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2024 Conference

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What line is it anyway? Stormwater Infrastructure and Climate Change in Floodplain Mapping



london.ca

Source to Stream Conference
Brampton, ON
March 27, 2024

Shawna Chambers, P.Eng., DPA
City of London
Division Manager, Stormwater Engineering
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519-661-2489 x7318





Protecting People and
Property:
**Ontario's Flooding
Strategy**





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**Technical Bulletin - Flooding Hazards:
Data Survey and Mapping Specifications**

Version 1.0 - December, 2023

Ontario 

River & Stream Systems: Flooding Hazard Limit



“should not be relied upon.” (Section 4.1, pg. 18)

“may not be used to provide any reduction in flood flows.” (Section 4.6, pg. 18)

“the cumulative effects of these structures should be incorporated” (3. Land Use, pg. 50)

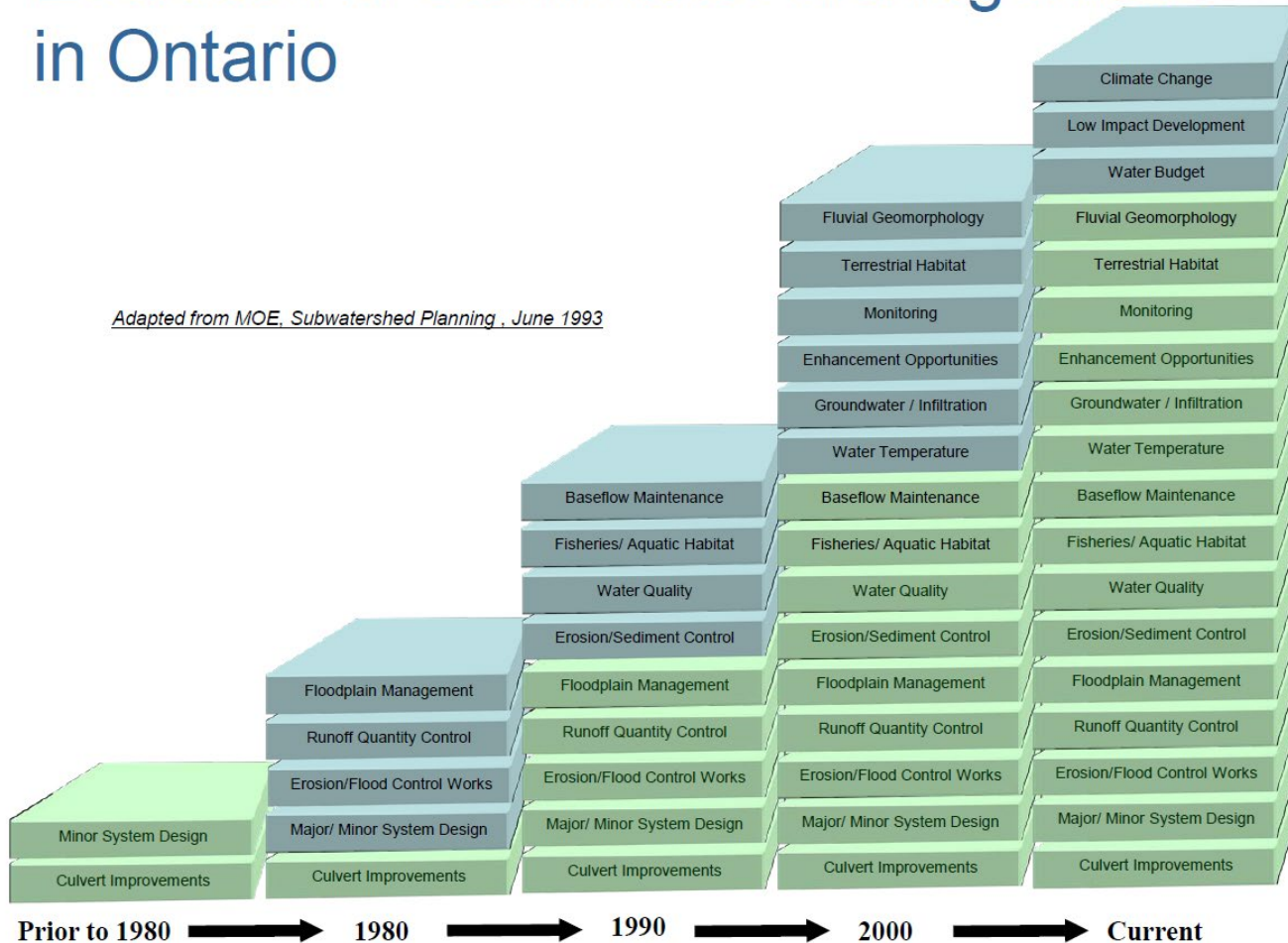


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Evolution of stormwater management in Ontario

