

Appendix C: Public Information Centre Display Materials

WELCOME TO PUBLIC INFORMATION CENTRE #4

Detail Design and Class Environmental Assessment Study
for the Highway 427 Expansion Project

At this PIC, you will have a chance to review:

An overview of the Project

The steps in the Environmental Assessment (EA) process

The Detail Design and Construction Activities

The Existing Conditions in the Project Lands

Potential Environmental Impacts and Proposed Mitigation

This information will be documented in a Design and Construction Report (DCR), which will be made available for public review as part of the Environmental Assessment process.

Project Description

The overall detail design scope of the Highway 427 Expansion Project includes the following:

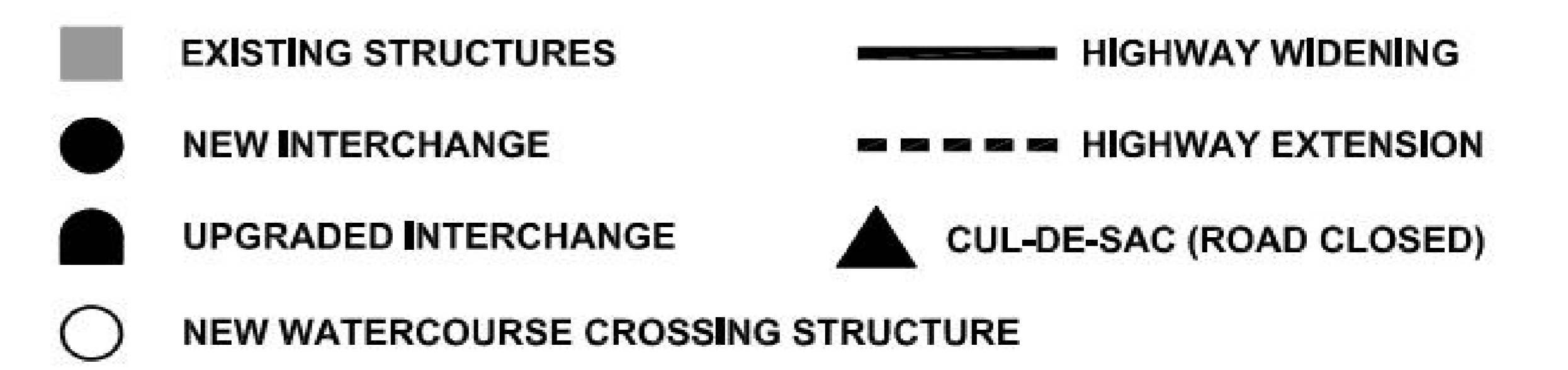
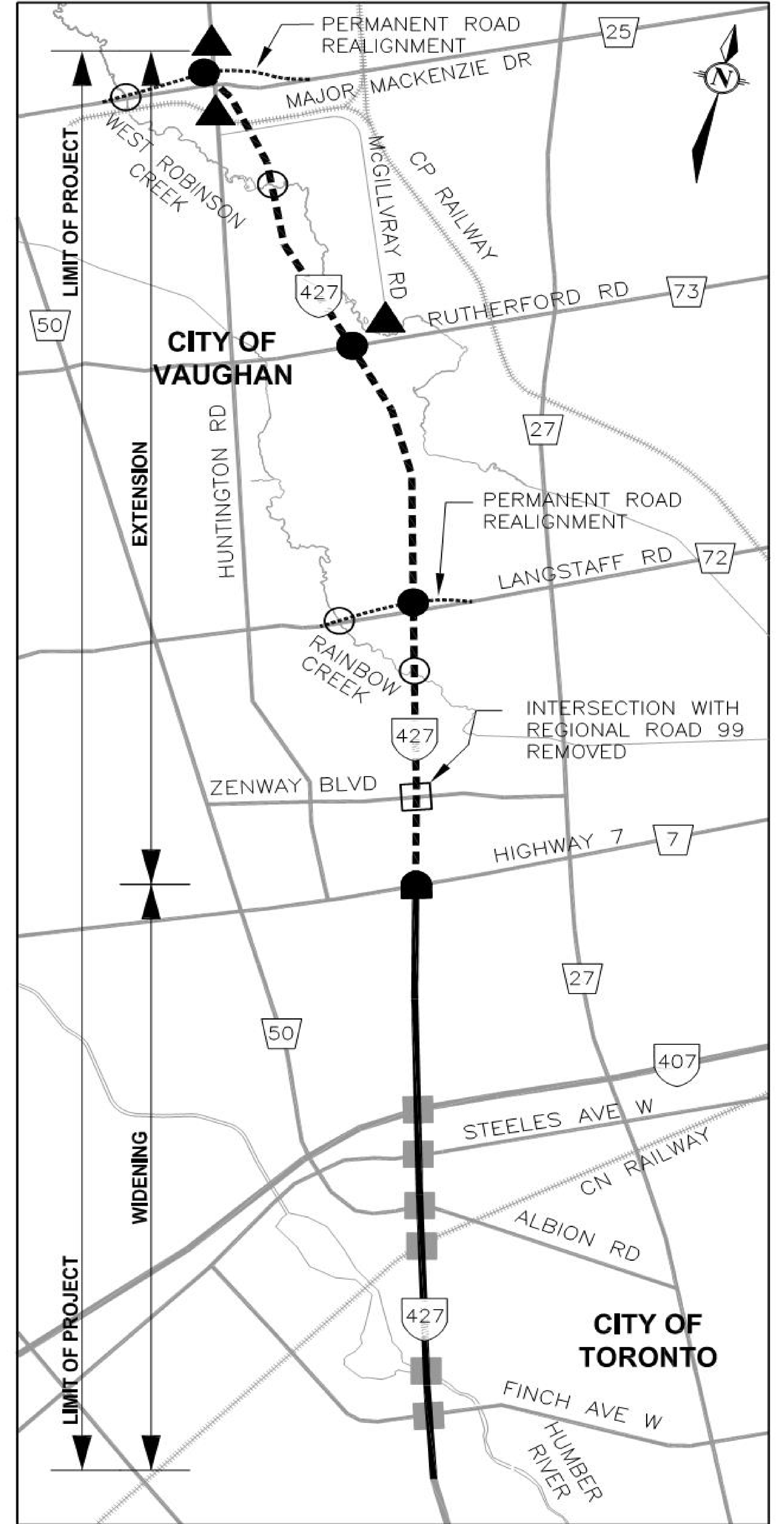
4.0 km Highway Widening from Finch Avenue to Highway 7:

- from six to eight lanes between Finch Avenue to south of Steeles Avenue;
- from four to eight lanes, from south of Steeles Avenue to Highway 7; and
- new median managed lanes.

New 6.6 km Highway Extension from Highway 7 to Major Mackenzie Drive with:

- eight lanes from Highway 7 to Rutherford Road;
- six lanes from Rutherford Road to Major Mackenzie Drive;
- three new interchanges (Langstaff Road, Rutherford Road and Major Mackenzie Drive); and
- new median managed lanes.

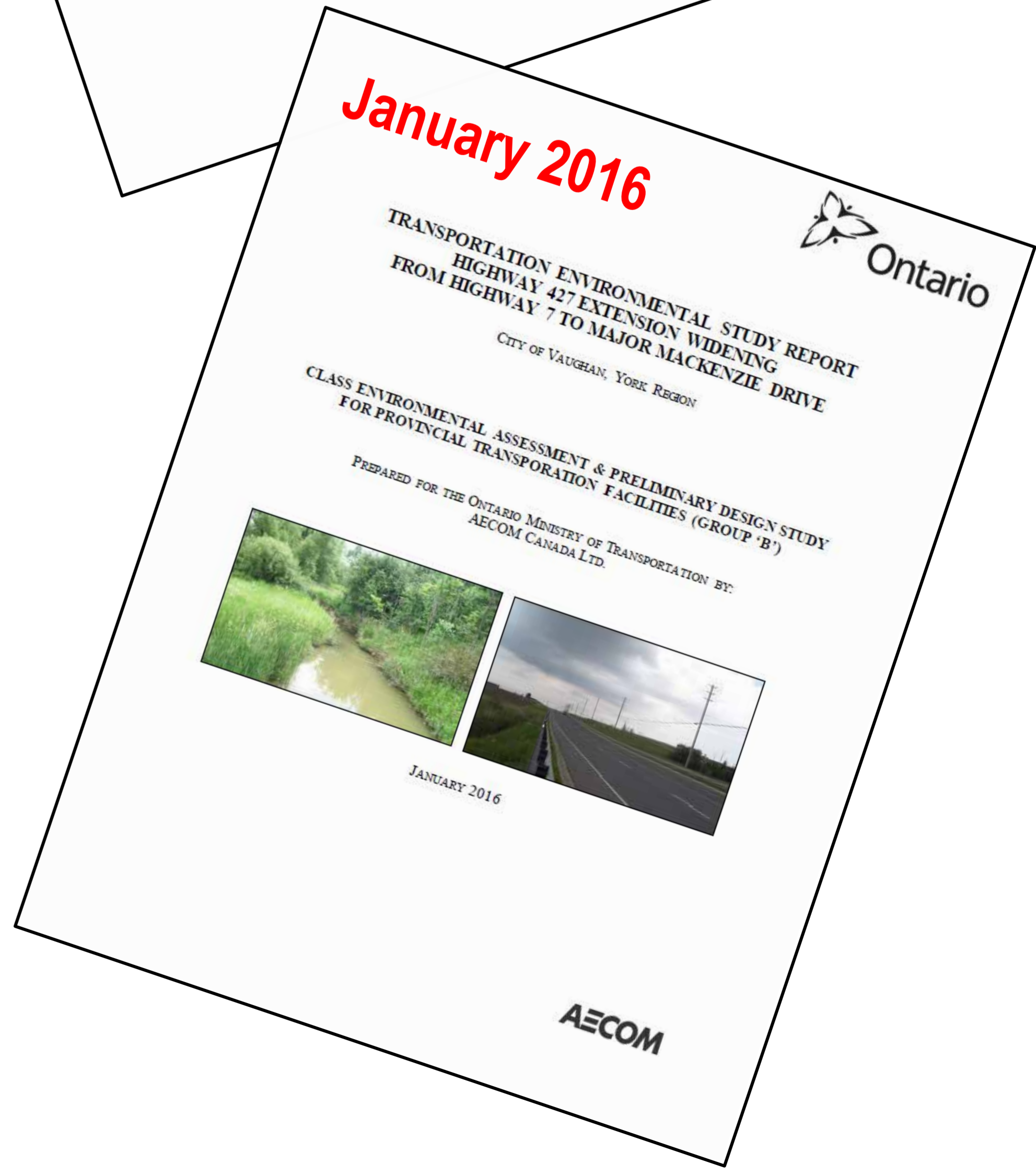
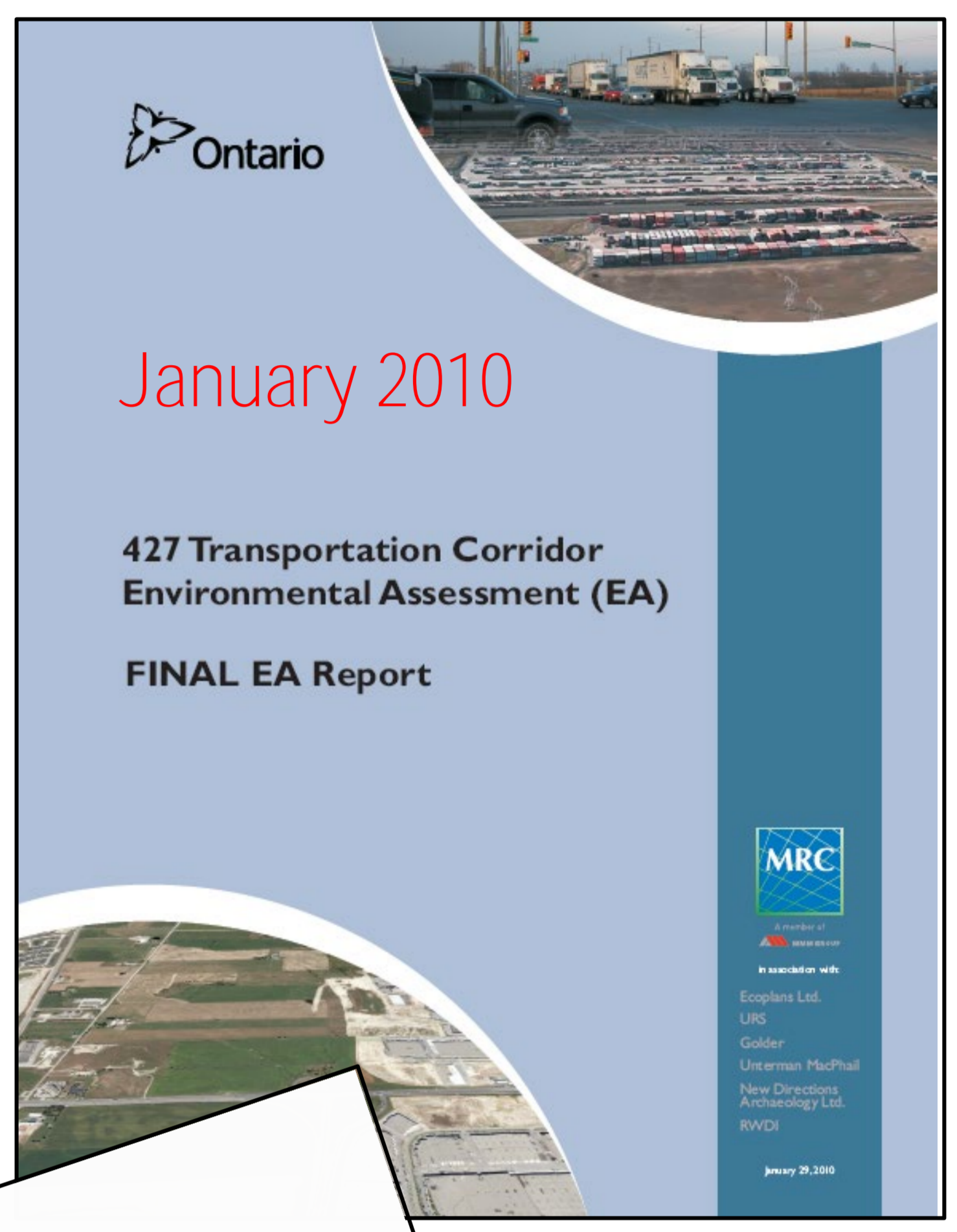
Project Limits



Environmental Assessment Process – Preliminary Design

This project is based on the following previous Preliminary Design and Environmental Assessment (EA) studies that together document the key elements of the Project:

- 427 Transportation Corridor Environmental Assessment Report (January 2010), for the extension of Highway 427 from its existing terminus at Highway 7 to Major Mackenzie Drive.
- Highway 427 from Albion Road to Highway 7 Preliminary Design and Class EA Study Transportation Environmental Study Report (November 2013), Group 'B' Class EA for the widening of the existing Highway 427 from 1.5 km south of Albion Road to Highway 7.
- Transportation Environmental Assessment Report, Highway 427 Extension Widening From Highway 7 to Major Mackenzie Drive (January 2016), Group 'B' Class EA to widen the planned extension of Highway 427 from Highway 7 to Major Mackenzie Drive.



