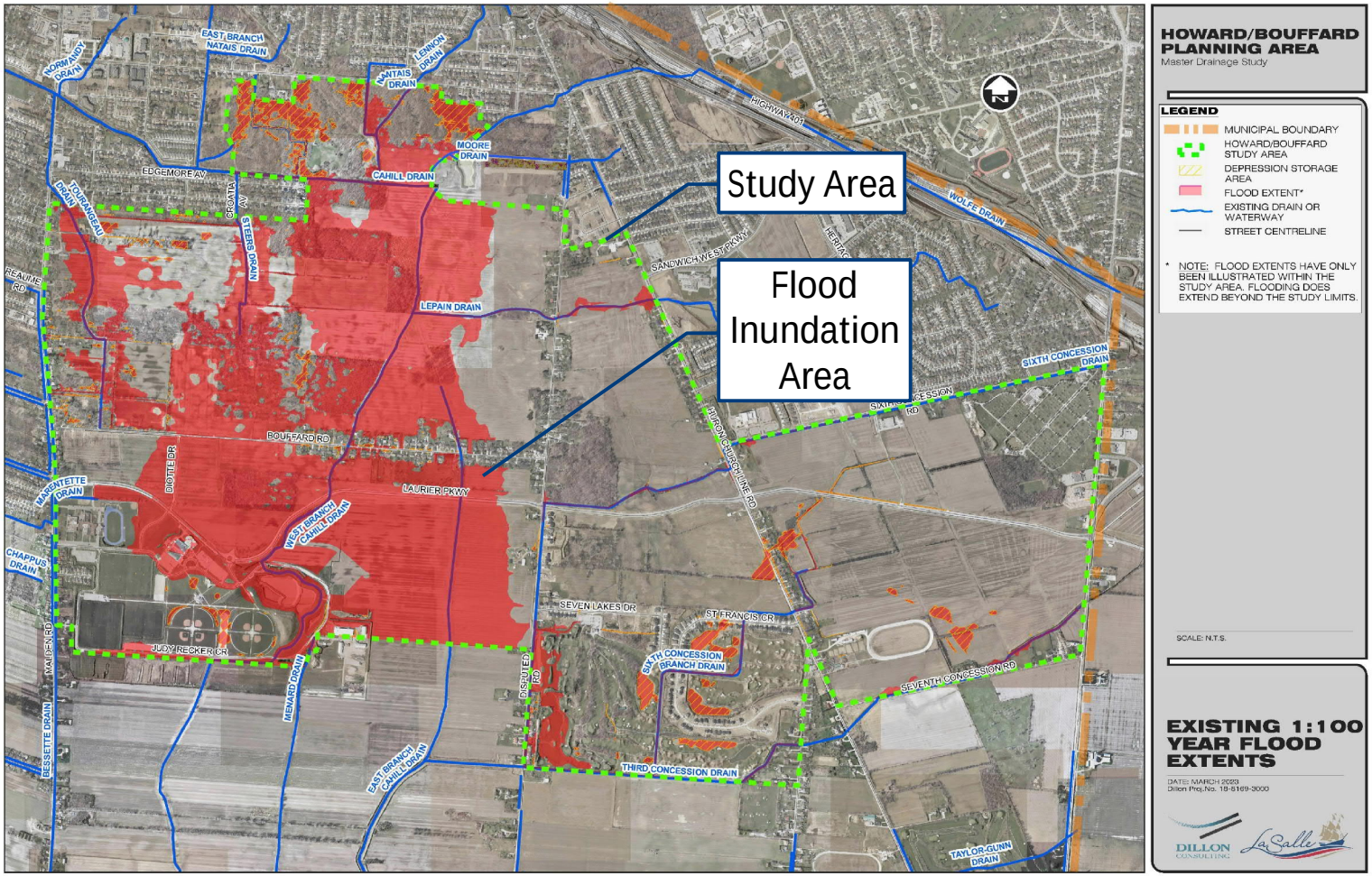
Howard/Bouffard Planning Area Master Drainage Study