Adapted from MOE, Subwatershed Planning, June 1993

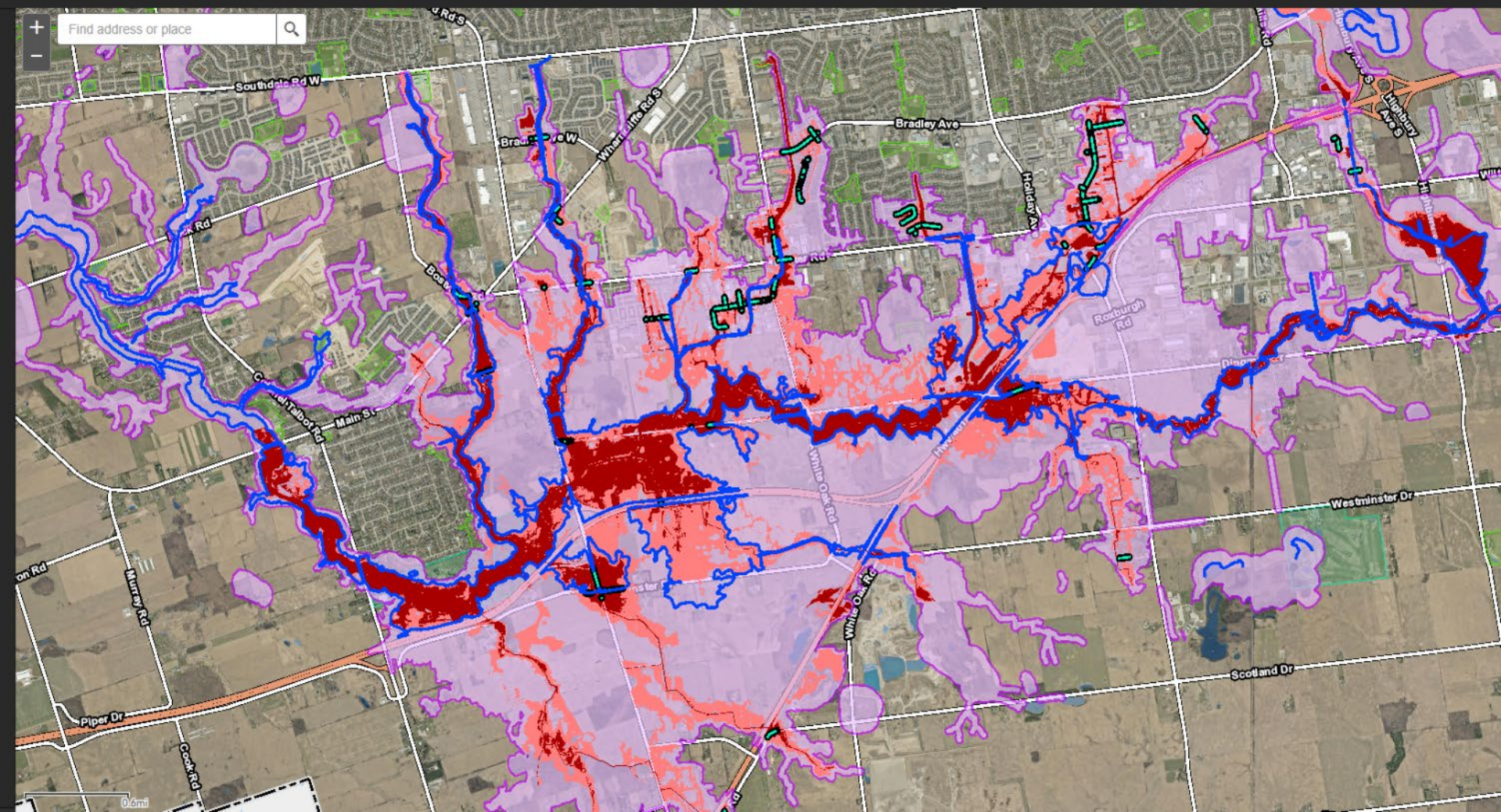




We choose to go to the moon.

