

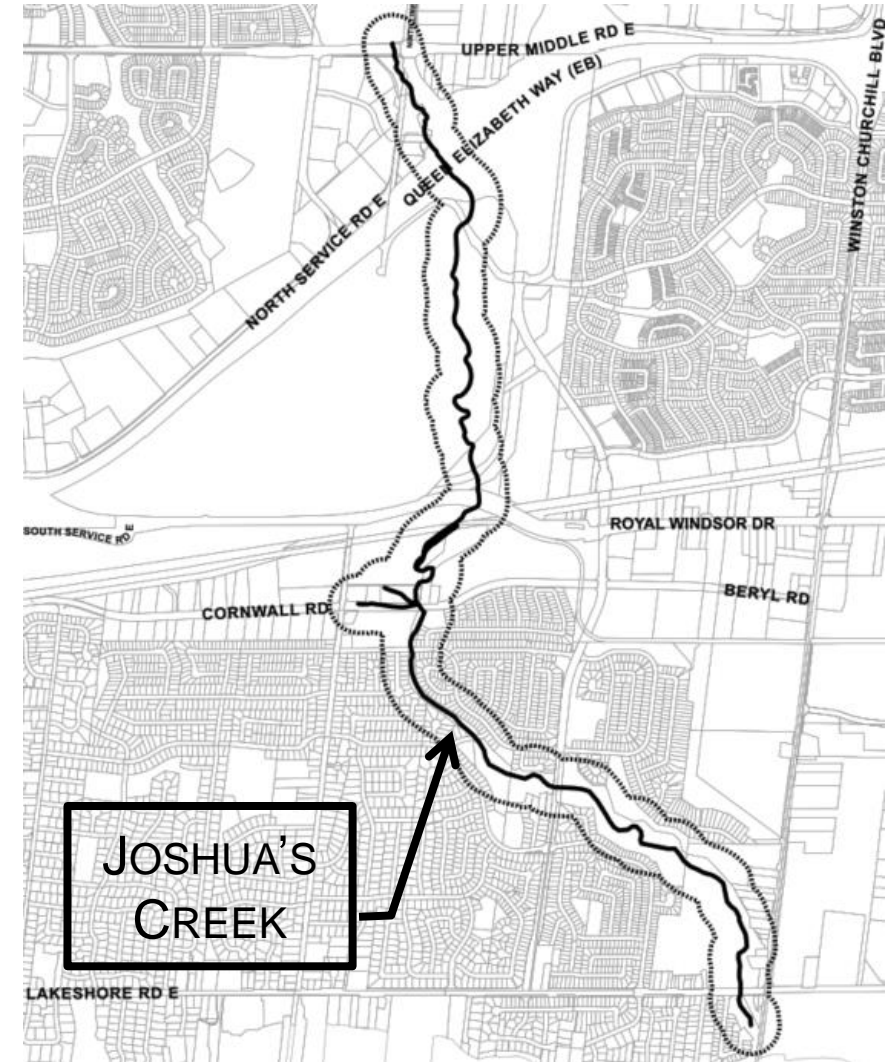
# **Joshua's Creek Flood Mitigation Opportunities Study**