Municipal Class Environmental Assessment

Town of LaSalle Council Meeting

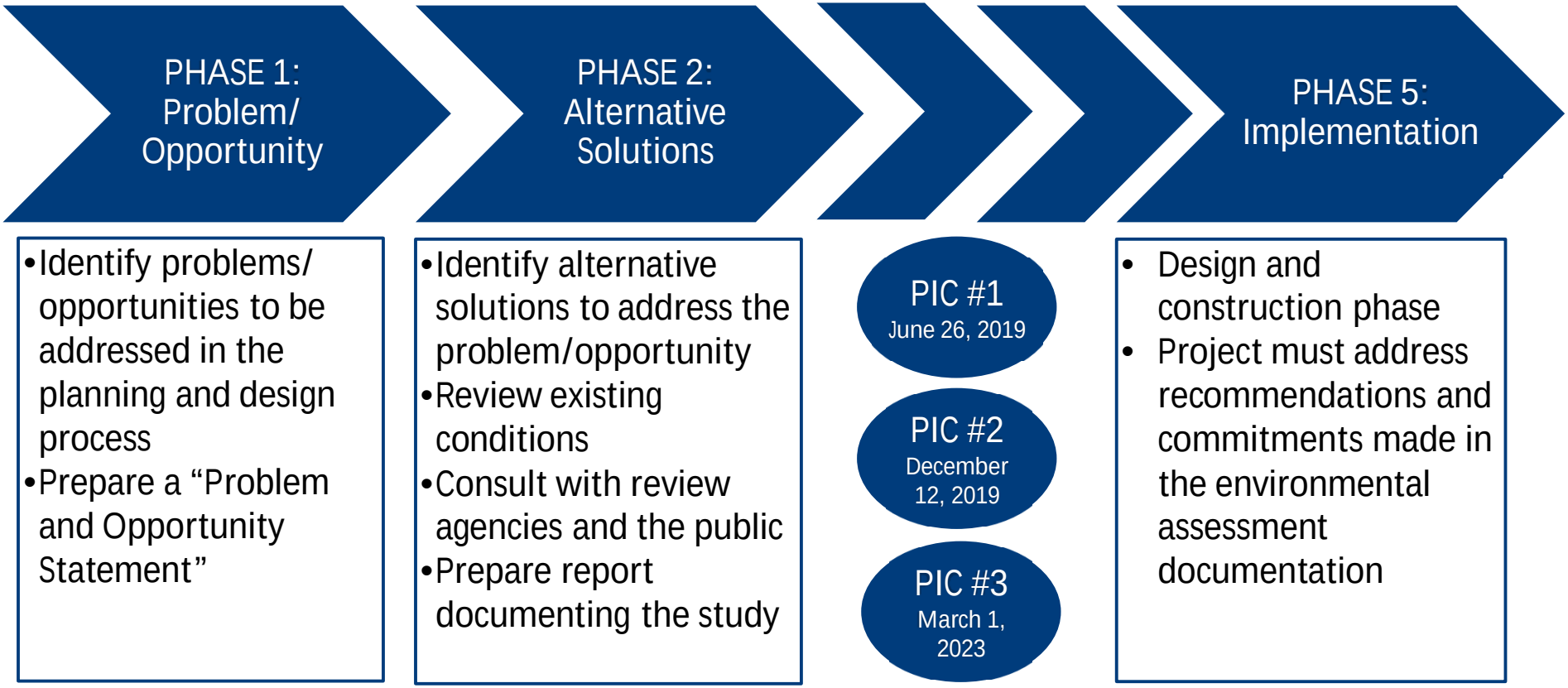
November 28, 2023

Study Purpose



Significant portions of the Howard/Bouffard Planning Area are flooded during the 1-in-100 year, 24-hour rainfall event. The Essex Region Conservation Authority has indicated issuance of permits for development would be difficult until the flooding issues are addressed. This study has evaluated alternative solutions to address the existing flooding issues and support future development in this key growth area.

Class Environmental Assessment Process



This study followed Master Plan approach #2 under the Municipal Class Environmental Assessment (EA; 2023), which includes Phases 1 and 2 of the process.

Consultation Summary

PIC #1
June 26, 2019

- Outlined project need and justification
- Presented the alternatives being considered and the initial preferred solution

What we heard:

- Concerns about downstream flooding, property impacts, timing for development, funding mechanisms, and the evaluation of alternative solutions
- Changes to the preferred solution were suggested

PIC #2
December 12, 2019

- Presented a revised preferred solution that would accommodate planned development throughout the Study Area

What we heard:

- Comments about property impacts, funding mechanisms, involvement of impacted landowners, and the flood extent mapping
- Developers indicated they want more control over the scope, schedule, and cost of works required for the development of their respective lands

PIC #3
March 1, 2023

- Presented a revised solution that incorporated the findings from the Turkey Creek Watershed Study and addressed feedback received through PIC #2

What we heard:

- Inquiries about property impacts, the development schedule, and details of the preferred solution
- Suggestions to consider additional alternatives, and for further refinement of the preferred solution to reduce impacts to private property and natural environment

Following PIC #3, the preferred solution was further refined. Mitigation measures and commitments for future work have been developed to address anticipated impacts.