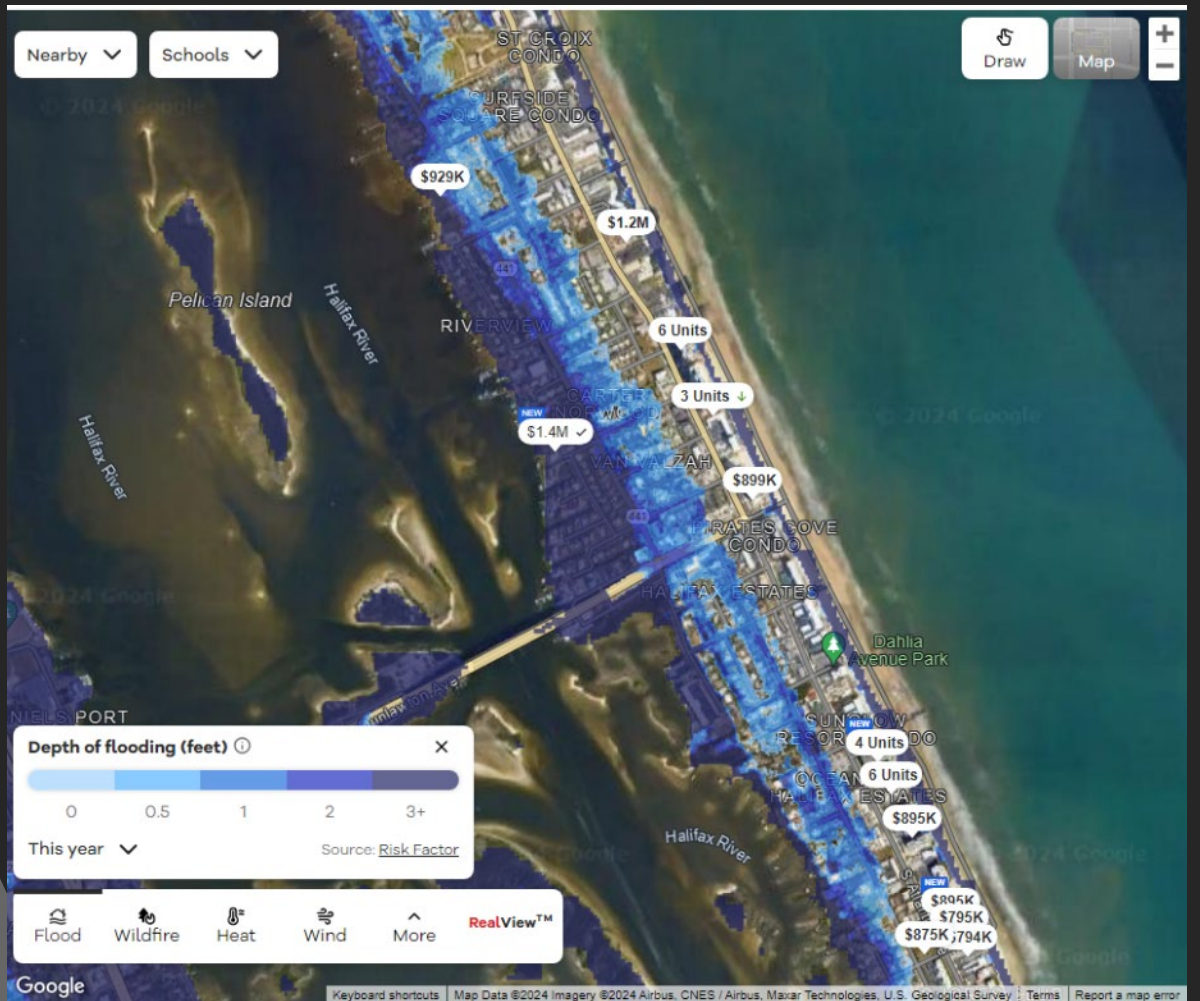
We choose to go to the moon.