**(Riverine Study)**

**Council Meeting – August 13, 2024**

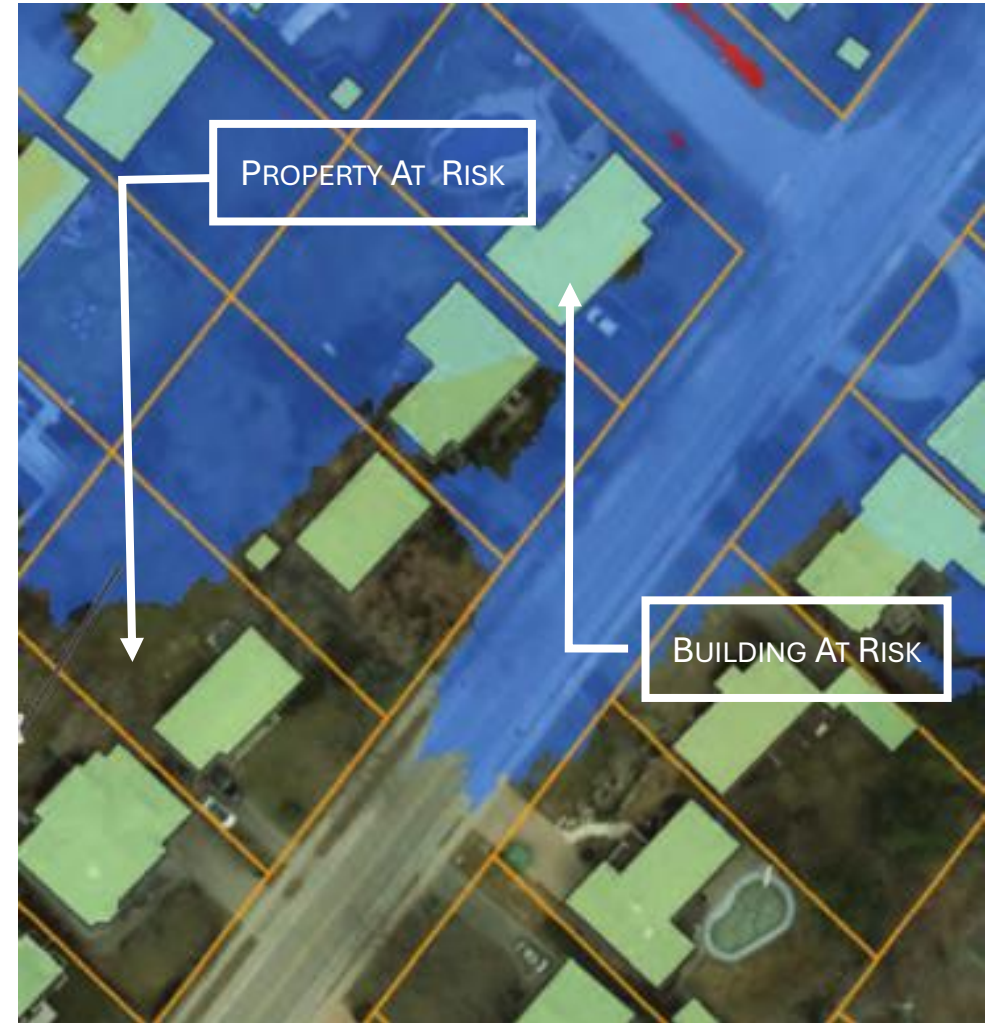
# Study Purpose

- Joshua's Creek Flood Mitigation Opportunities Study (Joshua's Creek Study) builds upon the 2008 Town-Wide Prioritization Study which quantified the magnitude of creek flood exposure in Oakville.
- None of these sites in the 2008 flood study were identified as a high priority based the evaluation carried out with available information at that time.
- The Joshua's Creek Study assesses flood risks for properties along the creek to recommend municipality-led capital work to reduce flood risks.
- Study was carried out as a Schedule B Municipal Class Environmental Assessment



# Study Results

- Low risk of flooding identified for Joshua's Creek under Regional storm event, with no residential buildings impacted up to 100-year storm event
- Flood risks occur when waters spill beyond creek banks and extend into property and/or enter buildings, endangering public safety and causing damage.
- Flood risk is quantified into two categories for properties (image to the right).
  - **Property at Risk**
    - Flooding risk on property, no flooding in the building
    - Flooding risk on property, no buildings (vacant property)
  - **Building at Risk**
    - Flooding risk on property, flooding risk in the building.



# Study Results



100-YEAR  
FLOODLINE

100-YEAR  
FLOODLINE WITH  
CLIMATE CHANGE  
IMPACTS



REGIONAL STORM  
(HURRICANE HAZEL)  
FLOODLINE



# Study Results

The preferred alternative is a combination of flood emergency preparedness (in the short term) and the future consideration of increasing the flow capacity of the Metrolinx crossing (with LIDs and flood wall) at the time of infrastructural renewal.

- Flood emergency preparedness,
- Available resources to Oakville residents through Oakville, Halton Region, Conservation Halton and U of W Intact Centre on Climate Change.

Flood Emergency Preparedness



- Low impact development (LID) measures to promote infiltration, evaporation, harvesting, filtration, and detention of stormwater are recommended as part of the Town's preferred approach to rainwater management.
- LIDs will be incorporated during the detailed design phase of the Metrolinx Crossing.