Alternative Solutions (Presented at PIC #3)

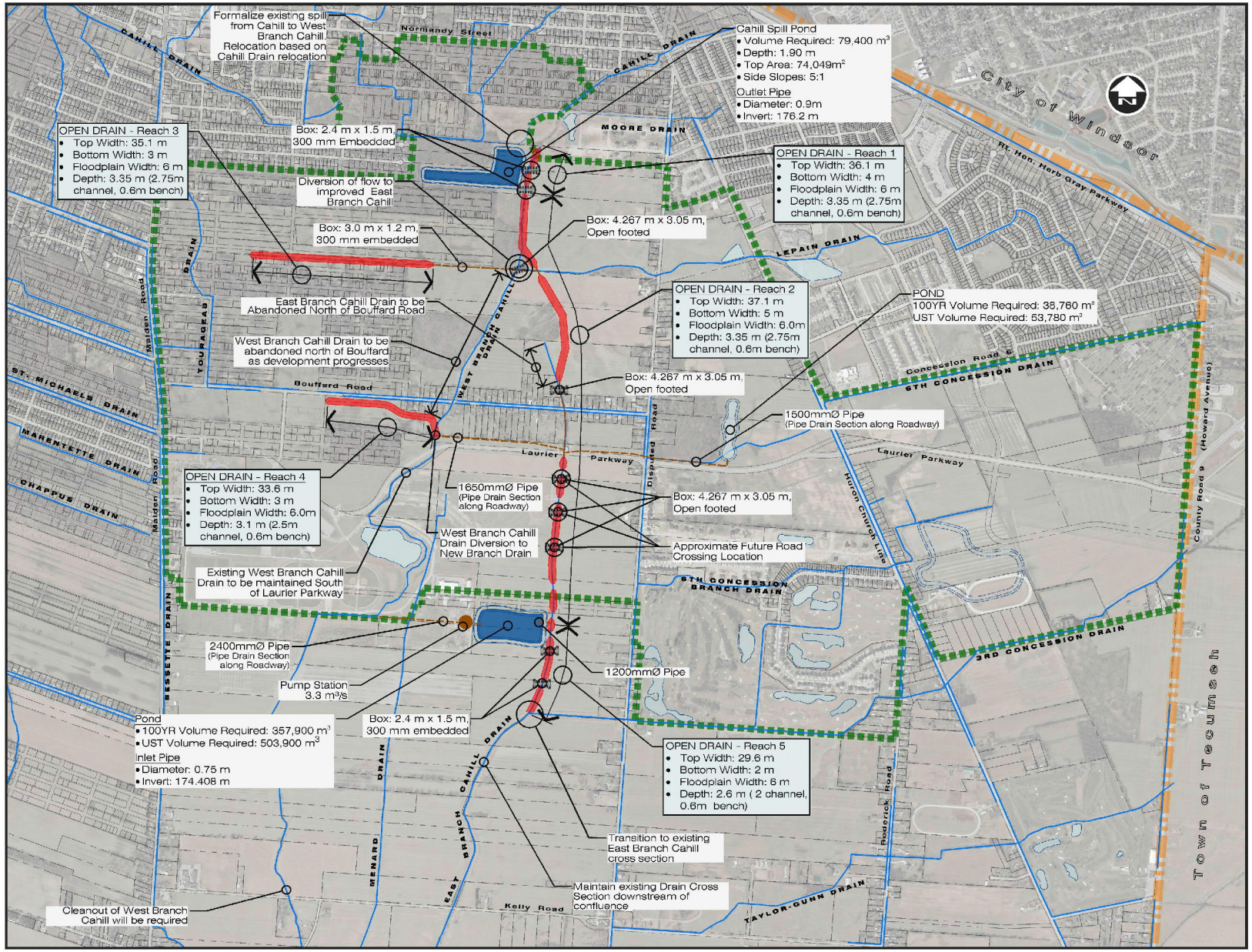
	Alternative Solution	Description
Alternative 1*	Do Nothing	Maintain status quo – no drainage solution to address spillover
Alternative 2	Consolidate Stormwater to Regional Facility	Update of previous preferred solution (as presented at PIC #2)
Alternative 3	Local Stormwater Management Ponds	Builds on the solution presented in a previous study (2017 EA Addendum)

A comparative evaluation of the three alternative solutions was completed to identify the level of preference for each solution in comparison to the others. The criteria used in the evaluation were grouped under the following categories:

- Natural Environment
- Socio-Economic Environment
- Cultural Heritage
- Engineering
- Cost
- Timing of Implementation.

