

Welcome to the **Upper Little River** Stormwater Master Plan Class Environmental Assessment

Public Information Centre #2

October 22, 2012



Please sign in

Take an information sheet to record your thoughts
as you review the display material

City and Town staff and the study team are available
to discuss your questions and concerns

Public input will influence this study;
please take time to fill out a comment sheet



Upper Little River Stormwater Master Plan Class Environmental Assessment

Study Purpose

Problem Statement

Future development is expected within the Upper Little River Watershed in the near future. Stormwater management infrastructure will be required to control runoff from this future development such that there are no adverse impacts to downstream areas due to flooding, erosion, or water quality. A Master Drainage and Stormwater Management Plan is proposed including both City of Windsor and Town of Tecumseh lands to coordinate and guide future development in this area. The preferred alternative will provide a balance of relevant natural, social, technical and economic criteria to establish appropriate drainage and stormwater management requirements at a watershed level that meets the needs of area stakeholders.



Project Objectives

The purpose of this Class Environmental Assessment (EA) process is to evaluate options and determine a preferred alternative for the provision of stormwater management controls for the developing lands within the Upper Little River Watershed while allowing for future enhancement of the watercourse and stream corridor. The objectives of this project are:

- To determine a preferred option for stormwater management infrastructure within the Upper Little River Watershed, while taking into account; flood control, water quality, erosion control, aquatic habitat, aesthetics, safety, and recreational uses
- To carry out a Class Environmental Assessment
- To complete a preliminary design for the preferred option

Key Issues and Challenges

The current state of the watershed presents several key challenges and opportunities:

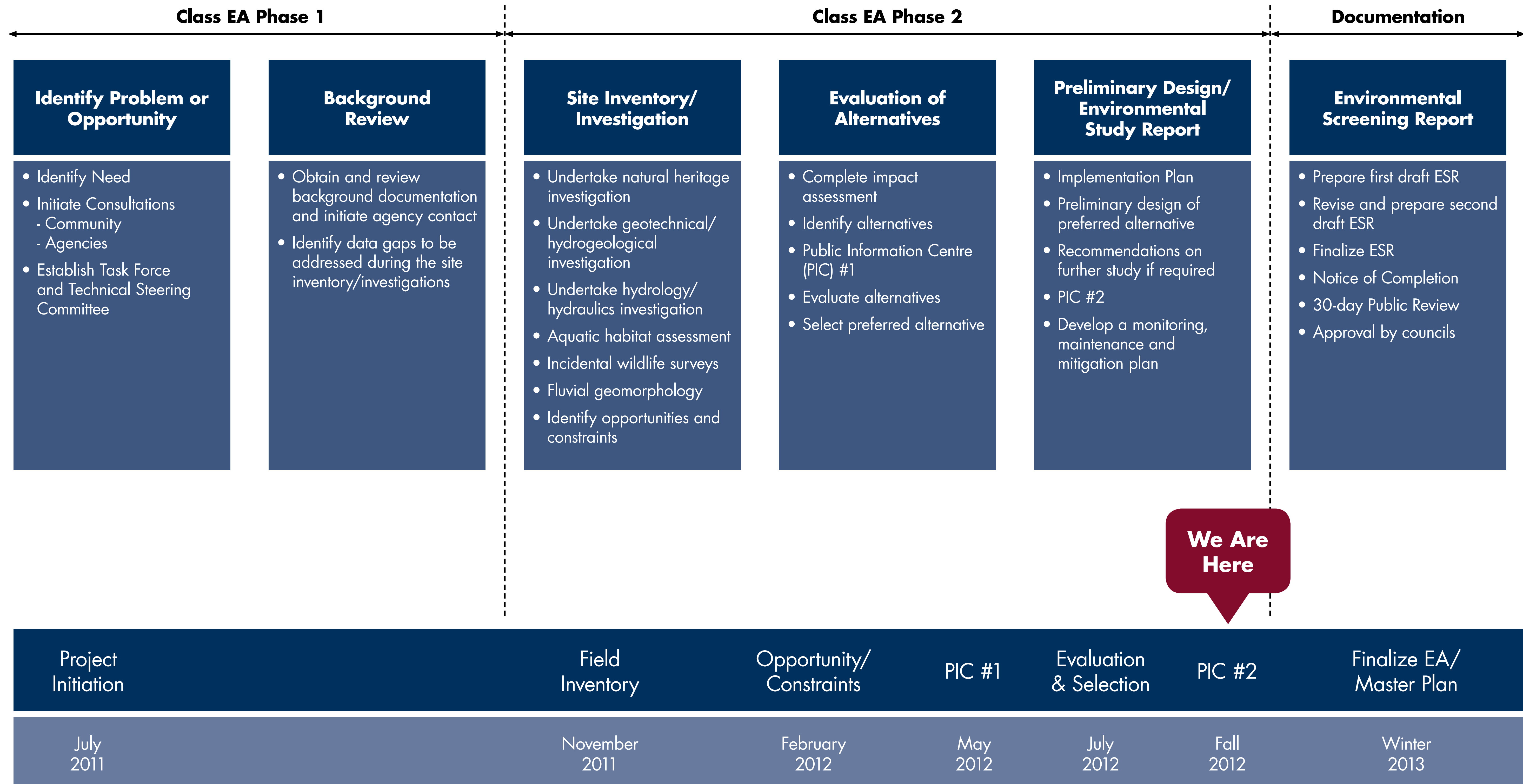
- The watershed suffers from recurring flooding and sediment build-up issues
- Waterfowl are attracted to typical stormwater management facilities, increasing the probability of bird strikes at the Windsor Airport
- Municipal Drains may be removed or modified in order to accommodate the proposed development plan, impacting fish habitat
- Develop corridors and linkages to minimize fragmentation of the natural habitat and recreational areas
- Future development will require stormwater management controls and infrastructure