Individual EA
Highway 427
Extension (Highway 7
to Major Mackenzie
Drive)
January 2010

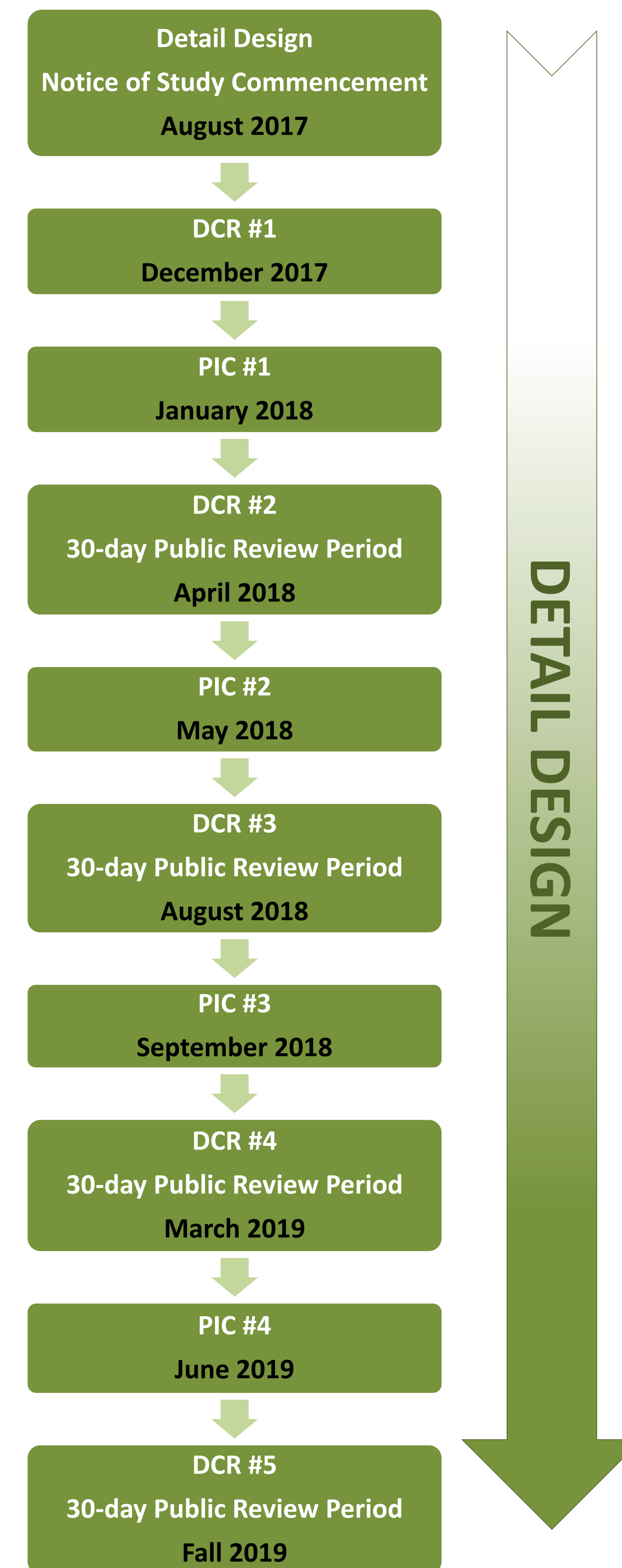
TESR
Widening of Existing
Highway 427 (Albion
Road to Highway 7)
November 2013

TESR
(Update to 2010 EA)
Widening of Highway
427 Extension (Hwy 7
to Major Mackenzie
Drive)
January 2016



Environmental Assessment Process – Detail Design

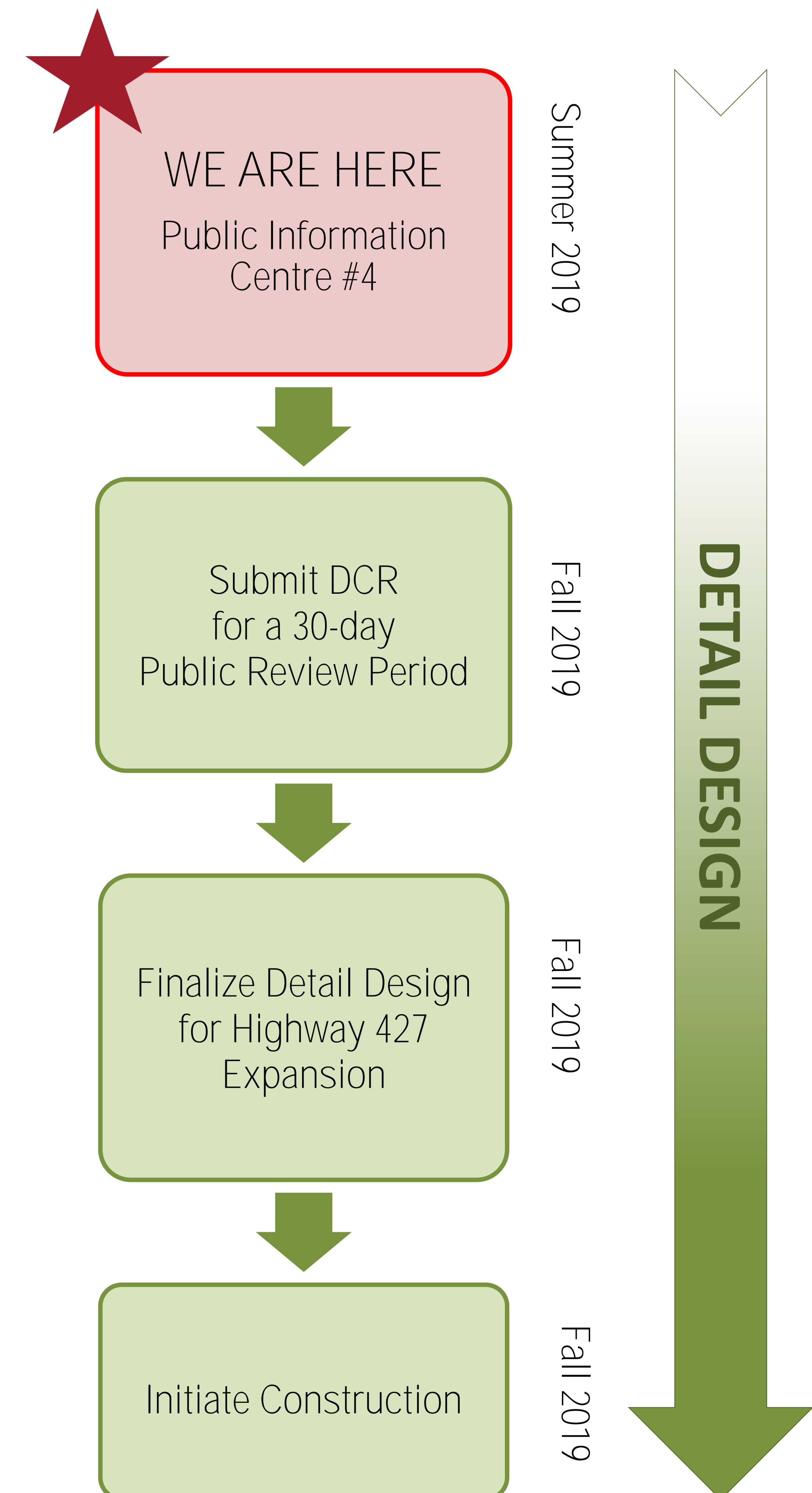
- This project is being carried out in accordance with the approved environmental planning process for Group 'A' projects under the *MTO Class Environmental Assessment for Provincial Transportation Facilities (Class EA)*.
- Based on the Design-Build / AFP Approach to this project, Detail Design will progress in a staged manner making it necessary to document the process in more than one Design and Construction Report (DCR).
- A series of DCRs are being prepared to document the Detail Design process for the various project components:
 - DCR #1 was prepared for advanced clearing and filed for public review in December, 2017.
 - PIC #1 was held in January, 2018 and documented the works in DCR #2.
 - DCR #2 was filed for public review from April 10, 2018 to May 11, 2018.
 - PIC #2 was held in May, 2018 and documented the works included in DCR #3.
 - DCR #3 was filed for public review from August 2, 2018 to August 31, 2018.
 - PIC #3 was held in September, 2018 and documented the works included in DCR #4.
 - DCR #4 was filed for public review from January 31, 2019 to March 2, 2019.
 - The works associated with DCR #5 are being presented at this PIC.
 - DCR #5 will be filed for public review in the fall of 2019.



Environmental Assessment Process – Detail Design

This PIC presents the Detail Design process that will be documented in the upcoming Design and Construction Report (DCR) which will include the following:

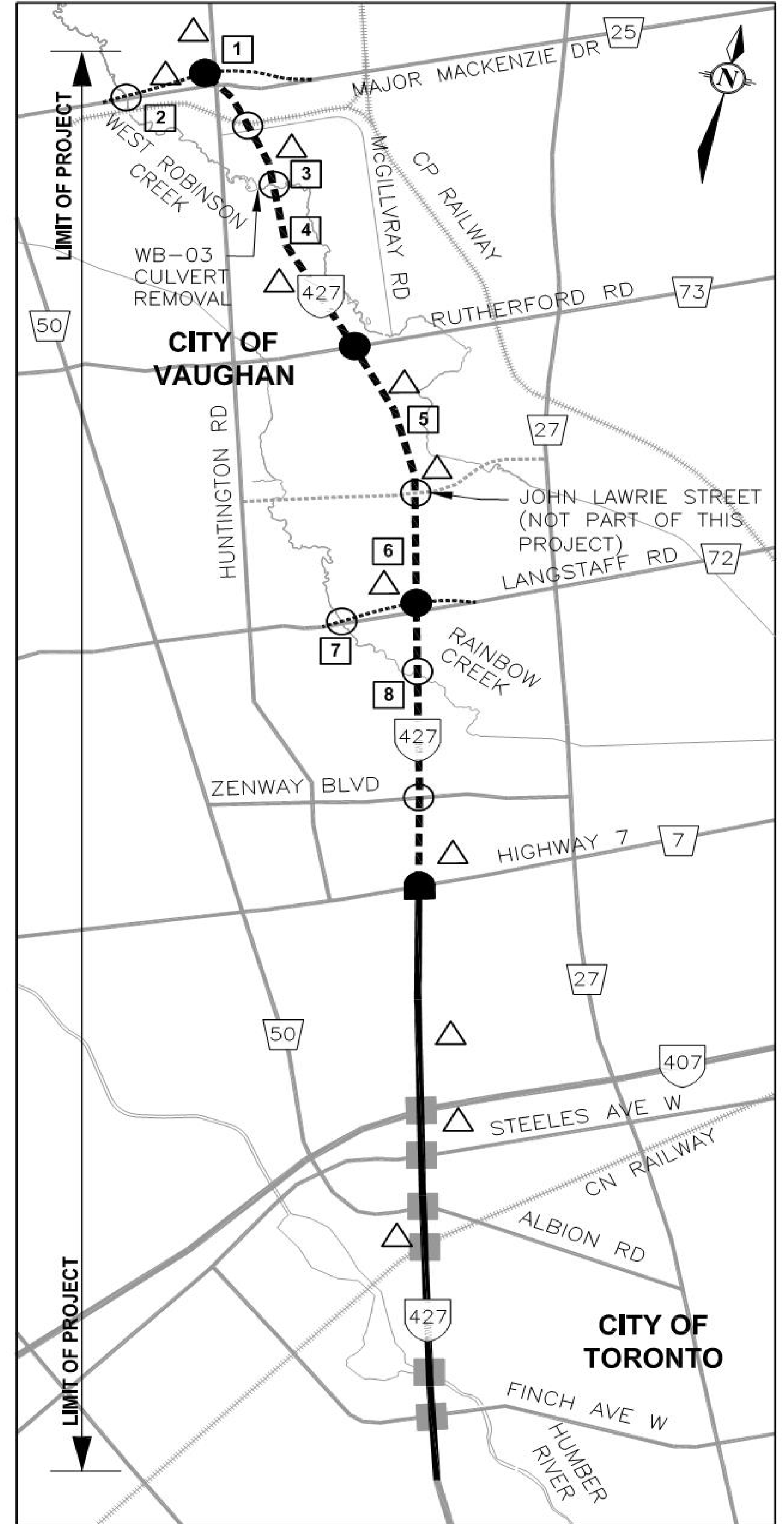
- An overview of the project and the EA process;
 - A summary of consultation activities undertaken;
 - A detailed description of the undertakings;
 - A description of potential effects on the environment, as well as proposed mitigation measures; and
 - Commitments to future work and monitoring.
-
- In accordance with the MTO Class EA, DCR #5 will be submitted for a 30-day public review period in Fall 2019.
 - The detail designs for the construction works addressed in DCR #5 will be finalized, taking into consideration all comments received.
 - Construction will commence on the works contained in DCR #5 in Fall 2019.



Overview of the Proposed Construction Works

The following is an overview of the proposed construction works presented as part of this PIC and DCR #5:

- Proposed restoration for each of the valley crossings (identified as numbered Restoration Areas in the Landscape Plans).
- Proposed stormwater management (SWM) landscape design (plantings for SWM ponds).
- Landscape design along the highway corridor, including cultural meadow / cultural woodland plantings, and pollinator seed mix.
- Construction activities related to the removal of an old collapsed culvert formally used for a farm access driveway (Culvert WB-03 as shown on the key map). The impacted area will be restored to accommodate fish passage.
- Design refinements to three pond outlets.