*Alternative 1 does not address the problem/opportunity; however, it must be considered as part of the Class EA process.

Alternative 2 – Regional Facility



HOWARD/BOUFFARD PLANNING AREA
Master Drainage Study

LEGEND
- MUNICIPAL BOUNDARY
- HOWARD/BOUFFARD STUDY AREA
- Pipe Drain Section
- Proposed Channel Alignment
- Potential Future Road/Bridge Location
- Pond Locations Identified in 2017 E.A. Addendum
- Proposed Pond Locations Newly Identified
- Existing Municipal Drains

NOTE:
Property is required along corridors to facilitate solution.

- Drain Crossing Locations Identifier
- CHANNEL DESCRIPTION IDENTIFIER

NOTE:
1. Drain alignments and extents to be refined through Detailed Design Process.
2. Number and locations of box culverts to be confirmed through Detailed Design.
3. Proportion of open and closed sections of each branch drain may be refined through Detailed Design.

DRAINS
3:1 Side Slopes (SS) Preferred.
4:1 Side Slopes (SS) may be required based on Geotechnical recommendations.

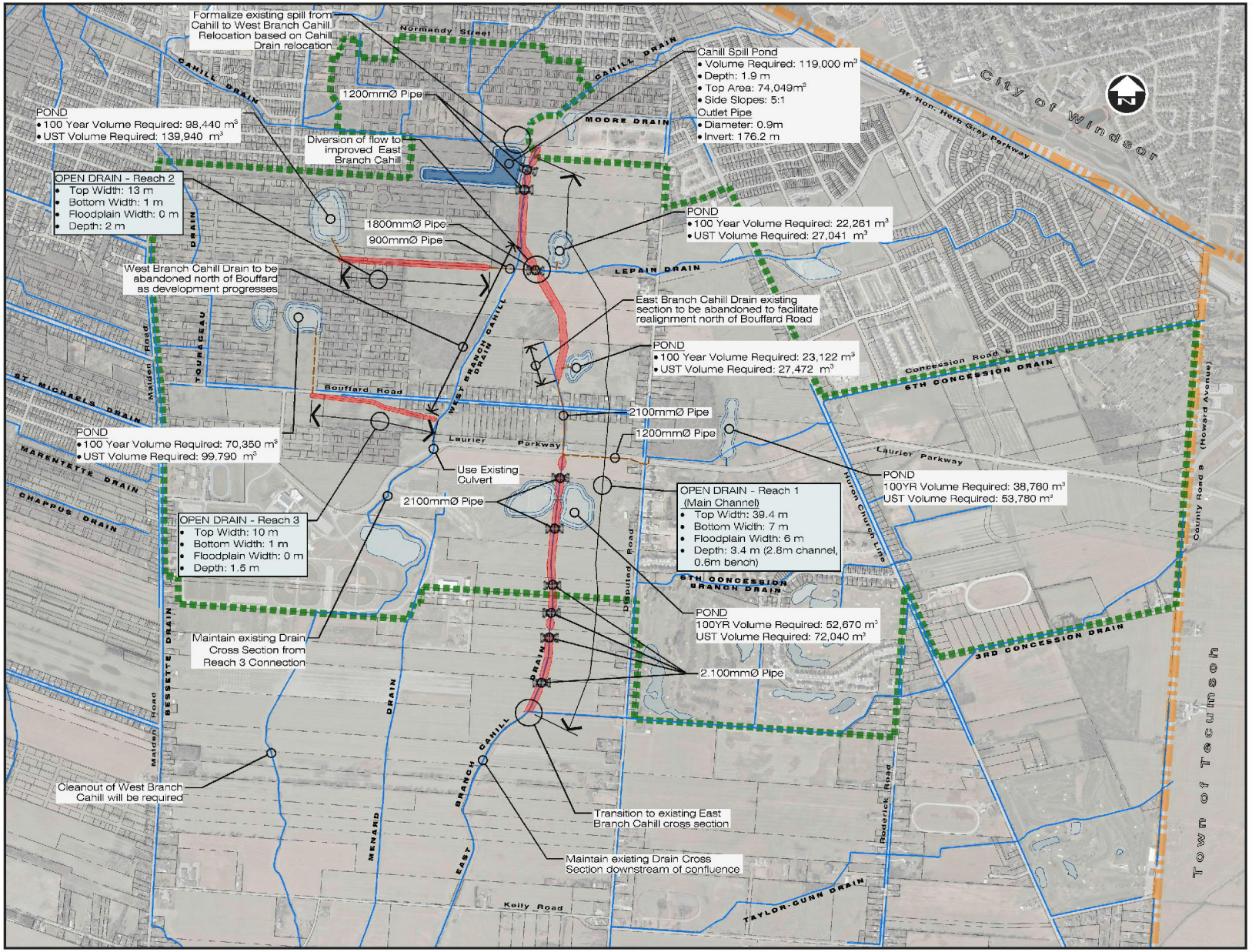
SCALE 0 0.2 0.6 1.0km

ALTERNATIVE 2

UPDATED REGIONAL SOLUTION

DATE: MARCH 2023
Dillon Proj.No. 18-8169-3000

Alternative 3 – Local SWM Ponds



HOWARD/BOUFFARD PLANNING AREA
Master Drainage Study

LEGEND
- MUNICIPAL BOUNDARY
- HOWARD/BOUFFARD STUDY AREA
- Pipe Drain Section