Upper Little River

Stormwater Master Plan Class Environmental Assessment

Class Environmental Assessment (EA) Process





Upper Little River

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Study Area



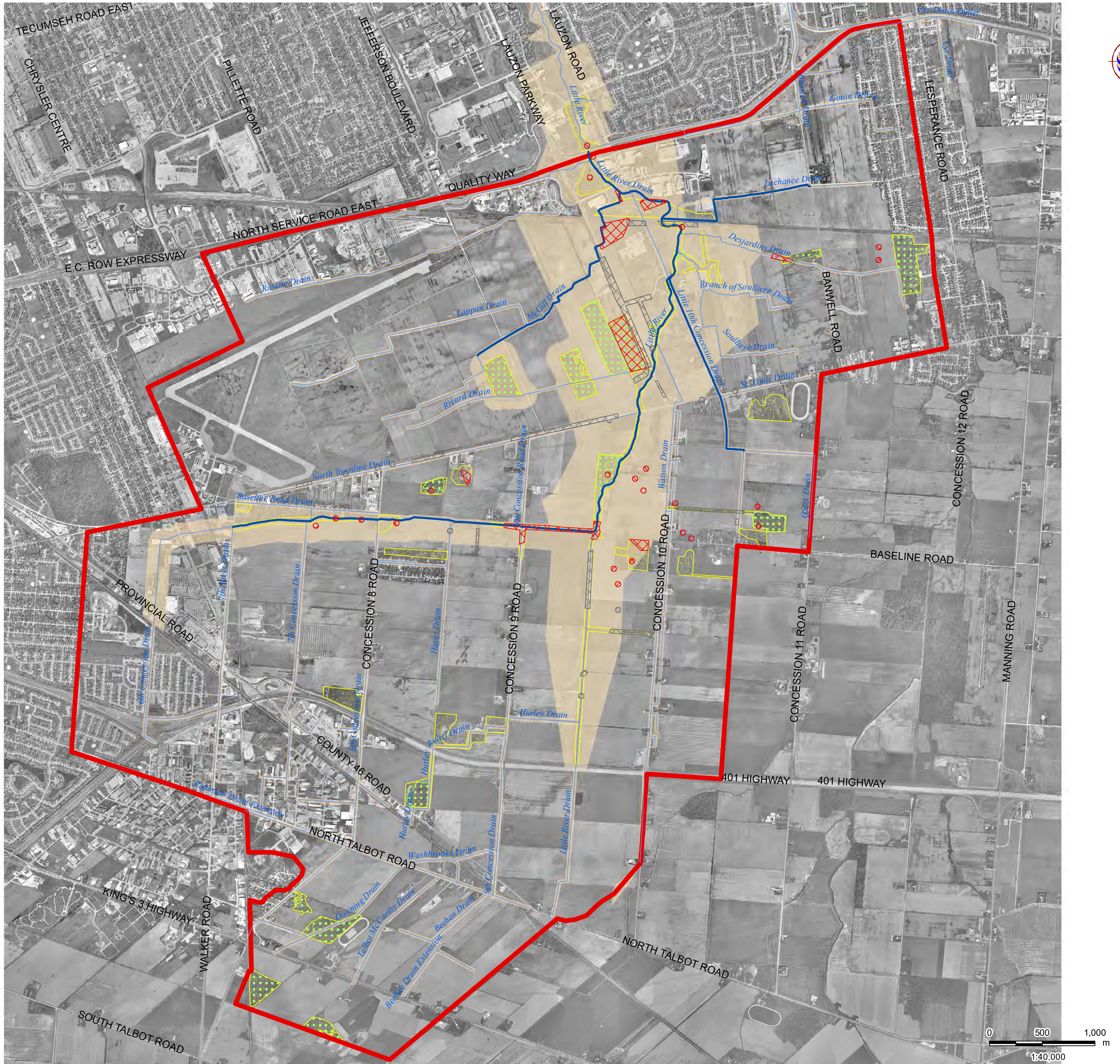
- Legend
- STUDY AREA
 - EXISTING WATERCOURSE
 - ➔ OVERLAND FLOW / TILE DRAIN
 - - - - CITY OF WINDSOR / TOWN OF TECUMSEH BOUNDARY



Upper Little River

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Significant Natural Areas



Legend

-  Watercourse
-  Study Area
-  Fish Habitat Reach
-  Significant Plant Species Observed
-  Significant Wildlife Species Observed
-  Habitat Areas
-  Woodland
-  Limit of Regulated Area



Description of Alternatives

Alternative #1

The “Do-Nothing” Approach

The “Do-Nothing” alternative includes no stormwater management (SWMM) controls for the developing areas in the Upper Little River.

Alternative #2

Water Quality and Erosion Control Only, no Flood Control

For this alternative, the proposed development will have only water quality treatment and erosion control, with no flood control. Many small water quality facilities would be scattered throughout the watershed.

Alternative #3

Communal On-line SWM Facilities

This alternative analyzes the potential to minimize the number of stormwater management facilities required to serve the study area by consolidating all water quality, erosion and flood controls at a few locations throughout the watershed.

Alternative #4

Communal Flood Control and Distributed Water Quality and Erosion Control

This alternative analyzes the scenario where a few large flood control facilities are located within the study area (similar locations to Alternative #3), but many small water quality and erosion controls are distributed throughout the area (similar locations to Alternative #2).

Alternative #5

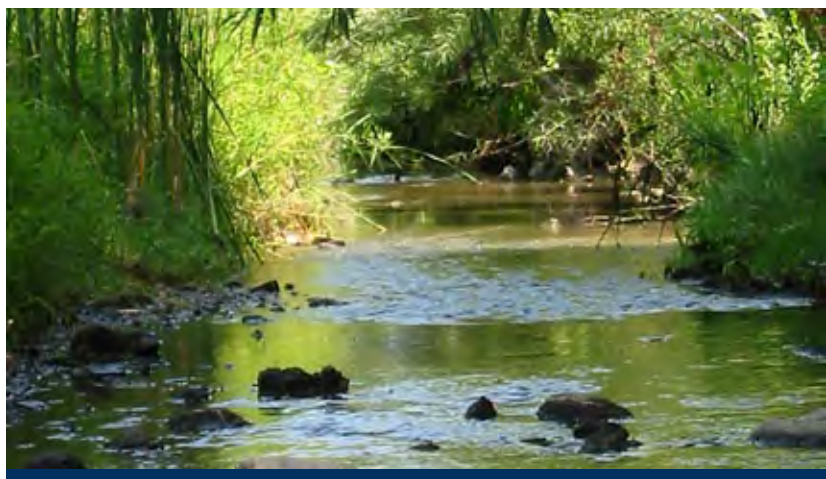
Distributed Stormwater Management Controls

This alternative considers the potential for stormwater management controls to be distributed throughout the study area, and each facility would be required to provide water quality, erosion and flood controls.

Alternative #6

Grouped Stormwater Management Controls

This alternative considers the potential for stormwater management controls to be grouped into stormwater management corridors. Each facility would be required to provide water quality, erosion and flood controls. The facilities are aligned to promote natural corridors and recreational linkages.



Upper Little River Stormwater Master Plan Class Environmental Assessment

Evaluation Criteria

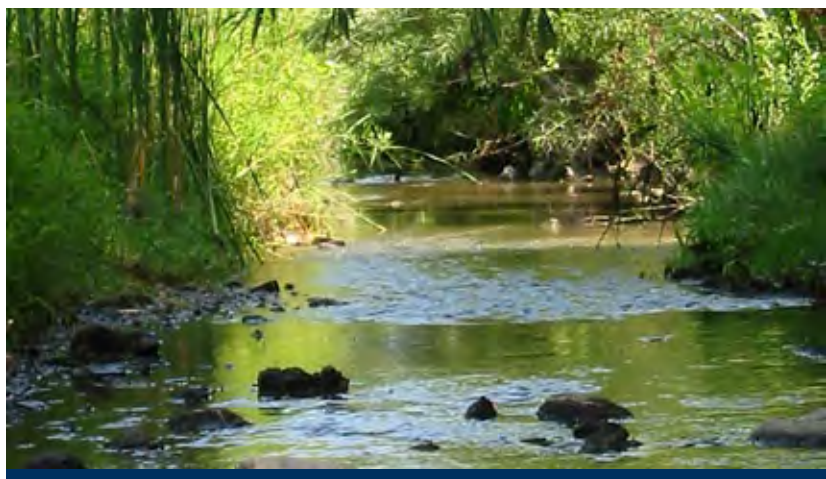
Evaluation Methodology

For each alternative the project team will:

- Apply the evaluation criteria using the measures outlined above
- The measures will be converted to an assigned score based on the rank of relative preferences of the alternatives
- The scores will then be totaled and normalized by category (so that each category is weighted equally) to provide an overall score for each alternative
- Alternatives with higher scores are considered more preferred or feasible than those with lower scores
- The initial evaluation will be based on an equal weighting of criteria categories
- A sensitivity analysis will be conducted to determine if the overall scoring of alternatives changes if criteria categories are assigned a different weighting scheme

Upper Little River Watershed Master Drainage Plan EA

EVALUATION CRITERIA		
Criteria	Description	Measure
Natural Environment		
Terrestrial Resources, Vegetation, and Wildlife Implications	The nature and extent of disturbance to terrestrial habitat, vegetation communities, and wildlife resulting from the construction/operation of the alternative. Alternatives that maintain biodiversity and minimize disturbance to native species, regionally significant species and species with specific habitat requirements are preferred.	<ul style="list-style-type: none"> • Nature of disturbance (direct vs. indirect) • Area (ha) of habitat affected • Nature, significance, and sensitivity of affected area or species
Fisheries Resources and Aquatic Habitat Implications	Implications of disturbance to fish habitat and/or features that sustain habitat conditions resulting from the construction/operation of the alternative. Alternatives that sustain a fishery are preferred.	<ul style="list-style-type: none"> • Nature and extent of disturbance to fish habitat, including opportunities for movement and potential spawning areas • Nature, significance and sensitivity of fish habitat affected • Nature and extent of any disturbance to features that sustain fish habitat conditions, including flow regime, groundwater seeps and riparian vegetation
Groundwater and Base Flow Implications	Impact of the alternative on groundwater levels and base flows in the Upper Little River Watershed. Alternatives that maintain or enhance groundwater and base flow are preferred.	<ul style="list-style-type: none"> • Nature and significance of changes to base flow • Nature and extent of impact to groundwater levels and well use
Surface Water Quality	Impact of the alternative on in-stream water quality.	<ul style="list-style-type: none"> • Number of proposed stormwater management control measures and their location within the study area • Nature and significance of changes to the overall water quality system
Economic Environment		
Total Capital Cost	Relative overall capital costs, including restoration/enhancement costs for the alternative. Lower cost alternatives are preferred.	<ul style="list-style-type: none"> • Capital costs of alternative relative to other alternatives
Total Maintenance Cost	Relative annual costs for operation & maintenance activities for the alternative. Lower cost alternatives are preferred.	<ul style="list-style-type: none"> • Operation & maintenance costs of the alternative relative to other alternatives
Technical Environment		
Ability to Provide Required Flood Protection	The ability of the alternative to maintain/enhance the existing level of flood protection. Alternative must satisfy flood protection requirements.	<ul style="list-style-type: none"> • Flood protection to required levels provided
Ease of Construction/ Implementation	The ability of the alternative to be easily implemented on a technical, regulatory, and practical basis. Alternatives that are easier to construct/implement are preferred.	<ul style="list-style-type: none"> • Type of structure/construction required • Permitting/approval requirements • Difficulty of construction/implementation (access, site-specific conditions, coordination between facilities)
Ability to Meet Agency Requirements	The ability of the alternative to meet MOE, Municipalities, Essex Region Conservation Authority, Windsor Airport requirements.	<ul style="list-style-type: none"> • Nature and location of controls • Nature and location of water bodies in relation to the Windsor Airport
Social/Cultural Environment		
Aesthetics	The ability of the alternative to maintain or enhance the appearance of the existing and newly created local natural areas and stormwater management control measures. Alternatives that maintain or improve existing aesthetic values are preferred.	<ul style="list-style-type: none"> • Nature and location of encroachment within existing natural areas • Nature and location of stormwater management control measures
Health and Safety	The potential risk or liability to community and operations staff health and safety resulting from: <ul style="list-style-type: none"> • Flood events • Recreational use • Operation and maintenance Alternatives that maintain or improve safety are preferred.	<ul style="list-style-type: none"> • Nature and location of risk • Public accessibility to risk areas • Flood control operational requirements
Recreational Opportunities	The ability of the alternative to maintain, enhance, and manage recreational opportunities within the study area. Alternatives that maintain or enhance opportunities are preferred.	<ul style="list-style-type: none"> • Nature and location of stormwater management control measures relative to recreational areas including trails, sports fields, and other recreational infrastructure
Cultural Heritage/Archaeology	The ability of the alternative to protect potential archaeological resources within the study area. Alternatives that avoid or protect potential locations are preferred.	<ul style="list-style-type: none"> • Proximity of stormwater management areas to existing archaeological finds • Nature of potential disturbance



