

**LITTLE RIVER CHANNEL IMPROVEMENT
CLASS ENVIRONMENTAL ASSESSMENT
- VIA RAIL TO LAUZON ROAD**

PUBLIC INFORMATION CENTRE NO. 1

***MARCH 29, 2023
5:00 - 7:00 PM***

PLEASE SIGN IN AT THE FRONT DESK



LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA - VIA RAIL TO LAUZON ROAD

PUBLIC INFORMATION CENTRE

Displays have been prepared for your input which focus on the following:

- Study Area
- Class EA Process
- Existing Conditions
- Hydrology & Hydraulics
- Geotechnical
- Hydrogeology 1 & 2
- Fluvial Geomorphology 1 & 2
- Natural Heritage 1 & 2
- Archaeology
- Options
 - Outfall Improvements
 - Bank Repairs
 - Bank Repair Alternatives
 - Modified Landmark
 - Full Landmark
 - Full Natural Channel Design
- Next Steps in the Study



**We welcome your feedback on all
of the materials presented.**

Please direct your questions to City of Windsor and Water's Edge staff and share your opinions with us. We also encourage you to complete a comment sheet before leaving.

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD

STUDY AREA



- THE GOAL OF THE PROPOSED DESIGN WOULD BE TO CREATE A MORE SUSTAINABLE RIVER CORRIDOR WHILE ENHANCING THE ECOLOGICAL AND AESTHETIC FUNCTIONS OF THE EXISTING CHANNEL

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD

CLASS EA PROCESS

Class Environmental Assessments

Class EA projects are broken down into three schedules:

Schedule A projects are limited in scale, have minimal adverse environmental effects and include a number of municipal maintenance and operational activities. These projects are preapproved and may proceed to implementation without following the full Class EA planning process. These projects generally include normal or emergency operational and maintenance activities.

Schedule B projects have the potential for some adverse environmental effects. The proponent (municipality) is required to undertake a screening process, involving mandatory contact with directly affected public and relevant review agencies, to ensure that they are aware of the project and that their concerns are addressed. If there are no outstanding concerns, then the proponent may proceed to implementation. These projects generally include improvements and minor expansions to existing facilities.

Schedule C projects have the potential for significant environmental effects and must proceed under the full planning and documentation procedures specified in the Class EA document. These projects require that an Environmental Study Report (ESR) be prepared and filed for review by the public and review agencies. These projects generally include the construction of new facilities and major expansions to existing facilities.

There are five phases in the process:

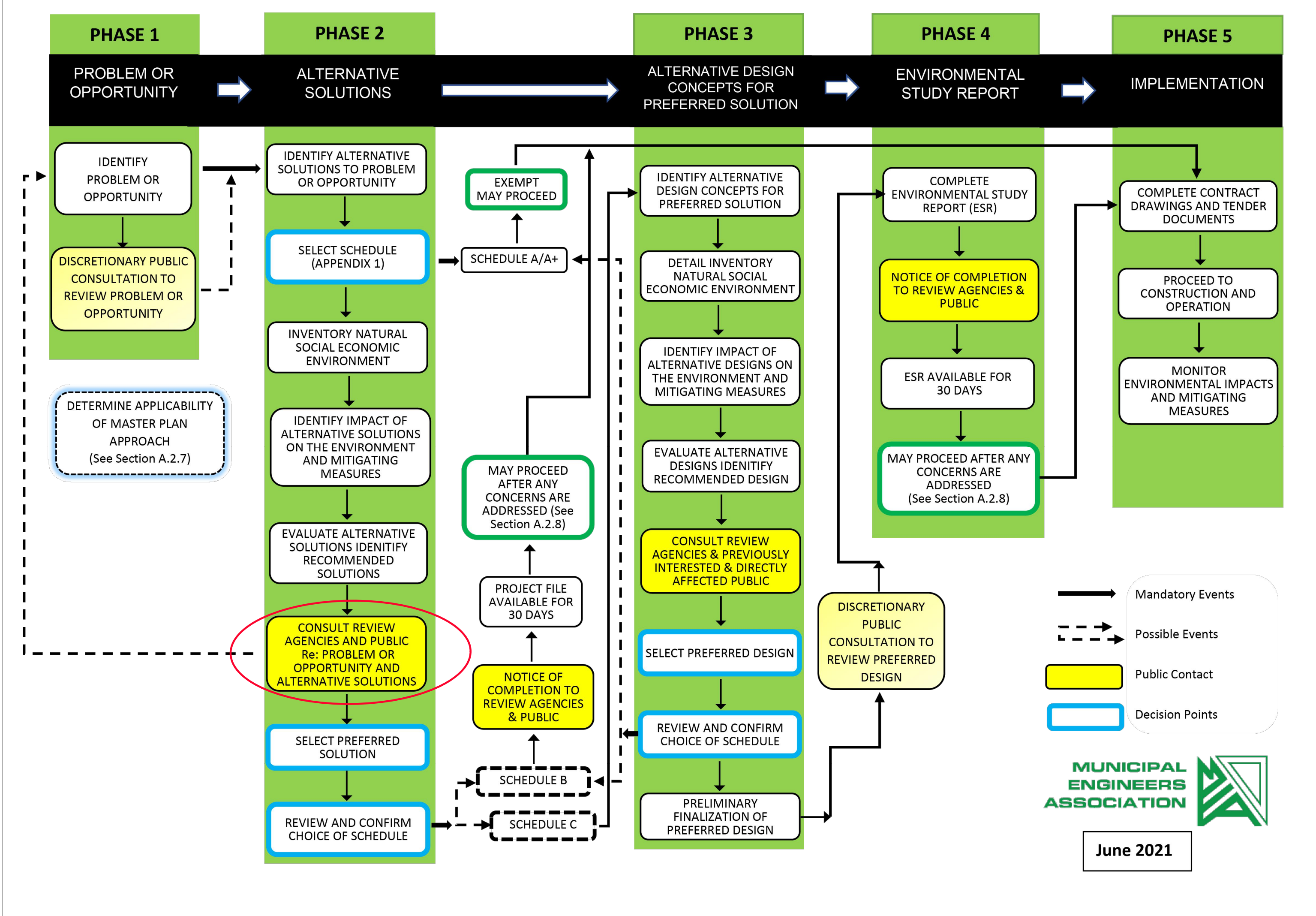
- Phase 1** Identify the problem (deficiency) or opportunity.
- Phase 2** Identify alternative solutions.
- Phase 2** Examine alternative design concepts for the preferred solution.
- Phase 2** Prepare Environmental Study Report (ESR).
- Phase 2** Implementation (contract drawings and documents, construction and operation).

Schedule A Projects only require completion of **Phase 1**

Schedule B Projects must complete **Phases 1 & 2**

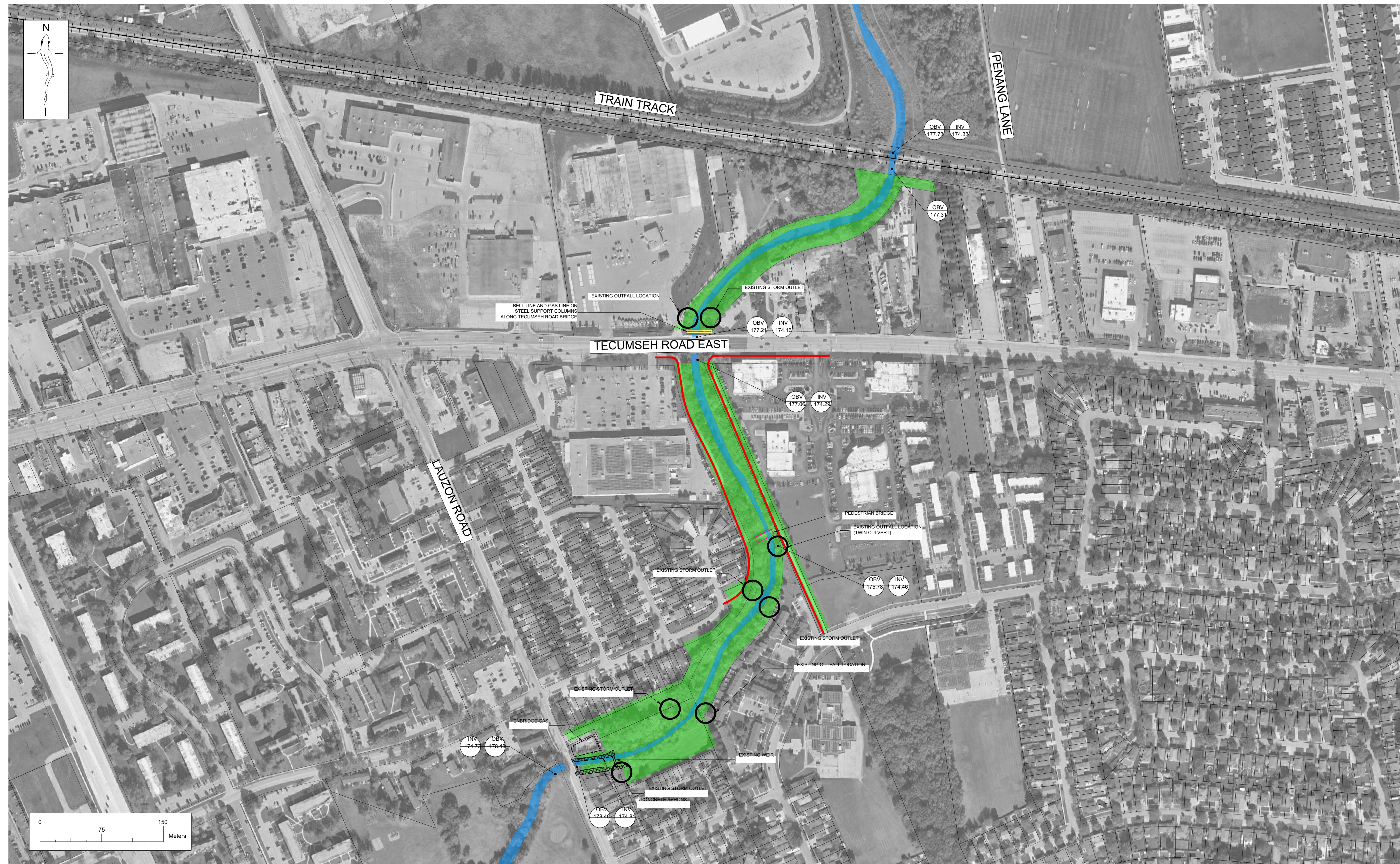
The Little River Class EA project is being completed as a **Schedule B** project and we are at the stage of the project noted on the figure (Public Consultation)

MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA



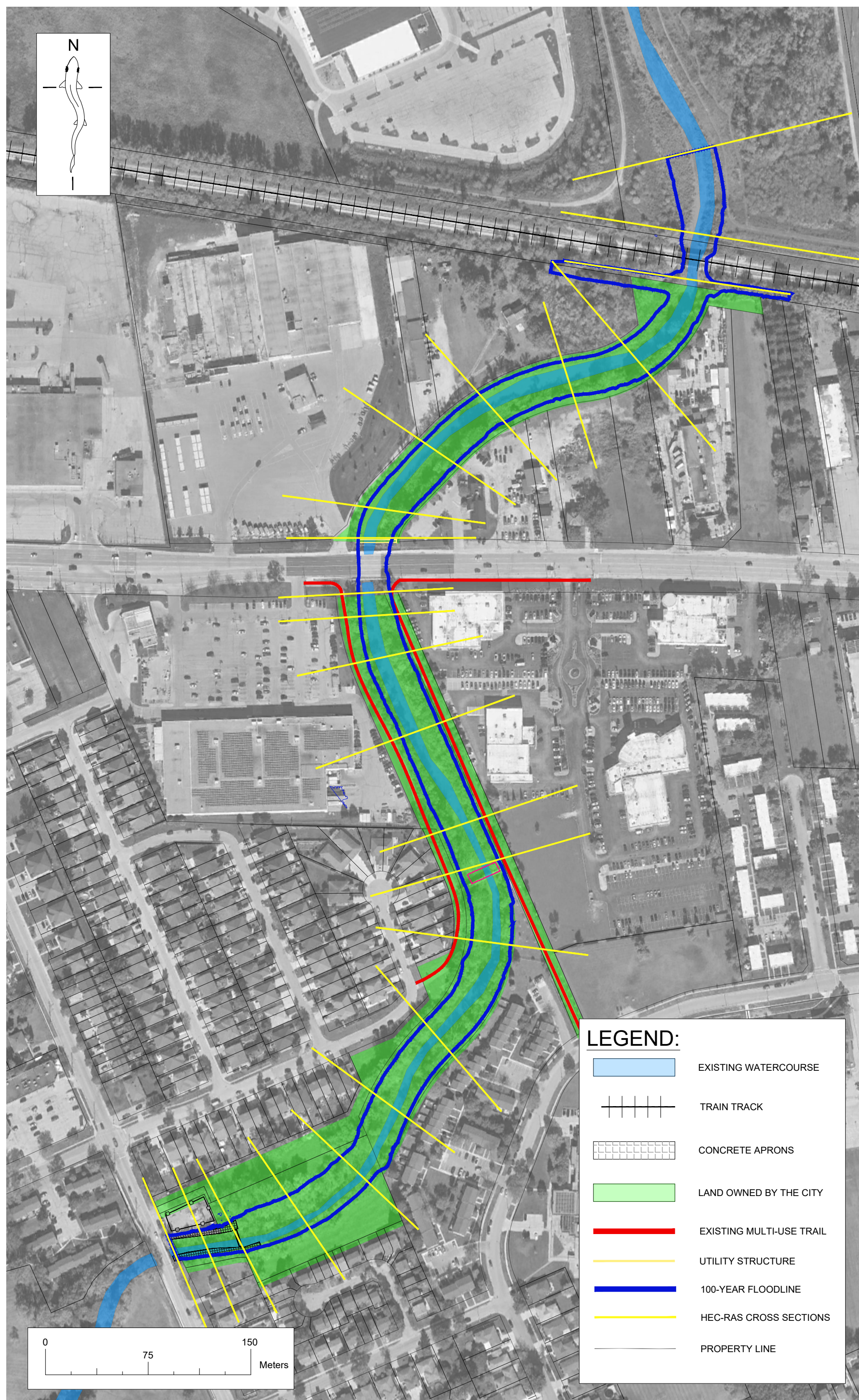
LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD

EXISTING CONDITIONS



LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD

HYDROLOGY AND HYDRAULICS



PAST WATERSHED STUDIES REVIEWED FOR LITTLE RIVER:

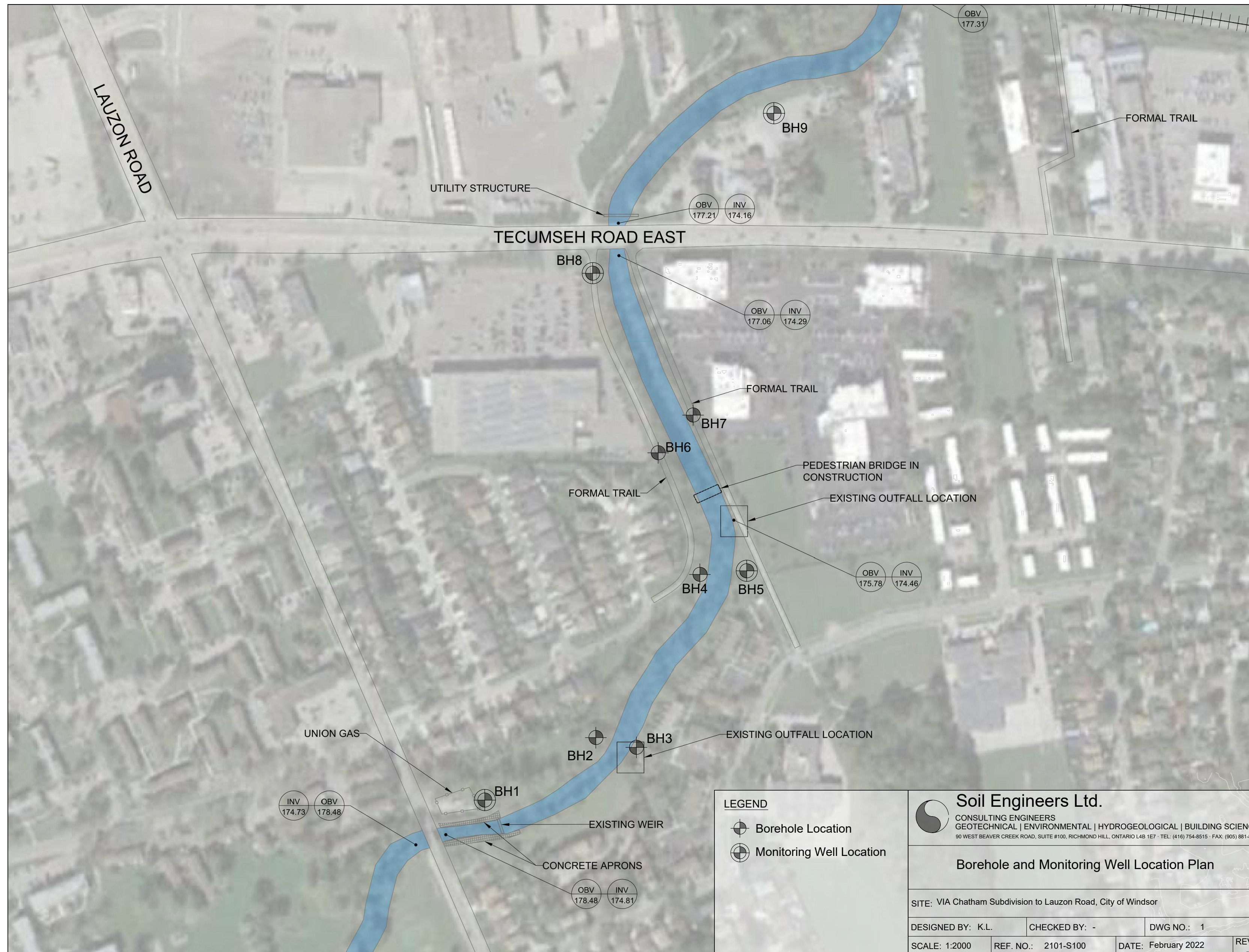
- FLOOD LINES MAPPING STUDY - LITTLE RIVER (M. M. DILLON, 1977)
- LITTLE RIVER FLOOD LINE MAPPING (MACLAREN, 1985)
- UPPER LITTLE RIVER WATERSHED MASTER DRAINAGE AND SWM PLAN ENVIRONMENTAL ASSESSMENT ENVIRONMENTAL STUDY REPORT (STANTEC, 2021)
- LITTLE RIVER WATERSHED FLOOD LINE MAPPING (ESSEX REGION CONSERVATION AUTHORITY, 2021) - (DILLON) - DRAFT

HYDRAULIC CONSIDERATIONS:

- FLOOD LINES CURRENTLY REMAIN WITHIN THE CHANNEL FOR REGIONAL FLOOD
- 100 -YEAR STORM IS $70M^3/S$ (DILLON 2021)
- DRAINAGE AREA UPSTREAM LAUZON ROAD IS $55.5KM^2$
- HYDRAULIC 1D MODEL HAS BEEN CREATED FOR BOTH EXISTING AND PROPOSED CONDITIONS
- CHANGES TO HYDRAULICS DO NOT CHANGE FLOODLINES FOR REGIONAL FLOOD