- Proposed Channel Alignment
- Potential Future Road/Bridge Location
- Pond Locations Identified in 2017 E.A. Addendum
- Proposed Pond Locations Newly Identified
- Existing Municipal Drains

NOTE:
Property is required along corridors to facilitate solution.

- Drain Crossing Locations Identifier
- CHANNEL DESCRIPTION IDENTIFIER

NOTE:
1. Drain alignments and extents to be refined through Details Design Process.
2. Number and locations of box culverts to be confirmed through detailed design.
3. Proportion of open and closed sections of each branch drain may be refined through Detailed Design.

DRAINS
3:1 Side Slopes (SS) Preferred.
4:1 Side Slopes (SS) may be required based on Geotechnical recommendations.

SCALE 0 0.2 0.5 1.0km

ALTERNATIVE 3

UPDATED LOCAL SOLUTION

DATE: MARCH 2023
Dillon Proj.No. 18-8169-3000

Evaluation Summary

Category	Preferred Solution Determined by Evaluation
Natural Environment	Alternative 1 – Do Nothing
Socio-Economic Environment	Alternative 3 – Local SWM Ponds
Cultural Heritage	Alternative 1 – Do Nothing
Engineering	Alternative 3 – Local SWM Ponds
Cost	Alternative 1 – Do Nothing
Timing of Implementation	Alternative 3 – Local SWM Ponds

Based on the evaluation of alternatives, it was determined that Alternative 3 – Local SWM Ponds is the preferred solution.

