Baseline/Woodroffe Stormwater Management Pond Class Environmental Assessment Study

Public Meeting
May 17, 2017

Agenda

Part A – Why a Pond and Why Here?

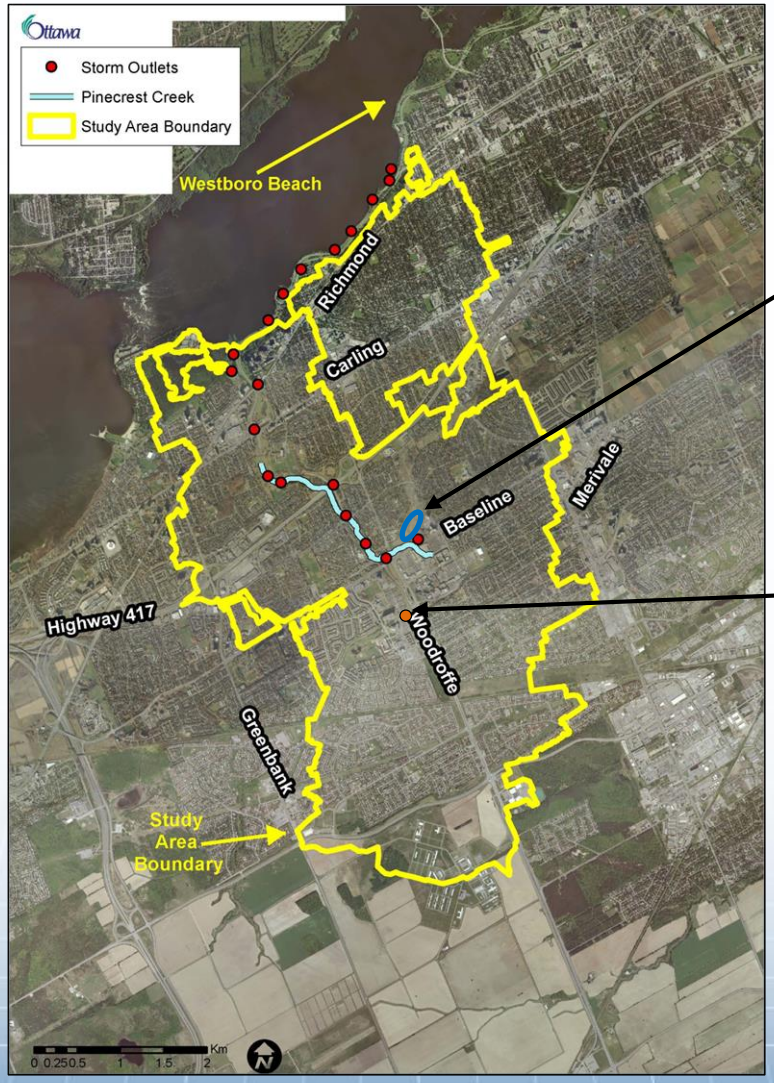
- Background….how we got here…need for a stormwater pond

Part B – Pond Options and Design Features

- Class EA Process
- Pond Options 1 and 2
- What we heard about pond design
- Refined Pond Option
- Next Steps

WHY A POND AND WHY HERE?

Context for Stormwater Pond



Proposed Pond

Baseline Station

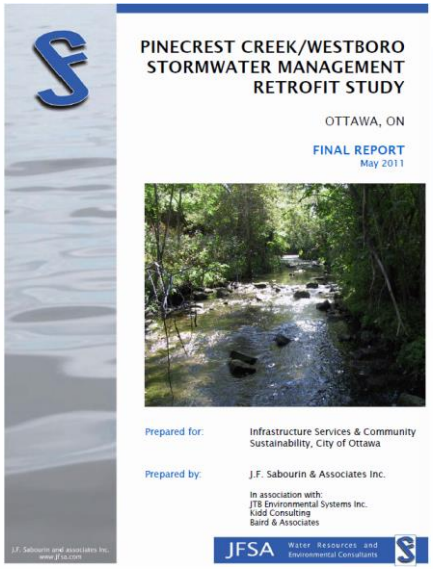
Need for a Stormwater Pond

- Improved water quality and some reduced risk of flooding
- Slower release of water to creek which will reduce erosion during storm events
- Removal of suspended solids prior to discharge
- Baseline LRT station flows to creek not permitted without stormwater improvements
- Existing stormwater inlet at Baseline station NOT connected to Pinecrest Creek