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD

GEOTECHNICAL



- NINE (9) SAMPLED BOREHOLES, WITH DEPTHS RANGING FROM 6.6 M TO 12.7 M MARCH 10 AND 14, 2021
- MONITORING WELLS WERE INSTALLED IN FOUR BOREHOLES FOR GROUNDWATER RECORDS AND HYDROGEOLOGICAL ASSESSMENT
- SITES GENERALLY CONSISTED OF TOPSOIL VENEER (5 TO 13 CM) AND A LAYER OF EARTH FILL (1.4 M AND 2.4 M BELOW GRADE) WHICH IS GENERALLY UNDERLAIN WITH STRATA OF SILTY CLAY AND SILTY CLAY TILL
- NATURAL WATER CONTENT OF THE TOPSOIL/EARTH FILL SAMPLES RANGED FROM 13% TO 25%, INDICATING MOIST TO VERY MOIST CONDITIONS.
- NATIVE SILTY CLAY AND SILTY CLAY TILL CONTACTED BELOW THE EARTH FILL IS HETEROGENEOUS WITH PARTICLE SIZES RANGING FROM GRAVEL TO CLAY, WITH SILT AND CLAY BEING THE DOMINANT FRACTIONS.
- SILTY CLAY IS COHESIVE IN NATURE, LAMINATED WITH OCCASIONAL SAND SEAMS, AND HAS A VARVED STRUCTURE SHOWING THE SOIL IS A LACUSTRINE DEPOSIT (LAKE OR RIVER DEPOSITS)

Grain size analyses were performed on three (3) representative samples:

Borehole No.	Sample Depth (m)	% Gravel	% Sand
2	9.3	5	
5	6.3	5	
8	6.3	4	

Atterberg Limits performed on clay and clay till show low plasticity in five selected soil samples:

Borehole No.	Sample Depth (m)	Liquid Limit (%)
2	9.3	
4	9.3	
5	6.3	
7	12.5	
8	6.3	

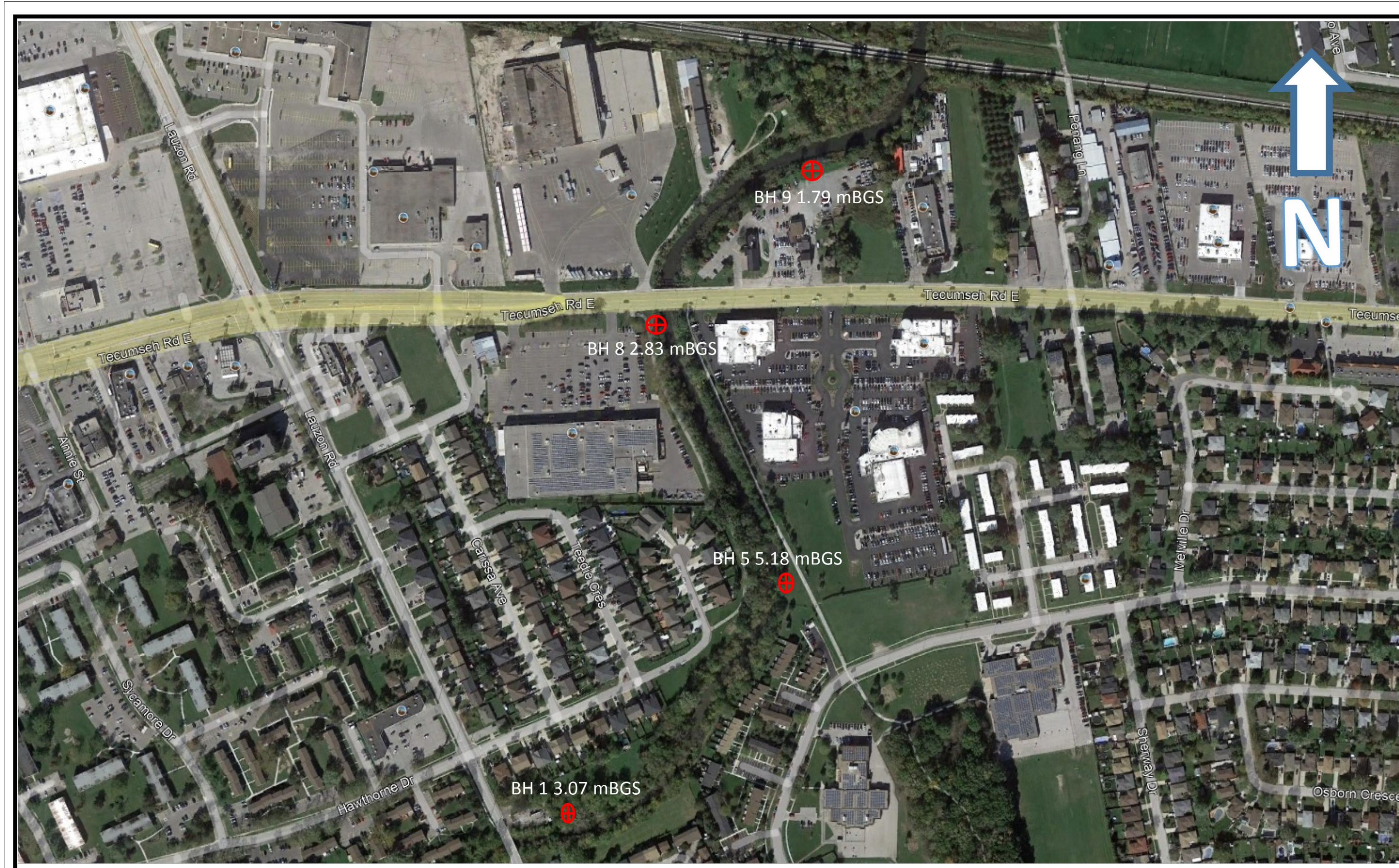
Natural water content values of the clay and clay till ranged between 10% and 21% indicating moist conditions

'N' values indicate that clay and clay till are generally stiff in consistency

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD

HYDROGEOLOGY

GENERAL STUDY AREA CHARACTERISTICS:



imagery from Google Earth © 2022

Drawing 2 - Perched Groundwater Elevations
Little River Channel Improvements, Windsor

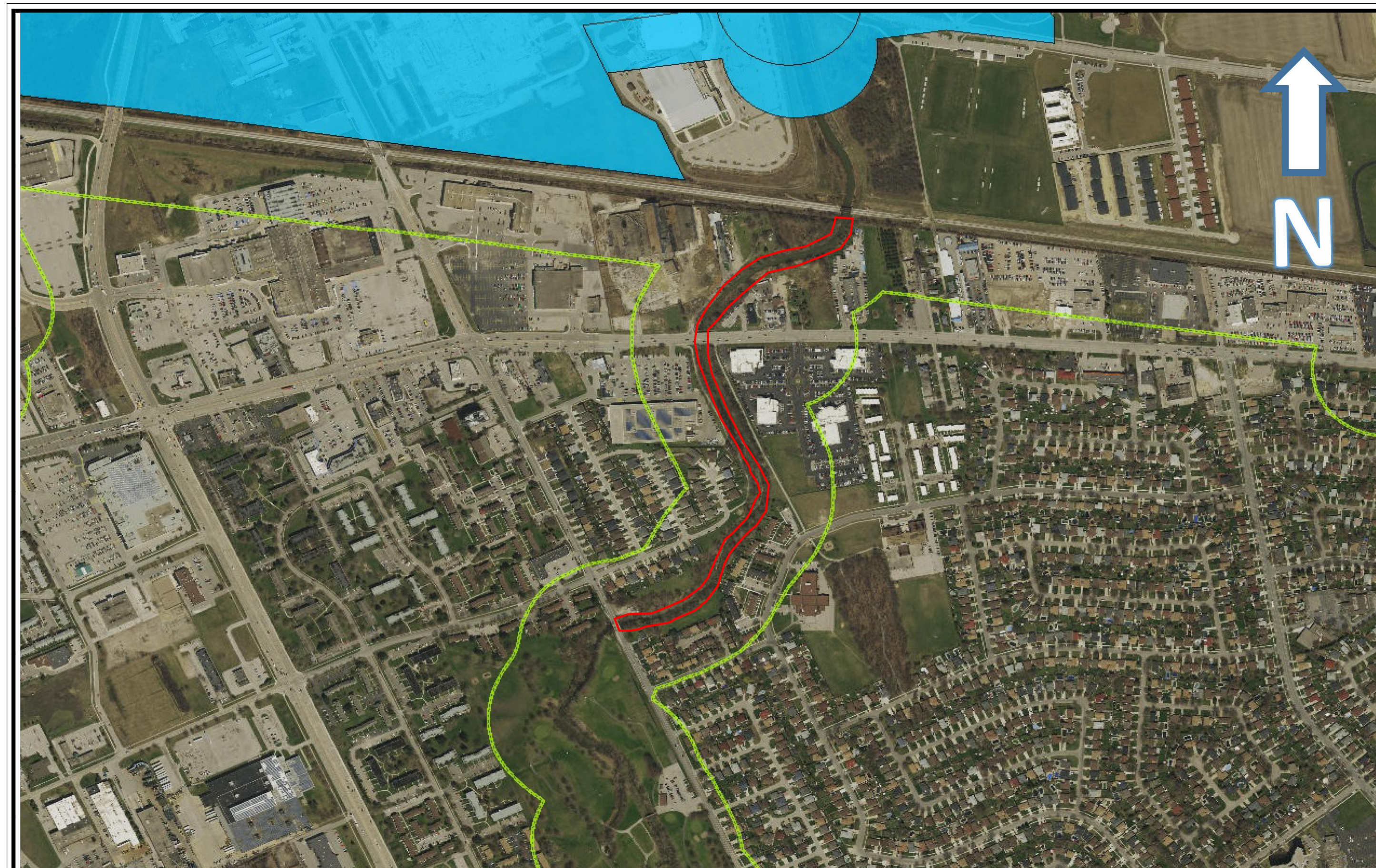
LEGEND	
BH 02-22 191.21	Measured Perched Groundwater Elevation (mBGS)