“We choose to go to the moon in this decade and do the other things not because they are easy, but because they are hard.” John F. Kennedy, 1962





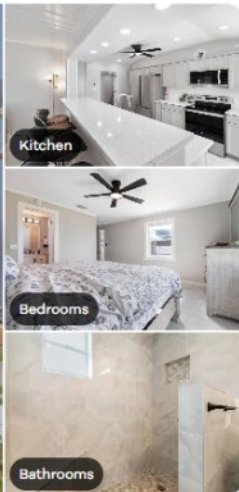
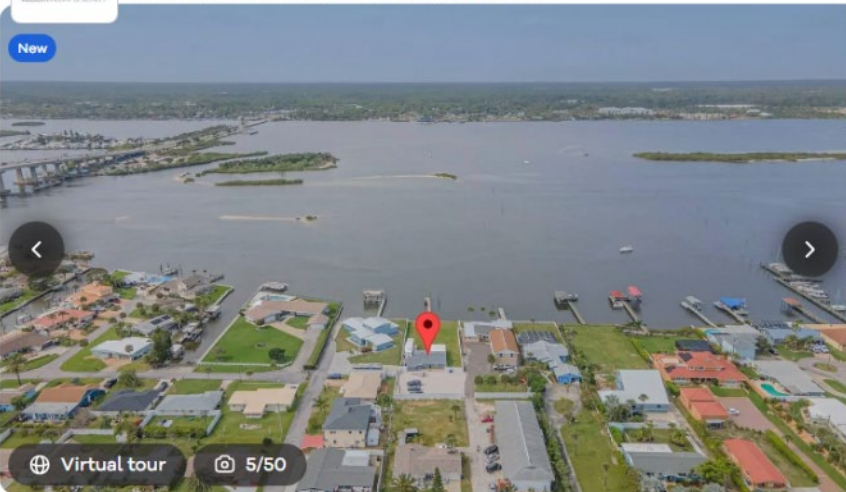
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< Back Port Orange, FL Florida > Volusia County > Port Orange > 3330 S Peninsula Dr



Presented by: **Taner Banks**
 Brokered by: Keller Williams Realty St. Augustine/Palm Coast



Virtual tour 5/50

How much home can you afford?

● For sale

\$1,400,000 Est. \$8,246/mo

3 bed 2 bath 2,372 sqft 0.38 acre lot

3330 S Peninsula Dr, Port Orange, FL 32127

Single family
Property type

3 days
Time on Realtor.com

\$590
Price per sqft

1945
Year built



Add a commute

Flood risk for 3330 S Peninsula Dr



[View Flood Factor™ report](#)

Flood Factor™

This property has a **100.00%** risk of flooding over 30 years. This property's risk of flood is **increasing** as weather patterns change. Flooding in this area is caused by precipitation, sea level rise, and hurricane storm surge.

FEMA rating: This property is located in FEMA zone AE

Understand this data

Realtor.com® empowers you with flood data so you can understand your risk and your options. [Learn more](#)

Flood insurance may impact your budget

As this property is located in a FEMA Zone AE Special Flood Hazard Area, homeowners are **required** to purchase flood insurance to obtain a mortgage from federally-backed or regulated lenders. Explore quotes for flood insurance from **\$519 to \$990** per year.

[Click to compare quotes](#)

Flood risk data including FEMA ratings is provided by **Risk Factor™**, a product of First Street Foundation®. The Flood Factor® model is designed to approximate flood risk and not intended to include all possible flood risks. Flood insurance quotes are based on \$250k in building and \$100k in contents coverage.



1990 Water Resources Policies

Conservation Authorities Act, 1990

Land and Rivers Improvement Act, 1990

Environmental Assessment Act, 1990

Ontario Water Resources Act, 1990

(Section 53 Certificate of Approvals)