Green Infrastructure



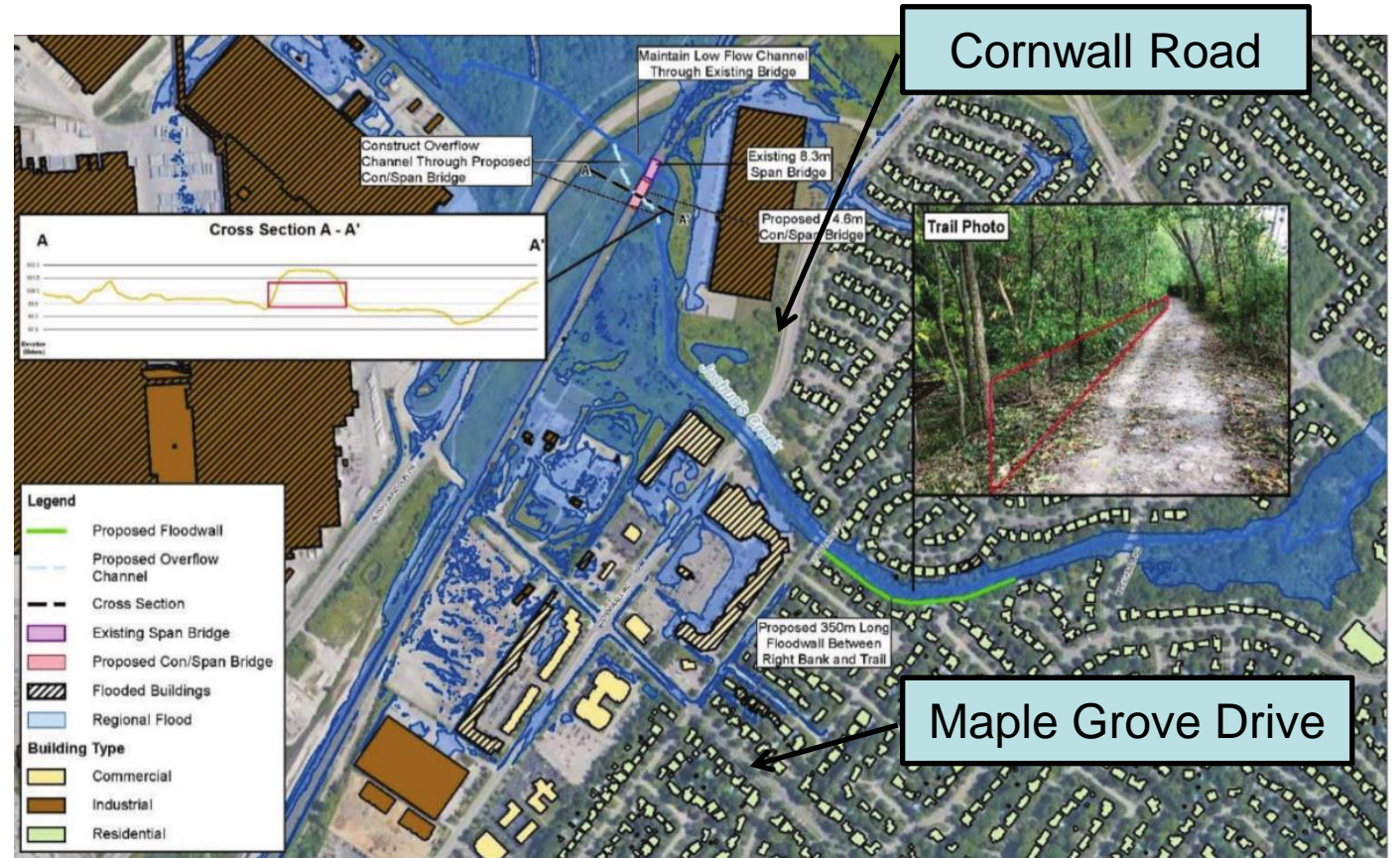
- Increasing the flow capacity of the Metrolinx crossing and constructing a flood wall downstream to accommodate this increased flow downstream between Constance Drive and Brookmill Road.
- The railway crossing is owned by Metrolinx, so any changes to the structure, fall outside the town's authority. While Metrolinx has no immediate plans for work at this crossing, the recommendation is to work with Metrolinx to ensure the replacement design includes increased capacity.

Metrolinx Crossing Upgrade



# Study Results

- Increasing the flow capacity of the Metrolinx crossing and constructing a flood wall downstream to accommodate this increased flow downstream, provides the most effective reduction in flood risk by removing 124 buildings out of the 134 residential buildings impacted by flooding during the Regional Storm event.
- Estimate cost of \$7.4 million.



# Conclusion

- The Joshua' Creek Flood Mitigation Opportunities Study Report has been compiled documenting the selection of recommended preferred alternatives.

## STAFF RECOMMENDATION

- That the Notice of Completion for the Joshua Creek Flood Mitigation Opportunities Municipal Class Environmental Assessment Study be published, commencing a 30-day public review period from September 1, 2024, to September 30, 2024.

