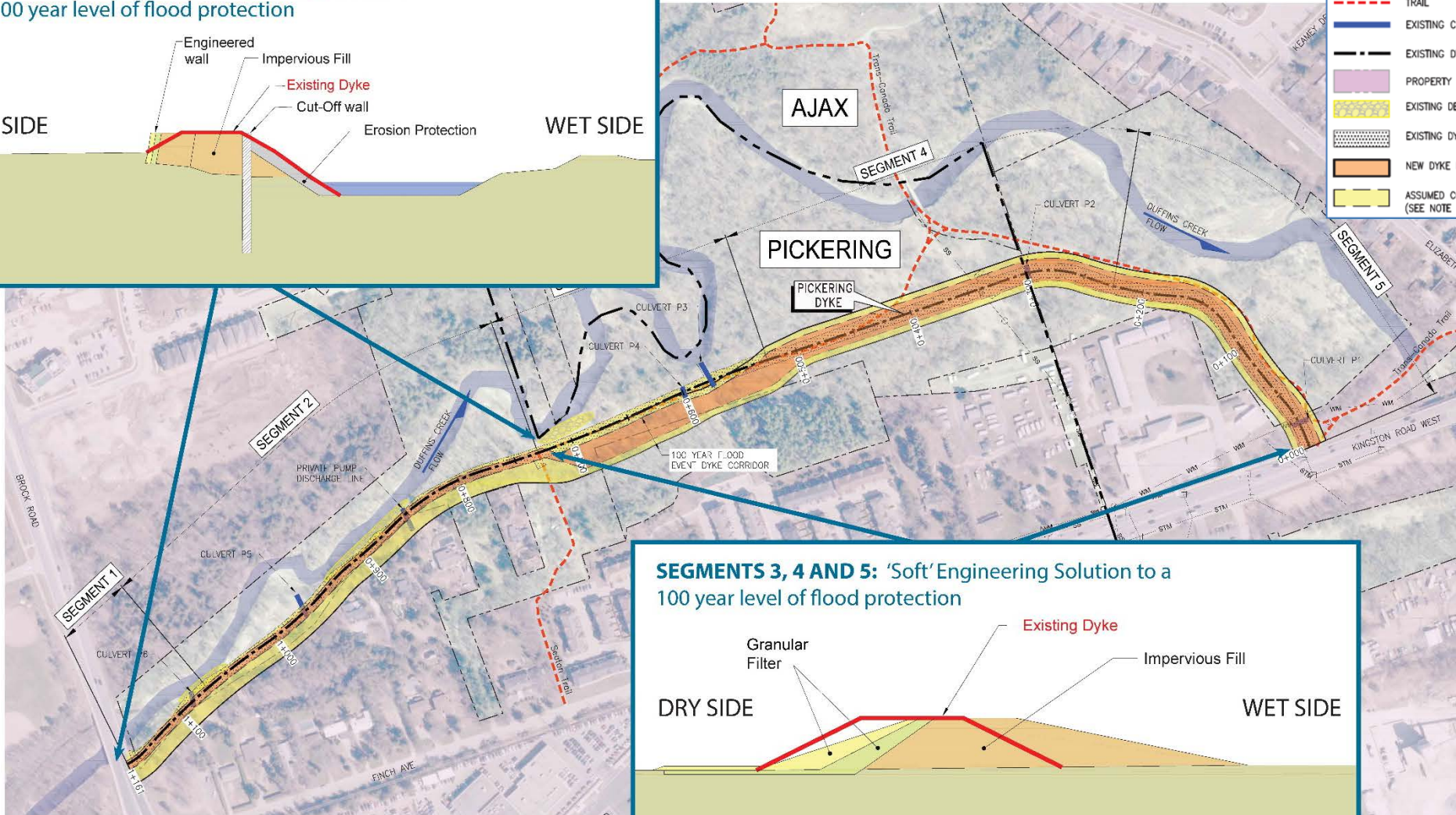
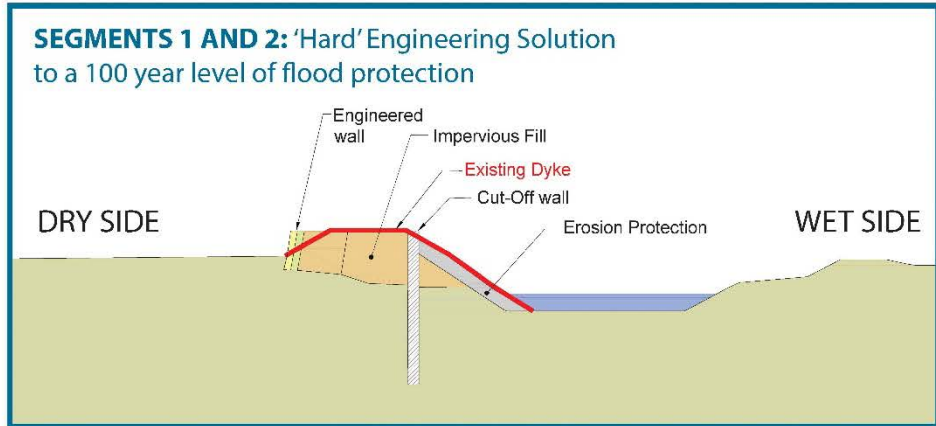
ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"><li>• No immediate capital cost</li><li>• No immediate disturbance to existing environments</li></ul>	<ul style="list-style-type: none"><li>• Potential of dyke failure</li><li>• Risk to humanlife and property</li><li>• Ongoing repair works required</li></ul>