2002+ Policies

Sustainable Water and Sewage Systems Act, 2002

MECP SWM Planning and Design Manual, 2003

O.Reg. 157/06, 2006 Section 28 added to CA Act

O.Reg. 588/17 Asset Management Planning for
Municipal Infrastructure, 2017

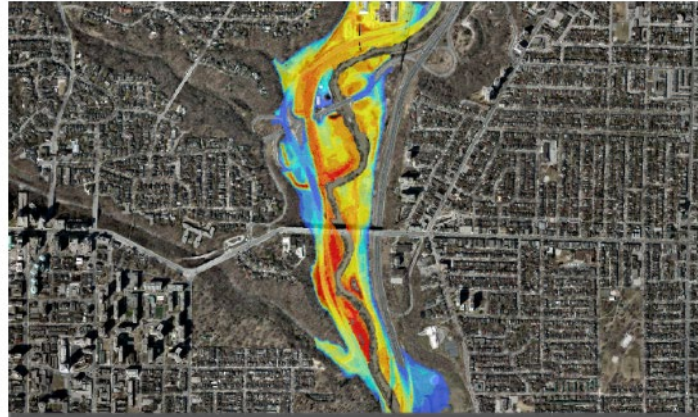
Consolidated Linear Infrastructure Environmental
Compliance Approval (CLI-ECA), 2023



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APPROACHES TO MANAGE REGULATORY EVENT FLOW INCREASES RESULTING FROM URBAN DEVELOPMENT