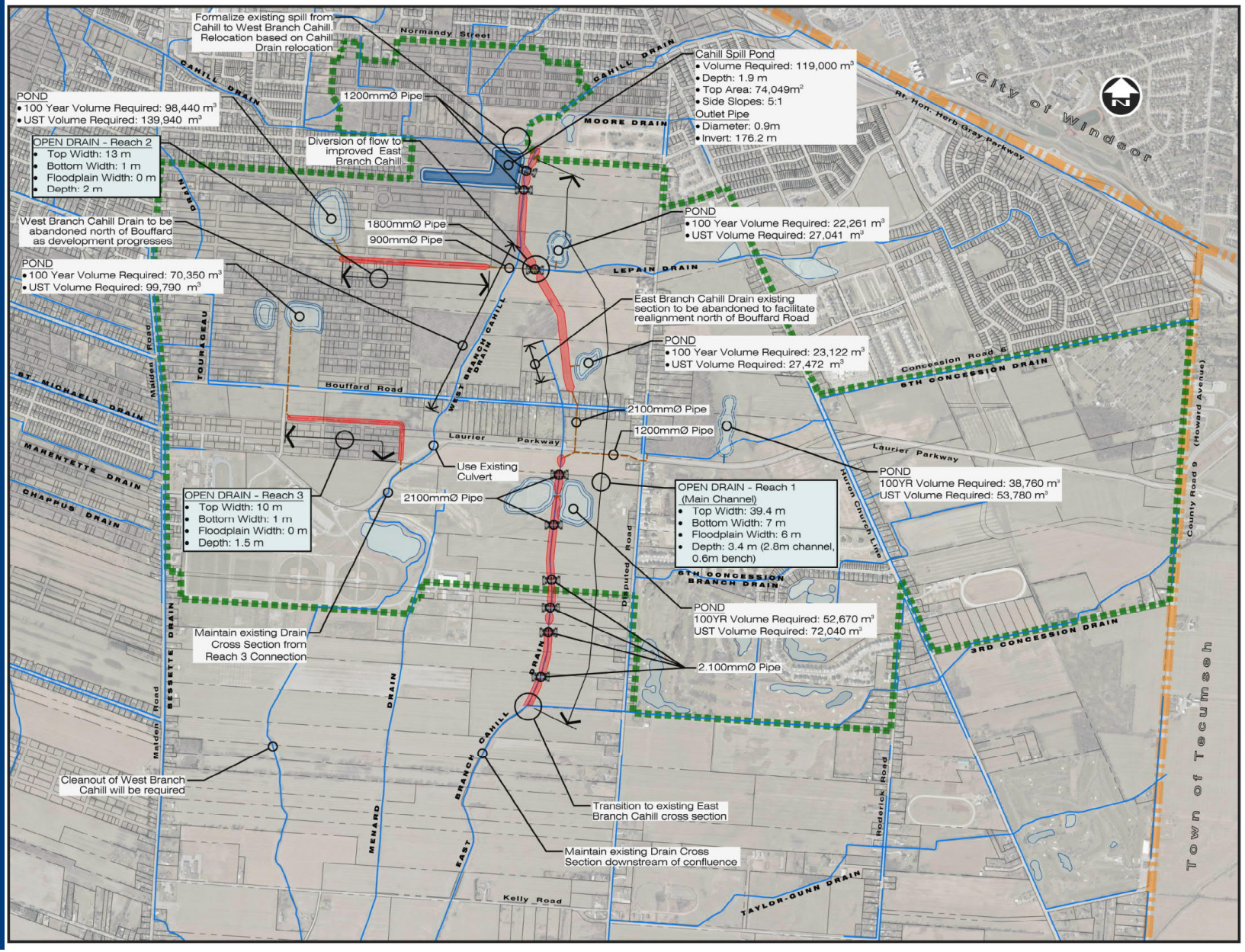
Preferred Solution: Local SWM Ponds

Alternative 1 (Do Nothing) is least preferred as it does not address the existing flooding issues and development would not be permitted to proceed within the flood inundation area.

When compared to Alternative 2 (Regional Solution), the following key advantages of Alternative 3 (Local SWM Ponds) were identified:

- Lesser anticipated impact on both terrestrial and aquatic ecosystems
- Greater potential for positive impacts to aquatic ecosystems through creation of new open channel with direct connection to existing fish habitat
- Reduced amount of private property to be acquired
- Less, smaller enclosures and channels
- Does not require a regional pond and pump station
- Construction and engineering costs are estimated to be $36 million lower
- Lower operation and maintenance costs
- Less time to implement
- Gives developers more control over SWM solutions for developed lands.

Preferred Solution (Refined Following PIC #3)



HOWARD/BOUFFARD PLANNING AREA
Master Drainage Study

LEGEND
- MUNICIPAL BOUNDARY
- HOWARD/BOUFFARD STUDY AREA
- Pipe Drain Section
- Proposed Channel Alignment
- Potential Future Road/Bridge Location
- Pond Locations Identified in 2017 E.A. Addendum
- Proposed Pond Locations Newly Identified
- Existing Municipal Drains

NOTE:
Property is required along corridors to facilitate solution.

- Drain Crossing Locations Identifier
- CHANNEL DESCRIPTION IDENTIFIER

NOTE:
1. Drain alignments and extents to be refined through Details Design Process.
2. Number and locations of box culverts to be confirmed through detailed design.
3. Proportion of open and closed sections of each branch drain may be refined through Detailed Design.

DRAINS
3:1 Side Slopes (SS) Preferred.
4:1 Side Slopes (SS) may be required based on Geotechnical recommendations.