■	EXISTING STRUCTURES	—	HIGHWAY WIDENING
●	NEW INTERCHANGE	- - -	HIGHWAY EXTENSION
●	UPGRADED INTERCHANGE	○	NEW STRUCTURE
△	STORMWATER MANAGEMENT POND	□	RESTORATION AREA

Vegetation Restoration and Landscape Design:

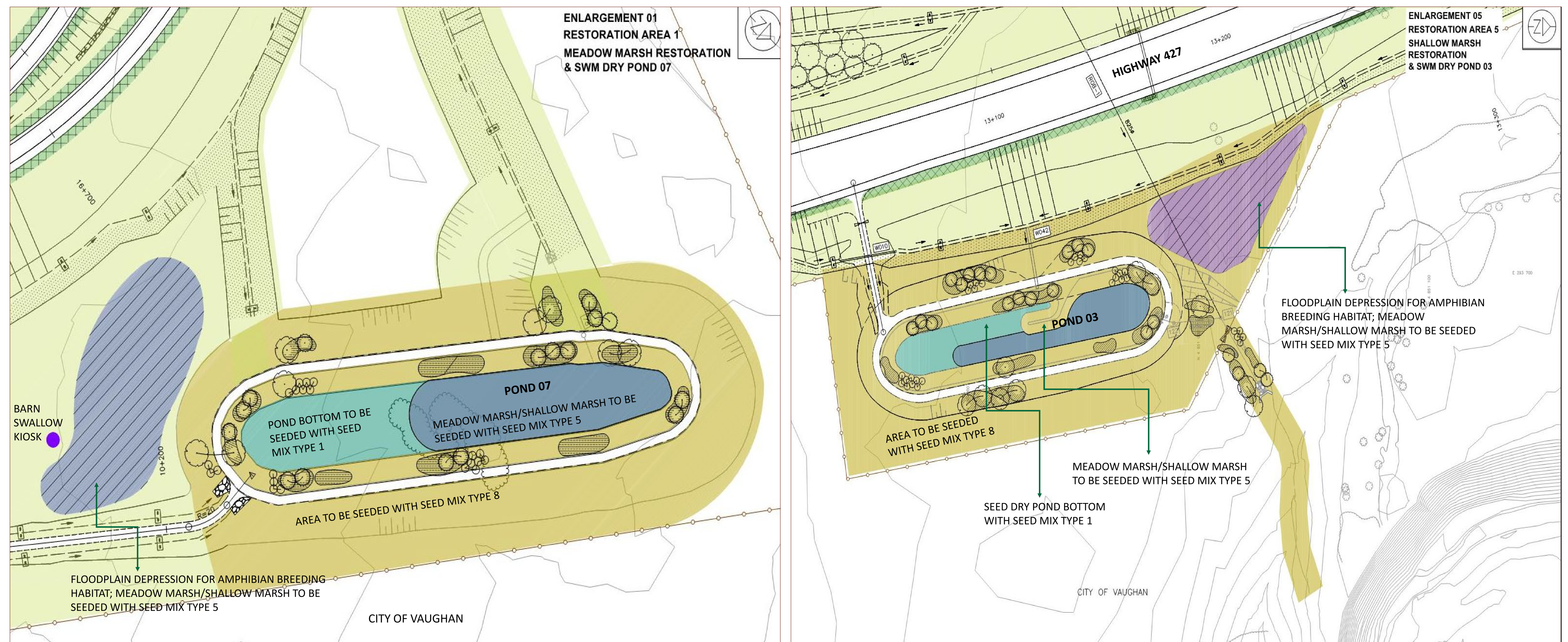
Eight (8) areas were identified for restoration through the previous EA process as outlined in the Vegetation Restoration Plan Framework (VRPF). These eight Restoration Areas are shown below in their relation to the overall extension. In general, vegetation removal has been limited to the amount necessary to facilitate construction and disturbed areas are will be restored.



Restoration Areas 1 and 5

Restoration Areas 1 and 5 are existing agricultural fields that the 2010 EA recommended for creating meadow and shallow marsh / floodplain depressions suitable for amphibian breeding habitat. The VRPF further recommended restoring Restoration Area 1 and Restoration Area 5 as Meadow Marsh (MAM), and Shallow Marsh (MAS), respectively.

Restorations Areas 1 and 5 incorporate amphibian breeding habitat within the created floodplain depressions and will be restored using Shallow Marsh (MAS) and Meadow Marsh (MAM), as identified in Landscape Plan Enlargements 01 and 05, shown below.



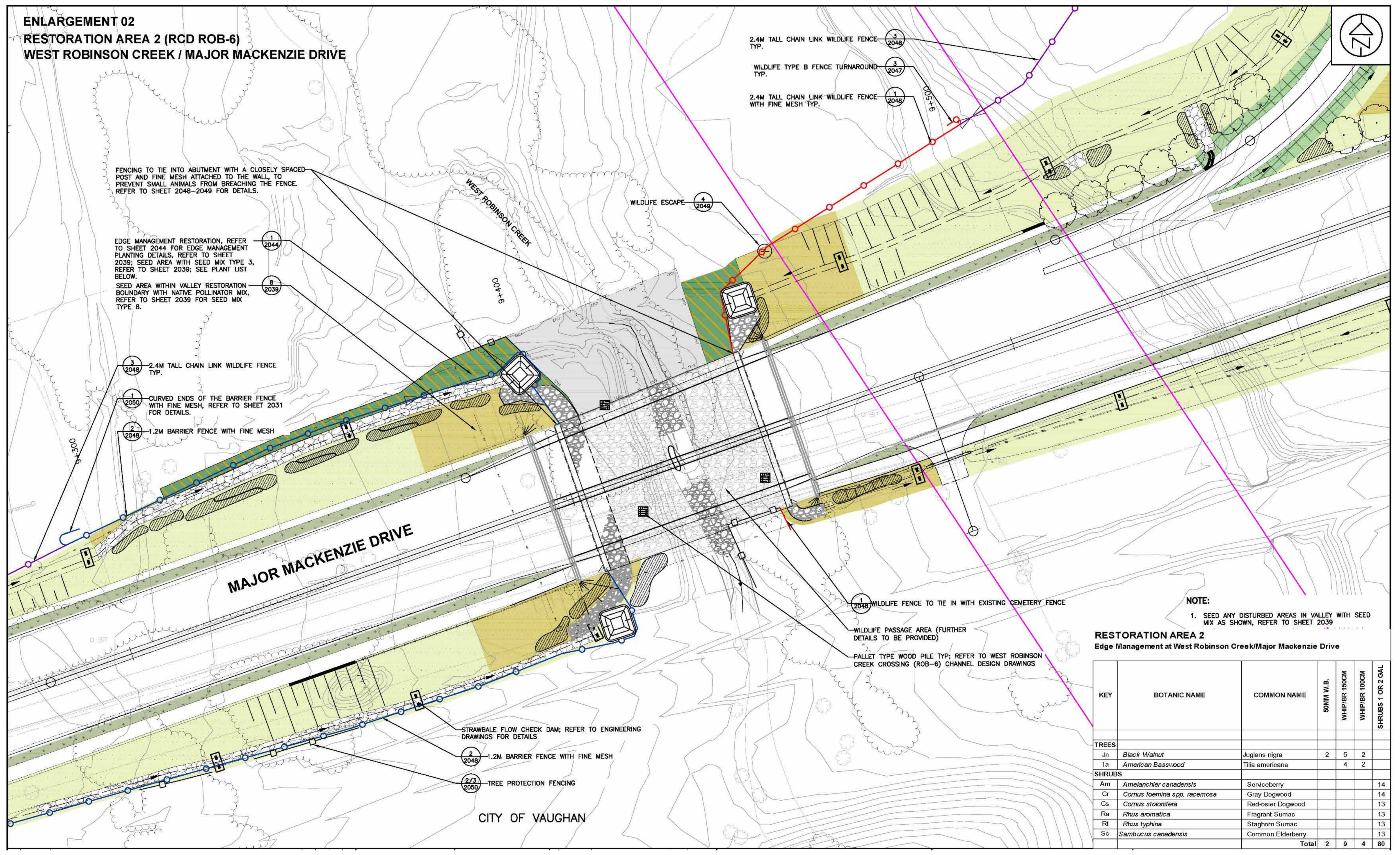
Restoration Area 2 - Major Mackenzie Drive crossing of West Robinson Creek (ROB-4)

Restoration Area 2 is located north of Major Mackenzie Drive at the West Robinson Creek crossing. This site includes an existing Fresh – Moist Willow Lowland Deciduous Forest (FOD7-3) that occurs within the West Robinson Creek riparian area.

Restoration objectives for this area are:

- Valley Restoration and Enhancement for the West Robinson Creek corridor, integrating opportunities to improve cover and enhance diversity.
- Edge Management to be implemented to protect adjacent existing vegetation.
- All woody vegetation within the existing riparian forest to be protected.

Restoration Area 2 also includes recommended design aspects to be considered for wildlife passage enhancement and natural channel design.

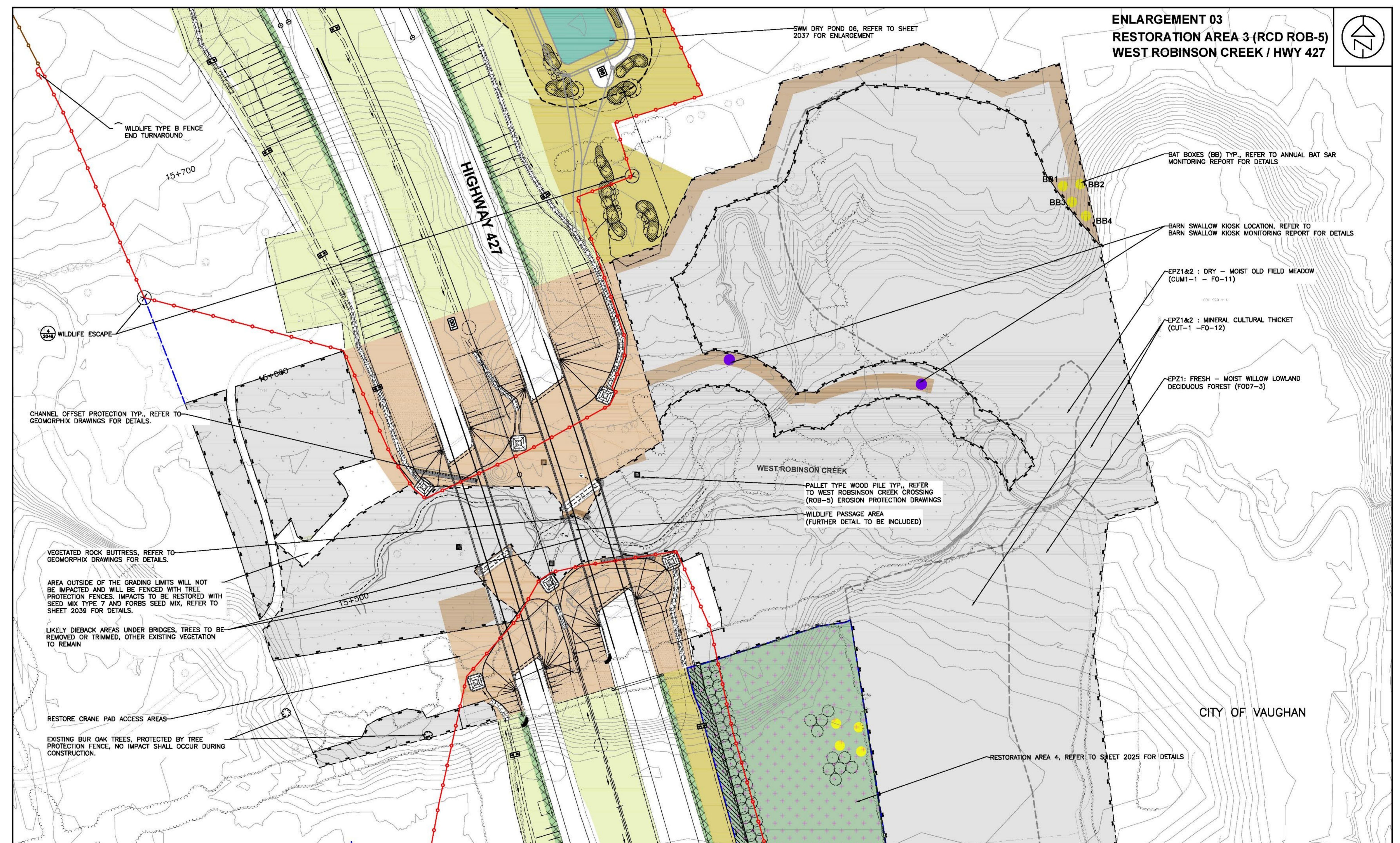


Restoration Area 3 - Highway 427 crossing of West Robinson Creek (ROB-5)

Restoration Area 3 is located south of Huntington Road at McGillvray Road. There is a Cultural Meadow (CUM1-1) community within the floodplain of West Robinson Creek within this area. At the time of the 2010 EA, much of the valley was pastured. In the intervening years, farming ceased and the pasture has regenerated to cultural meadow comprised of a mix of native and non-native species. The existing vegetation at this location is very common, early successional habitat with a high proportion of non-native species and no rare or sensitive plant species or communities.

Restoration objectives for this area are:

- Restore to a Dry-Fresh Graminoid Meadow (MEGM3), to provide foraging habitat for Barn Swallows.
- To provide two Barn Swallow habitat replacement structures and four bat boxes for habitat compensation (completed).
- Integrating opportunities to improve cover and enhance diversity.
- Edge Management to be implemented to protect adjacent existing vegetation.
- Disturbed areas will be revegetated with native plant species in order to replace and enhance the existing vegetation cover within the valleys.

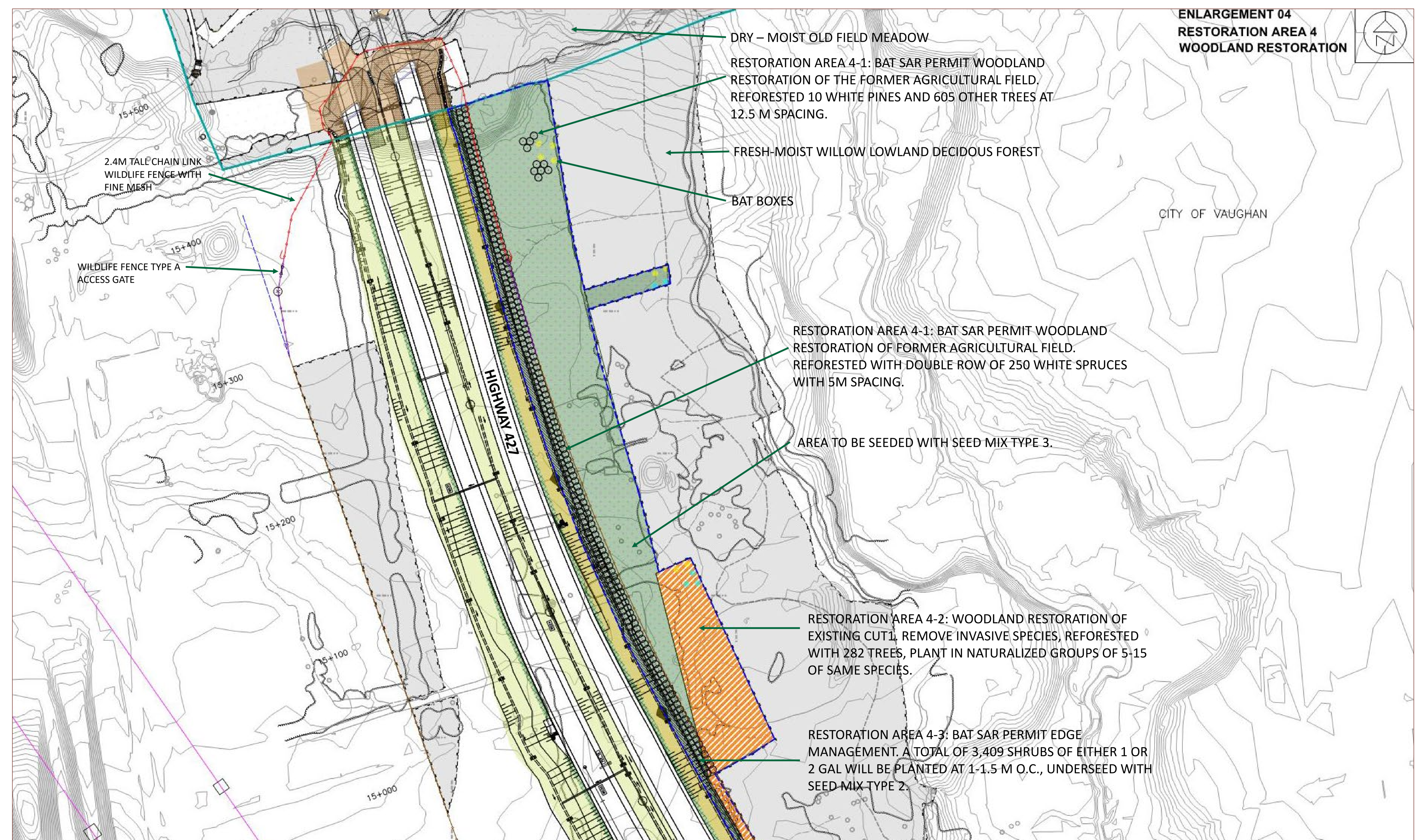


Restoration Area 4 – Deciduous Forest Restoration

Restoration Area 4 is located east of Huntington and south of McGillivray Road, and is directly south of Restoration Area 3. Restoration Area 4 contains Cultural Thicket (CUT1) and Deciduous Forest (FOD9-3 and FOD7-3) communities and agricultural fields. The Cultural Thicket is predominately Common Buckthorn and hawthorns with a thick understory of herbaceous plants and grasses. A portion of Restoration Area 4 (i.e., the forest communities) was identified as Bat Species at Risk (SAR) Habitat and specific requirements apply to this restoration area under the Bat Overall Benefit Justification (OBJ) Report and SAR Bat Permit.