Upper Little River Stormwater Master Plan Class Environmental Assessment

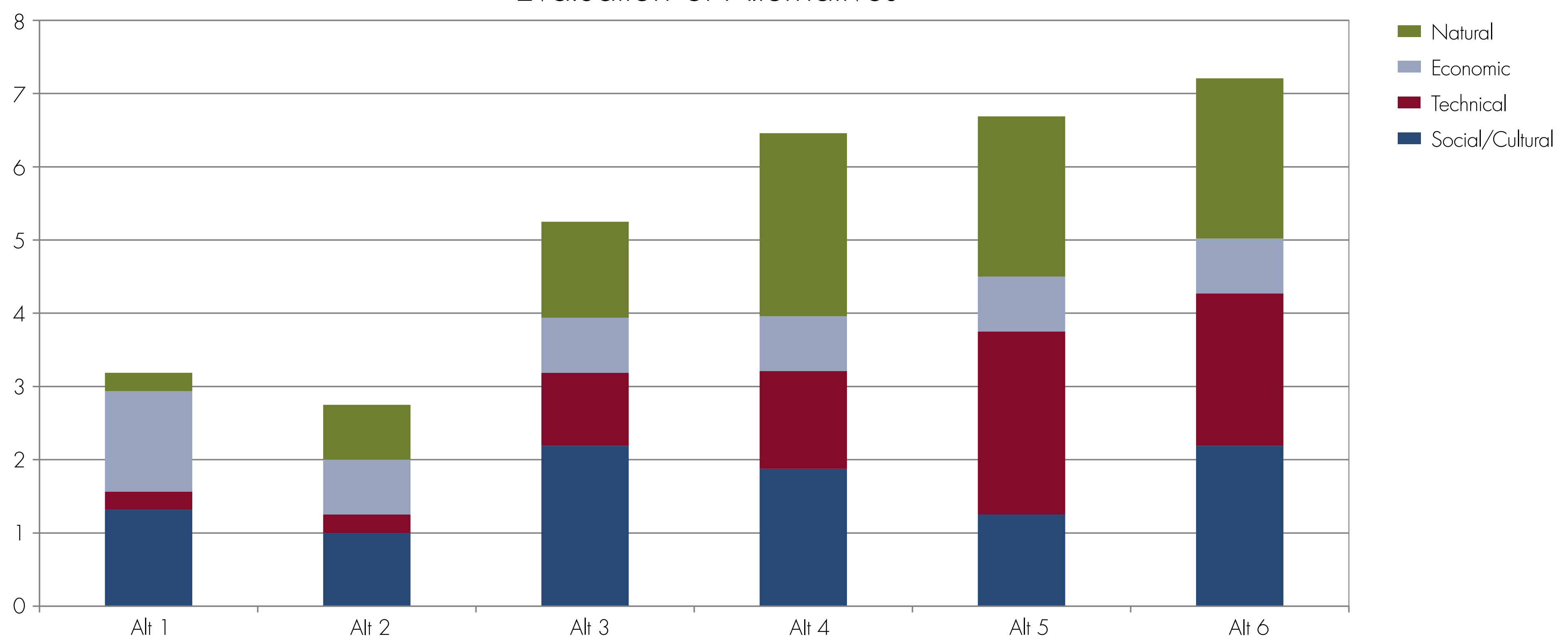
Summary of Evaluation

Six alternatives were evaluated for the stormwater management opportunities using the evaluation criteria presented at Public Information Centre #1 and:

Alternative 6 with grouped stormwater management controls located along major transportation and environmental corridors is the preferred solution.

This alternative has the highest combined score as shown in the chart. It ranked highest by providing all of the technical requirements for stormwater management and by providing a central core for amenities and trails.

Evaluation of Alternatives



Sensitivity Analysis

The analysis shown above was based on an equal weighting of the four categories of criteria as required for Class Environmental Assessment Studies:

- Natural Environment 25%
- Economic Environment 25%
- Technical Environment 25%
- Social/Cultural Environment 25%

To determine whether the preferred solution changed if the categories were weighted differently, four sensitivity analyses were completed as follows:

1. Natural Environment as more important
Natural – 40%, Economic – 20%, Technical – 20%, and Social/Cultural – 20%
2. Economic Environment as more important
Natural – 20%, Economic – 40%, Technical – 20%, and Social/Cultural – 20%
3. Technical Environment as more important
Natural – 20%, Economic – 20%, Technical – 40%, and Social/Cultural – 20%
4. Social/Cultural Environment as more important
Natural – 20%, Economic – 20%, Technical – 20%, and Social/Cultural – 40%

In all cases, Alternative 6 was the preferred alternative.