Drawn: CFH
Date: 1/14/2022


- THE STUDY AREA LIES WITHIN THE ST. CLAIR CLAY PLAINS PHYSIOGRAPHIC REGION - MAINLY COMPRISED OF DEEP WATER FINE GRAINED CLAY SEDIMENTS DEPOSITED IN GLACIAL LAKE WHITTLESEY.
- QUATERNARY GEOLOGY MAPPING INDICATES STUDY AREA IS UNDERLAIN BY CLAYEY SILT TILL DEPOSITS (BROOKSTON CLAY PER ERCA)
- PALEOZOIC GEOLOGY MAPPING INDICATES UNDERLYING MATERIAL IS HAMILTON GROUP SHALE AND LIMESTONE BEDROCK.
- MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS (MECP) WATER WELL RECORD (WWR) DATABASE SUGGEST OVERBURDEN MAY BE APPROXIMATELY 39 M THICK IN THE GENERAL VICINITY OF THE STUDY AREA
- APART FROM LITTLE RIVER, THERE ARE NO SURFACEWATER FEATURES ON OR ADJACENT TO THE STUDY AREA
- STUDY AREA IS NOT LOCATED IN THE HIGHLY VULNERABLE AQUIFER (HVA) AREA, A SIGNIFICANT GROUNDWATER RECHARGE AREA (SGRA), A VULNERABLE GROUNDWATER AREA, A GROUNDWATER UNDER DIRECT INFLUENCE (GUDI) OF SURFACE WATER AREA, AND NOT LOCATED WITHIN A VULNERABLE SURFACE WATER AREA
- MAPPING AND THE MECP WWR DATABASE INDICATE NO PRIVATE OR MUNICIPAL WATER SUPPLY WELLS LOCATED IN PROXIMITY TO THE STUDY AREA WITH NO IMPACTS DURING DEWATERING

STUDY AREA INVESTIGATIONS:



imagery from OSPiA © 2022

**Drawing 3 - Ontario Source Protection Information Atlas Mapping
Little River Channel Improvements, Windsor**

LEGEND	
	Study Area

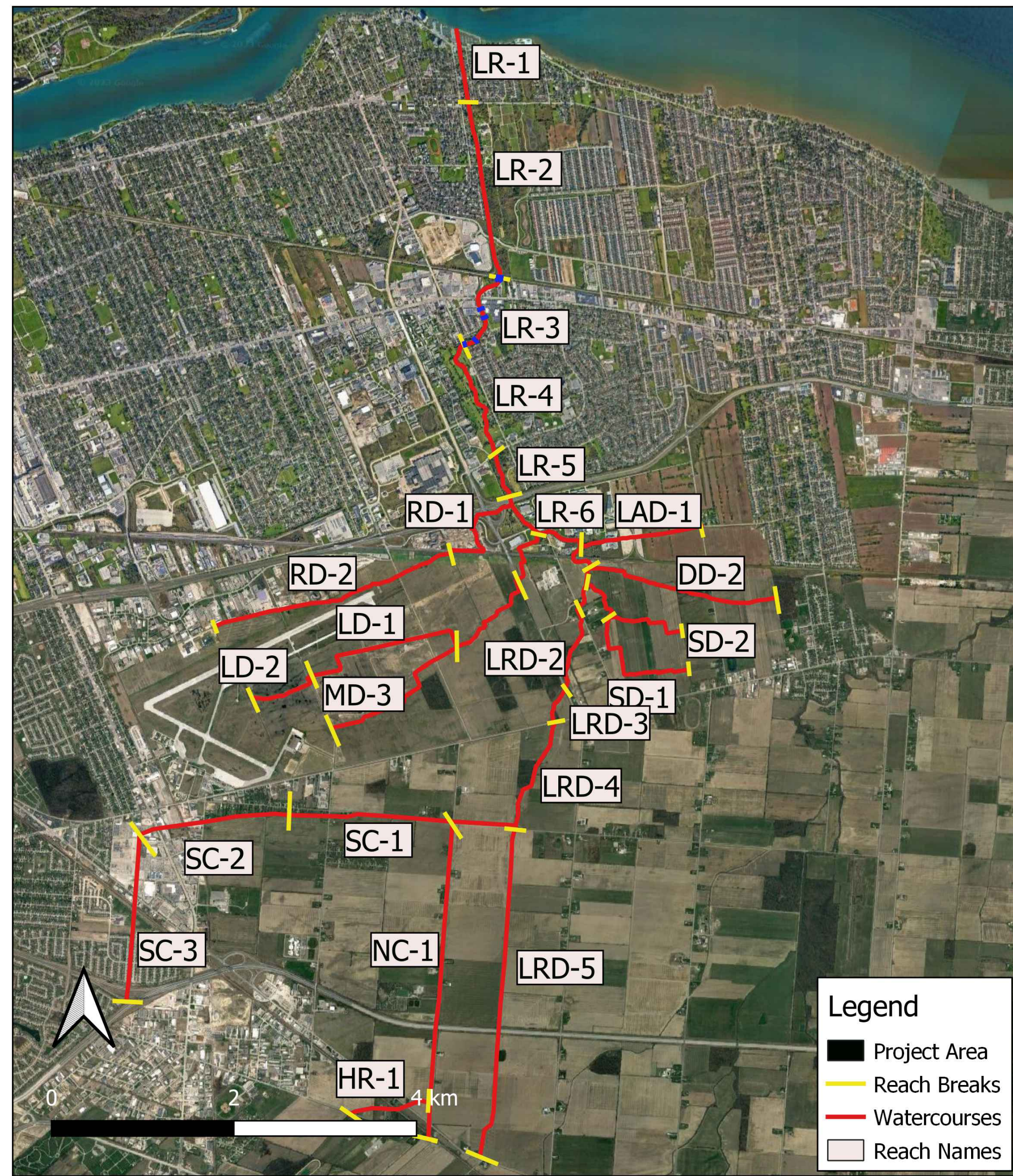


Drawn: CFH
Date: 1/13/2022

- LITTLE RIVER CHANNEL IMPROVEMENTS - HYDROGEOLOGICAL INVESTIGATION
- FOUR MONITORING WELLS WERE DEVELOPED (PURGED) USING WATERRA INERTIAL VALVES AND TUBING TO REMOVE FINE-GRAINED MATERIAL FROM THE WELL SCREEN SAND PACK
- WATER CHEMISTRY SAMPLES WERE OBTAINED FROM TWO WELLS FOR ANALYSIS OF GENERAL CHEMISTRY PARAMETERS
- SUBSURFACE STRATIGRAPHY GENERALLY CONSISTS OF FILL UNDERLAIN BY SILTY CLAY TILL /SILTY CLAY DEPOSITS TO THE TERMINATION DEPTHS OF THE BOREHOLES UP TO 12.7 MBGS
- PERCHED GROUNDWATER WAS ENCOUNTERED WITHIN THE LOW PERMEABILITY SOIL DEPOSITS AT DEPTHS OF 1.79 TO 5.18 MBGS
- FOUR WELLS WERE ASSESSED VIA SLUG TESTS TO ESTIMATE SATURATED SOIL HYDRAULIC CONDUCTIVITY ($<1 \times 10^{-7}$ M/SEC) AND GRAIN SIZE
- ANALYSES ($<1 \times 10^{-8}$ M/SEC). RESULTS ARE INDICATIVE OF LOW PERMEABILITY AS WOULD BE EXPECTED FROM SILTY CLAY OVERBURDEN
- GROUNDWATER SAMPLES EXHIBITED EXCEEDANCES OF THE CITY OF WINDSOR STORM SEWER USE BY-LAW CRITERIA LIMITS FOR TOTAL SUSPENDED SOLIDS (TSS) AND SULFATE BUT NO EXCEEDANCES OF THE CITY OF WINDSOR SANITARY SEWER USE BY-LAW CRITERIA LIMITS. TSS IS SUSPECT DUE TO SAMPLING METHODOLOGY AND REQUIRES FURTHER CONFIRMATION.
- LITTLE RIVER SAMPLES EXHIBITED NO EXCEEDANCES OF SANITARY SEWER CRITERIA LIMITS AND NO EXCEEDANCES OF STORM SEWER CRITERIA LIMITS
- TREATMENT OF CONSTRUCTION DEWATERING DISCHARGE WOULD BE REQUIRED PRIOR TO DIRECTING THE DISCHARGE TO MUNICIPAL STORM SEWERS

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD

FLUVIAL GEOMORPHOLOGY



	21002 - Little River Class EA	Date: Jan 27, 2023	Figure: Map 1
	Fluvial Geomorphology Map	Checked By: EG	Drawn By: AM



	21002 - Little River Class EA	Date: Sept. 15, 2022	Figure: Map 1
	Fluvial Geomorphology Map #2	Checked By: EG	Drawn By: NG

LITTLE RIVER CHARACTERISTICS:

- ❖ LITTLE RIVER IS A SINUOUS CHANNEL WITH ESTABLISHED POOL-RIFFLE SEQUENCES
- ❖ STUDY REACH IS LR-3 WITHIN THE OVERALL LITTLE RIVER SYSTEM
- ❖ CHANNEL REACH LR-3 IS GENERALLY WIDE AND DEEP WITH AN AVERAGE BANKFULL WIDTH OF 14.5M AND AVERAGE MEAN DEPTH OF 0.68M
- ❖ REACH IS CHARACTERIZED BY COMMON ELEMENTS OF URBAN CHANNELS SUCH AS ROAD CROSSINGS, STORMWATER OUTFALLS, AND BANK PROTECTION/MODIFICATION
- ❖ BANKS ARE COVERED WITH REEDS, TREES, SHRUBS, GROUND COVER OF GRASSES AND HERBACEOUS VEGETATION, AND ARTIFICIAL PROTECTION
- ❖ UPSTREAM CHANNEL INVERT IS ARMOURSTONE OR INTERLOCKING STONE THAT TRANSITIONS TO A NATURAL CHANNEL BOTTOM (NEAR CROSS SECTION 3)
- ❖ DOWNSTREAM REACHES (LR-1 AND LR-2) ARE AFFECTED BY FLUCTUATING ST. CLAIR RIVER BACKWATER CONDITIONS