JUNE 2016

Toronto and Region Conservation Authority

In association with the Regional Storm Control Committee



5 Shoreham Drive, Toronto, ON M3N 1S4





DRAFT

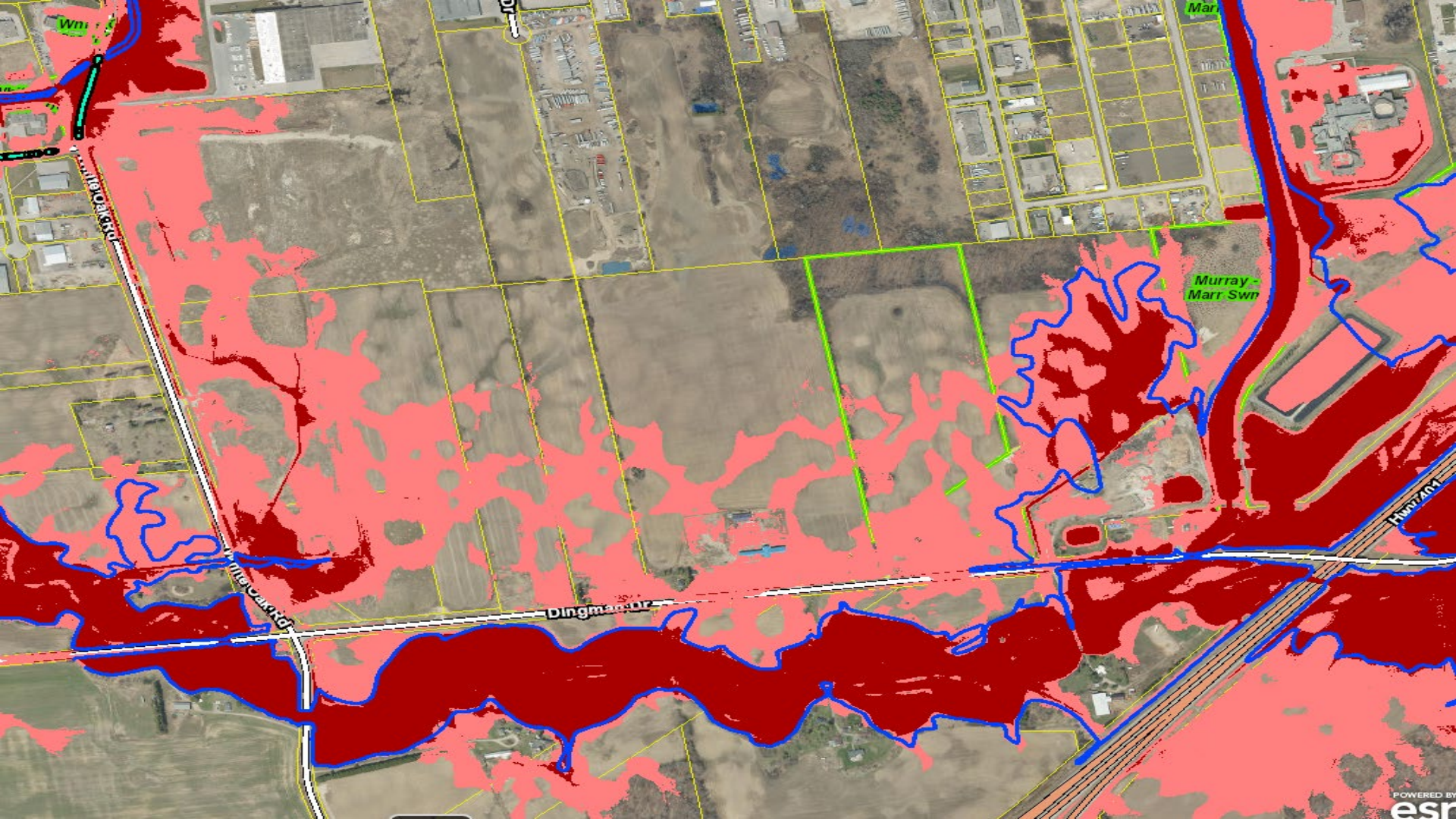


Figure Date: December 19 2023

- Watercourse
- Roads
- Parcels
- Buildings
- BOC Controlled Regulatory Extent
- BOC Uncontrolled Regulatory Extent
- BOC Controlled Regulatory Extent

This drawing must be used in conjunction with the attached report, Pincombe Drain Conveyance Capacity Assessment (2023), and is subject to the same limitations and corrections stated in the report.

 Matrix Solutions Inc. A Montrose Environmental Company	
City of London Pincombe Drain Conveyance Capacity Assessment	
Project #: 35495	
Existing Regulatory Extent - View 1	
<p><small>Disclaimer: The information contained herein may be compiled from numerous third party materials that are subject to periodic change without prior notification. While every effort has been made by Matrix Solutions Inc. to ensure the accuracy of the information presented at the time of publication, Matrix Solutions Inc. assumes no liability for any errors, omissions, or inaccuracies in this third party material.</small></p>	
M.L.	Fig. 7





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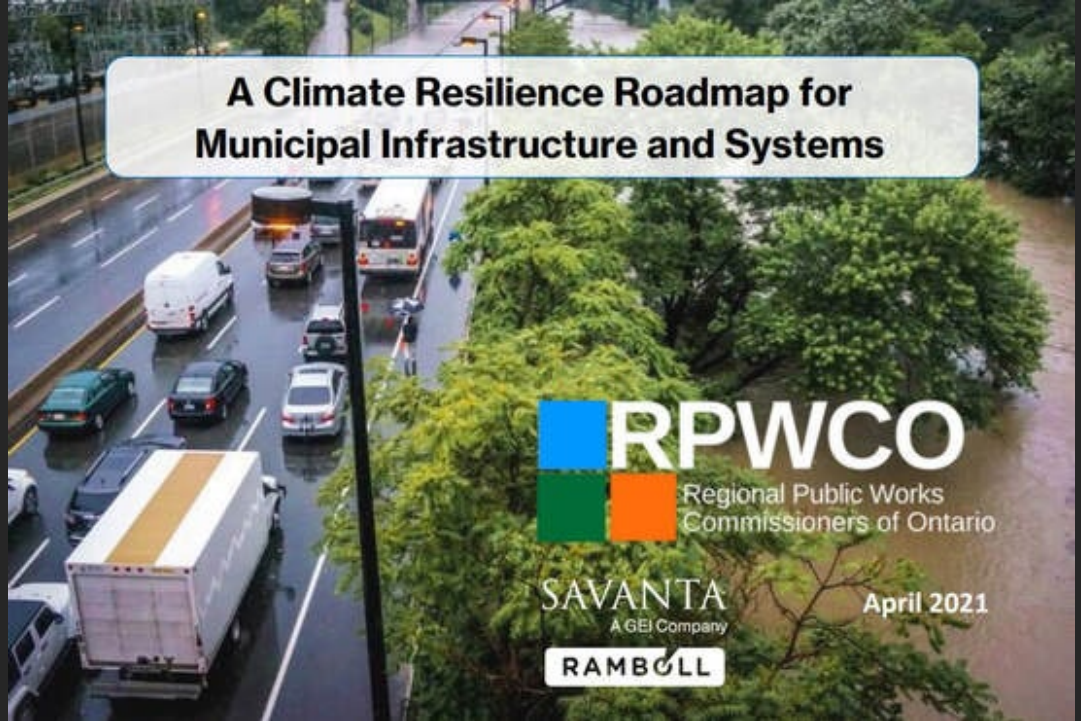
A Climate Resilience Roadmap for Municipal Infrastructure and Systems