Restoration objectives for this area are:

- Restore to a deciduous forest community.
- Management of invasive species (Common Buckthorn).
- Preserve native woody species, such as White Elm and hawthorns.
- Implement requirements from the Bat OBJ Report and SAR Bat Permit.



Restoration Area 6 – Deciduous Forest Restoration

Restoration Area 6 is located north of Langstaff Road, west of the Highway 427 extension. This area includes a Dry-Fresh Oak-Hardwood Deciduous Forest (FOD2-4) community dominated by Bur Oak and Shagbark Hickory, with Running Strawberry-bush in the ground layer and an understory with a moderate abundance of Common Buckthorn. The area is relatively flat with pockets of low-lying wet areas.

Restoration objectives for this area are:

- Woodland restoration and edge management through shrub planting.
- To meet specific requirements for number of trees, sizing and species to be included per the Bat SAR Permit.

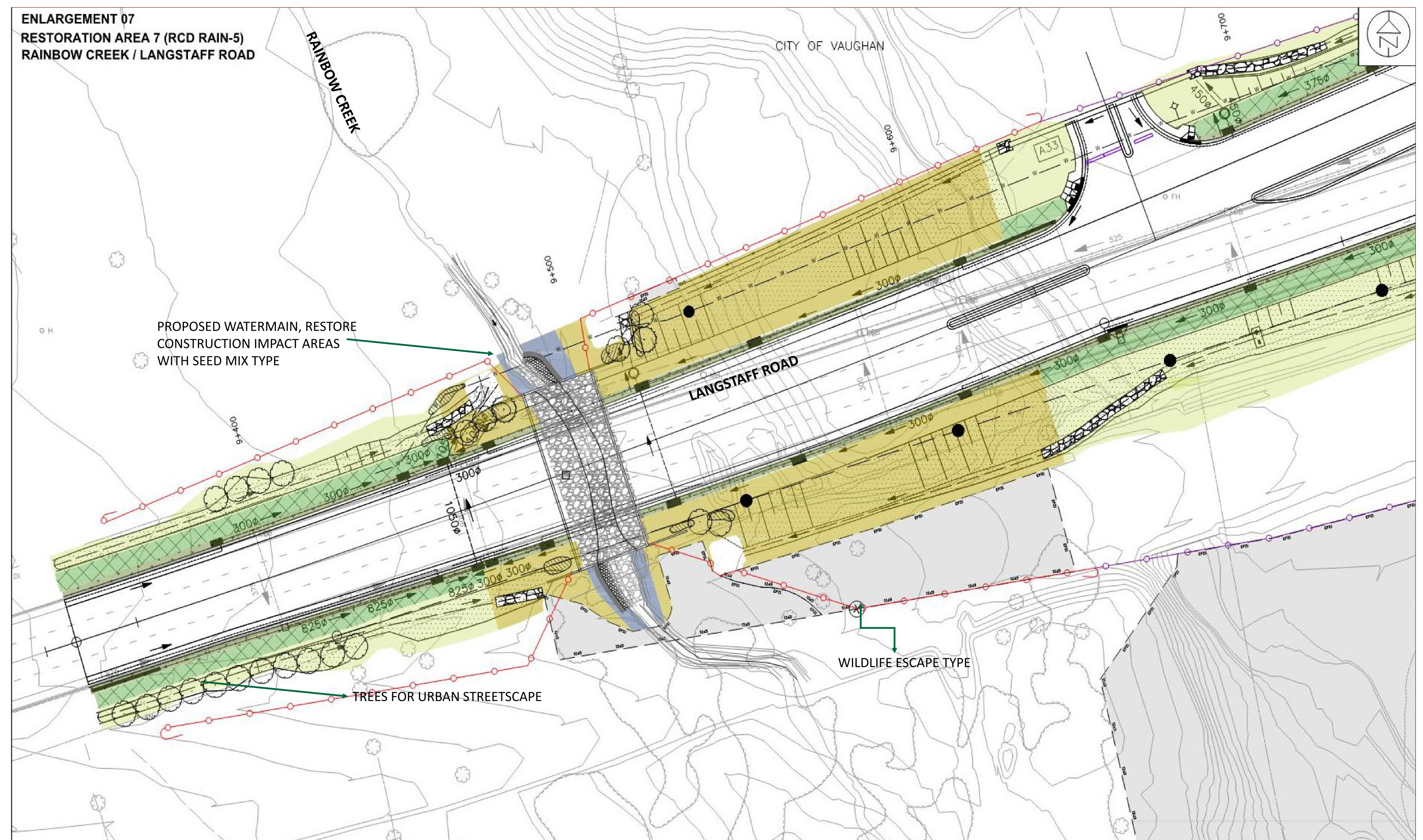


Restoration Area 7 – Langstaff Road crossing of Rainbow Creek (RAIN-5)

Restoration Area 7 is located north and south of Langstaff Road at the Rainbow Creek crossing. The existing Cultural Meadow community was predominately represented by common native and non-native herbaceous species common to disturbed areas, including goldenrod and Smooth Brome. Willow species, and dogwood species were scattered throughout the site with larger trees set back further from the road. No regionally rare species are present in this restoration area.

Restoration objectives for this area are:

- Disturbed areas shall be restored.
- Restoration will include seeding of the right- of-way as well as riparian plantings along the banks of Rainbow Creek.

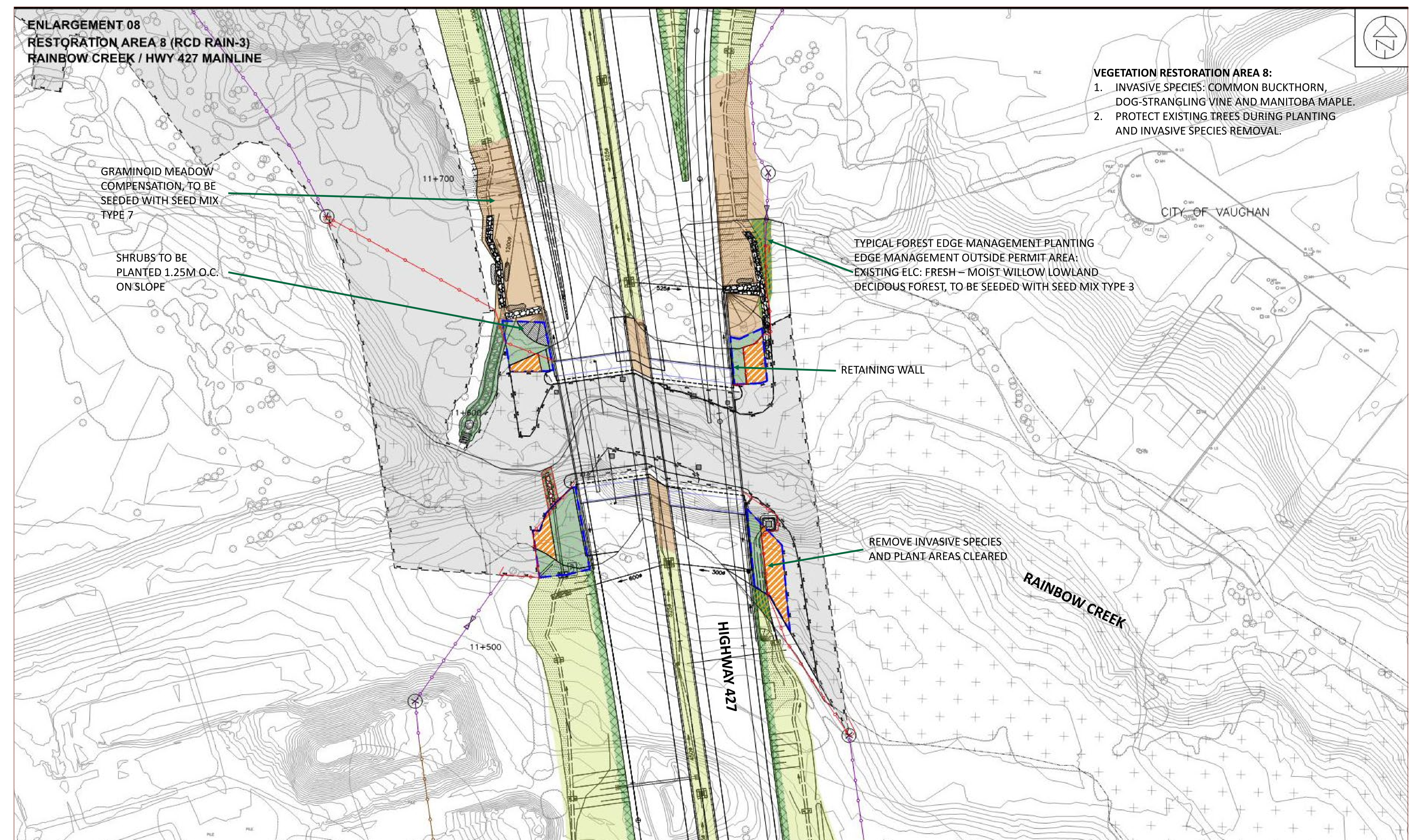


Restoration Area 8 – Highway 427 crossing of Rainbow Creek (RAIN-3)

Restoration Area 8 is within the valley corridor of Rainbow Creek, just south of Langstaff Road. The northern portion of Restoration Area 8 is defined as a Mineral Cultural Thicket (CUT) that transitions into a Fresh – Moist Willow Lowland Deciduous Forest (FOD7-3). The southern portion of Restoration Area 8 is represented by a Mineral Cultural Meadow (CUM1) and a Fresh – Moist Willow Lowland Deciduous Forest (FOD7-3) community, with a narrow Cultural Thicket (CUT1) community representing the transition zone between the two. Rainbow Creek exists within the Fresh – Moist Willow Lowland Deciduous Forest (FOD7-3) and flows from west to east within Restoration Area 8.

Restoration objectives for this area are:

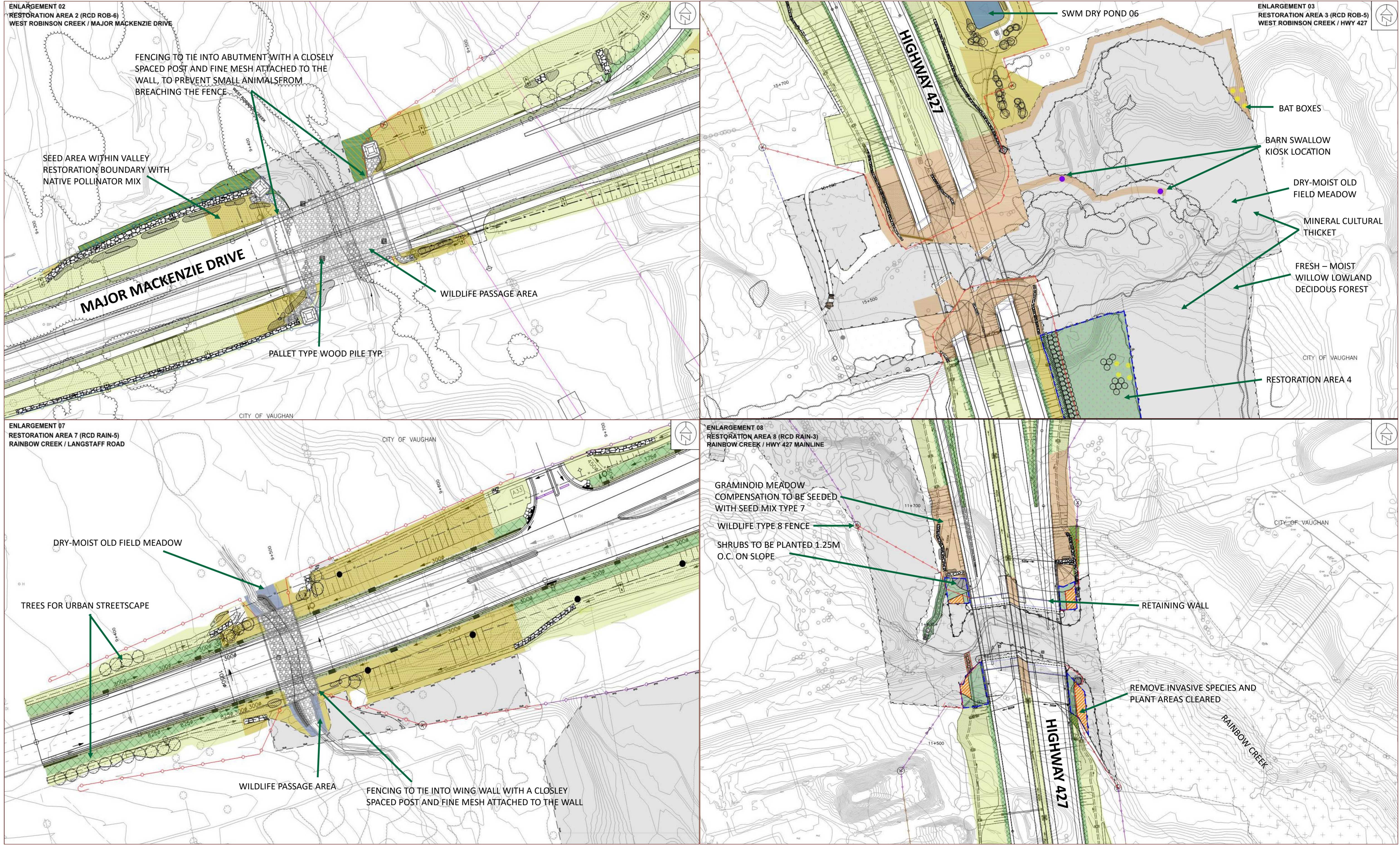
- Restore disturbed areas to resemble the existing species assemblage of the community (Deciduous Forest) while also improving its ecological function and integrity by planting native and non-invasive species.
- Retain vegetation that is not directly impacted by the new bridge over Rainbow Creek.
- Restore the Rainbow Creek valley area to a forest community and achieve at least 60% canopy cover.