SCALE 0 0.2 0.5 1.0km

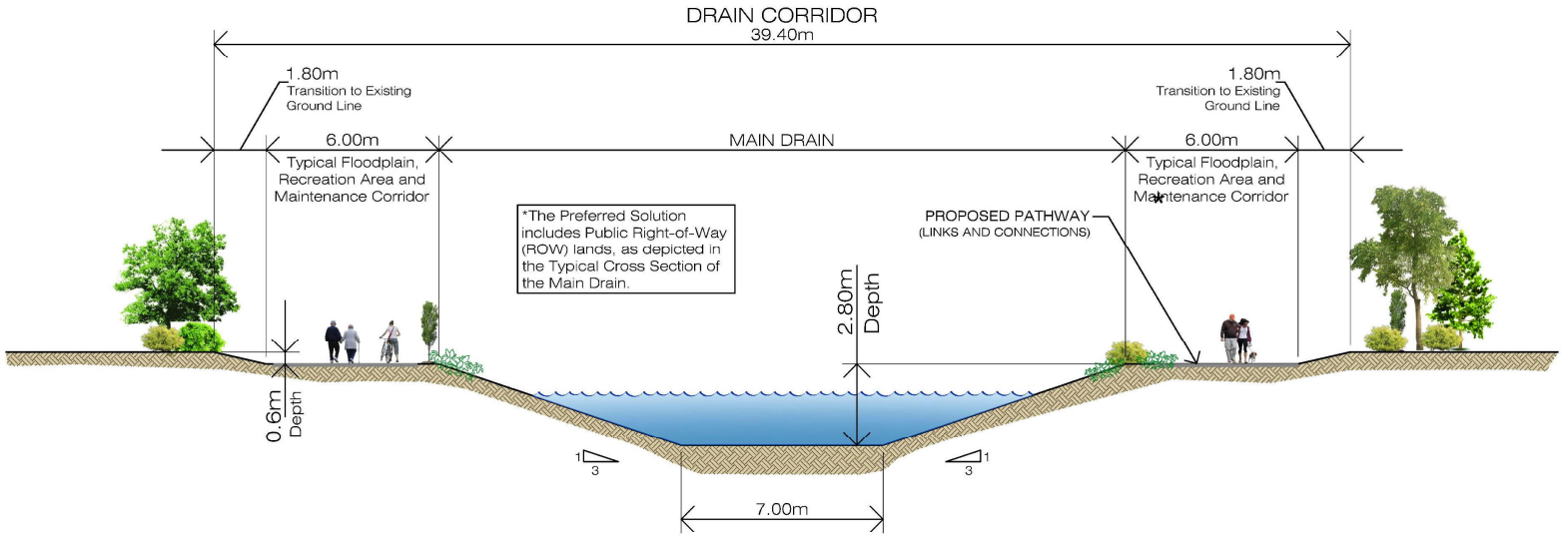
ALTERNATIVE 3

UPDATED LOCAL SOLUTION

DATE: MARCH 2023
Dillon Proj.No. 18-8169-3000

MAY 30, 2023
Revisions made based on feedback from PIC#3

Preferred Solution – Typical Cross Section



TYPICAL CROSS SECTION

HOWARD/BOUFFARD PLANNING AREA
Master Drainage Study

Maximum Ponding Depths in Floodplain is 0.3m for 100yr, 24hr. Chicago Storm.