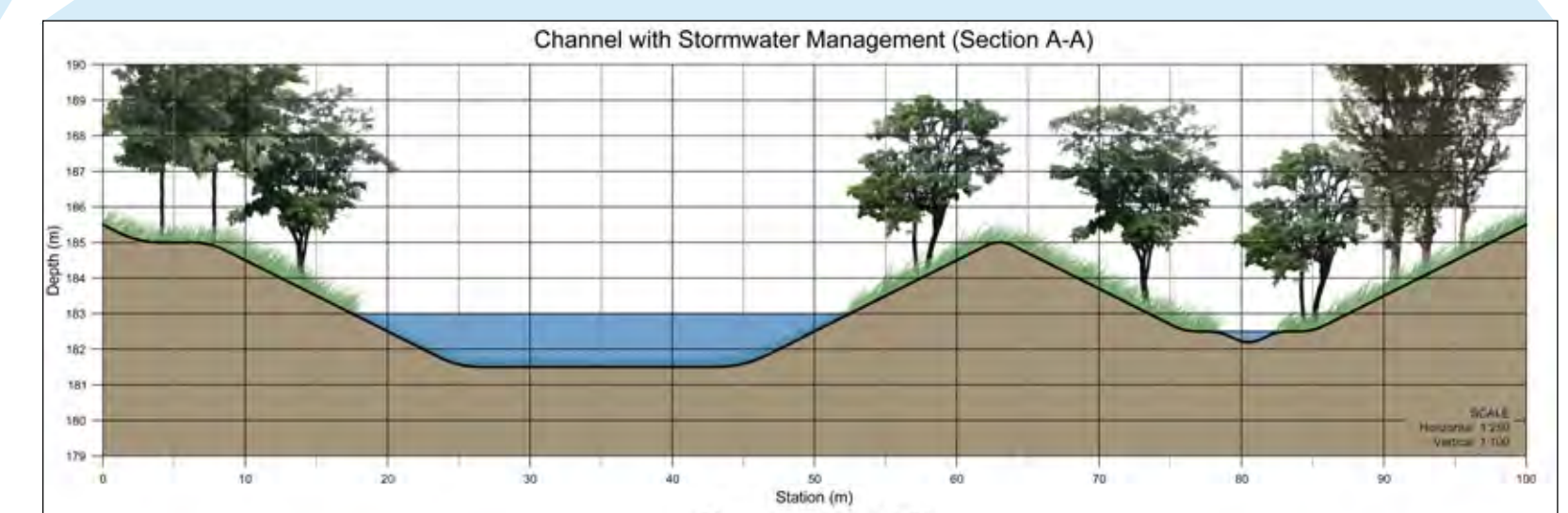
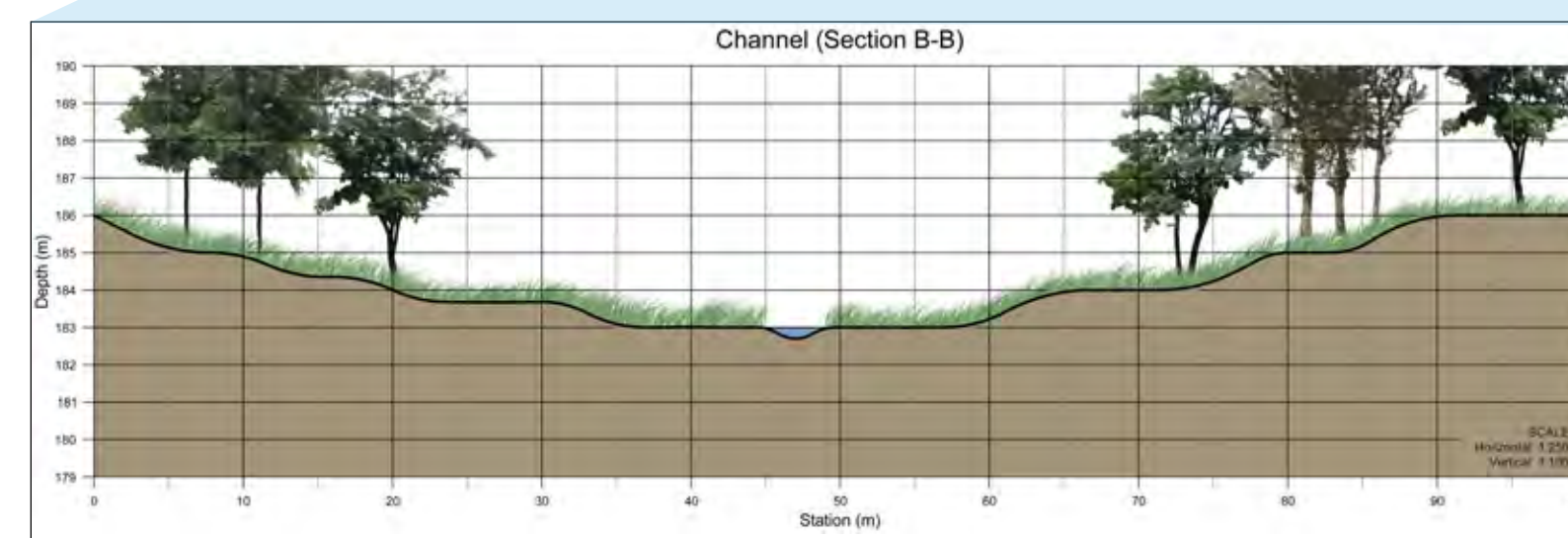
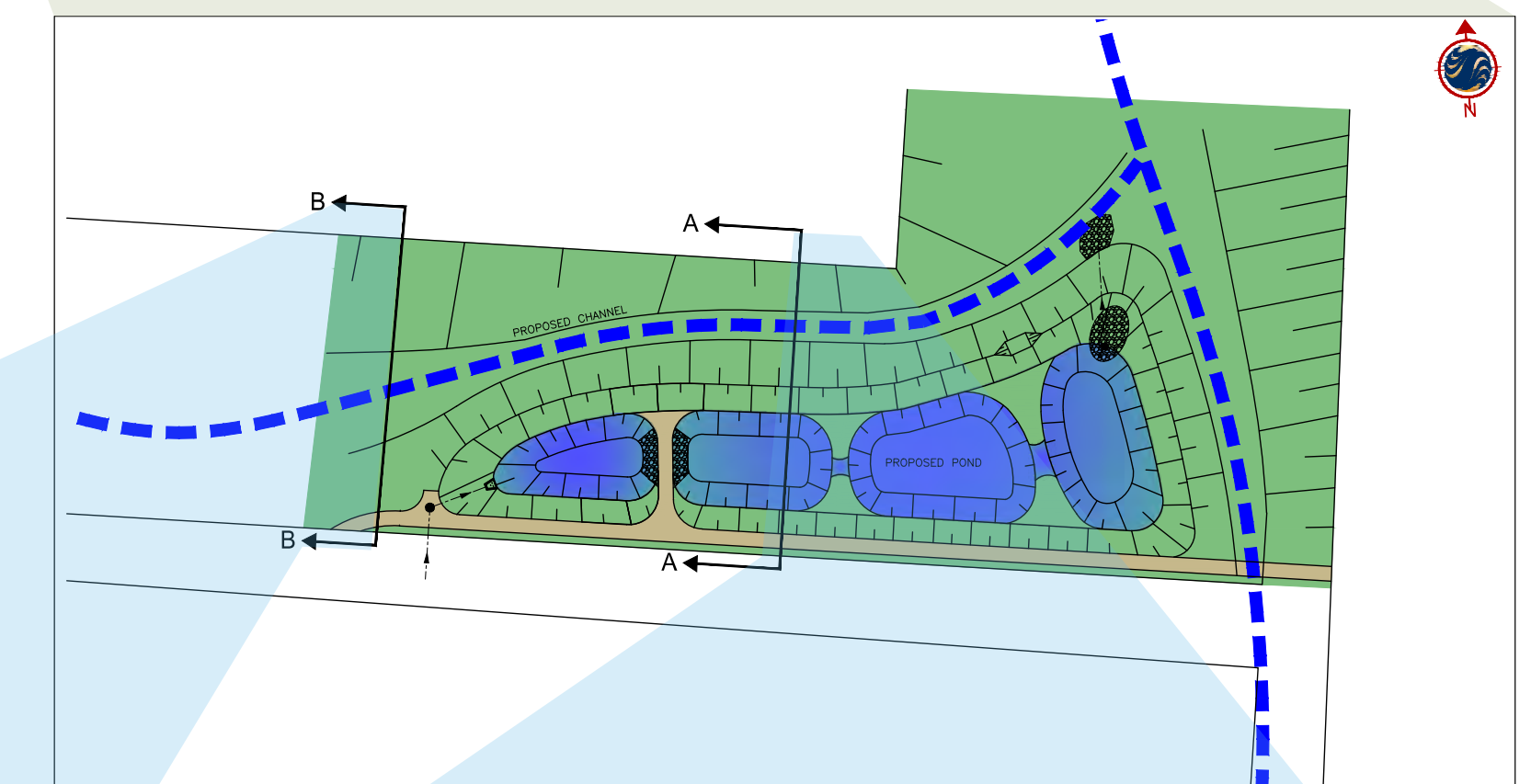