SUMMARY OF STUDY AREA GEOMORPHIC PARAMETERS

PARAMETER
Bankfull Width (m)
Bankfull Mean Depth (m)
Bankfull Max Depth (m)
Bankfull Area (m ²)
Wetted Perimeter (m)
Hydraulic Radius (m)
Floodprone Width (m)
Width-Depth Ratio
Entrenchment Ratio
Channel Bottom Slope (m/m)
Bankfull slope



PHOTOGRAPH 1



PHOTOGRAPH 3



PHOTOGRAPH 2



PHOTOGRAPH 4

LITTLE RIVER ISSUES:

- ❖ BEAVER ACTIVITIES HAVE IMPACTED SEVERAL LARGE TREES (SEE **PHOTOGRAPH 1**)
- ❖ SEVERAL FAILING STORMWATER OUTFALLS ALONG THE STUDY REACH
- ❖ EROSION INDICATORS PRESENT ON CHANNEL BANKS INCLUDE:
 - FALLEN/LEANING TREES (SEE **PHOTOGRAPH 1**)
 - BASAL SCOUR AND EXPOSED TREE ROOTS (SEE **PHOTOGRAPH 2**)
 - WOODY DEBRIS LEADING TO LOG JAM (SEE **PHOTOGRAPH 3**)
 - FALLEN CONCRETE BLOCKS IN THE RIVER (SEE **PHOTOGRAPH 4**)

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD

NATURAL HERITAGE

LITTLE RIVER ENVIROMENTAL CHARACTERIZATION

- LITTLE RIVER HAS A WARMWATER THERMAL REGIME, FISH COMMUNITY AND AQUATIC HABITAT CONSIDERED POOR TO MODERATE THROUGHOUT
- NO DESIGNATED NATURAL AREAS (I.E. PROVINCIALY SIGNIFICANT WETLANDS (PSW), AREAS OF NATURAL AND SCIENTIFIC INTEREST (ANSI), OR OTHER LOCAL NATURAL HERITAGE DESIGNATIONS ETC.).
- A SINGLE VEGETATION COMMUNITY TYPE CULTURAL WOODLAND (CUW1) IS PRESENT
- NO WETLAND FEATURES ARE PRESENT WITHIN THE STUDY AREA.
- 387 TREES WERE INVENTORIED: 19 SPECIES - (81%) NATIVE SPECIES AND (19%) NON-NATIVE SPECIES.
- POTENTIALLY FOUR SPECIES AT RISK PRESENT: EASTERN PEWEE (CONTOPUS VIRENS), SNAPPING TURTLE (CHELYDRA SERPENTINA), EASTERN FOXSNAKE (PANTHEROPHIS GLOYDI), PRAIRIE ROSE (ROSA SETIGERA)
- SAR HABITAT IS LIMITED TO POTENTIAL PRESENCE OF EASTERN FOXSNAKE GIVEN URBAN LANDSCAPE AND LIMITED NATURAL COVER
- NATURALIZATION PLANTINGS WILL ENHANCE OVERALL HABITAT QUALITY FOR SNAKES
- ONE PROVINCIALY SIGNIFICANT PLANT SPECIES (A SINGLE MISSOURI IRONWEED (VERNONIA MISSURICA)) WAS OBSERVED - RECOMMEND THAT GRADING AVOID THIS PLANT OR RELOCATION IF NECESSARY
- NORTHERN MADTOM (NOTURUS STIGMOSUS) (ENDANGERED) OCCUR DOWNSTREAM BUT ARE NOT IN STUDY AREA - RESTORATION WILL IMPROVE THE OVERALL FISH HABITAT AND RIVER CONDITIONS AND ALSO BENEFIT THE NORTHERN MADTOM
- NO SUITABLE BAT HABITAT FOUND
- LITTLE RIVER CORRIDOR PROVIDES AN IMPORTANT WILDLIFE MOVEMENT LINKAGE BETWEEN THE DETROIT RIVER AND LANDS TO THE SOUTH OF E.C. ROW PARKWAY. NATURAL COVER LIMITED TO A NARROW BAND OF VEGETATION ON EACH BANK UTILIZED BY A VARIETY OF WILDLIFE. ENHANCEMENT WORKS MAY IMPROVE LINKAGE QUALITY WITH GREATER DIVERSITY OF NATIVE SPECIES AND IMPROVED HABITAT HETEROGENEITY.
- STREAM ENHANCEMENTS PRESENT AN OPPORTUNITY TO IMPROVE EXISTING AQUATIC HABITAT AND THE DIVERSITY AND COVER OF AQUATIC AND NEARSHORE VEGETATION THROUGH SEEDING OR PLANTING OF NATIVE HERBACEOUS STOCK

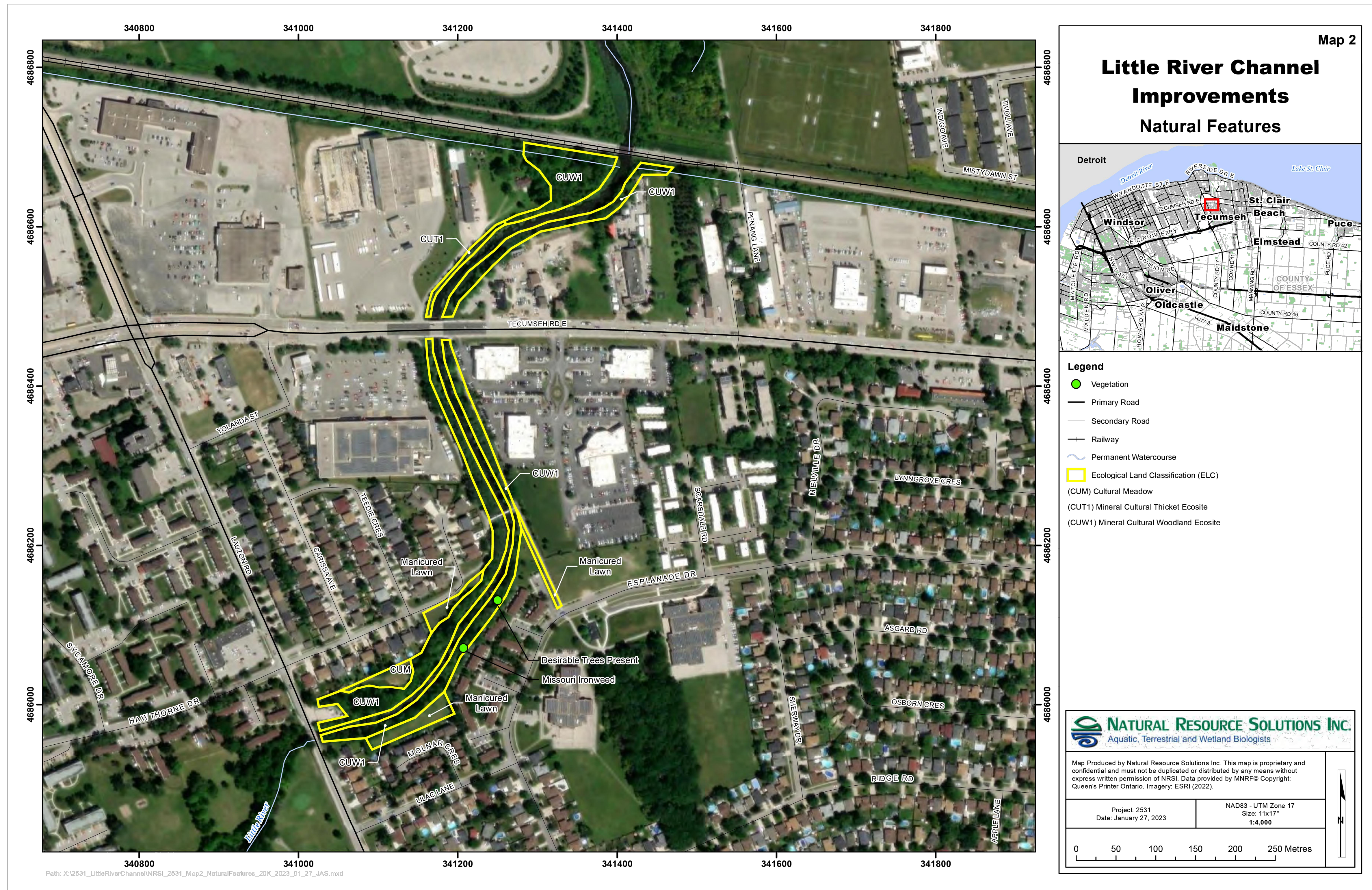
NATURAL FEATURES CONSTRAINTS

- WARMWATER TIMING WINDOWS APPLY FOR CONSTRUCTION WITH NO IN-WATER WORK BETWEEN APRIL 1 TO JUNE 30
- WILL REQUIRE ERCA PERMIT PURSUANT TO ONTARIO REGULATION 158/06 (ERCA 2013) AND DFO AUTHORIZATION PURSUANT TO FISHERIES ACT.
- IN ACCORDANCE WITH THE PROVINCIAL POLICY STATEMENT (2014), DEVELOPMENT AND SITE ALTERATION SHALL NOT BE PERMITTED WITHIN THE AREA OUTLINED IN SUB-SECTIONS A) - F) "UNLESS IT HAS BEEN DEMONSTRATED THAT THERE WILL BE NO NEGATIVE IMPACTS ON THE NATURAL FEATURES OR THEIR FUNCTIONS."
- SAR HABITAT FOR EASTERN WOOD-PEWEE, SNAPPING TURTLE, EASTERN FOXSNAKE, AND MISSOURI IRONWEED IDENTIFIED - ADDITIONAL FIELD SURVEYS PRIOR TO CONSTRUCTION MAY BE REQUIRED
- NO SUITABLE BAT HABITAT OBSERVED BUT MAY PROVIDE SUITABLE FORAGING HABITAT - INSTALLATION OF ELEVATED BAT ROOST STRUCTURES IN THE SOUTHERN REACH WOULD ENHANCE HABITAT FOR BATS AND PUBLIC EDUCATION.
- DESIGN SHOULD AIM TO RETAIN AS MANY OF THE NATIVE TREE SPECIES AS POSSIBLE
- REMOVAL OF NON-NATIVE SPECIES IS ENCOURAGED (EG SIBERIAN ELM) - REMOVALS WILL BENEFIT SITE DIVERSITY THROUGH NATURALIZATION
- TREE PRESERVATION PLAN REQUIRED FOR FINAL DESIGN - IDENTIFY TREES TO BE RETAINED AND/OR PROTECTED AND MITIGATION OR COMPENSATION MEASURES FOR TREES THAT ARE REMOVED.