Wildlife Passage Features at Creek Crossings

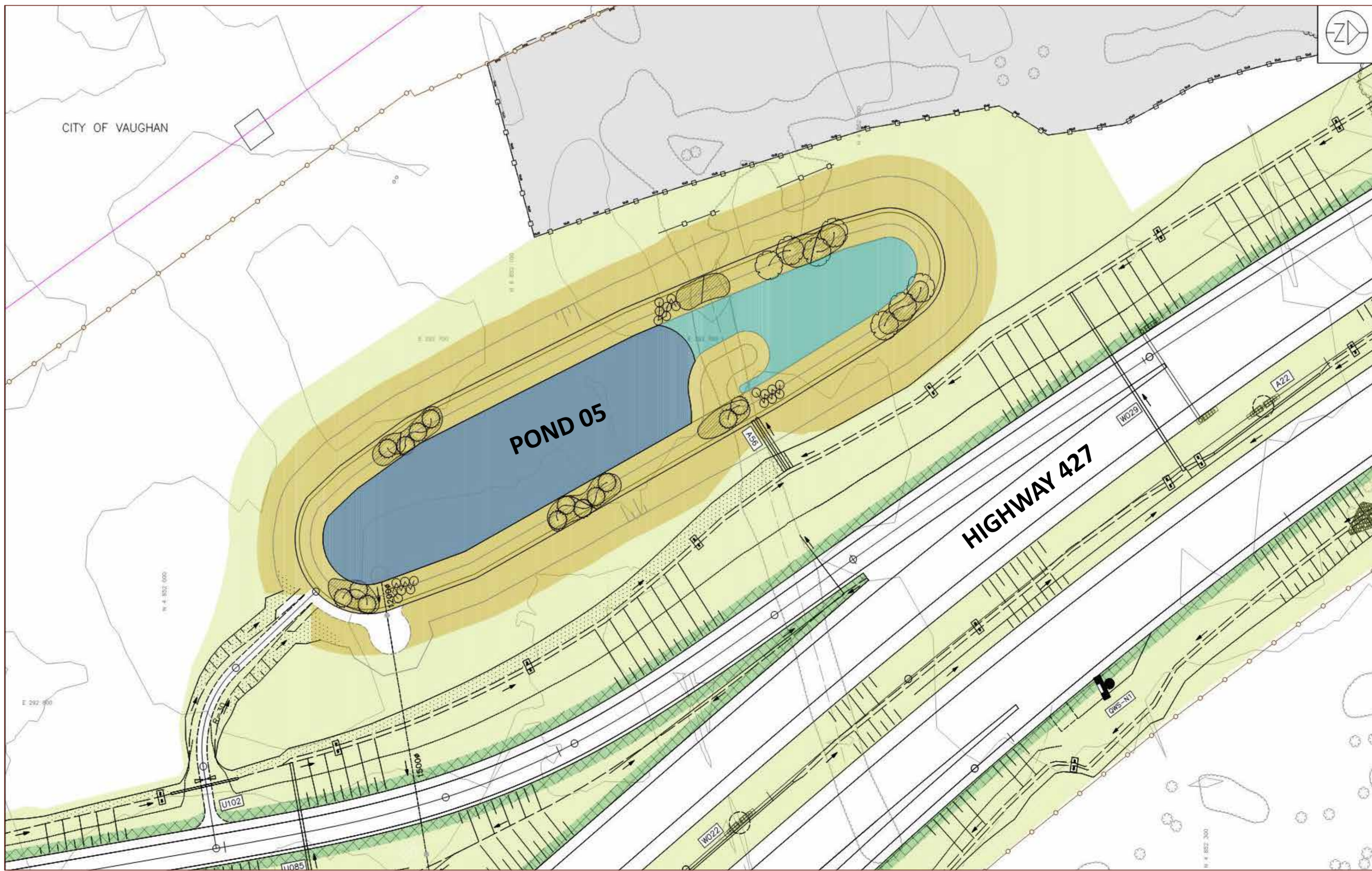
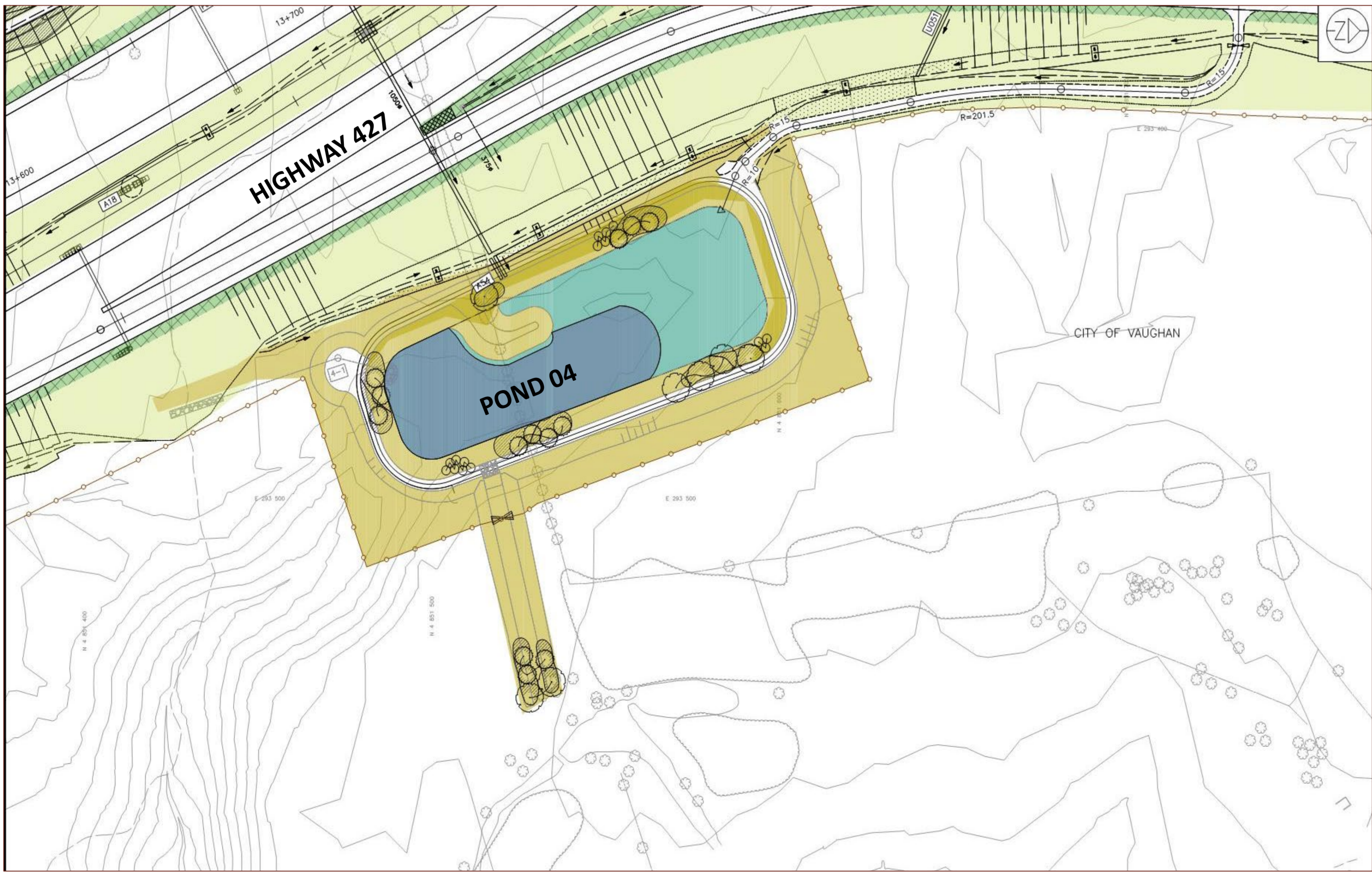
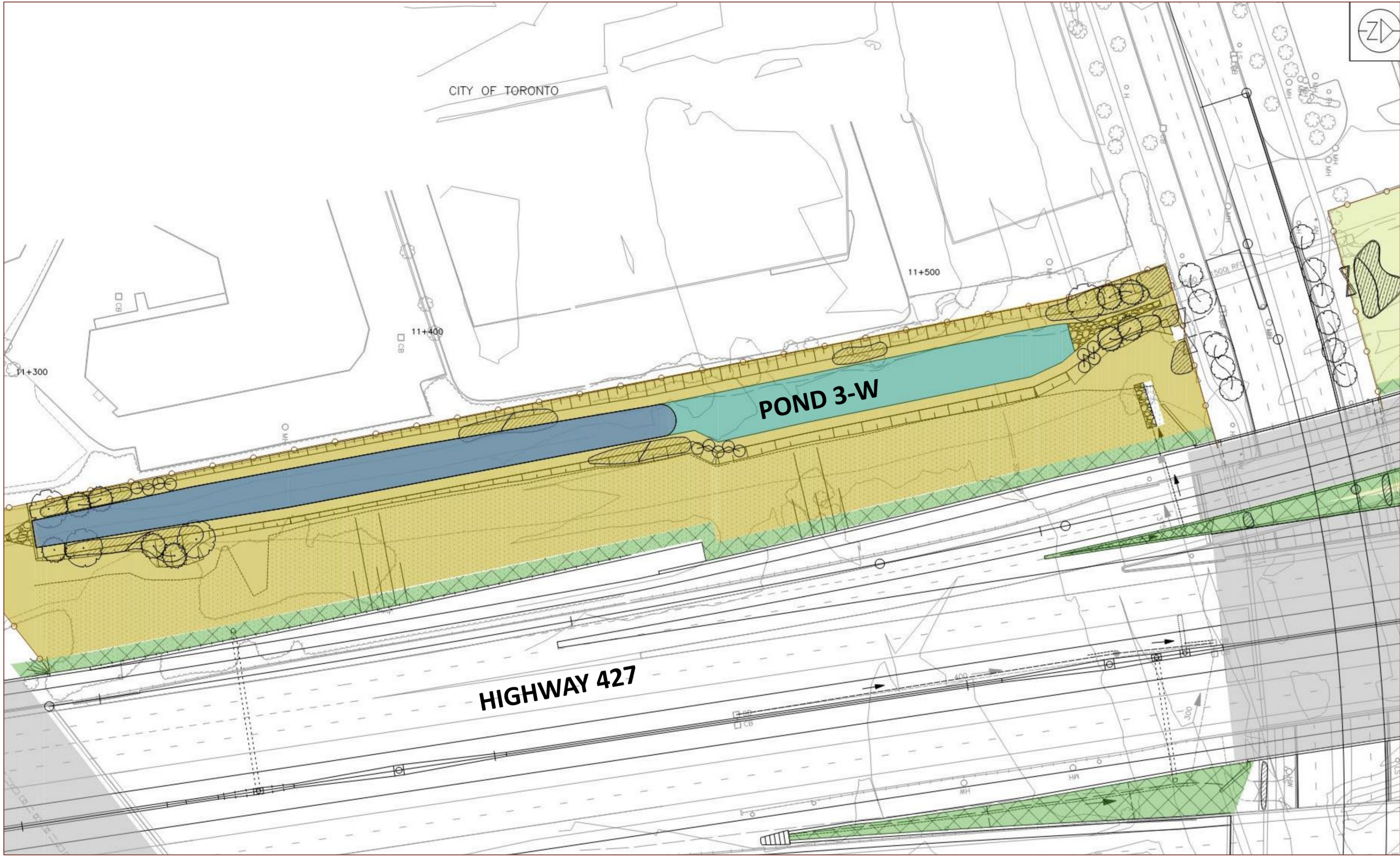
Wildlife passage has been a key consideration at Restoration Areas 2 (ROB-6), 3 (ROB-5), 7 (RAIN-3) and 8 (RAIN-5). These structures were designed to meet minimum height and Openness Ratio requirements to encourage wildlife passage through the structures and under the roadways. This was combined with wildlife fencing, to keep animals off of the highway and direct them to the passage structures, and escape ramps / shorter fencing for deer and animals that do find themselves in the highway corridor.

- Additional wildlife passage features include boulder and brush piles to provide cover to animals using the passage structures, and native soil spread under the bridge that is suitable for animal passage (deer and small animals).
- Shrub plantings and native seed mixes flank the structures to funnel animals and provide shelter at the structure approaches, while not obstructing views through the structure.