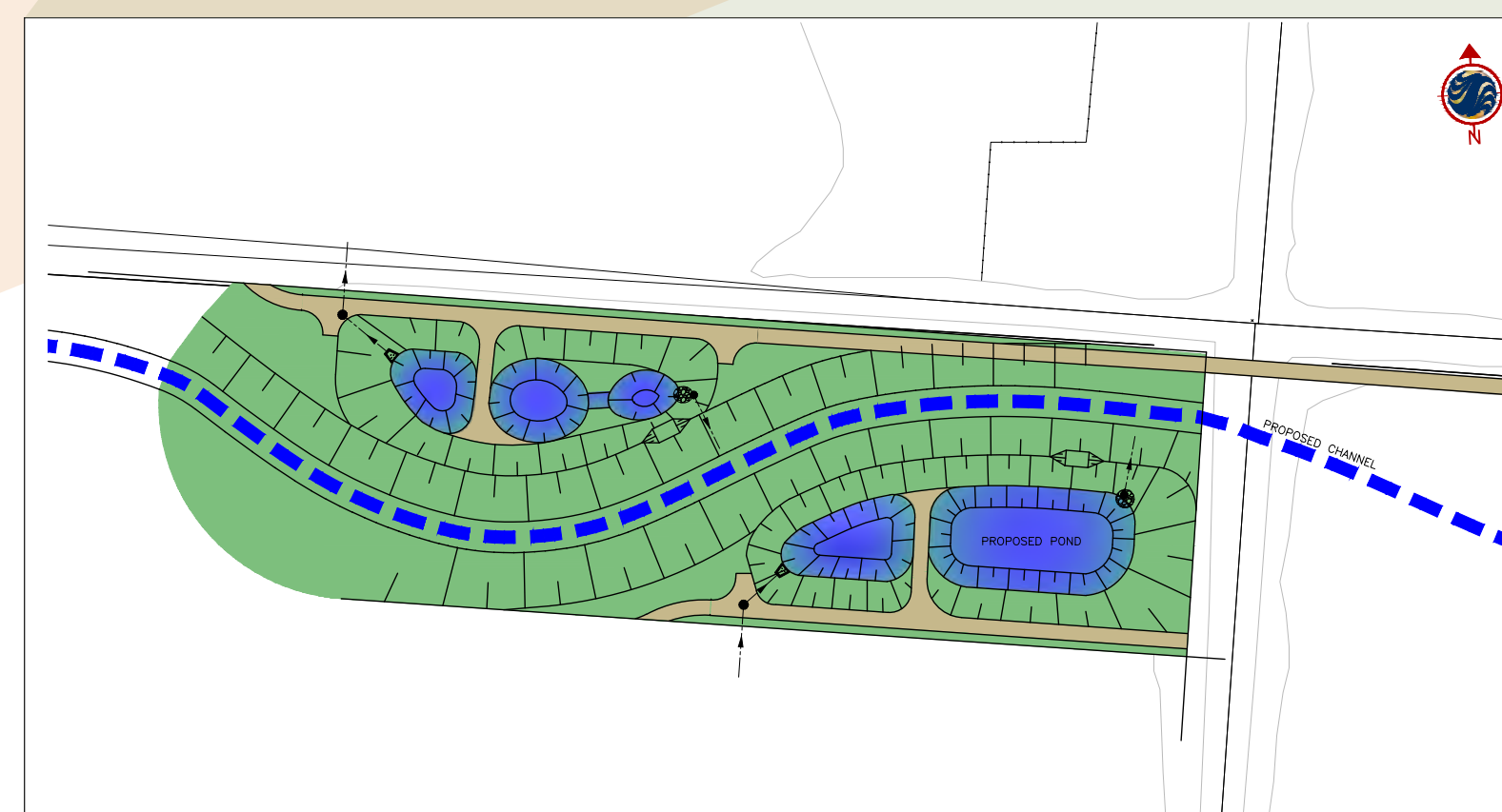
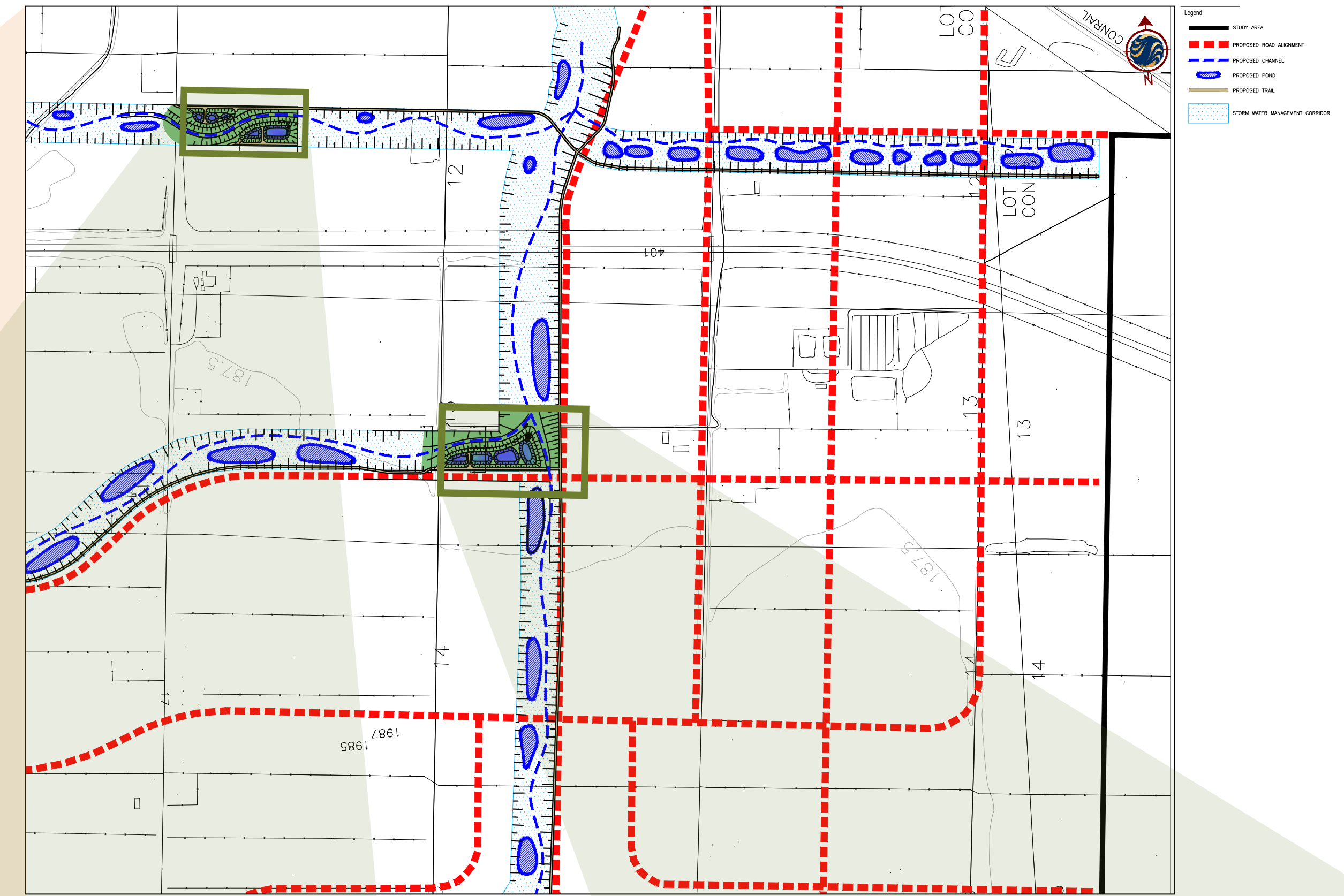
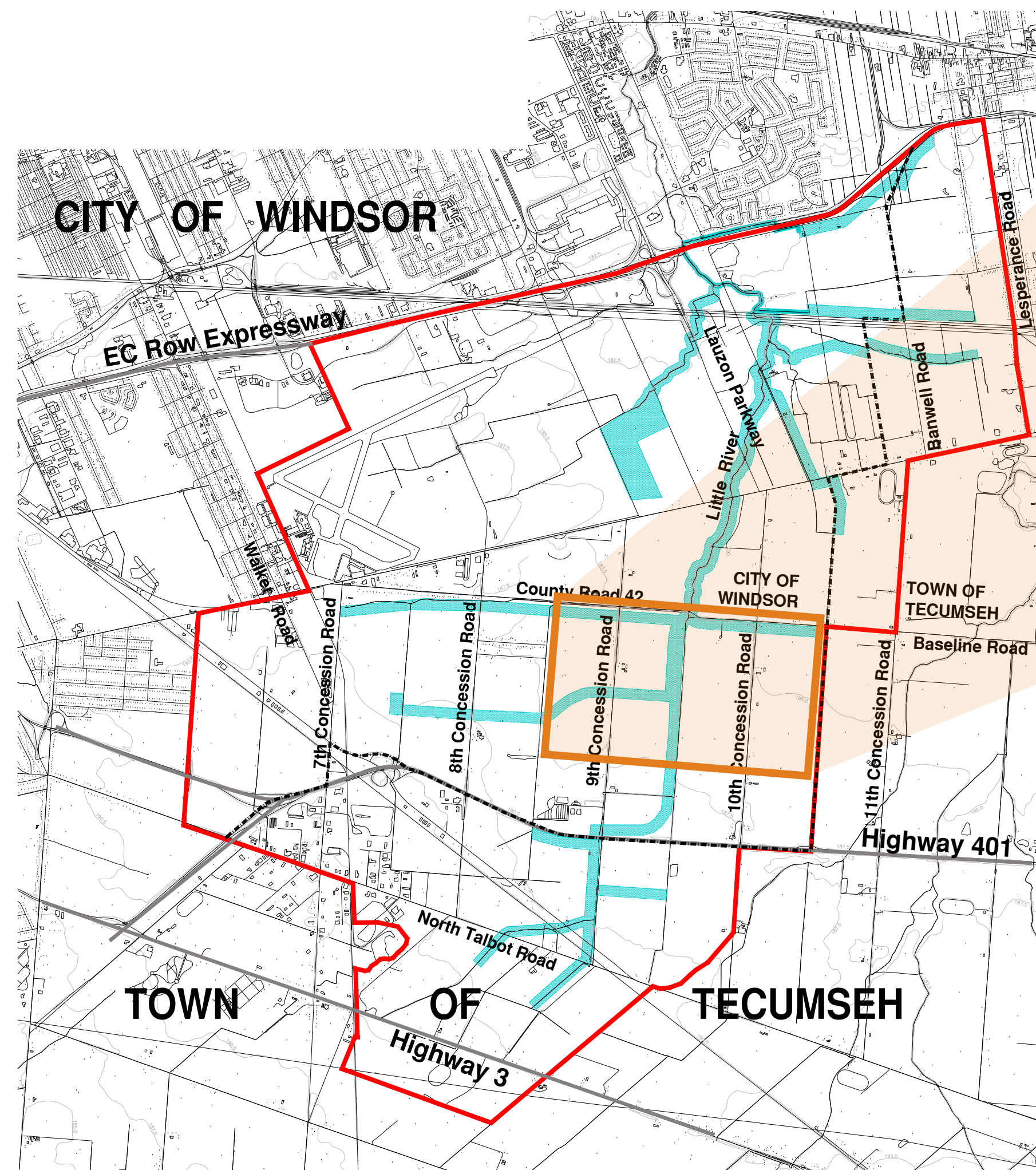