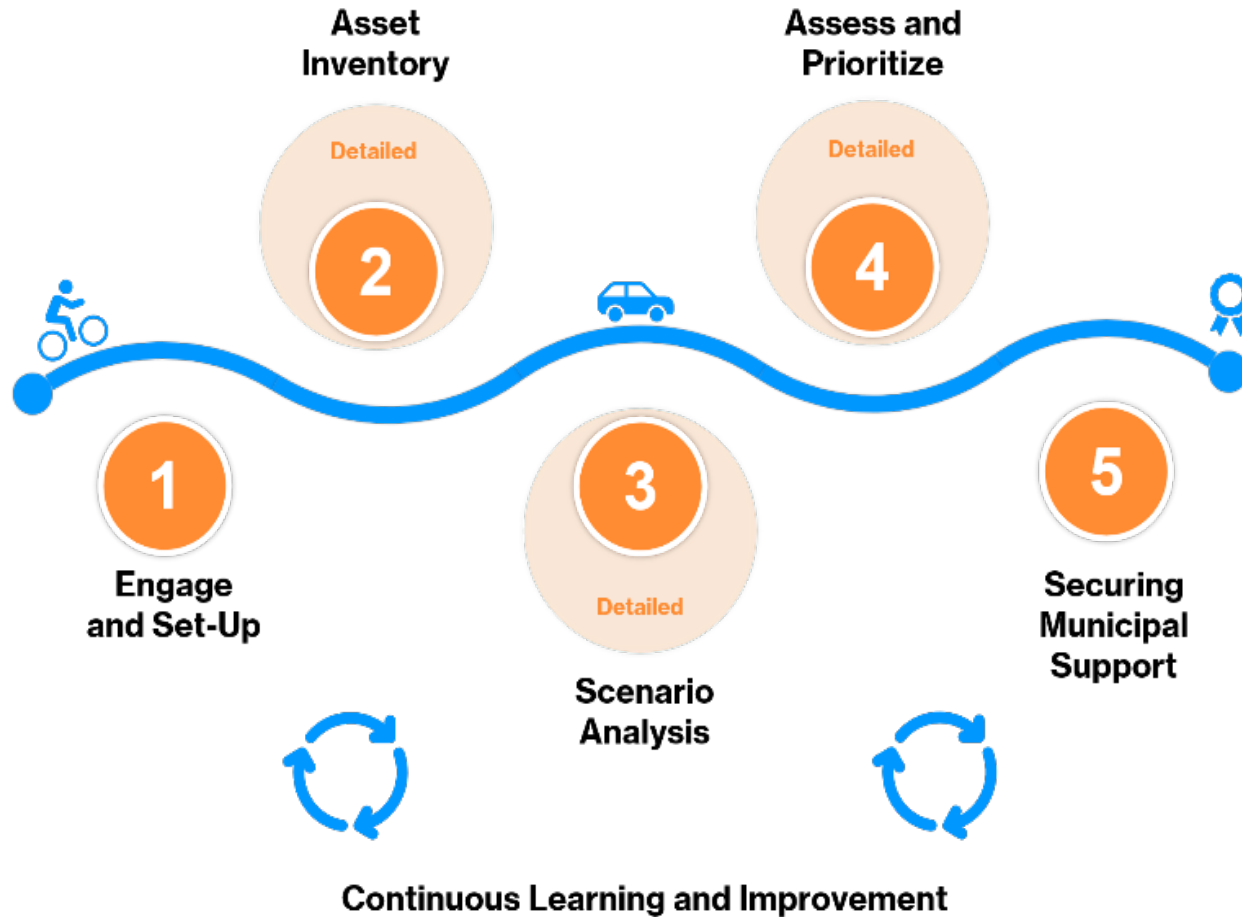


SAVANTA
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April 2021

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Uncertainty

Climate change

Policy updates

Modelling limitations



Flood Protection

Risk Management

Emergency Management

Land Use Policy

Level of Service

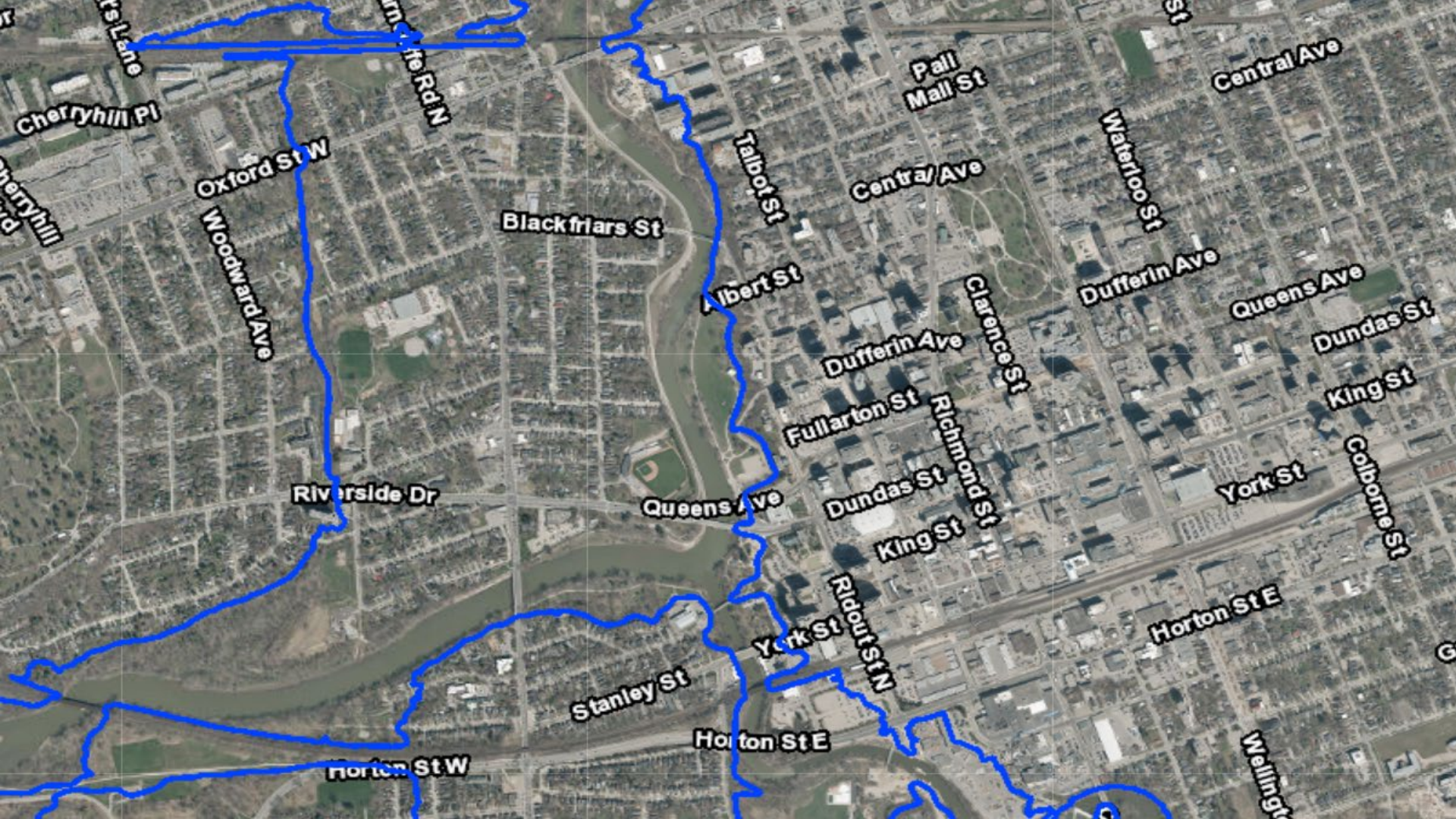
Infrastructure solutions

Cost to Taxpayers

Land Value/Usability











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ENGINEERING COMPANIES
ONTARIO



Ontario



Conservation
ONTARIO
Natural Champions

 **RPWCO**

Regional Public Works
Commissioners of Ontario

**MUNICIPAL
ENGINEERS
ASSOCIATION**















Looking for your experiences with:

- controlled/uncontrolled floodplain models
- climate change assumptions

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