Example of a dyke failure

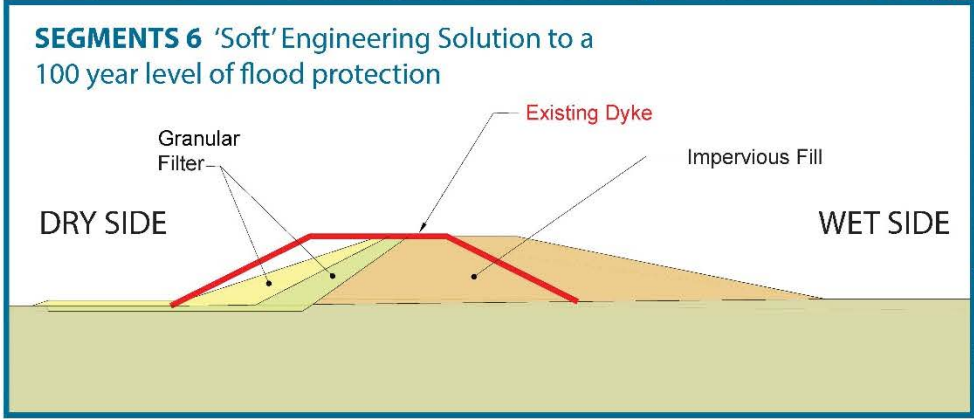
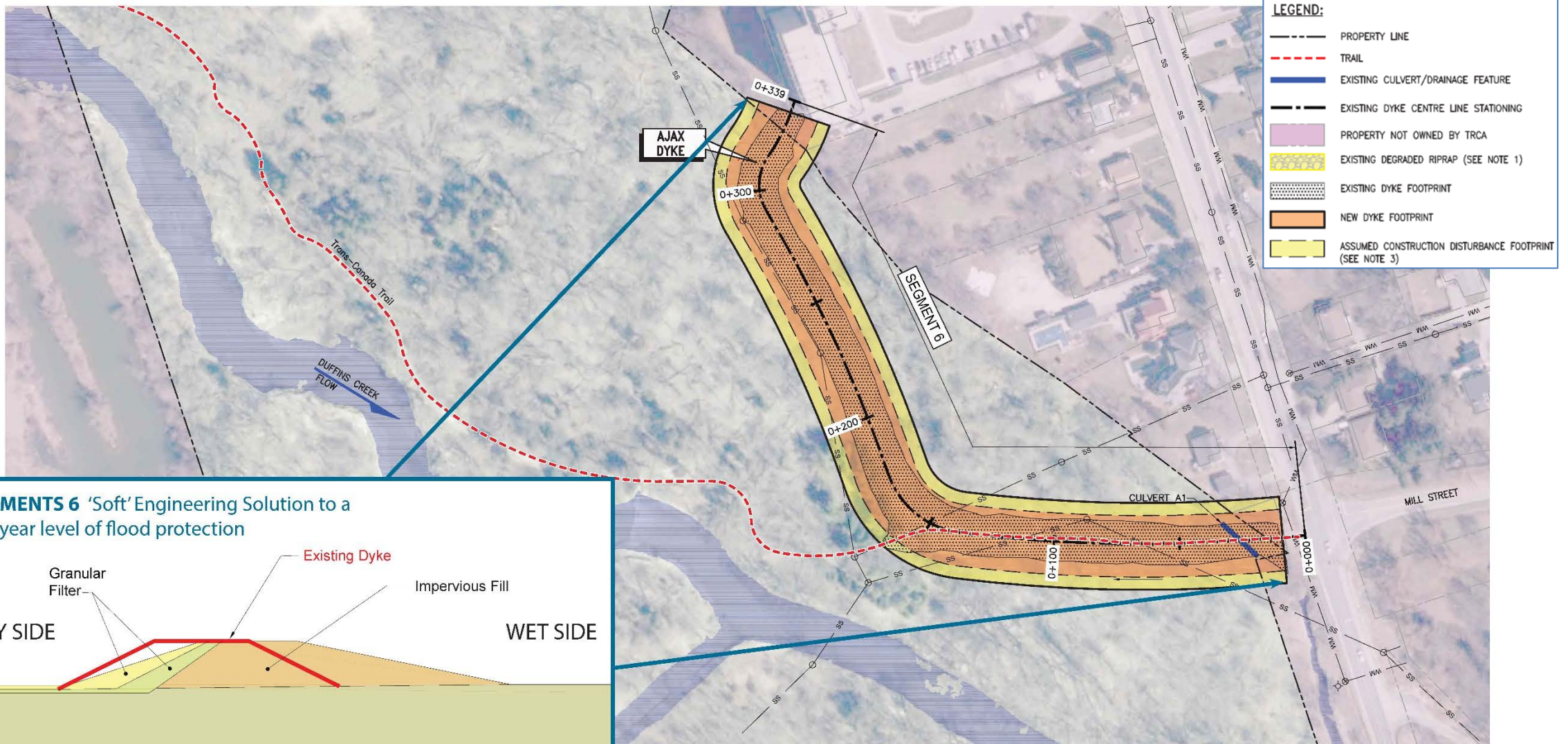
# PRELIMINARY PREFERRED ALTERNATIVE SOLUTION