Upper Little River Stormwater Master Plan Class Environmental Assessment

Preliminary Preferred Alternative

Alternative #6 Grouped Stormwater Management Controls

This alternative considers the potential for stormwater management controls to be grouped into stormwater management corridors. Each facility would be required to provide water quality, erosion and flood controls. The facilities are aligned to promote natural corridors and recreational linkages.





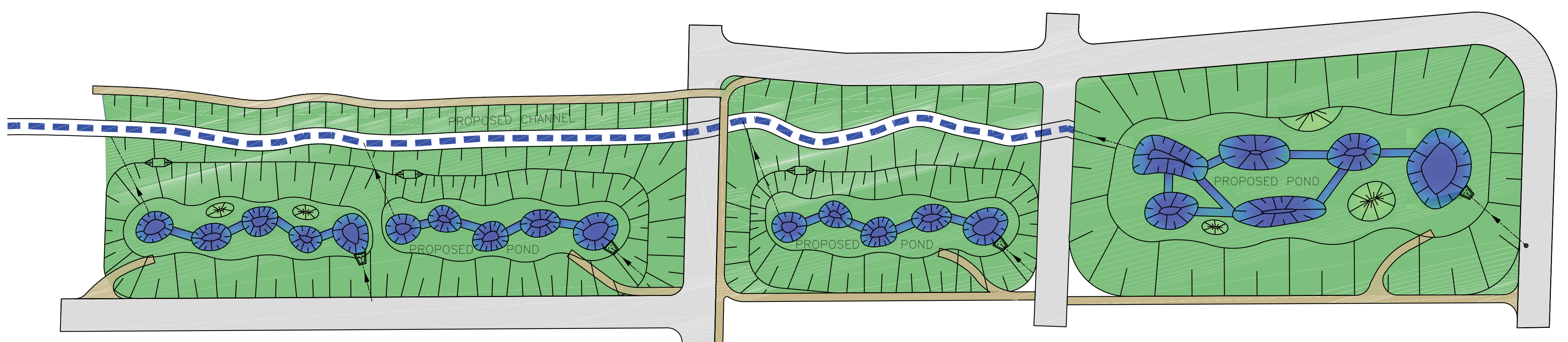
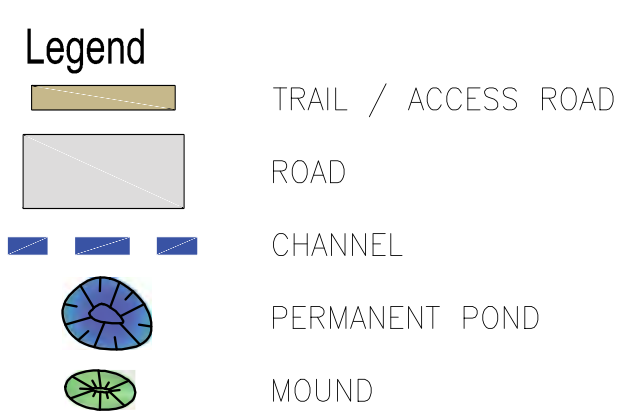
Upper Little River

Stormwater Master Plan Class Environmental Assessment

Design Elements

Several key elements included in the proposed design are:

- Create continuity between existing/future woodlots, parks, and stormwater management ponds to allow for the movement of animals and people. These areas will be located near each other to create a continuous area linked by an integrated trail network
- Modification of the existing drainage network. Some drains will be enhanced, while others will be abandoned in favour of storm sewers. Flow will be concentrated in wider riparian channels with enhanced fish habitat
- Due to flat topography across the site, approximately half of the stormwater management ponds will likely require pumping to drain to Little River
- Due to the proximity of the site to the Windsor International Airport, stormwater management ponds will include design features to discourage use by waterfowl including abundant shrubs and trees
- Increased base flow in Upper Little River to enhance fish habitat
- Reduced flood elevations created by wider conveyance channels and storage





The Next Steps

Comments from today's Public Information Centre
will be received until
November 5, 2012

Comments from reviewing agencies will be incorporated
into the decision making process

Finalize Environmental Study Report and
File Class Environmental Assessment
Winter 2013

Thank You for Attending

*If you have any questions about this study
feel free to ask any member of the Study Team.*



Upper Little River Stormwater Master Plan Class Environmental Assessment

INTRODUCTION

The Essex Region Conservation Authority in conjunction with the City of Windsor and the Town of Tecumseh has initiated a Master Plan Study in accordance with Phases 1 & 2 of the Municipal Class Environmental Assessment (EA) process. This Study will determine the stormwater management infrastructure requirements for the Upper Little River Watershed area to service existing and future development. This information brief provides an overview of the study, key activities and schedule.

PROBLEM STATEMENT

Future development is expected within the Upper Little River Watershed in the near future. Stormwater management infrastructure will be required to control runoff from this future development such that there are no adverse impacts to downstream areas due to flooding, erosion, or water quality. A Master Drainage and Stormwater Management Plan is proposed including both City of Windsor and Town of Tecumseh lands to coordinate and guide future development in this area. The preferred alternative will provide a balance of relevant natural, social, technical and economic criteria to establish appropriate drainage and stormwater management requirements at a watershed level that meets the needs of area stakeholders.