SEE NATURAL HERITAGE MAPPING ON SHEET 13

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD

NATURAL HERITAGE

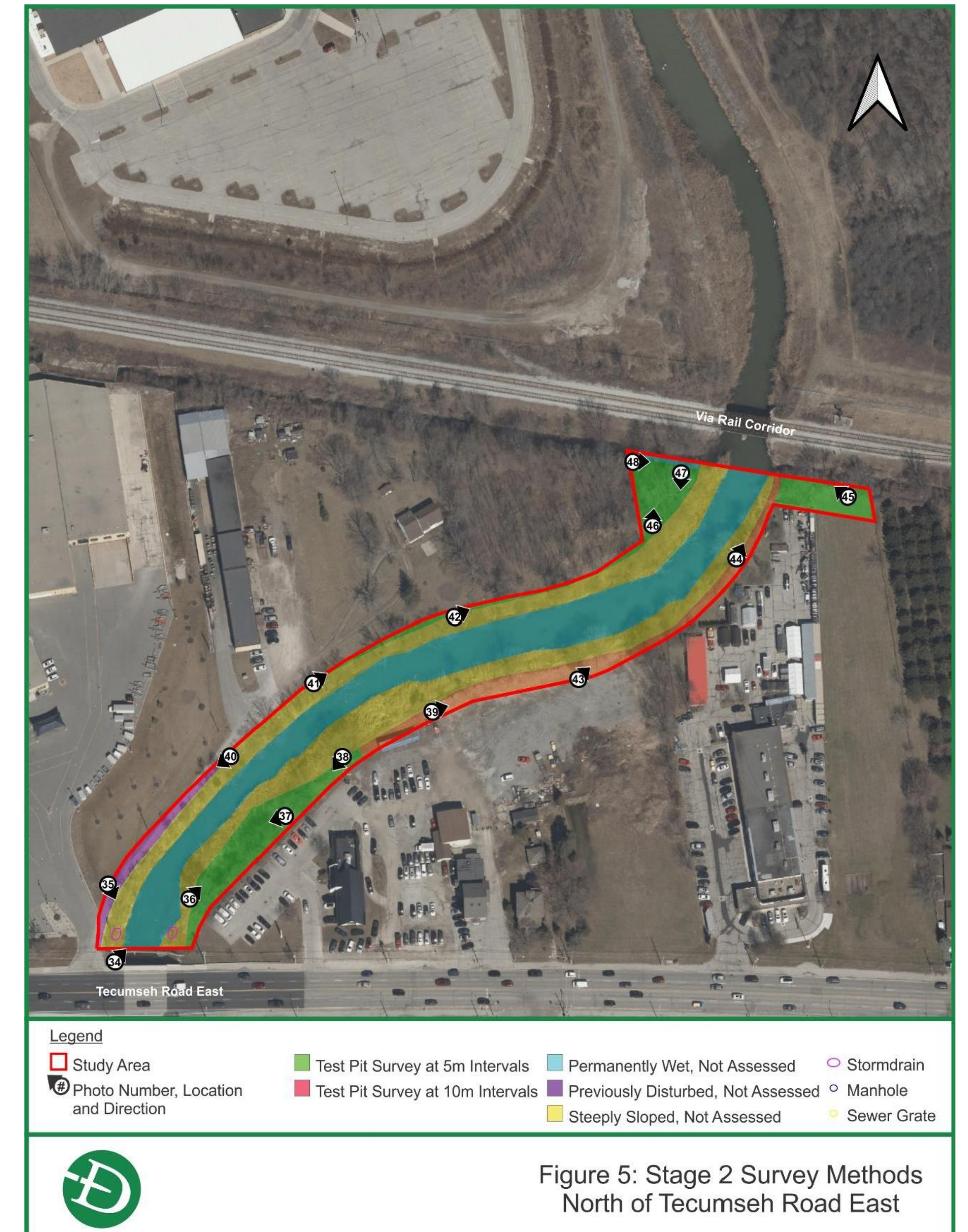


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ARCHAEOLOGY



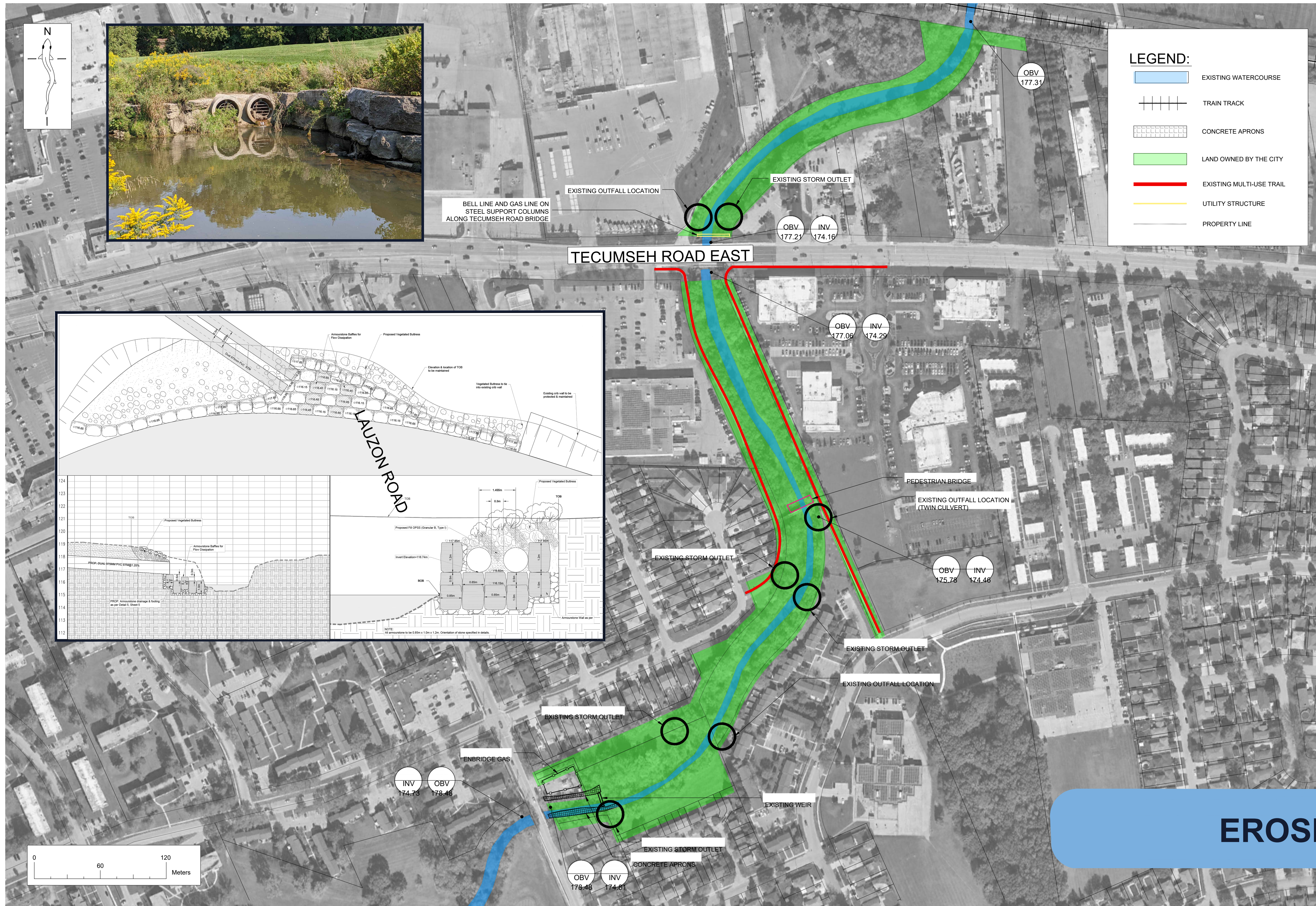
- STAGE 1 AND STAGE 2 ARCHAEOLOGY STUDIES WERE UNDERTAKEN
- STAGE 1 BACKGROUND RESEARCH INDICATED THAT THE STUDY AREA EXHIBITED MODERATE TO HIGH POTENTIAL FOR THE IDENTIFICATION AND RECOVERY OF ARCHAEOLOGICAL RESOURCES.
- EXISTING ASPHALT TRAIL, ASPHALT LANEWAY, CONCRETE TRAIL, AND GRAVEL AREA HAVE NO POTENTIAL BASED ON THE IDENTIFICATION OF EXTENSIVE AND DEEP LAND ALTERATION
- LITTLE RIVER IS EVALUATED AS BEING PERMANENTLY WET AND THEREFORE WAS DETERMINED TO RETAIN NO ARCHAEOLOGICAL POTENTIAL.
- TREET EMBANKMENTS ON BOTH SIDES OF THE LITTLE RIVER WERE STEEPLY SLOPED AND RETAIN NO ARCHAEOLOGICAL POTENTIAL
- STAGE 2 FIELD ASSESSMENT COMPLETED WITH TEST PIT SURVEYS AT FIVE METRE INTERVALS ACROSS THE GRASS AND TREETD AREAS (10M INTERVAL IN DISTURBED AREAS)
- STAGE 2 ASSESSMENT RESULTED IN THE IDENTIFICATION AND DOCUMENTATION OF NO ARCHAEOLOGICAL RESOURCES
- NO ADDITIONAL INVESTIGATION IS RECOMMENDED FOR THE STUDY AREA