## PICKERING DYKE

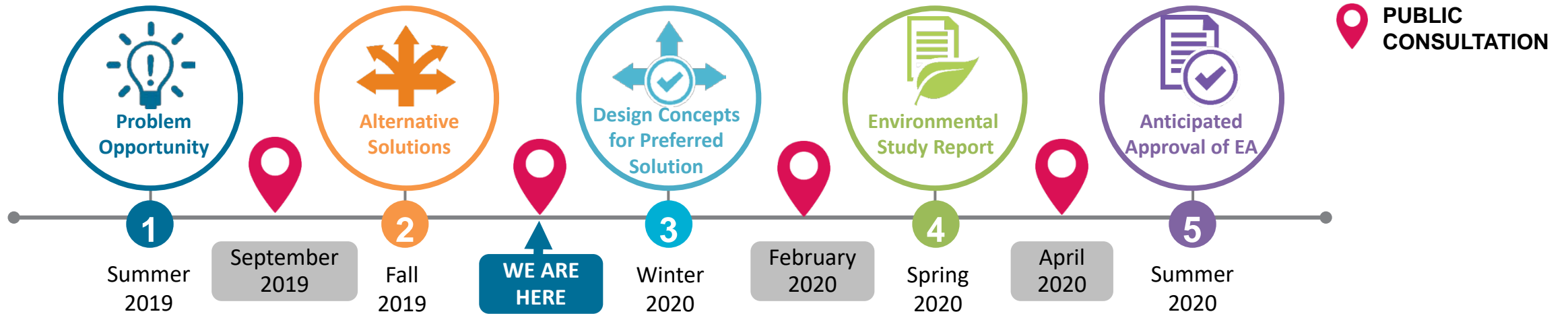


# PRELIMINARY PREFERRED ALTERNATIVE SOLUTION

AJAX DYKE



# NEXT STEPS



- **Refine Evaluation and Preferred Alternative Solution based on feedback received.**
- **Consider Alternative Design Concepts which includes:**
  - Refining the Preferred Alternative Solution to minimize impacts.
  - More detailed consideration of changes to infrastructure including underground utilities.
  - More detailed modeling to refine design of flood protection works to withstand flooding.
- **Alternative Design Concepts and Evaluation Criteria will be brought back to the committees and public for comment in January and February 2020.**
- **On-going consultation with agencies, landowners and other stakeholders.**

# THANK YOU

We appreciate the time you have taken to learn more about the Pickering and Ajax Dykes Rehabilitation EA. Your input is important for the success of the EA process. Please provide your input.

## Contact the Project Team:

Pickering and Ajax Dykes Rehabilitation Project  
Coordinator

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WEBSITE: [www.trca.ca/PADR](http://www.trca.ca/PADR)

PHONE: 416-661-6600 ext. 5948

Toronto and Region Conservation Authority  
101 Exchange Avenue, Vaughan ON, L4K 5R6

## HOW TO STAY CONNECTED:

- Next PIC: February 2020 (*tentative date*)
- **Join our mailing list** – leave us your email or mailing address of you would like to be kept up to date as the study progresses
- Send us your comments or questions. Email us at **[PADR@trca.ca](mailto:PADR@trca.ca)**

Thank you.

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