DECISION-MAKING PROCESS

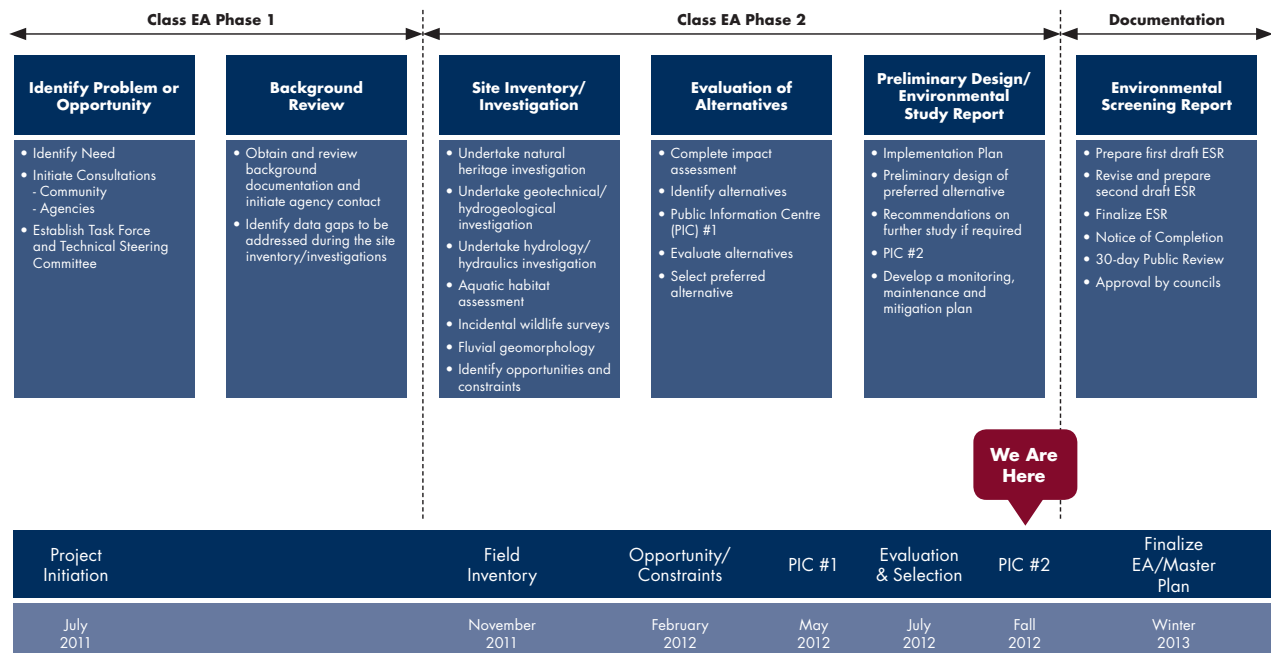
The study will be in accordance with the Municipal Engineers' Association document entitled "Municipal Class Environmental Assessment" October 2000, as amended in 2007.

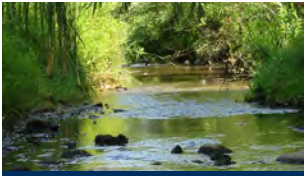
The Class EA process includes public and review agency consultation, an evaluation of alternatives, an assessment of the impacts of the proposed alternatives, and identification of a preferred solution.

PROJECT OBJECTIVES

The purpose of this Class EA process is to evaluate options and determine a preferred alternative for the provision of stormwater management controls for the developing lands within the Upper Little River Watershed while allowing for future enhancement of the watercourse and stream corridor. The objectives of this project are:

- To determine a preferred option for stormwater management infrastructure within the Upper Little River Watershed, while taking into account; flood control, water quality, erosion control, aquatic habitat, aesthetics, safety, and recreational uses
- To carry out a Class Environmental Assessment
- To complete a preliminary design for the preferred option





Upper Little River Stormwater Master Plan Class Environmental Assessment

THE STUDY AREA

The Upper Little River Stormwater Master Plan will focus on the portion of Little River located upstream of the E.C. Row Expressway, including the Windsor Airport.

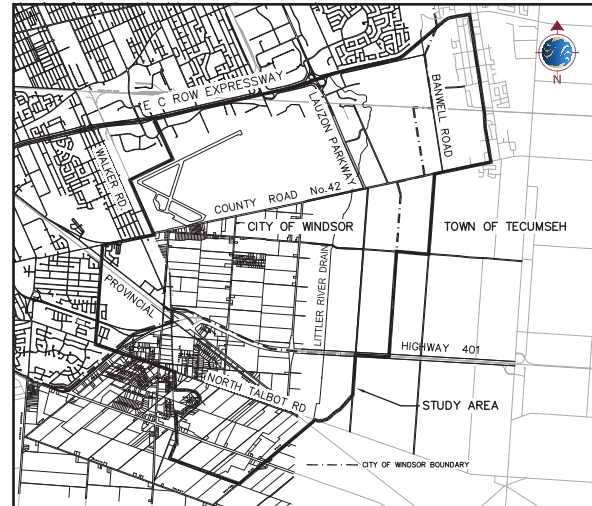
PROJECT ACTIVITIES

A review of background information and field reconnaissance has been completed and the results are documented. Some of the key findings include:

- Proximity of the site to the Windsor International Airport and bird management concerns influenced the preferred stormwater management solution
- Trails are well used and highly valued by the community
- No endangered species were identified
- Some of the existing municipal drains will be abandoned while others will be enhanced following urban planning strategies

The list of alternatives identified previously has been evaluated and a preliminary solution is proposed:

- Construct stormwater management facilities off-line of Upper Little River to provide mitigation for future development
- Group the facilities into corridors to promote natural corridors and recreational linkages
- Identify trail links to external areas
- Improve water quality and flood impacts along Upper Little River



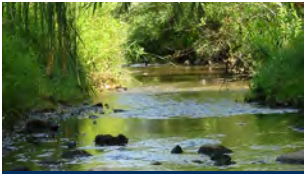
NEXT STEPS

- Comments from today's PIC will be received until November 5, 2012
- Comments received from review agencies and the public will be incorporated into the decision-making process
- Finalize Environmental Study Report and File Class Environmental Assessment

For additional information, please contact:

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Upper Little River Stormwater Master Plan Class Environmental Assessment

COMMENT SHEET

1. The preliminary preferred solution is to construct stormwater corridors along major transportation and environmental corridors off-line of Upper Little River. Please provide your comments, questions or concerns below.

2. How would you describe the nature of your interest in the study?

- Member of the general public
- Resident/landowner within the Study Area
- Member of an Interest Group (please specify) _____
- Agency representative (please specify) _____

3. Do you have any additional comments or information that you feel would be helpful to the project team?

Please comment: _____

4. Please provide your name and contact information (optional).

Are you on the project mailing list? YES NO, please add my name and contact information to the mailing list

Your completed Comment Sheet will be included in the Class EA report, which will be made public at the completion of this study. Please check the box below if you wish to have your comments included anonymously.

Please withhold my name and contact information from publication in the Class EA report.

You may leave this completed Comment Sheet in the box provided at the registration table for this Information Centre or you may send it by November 5, 2012 to:

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Thank you for your participation in this study.