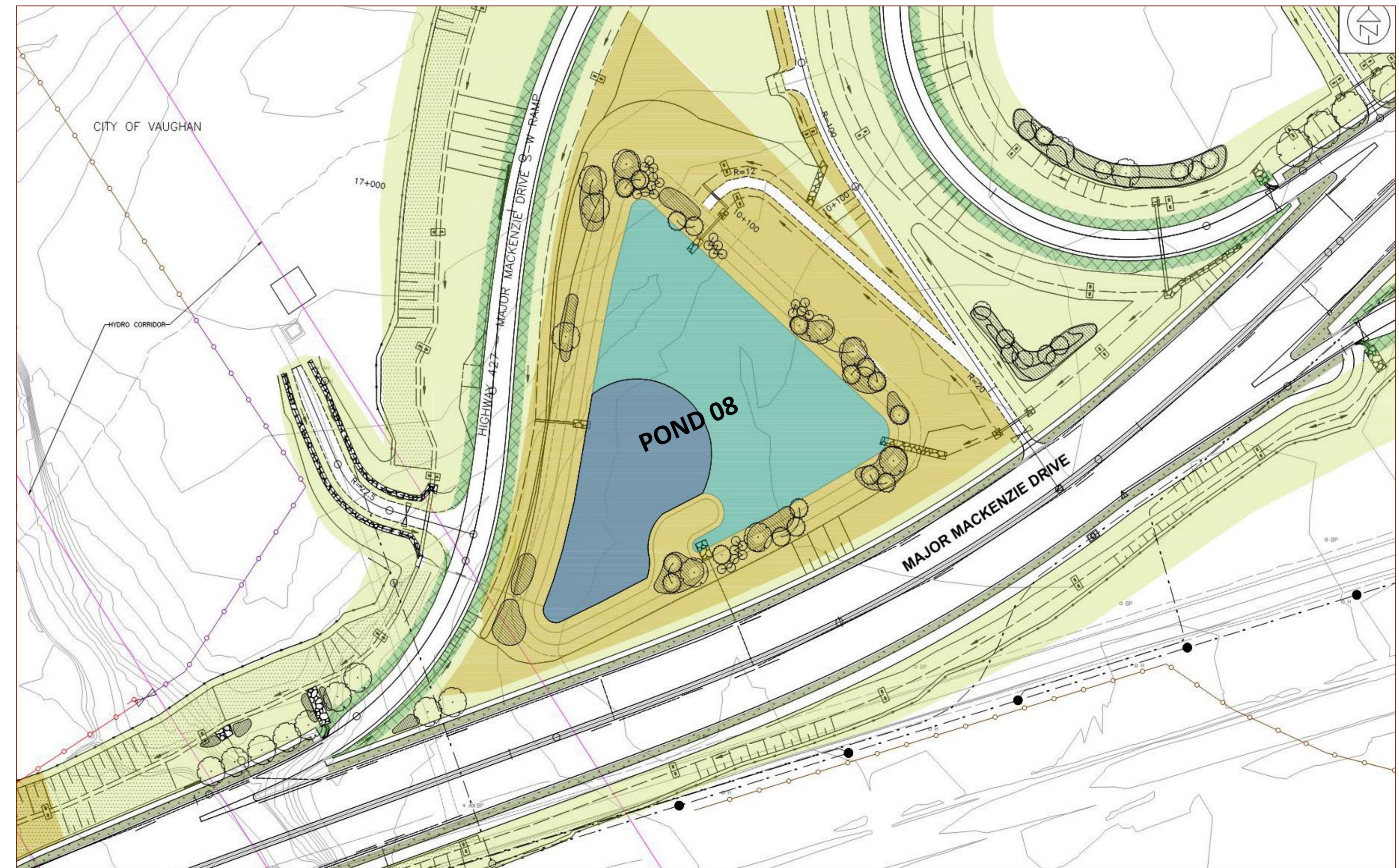
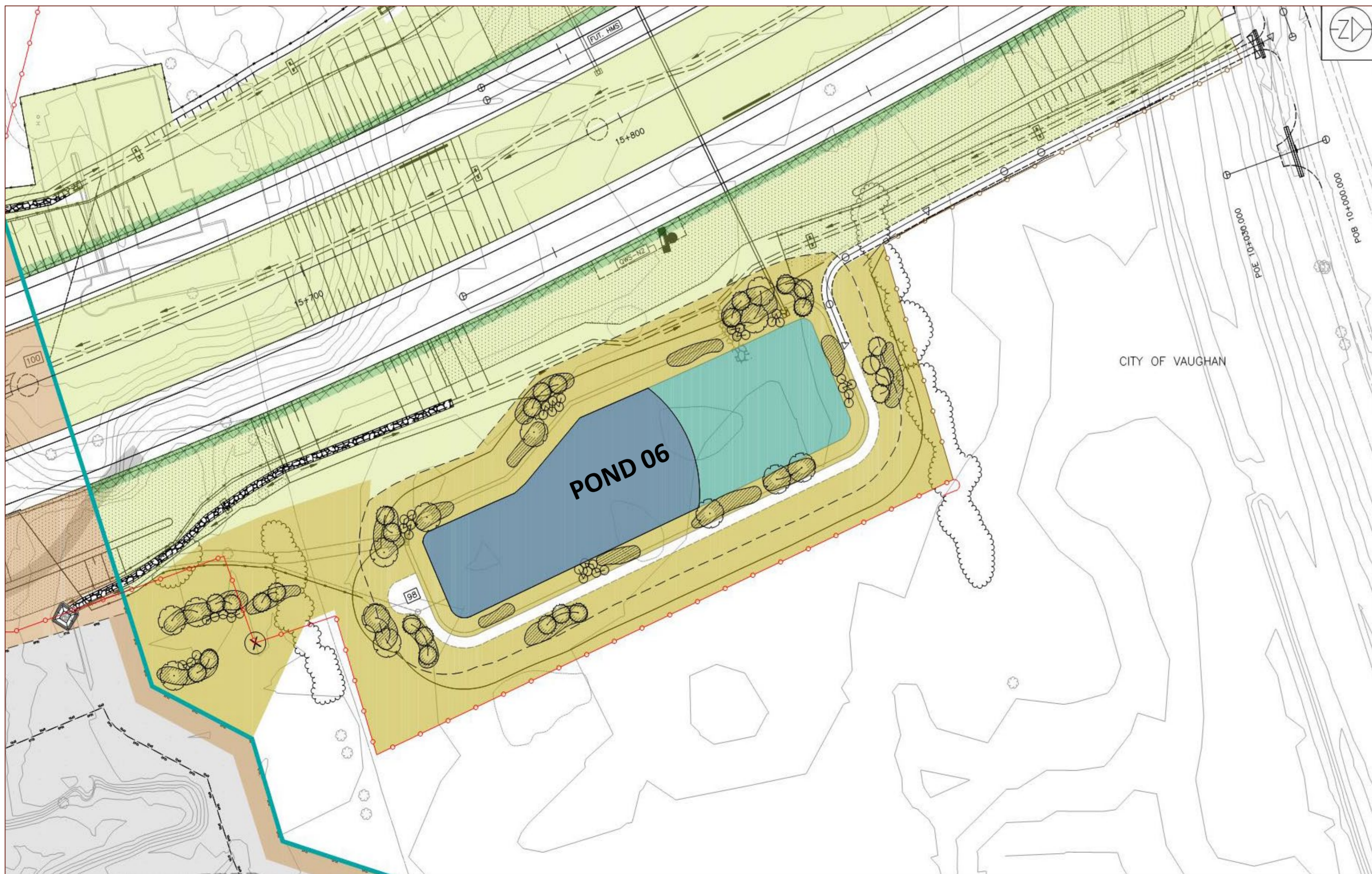
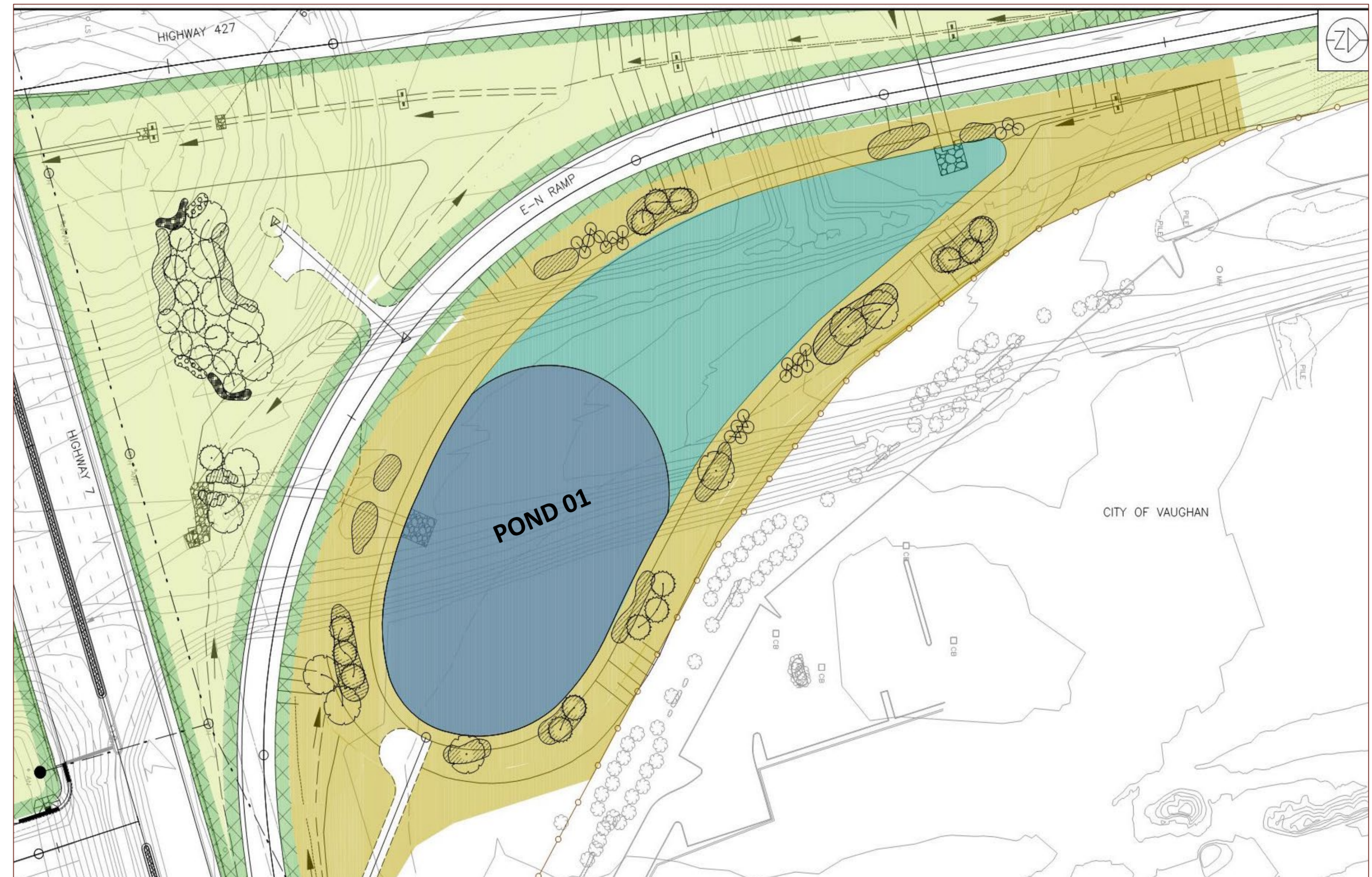
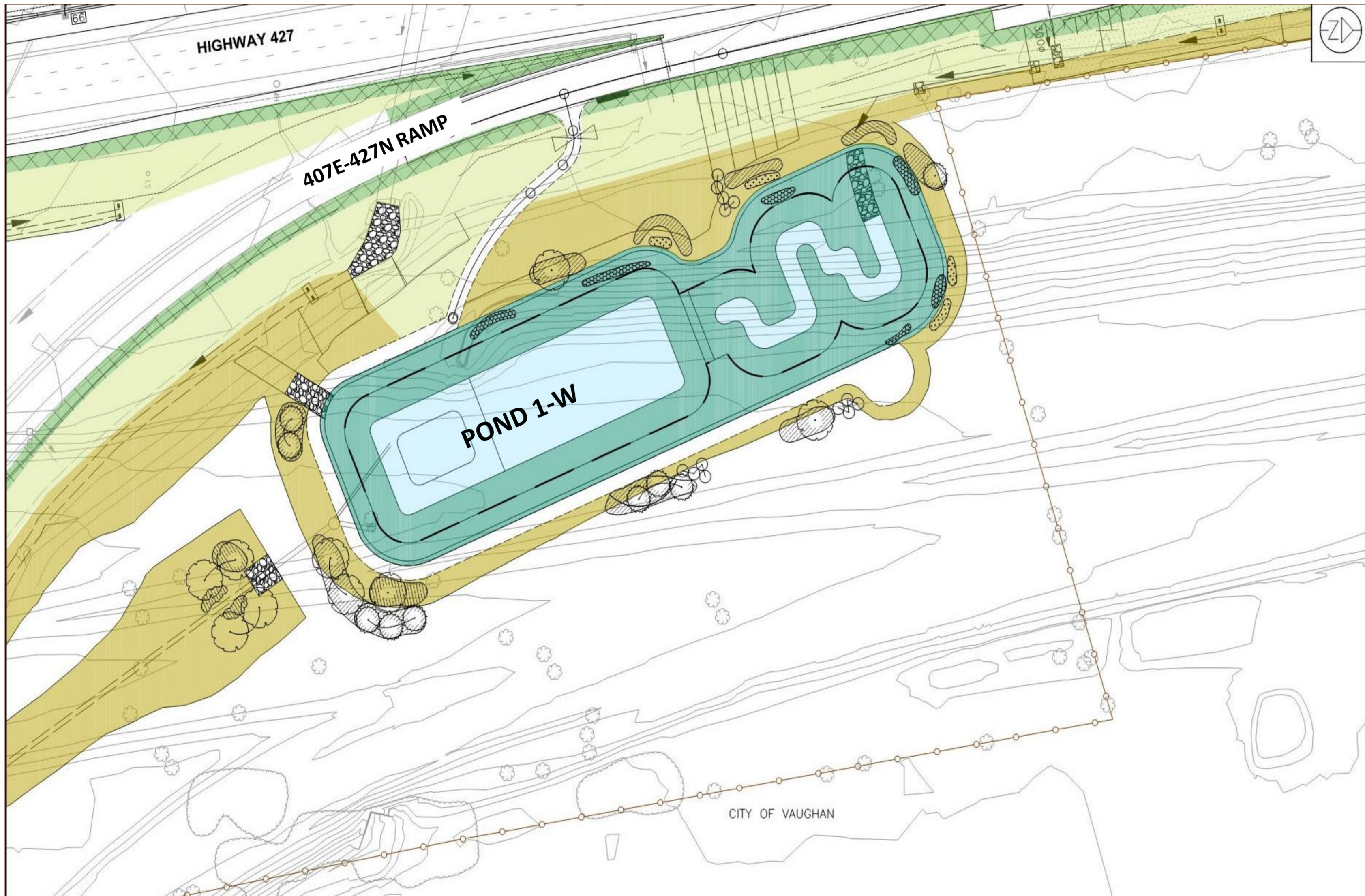
Stormwater Management (SWM) Landscape Design

Urban streets impacted by construction will be landscaped with sod / seed, with shrub and tree beds located to provide aesthetic benefit and buffering of views. Clusters of trees and shrubs will be planted at areas with high visibility near interchanges. Trees will be planted only on slopes that are 3:1 or less. Steeper slopes will be planted with shrubs only. The species to be planted within these areas have been selected to be suitable for roadside conditions (salt, pollution and wind-tolerant). Woody vegetation will be planted at least 15m from the edge of pavement for safety requirements.



Stormwater Management (SWM) Landscape Design

Urban streets impacted by construction will be landscaped with sod / seed, with shrub and tree beds located to provide aesthetic benefit and buffering of views. Clusters of trees and shrubs will be planted at areas with high visibility near interchanges. Trees will be planted only on slopes that are 3:1 or less. Steeper slopes will be planted with shrubs only. The species to be planted within these areas have been selected to be suitable for roadside conditions (salt, pollution and wind-tolerant). Woody vegetation will be planted at least 15m from the edge of pavement for safety requirements.