LIST OF DESIGN OPTIONS FOR LITTLE RIVER

1. DO NOTHING (INCLUSION IS REQUIRED)
2. OUTFALL IMPROVEMENTS
3. BANK REPAIRS
4. MODIFIED LANDMARK - ONLY SOME INSTREAM STRUCTURES BUT NO POOL OR LOG STRUCTURES
 - a. MODIFIED LANDMARK WITH OUTFALL IMPROVEMENTS
 - b. MODIFIED LANDMARK WITH BANK REPAIRS
 - c. MODIFIED LANDMARK WITH OUTFALL IMPROVEMENTS AND BANK REPAIRS
5. FULL LANDMARK
 - a. FULL LANDMARK WITH OUTFALL IMPROVEMENTS
 - b. FULL LANDMARK WITH BANK REPAIRS
 - c. FULL LANDMARK WITH OUTFALL IMPROVEMENTS AND BANK REPAIRS
6. FULL NCD (PER STANTEC)

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD



PROS

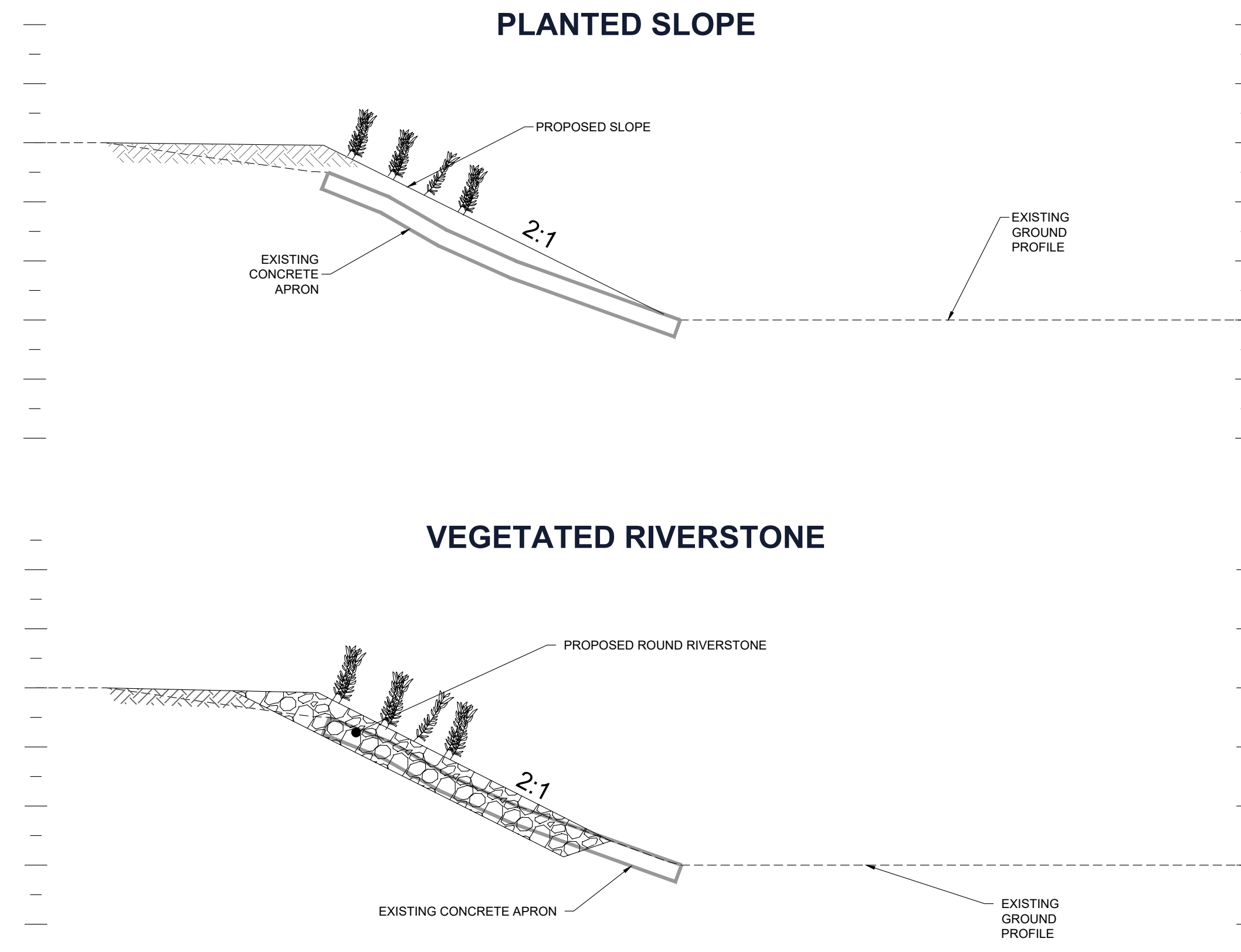
- PREVENT EROSION AT THE OUTLET
- REDUCE CHANNELIZATION OF THE WATERCOURSE
- RELATIVELY LOW COST
- AESTHETIC OF THE RIVER ARE IMPROVED
- MINIMAL DISTURBANCES FROM CONSTRUCTION
- DOES NOT REQUIRE YEARLY INSPECTIONS

CONS

- QUICK FIXES
- NO IMPROVEMENTS TO BANKS
- DOES NOT IMPROVE THE VALUE OF THE NEIGHBORHOOD
- DEGRADED BANKS LIKELY TO FILL IN WITH LITTER

EROSION CONTROL AT OUTLET

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD



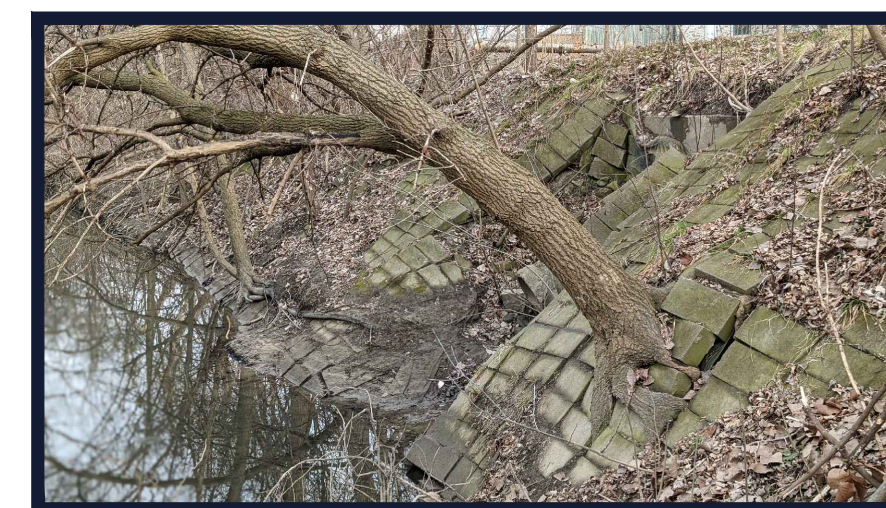
PROS

- PLANTS TO STABILIZE SLOPE
- PLANTS TO NATURALIZE THE SLOPE AND TAKE IT BACK TO ITS ORIGINAL STATE
- RIVERSTONE HAS HIGH AESTHETIC VALUE WHICH WILL ENCOURAGE HIKING, SITE SEEING AND DETER FROM LITTERING
- RIVERSTONE IS PERMEABLE
- INCREASE THE ROUGHNESS OF THE BANK BY MAKING THE STREAM LESS FLASHY
- FLOW VELOCITIES ARE REDUCED IMPROVING MIGRATION ABILITY
- MINIMAL DISTURBANCES FROM CONSTRUCTION
- HABITAT ON BANKS MAY BE IMPROVED

CONS

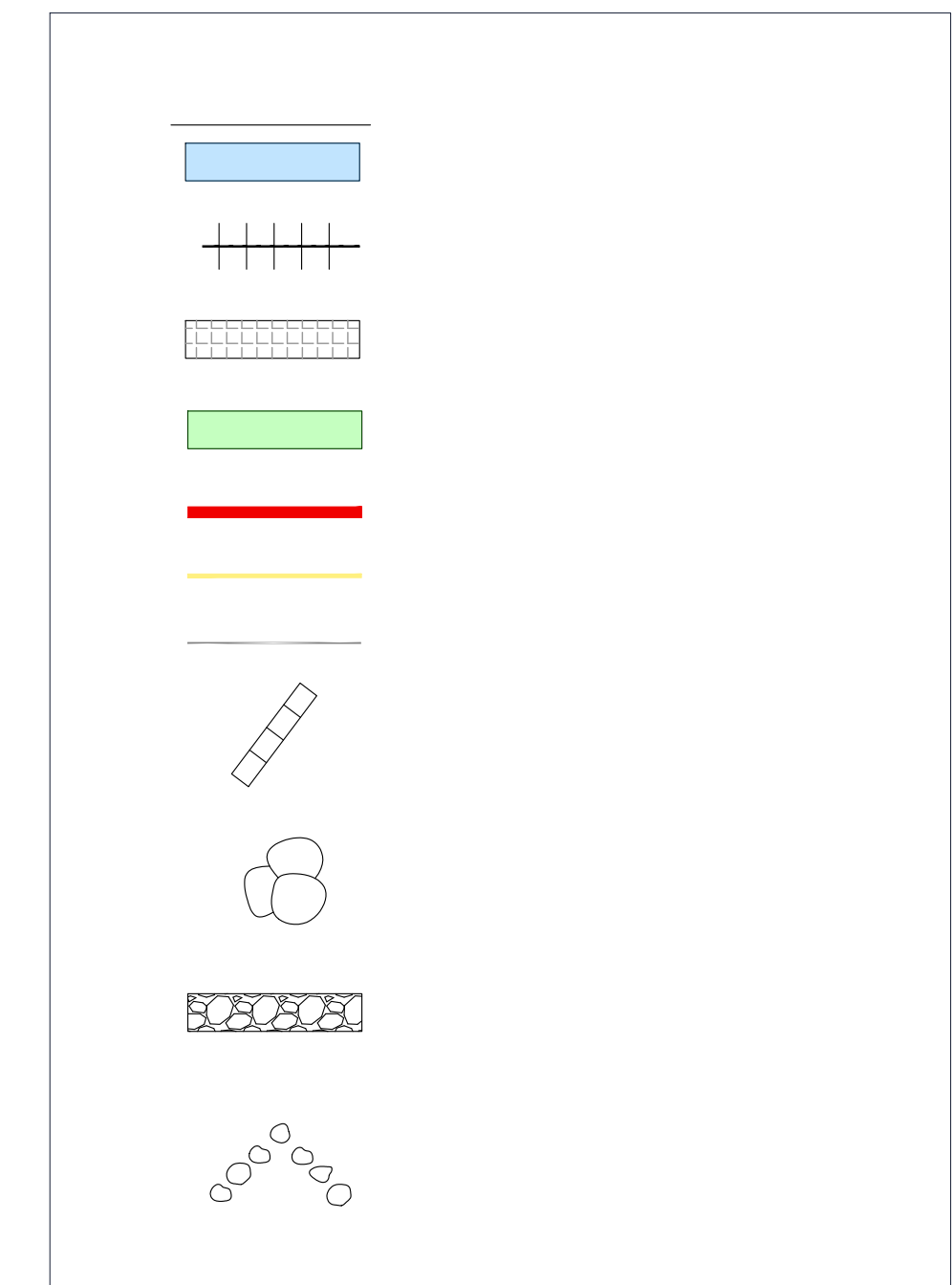
- MORE EXPENSIVE THAN OPTION 2. MAIN COSTS ASSOCIATED ARE WITH REMOVING AND DISPOSING CONCRETE BANKS AND INSTALLING VEGETATED RIVER STONE (~\$375,000)