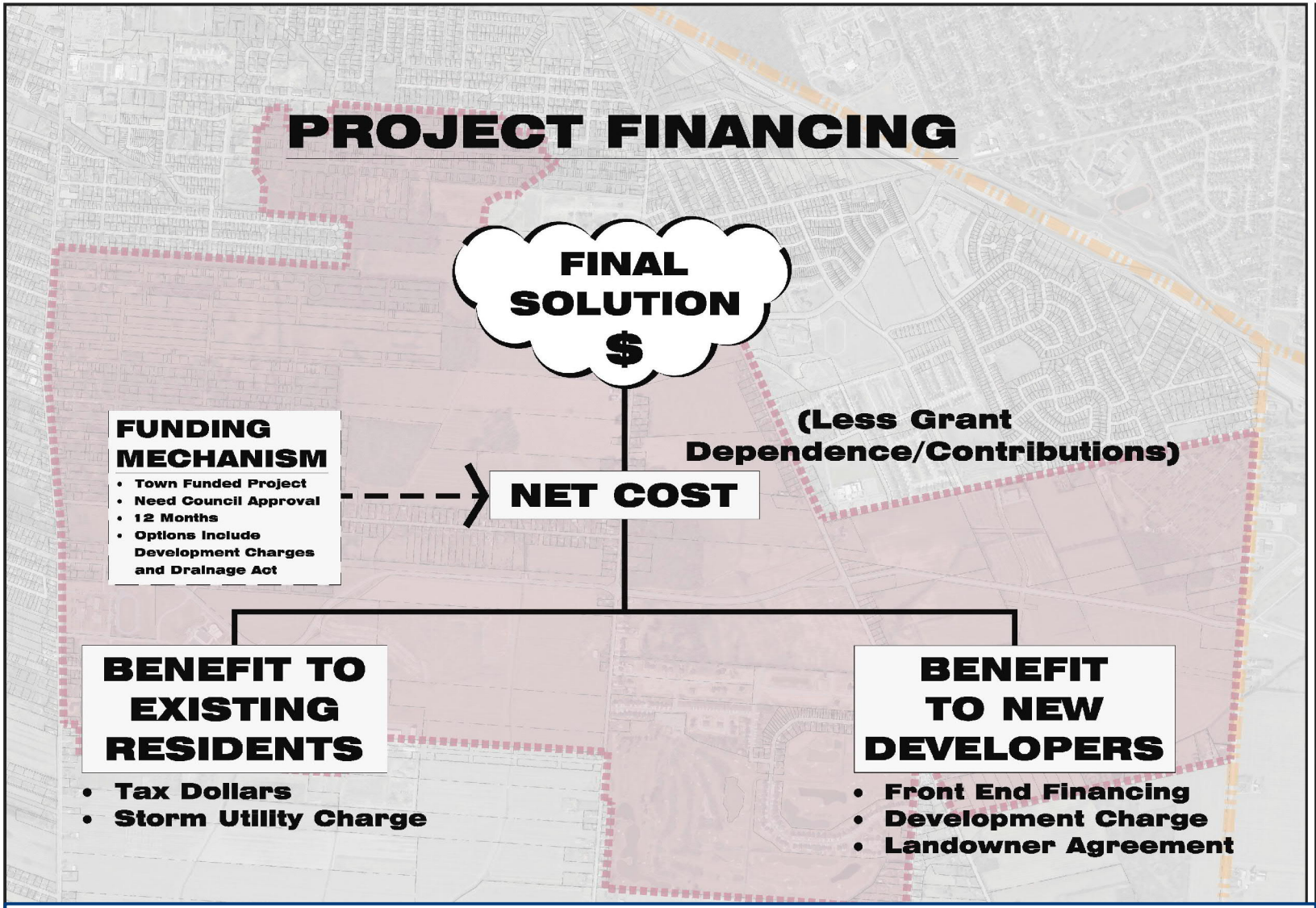
SCALE: N.T.S.

ALTERNATIVE 3

TYPICAL DRAIN CROSS SECTION

DATE: MARCH 2023
Dillon Proj.No. 18-8169-3000

Project Financing



HOWARD/BOUFFARD PLANNING AREA
Master Drainage Study

* The Drainage Act is currently the preferred mechanism to formalize the implementation of the project including refining the design, project costs and confirming the assessments to the contributing lands. The Drainage Act provides a mechanism to ensure that upstream lands contribute to the project cost.

PROJECT FINANCING
DATE: MARCH 2023
Dillon Proj.No. 18-8169-3000

The anticipated cost for engineering and construction of the proposed work is $18 million (2023 dollars). This cost excludes property acquisition and applicable taxes.

Anticipated Project Timeline

	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025
1. Final Master Drainage Study (Public Process)	X	X	Master Drainage Study Report public review: January 10 to February 9, 2024						
2. Financing Solutions • Drainage Act • Agreements • Development Charges (Public Process)		X	X	X	X				
3. Preliminary Development Plans				X	X	X	X		
4. Agency Approvals						X	X		
5. Tender and Construction								X	X
6. Development Design and Construction							X	X	X

Notes:

- All works beyond Final Master Drainage Study require Council approval
- Preliminary schedule shown is based on no objections throughout the various public processes
- Development Approval to begin in 2025
- Tender and Construction extends beyond Q4 2025.

Thank you

QUESTIONS