Landscape Design

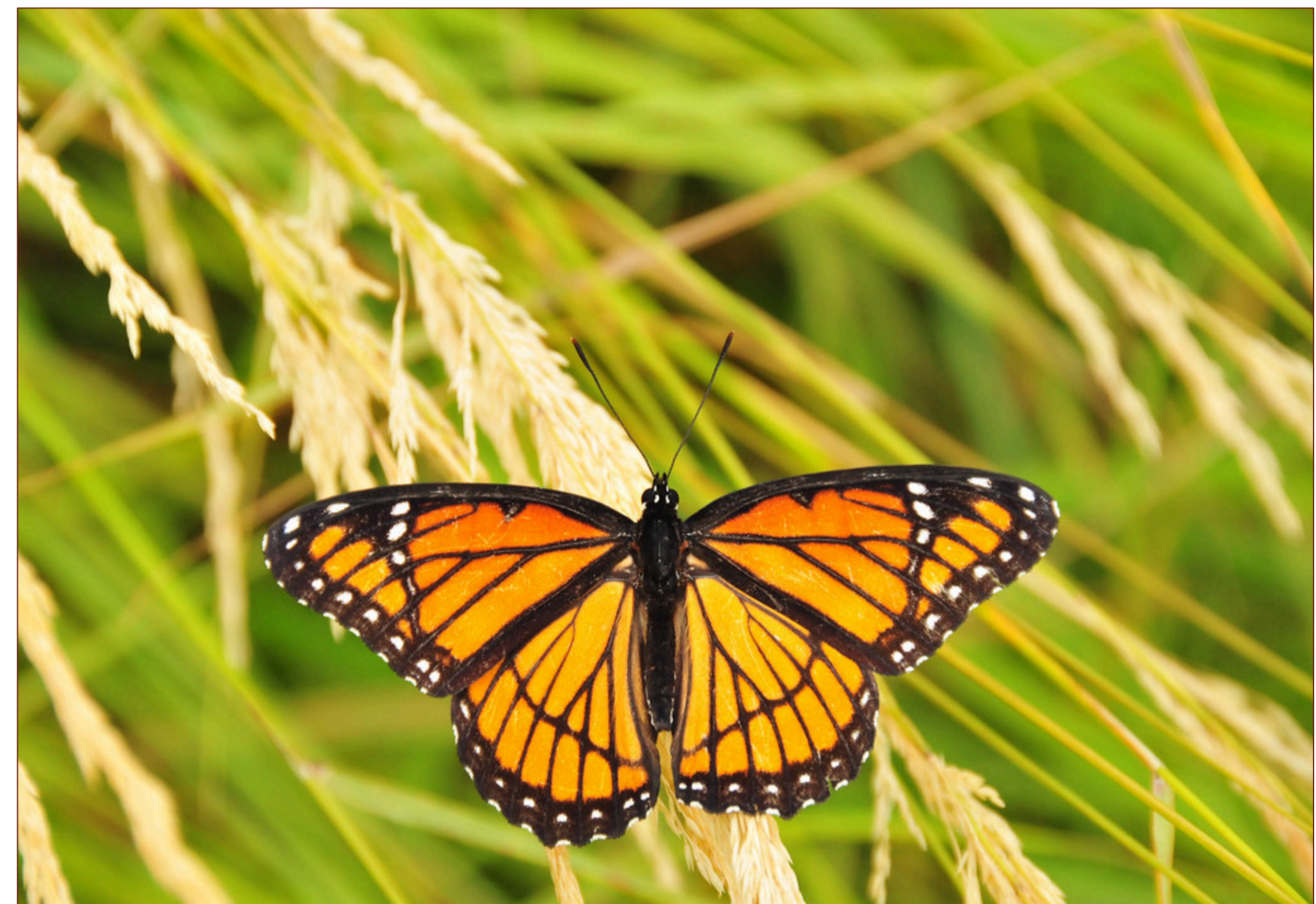
Urban streets impacted by construction (Zenway, Langstaff, Rutherford, Major Mackenzie) will be landscaped with sod / seed, with shrub and tree beds located to provide aesthetic benefit and buffering of views. Clusters of trees and shrubs will be planted at areas with high visibility near interchanges. Trees will be planted only on slopes that are 3:1 or less. Steeper slopes will be planted with shrubs only.

The species to be planted within these areas have been selected to be suitable for roadside conditions (salt, pollution and wind-tolerant). Woody vegetation will be planted at least 15m from the edge of pavement for safety requirements.



Pollinator Seeding

Pollinator habitat will be provided by introducing a carefully selected seed mix and native plant species. This will occur in key locations around stormwater management ponds and in restoration areas.



Construction activities related to the removal of an old collapsed culvert formally used for a farm access driveway (Culvert WB-03 as shown on the key map). The impacted area will be restored to accommodate fish passage.

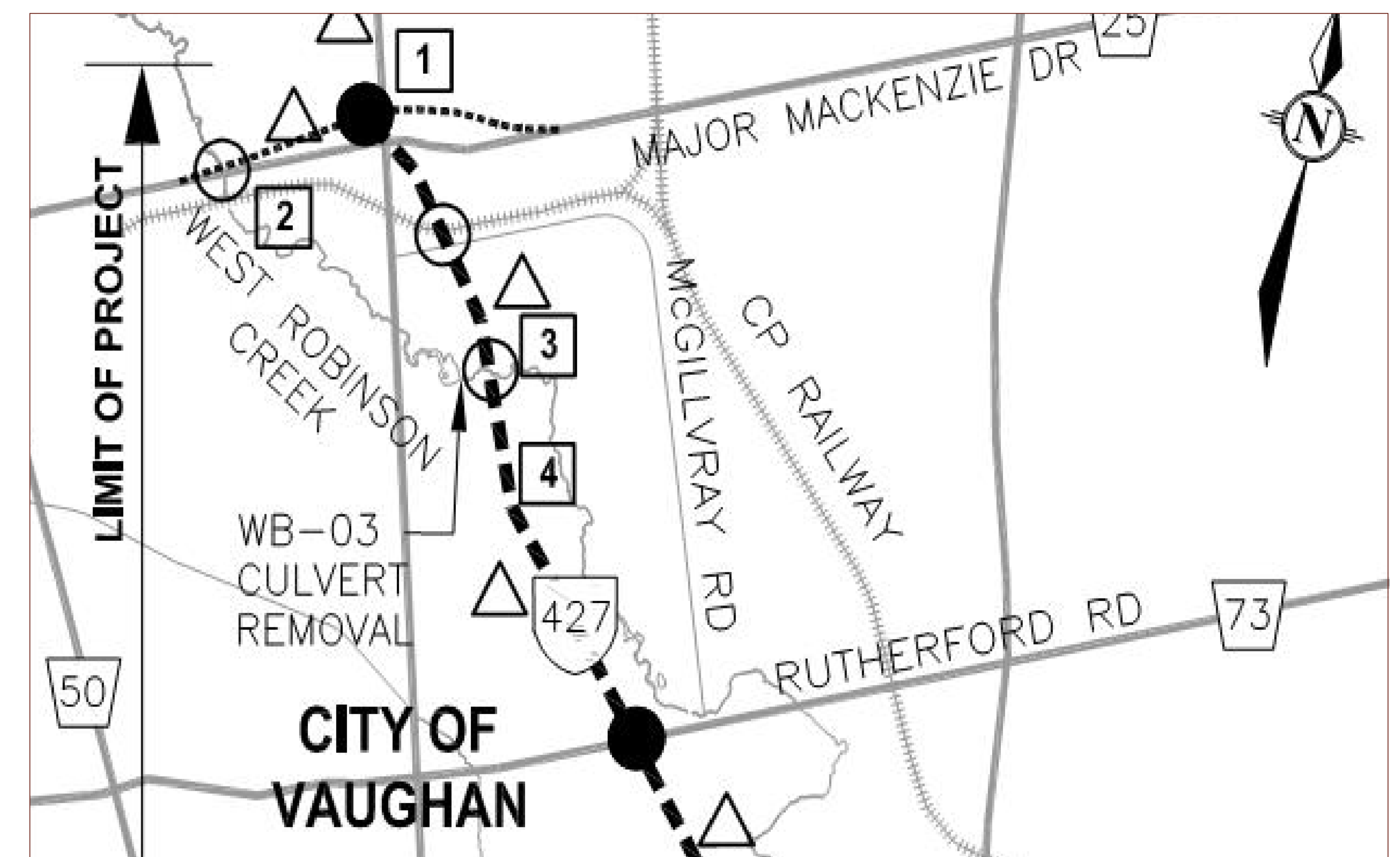
Detailed fluvial geomorphological assessments were completed at the watercourse of WB-03, as minor channel restorations were required to restore channel morphology.

Scope of the Works

- Remove laneway and allow channel to flow unimpeded.
- Remove fish barrier (collapsed box culvert WB-03).
- The removal of the existing collapsed box culvert will provide an overall benefit to the aquatic environment.
- Channel will be restored to fish habitat once culvert is removed.

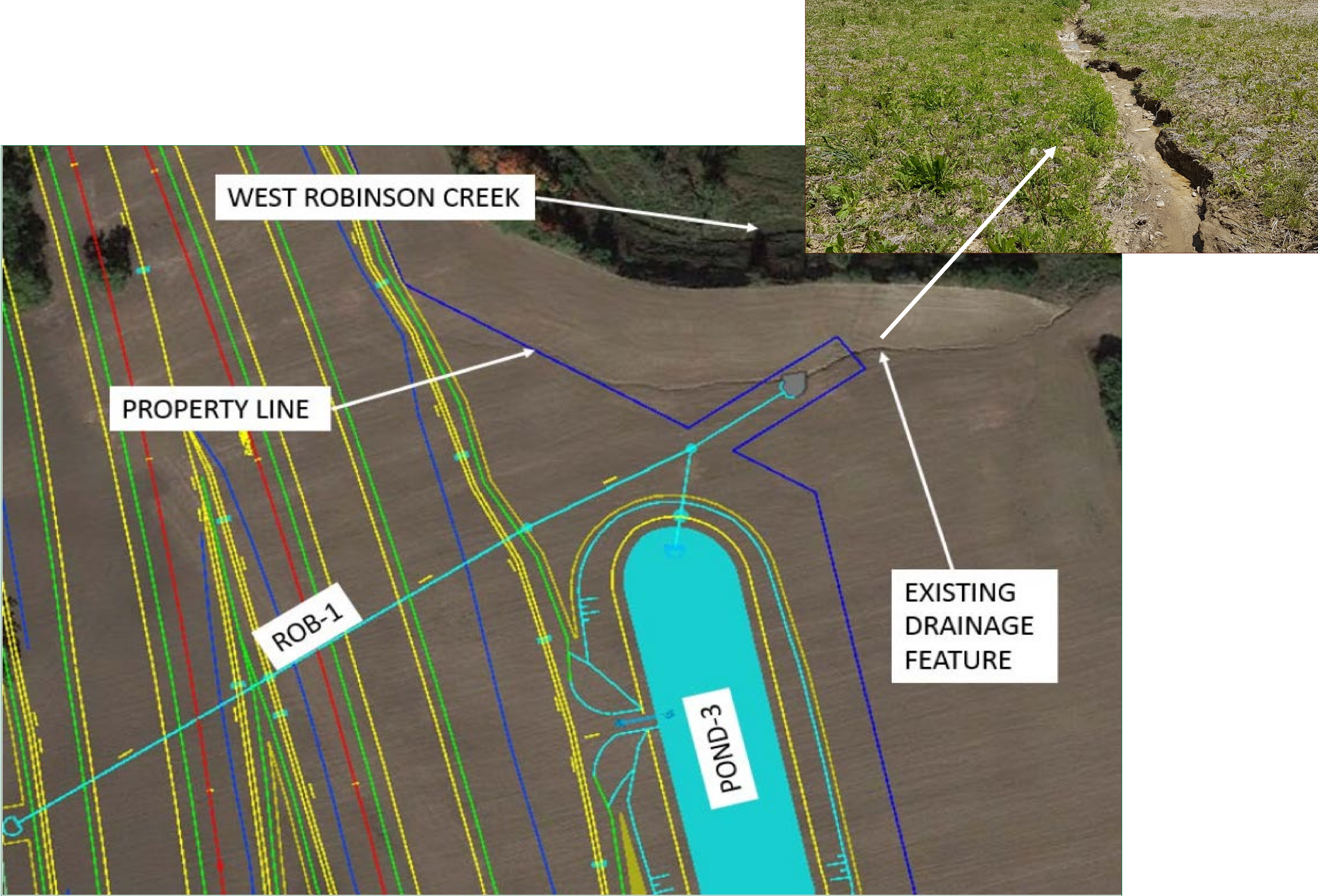
Mitigation Measures

- Fish habitat information was collected with site specific susceptibility of the channel to erosion, as determined through the fluvial geomorphological assessment, to determine risk to fish habitat.
- Any instream or near stream works shall be conducted during the appropriate in-warmwater construction timing (from July 1 to March 31) to protect the resident warmwater fish communities during the spawning period at watercourse crossings.



Design Refinements to Pond Outlets

Pond 3 Outlet Temporary Works

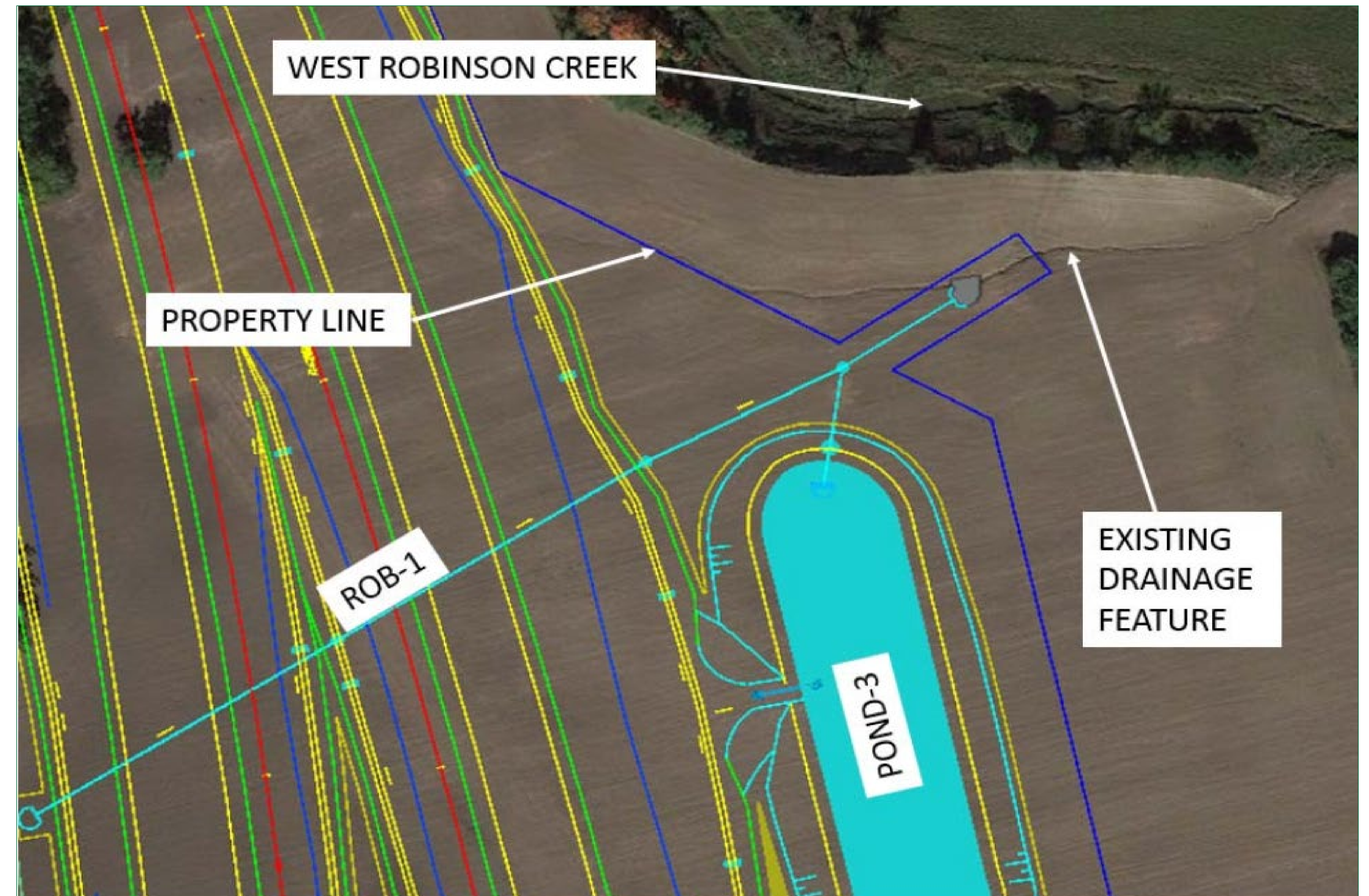
- As a result of the increased stormwater flow being directed through the ROB-1 culvert and flow from Pond 3, it was determined through stormwater flow analysis that without design improvements to the existing drainage feature, erosion was to be expected.
 - Permanent and temporary works to the existing drainage feature will be required to avoid these erosion impacts. Additional property will be required to implement all of the permanent works.
 - By implementing a temporary retention basin during construction and making modifications to the Pond 3 outlet to control release rates, peak flows can be managed to pre-development conditions. These temporary measures will be in place until the required property is obtained.
 - Once the additional property is obtained, armoring of the drainage feature from the top all the way to the watercourse will protect it from future erosion.
- 
- The temporary retention basin will be seeded with a cultural meadow mix, and SWM pond seed mix for enhancement and erosion control.
 - With the proposed measures, peak flows at the existing channel will be slightly lower than in the existing conditions.
 - Once the drainage feature has been constructed and stabilized, the temporary retention basin will be removed and the new drainage feature fully utilized.