EXISTING BANK CONDITIONS



BANK EROSION CONTROL

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD



PROS

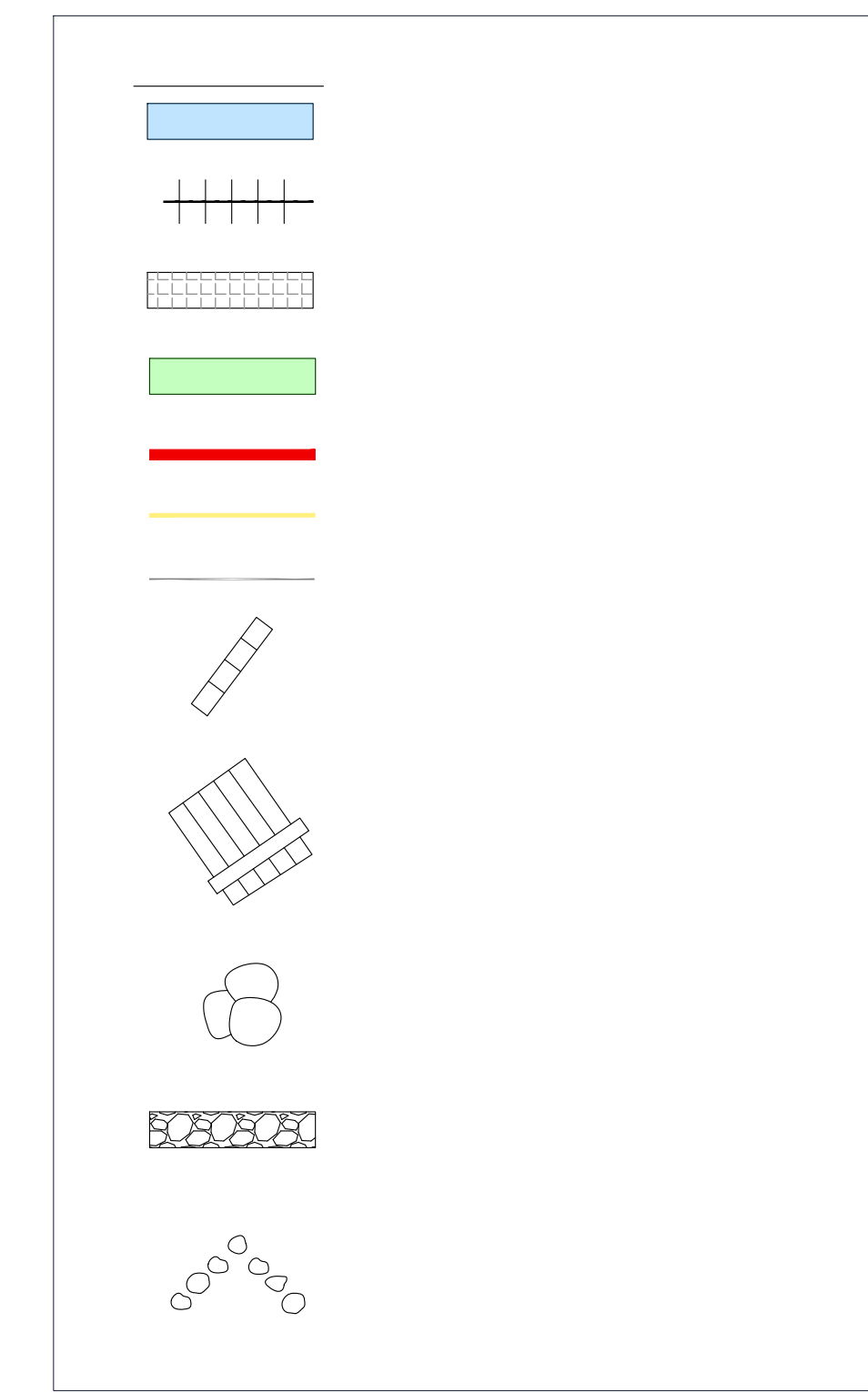
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CONS

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MODIFIED LANDMARK

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD



PROS

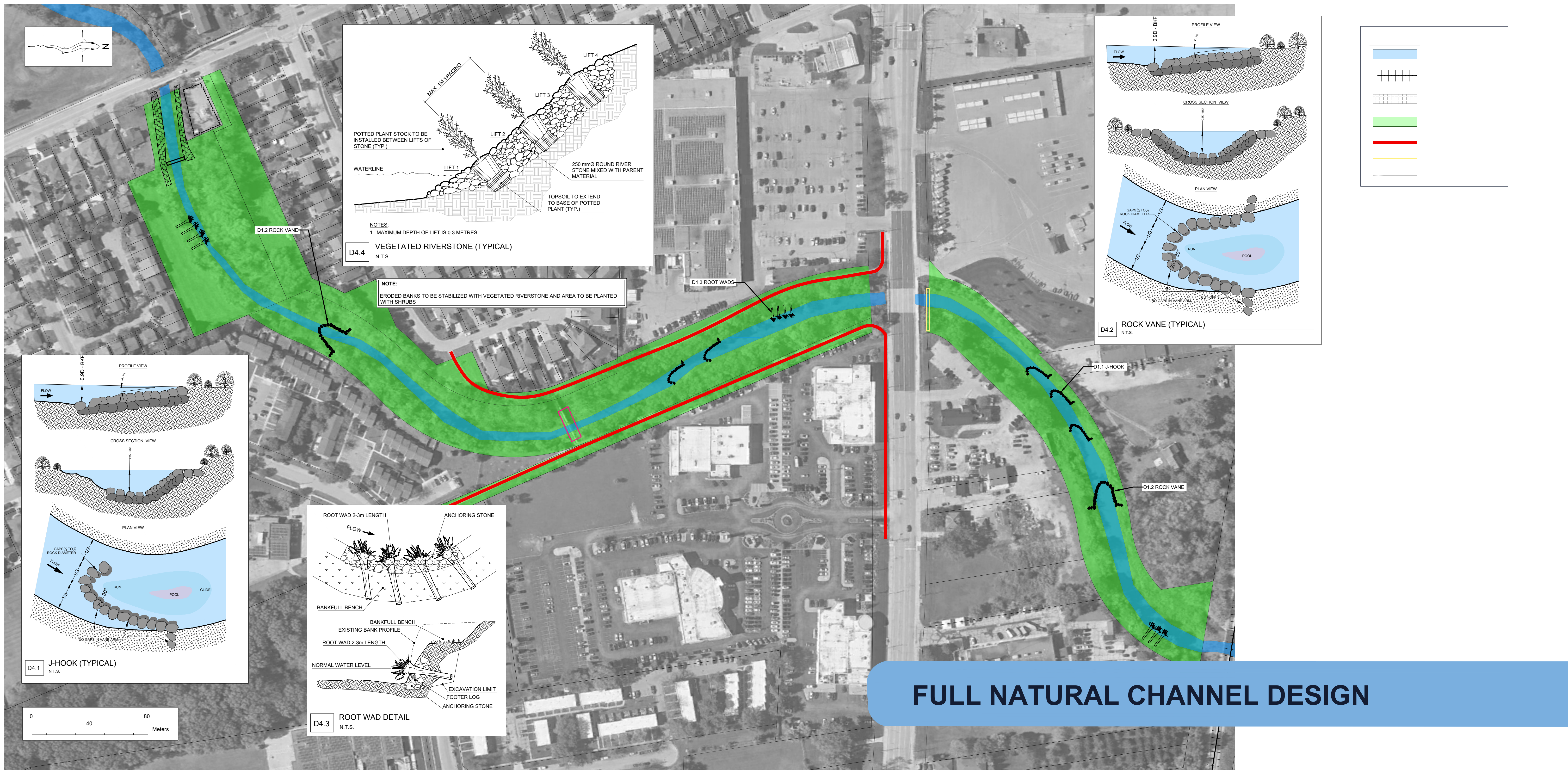
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CONS

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FULL LANDMARK

LITTLE RIVER CHANNEL IMPROVEMENT CLASS EA VIA RAIL TO LAUZON ROAD



After the Public Information Centre, the following will be carried out:



- Review the comments received and respond to any questions / concerns.
- Update and finalize the study design report
- Notice of completion to public and agencies
- Project file available for 30 Day review period
- When any concerns are addressed, the City may proceed to final design

Please feel free to ask questions and fill out a comment sheet before you leave. Comments can be left in the box provided or forwarded to the Project Team by **APRIL 12, 2023**.

CONTACT INFORMATION

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THANK YOU FOR ATTENDING!