Design Refinements to Pond Outlets

Pond 3 Outlet Temporary Works

Environmental Impacts

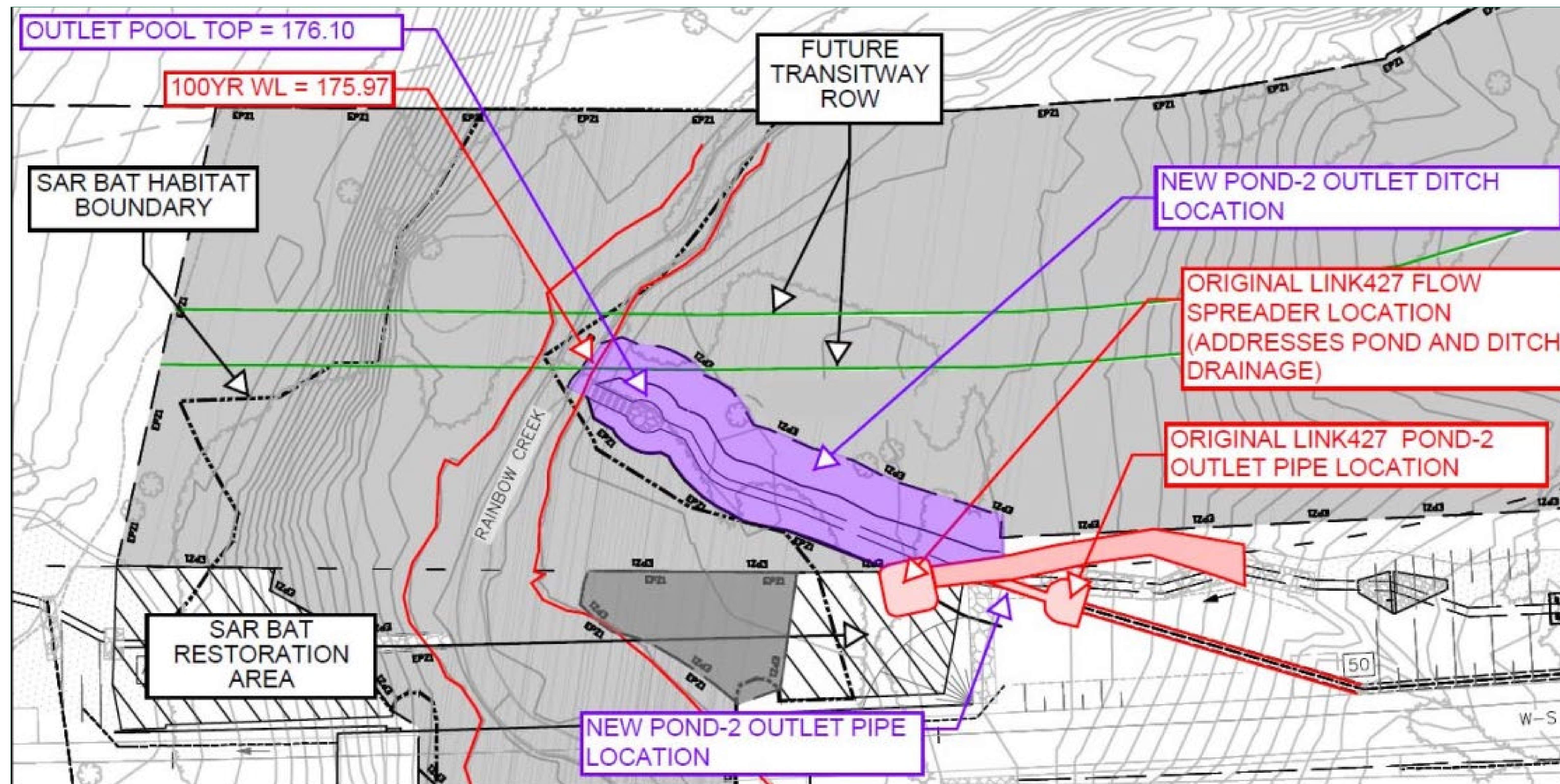
- Overall, the interim and ultimate solutions do not result in significant harm to the environment. Impacts to vegetation and wildlife habitat will be very minor. The majority of the outlet will be constructed within an active agricultural field (no identified Species at Risk habitat impacts).
- Through the design of the armoured connection to West Robinson Creek, the outlet will be sculped into the existing channel bank and will not result in an encroachment into the channel. Therefore, this work is not anticipated to result in serious harm.
- Restoration of the outfall channel following armouring of the outlet will include naturalized plantings and native seed mix.



Mitigation Measures

- Timing window for vegetation clearing will be applied (i.e., clearing only outside migratory bird nesting period between April 15 and August 15).
- ESC measures and tree protection fencing to be installed at the limits of the temporary work zone to prevent unintended impacts beyond the identified area where construction impacts will occur.
- LINK427 Environmental Inspector will monitor ESC measures and tree protection fence regularly to identify deficiencies or failures and ensure repair for effectiveness.
- Heavy equipment will be contained within the work area defined by the ESC measures and tree protection fencing.

Design Refinements to Pond Outlets



Pond 2 Outlet Relocation

- In the LINK427 design presented in DCR #4, the outlet pipe from Pond-2 discharged to a plunge pool as shown in red in the figure above. The design for the outlet area was advanced and refined, which revealed that positive drainage could not be provided with the original outlet configuration.
- In order to provide positive drainage, the flow spreader would have to be relocated at a lower elevation and be moved within the Environmentally Sensitive Area (shown in the dark grey area) and within Species at Risk (SAR) bat habitat, which was not a feasible option, as the flow spreader would have been a permanent disturbance where only temporary disturbance is allowed.
- Therefore, the optimal location would avoid the SAR bat habitat, any channel meanders, the future transitway right-of-way and the Environmentally Sensitive Area. This optimal location is highlighted in purple in the figure above.
- The relocation of Pond-2 outlet was not caused by, nor will impact the Pond-2 hydrology or hydraulics.

Design Refinements to Pond Outlets

Pond 2 Outlet Relocation

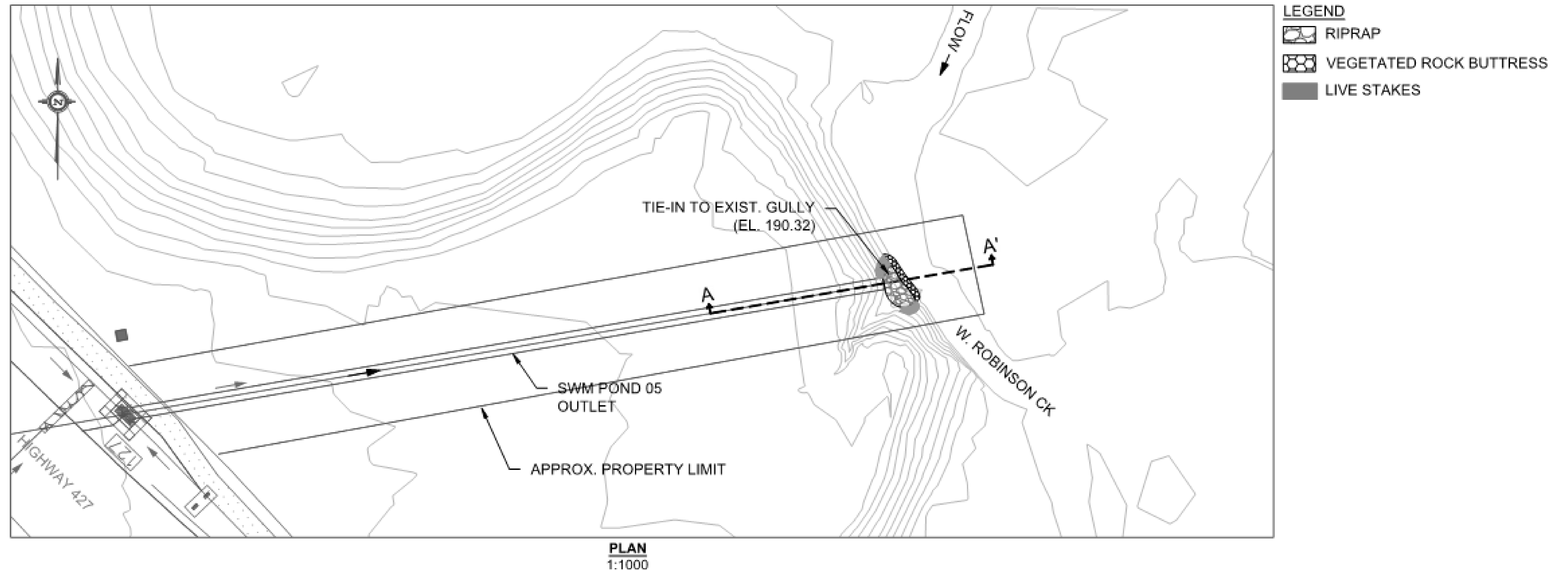
Environmental Impacts

- The proposed Pond-2 outfall will not encroach within the 2-year flood level causing no new footprint within fish habitat. Therefore, no detailed impact assessment is required under the Fisheries Act and the MTO/DFO/MNRF Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings.
- The vegetation community impacted by the new location of the drainage feature is not SAR Bat Habitat.
- Erosion and sediment control (ESC) measures and tree protection fencing will be installed at the limits of the SAR Bat Habitat to prevent unintended intrusion during construction. Therefore, there will be no changes to the SAR Bat Habitat impacts identified in the SAR Bat Permit.
- There will be a minor impact (approx. 25 m²) to the corner of the SAR Bat Habitat restoration area identified in the SAR Bat Permit as a result of grading for the swale. Through a reduction in tree spacing, the required number of trees (according to the SAR Bat Permit) will still fit within the SAR Bat Restoration area.
- Overall, there are no significant negative impacts to the environment or future infrastructure anticipated due to the relocation of the Pond-2 outlet drainage feature.

Mitigation Measures

- Timing windows for vegetation clearing will be respected (i.e., clearing outside migratory bird nesting period [April 15 through August 15] for all vegetation and clearing outside the bat active season [April 1 through September 30] for vegetation within designated SAR bat habitat).
- ESC measures and tree protection fencing will be installed at the limits of the temporary work zone to prevent unintended impacts beyond the identified area.
- The LINK427 Environmental Inspector will monitor ESC measures and tree protection fence regularly to identify deficiencies or failures and ensure repair for effectiveness.
- Heavy equipment will be contained within the work area defined by the ESC measures and tree protection fencing.

Design Refinements to Pond Outlets



Pond 5 – Outlet Design

- The Robinson Creek channel bank will be reinforced with a vegetated rock buttress to mitigate undercutting / slumping downslope of the outlet.
- The existing bank is situated along the outer bend of a meander and is therefore more susceptible to erosion.
- The buttress matches the existing channel bank grade (eg., 1.5:1) so as to not reduce the cross-sectional area of Robinson Creek.

Mitigation Measures

- Timing window for vegetation clearing will be applied (i.e., clearing outside migratory bird nesting period [April 15 through August 15]).
- ESC measures and tree protection fencing will be installed at the limits of the temporary work zone to prevent unintended impacts beyond the identified area.
- LINK427 Environmental Inspector will monitor ESC measures and tree protection fence regularly to identify deficiencies or failures and ensure repair for effectiveness.
- Heavy equipment will be contained within the work area defined by the ESC measures and tree protection fencing.

Communication Opportunities

Highway 427 Expansion Project Website

- The Highway 427 Expansion project website (www.427expansion.ca) will be the central portal for communication providing updates and information on traffic disruptions, construction activities and progress.

One-Window Communication

- LINK427 has established a one-window communication system for public enquiries, complaints and comments. Members of the public may contact LINK by telephone: 1-888-352-8085 (French Language line: 1-888-595-3152) or by email at ask@427expansion.ca.
- Ce document hautement spécialisé n'est disponible qu'en anglais en vertu du règlement 411/97, qui en exempte l'application de la Loi sur les services en français. Pour de l'aide en français, Appelez le Bureau des services en français au: 1-888-595-3152.

Variable Message Panels

- Portable variable messaging signs (PVMS) will be used at key locations and updated as needed to communicate, in real time, key information related to traffic management.

Notices & Bulletins

- Notices of upcoming consultations or other project activities will be delivered via the Project Mailing List, E-mail List, Project website, and local newspapers. Notices will also be mailed to residents and businesses that reside in a 2km radius of the project boundary.
- Project Bulletins will be prepared monthly, or more frequently if required and may include information on PICs, construction activities, traffic detours and other relevant information. These bulletins will be sent via email and available on the Project website.

Next Steps

Following this Public Information Centre (PIC), we will:

- Review and respond to comments received.
- Refine the Detail Design and mitigation measures based on comments received.
- Prepare the Design and Construction Report for public review.

Thank you for attending this Public information Centre. We welcome your comments. Please fill out the Comment Sheet you were provided when you entered and submit it before you leave, or e-mail / mail it to the address below by July 12, 2019. If you have questions about the Project or wish to be added to the mailing list, please contact:

Mr. Pedro Gonzalez
Project Director
LINK427
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Phone: 1-888-352-8085
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Comments and information regarding the project are being collected to assist LINK427 in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the study and may be included in study documentation. LINK427 will adhere to the privacy protection rules established in the Freedom of Information and Protection of Privacy Act (FIPPA). With the exception of personal information, all comments will become part of the public record.