Baseline/Woodroffe Stormwater Pond a MUST HAVE Project

- Funding agreement with Province signed in 2015, City/Province are co-sponsors
- As pond directly affects Baseline LRT station drainage, pond approvals, design and construction have been “bundled” with Stage 2 LRT
- Stage 2 LRT Project will control/implement pond to meet schedule for Baseline LRT station construction
- Stage 2 LRT Project also responsible for EA and NCC approvals
- Implementation of the pond is an LRT requirement

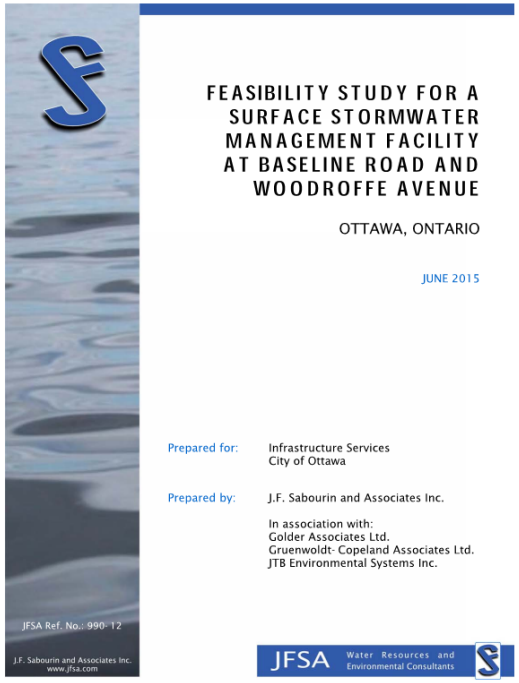
Prior City Studies (2009-11)



- Pond initially proposed in Pinecrest Creek/Westboro Stormwater Management (SWM) Retrofit Study
- Related to Ottawa River Action Plan to enhance use of river and reduce beach closures
- Public open house in 2010 presented pond proposal
- Combination of SWM retrofit measures to provide best solution taking into account social, environmental and economic factors
- Other pond sites ruled out as too small/did not as effectively address creek water quality issues
- Public consultation included newspaper ads/open houses
- Feasibility of pond from NCC's perspective still unknown…..needs to be confirmed

Prior City Studies (2011-15)

- Feasibility study for stormwater management pond at Baseline/Woodroffe undertaken
- Undertaken to confirm NCC's support
- To determine a more sustainable solution to the construction of a large underground storage tank for flows from SW Transitway/LRT
- Underground storage tanks are:
  - ❑ Expensive to construct/maintain
  - ❑ Potentially affect a large area near LRT station that could be developed
  - ❑ Not as effective as stormwater ponds in improving water quality



Feasibility Study - Conclusions

- 2 pond concepts developed/evaluated for Woodroffe site, both options are feasible
- Would offset stormwater management flows from future City transportation projects including LRT to Baseline (timing of LRT unknown at time of study)
- Also mitigates water quality and erosion impacts from 430 hectares of existing development upstream of pond
- Existing catchment area of pond is very urbanized without stormwater management controls
- Uncontrolled urban run off is bad for the environment
- City is being pro-active/acting as a good steward of the environment in fixing existing problem

Feasibility Study - Public Consultation

- Feasibility Study did not involve any public consultation
- Study was NOT completed as an EA
- An internal study to confirm technical/environmental feasibility and confirm NCC as a willing host of the pond
- No budget available to implement recommended pond until funding agreement with Province signed in 2015
- LRT implementation timing still uncertain
- Should we have consulted the public on potential project with feasibility in doubt and unfunded …..?

NCC Position

- In 2014, NCC confirmed their support for a pond on the site subject to conditions:
  - ❑ Cumulative Impact Study (CIS) of all anticipated study area projects including Baseline LRT station (in progress)
  - ❑ City to commit to implementing stormwater retrofit measures as per Pinecrest Creek/Westboro Area Study
  - ❑ Demonstrate that pond will have environmental, visual and landscape benefits
- Stormwater retrofit measures are in ADDITION to the pond NOT an alternative to it
- A Class EA must be completed for the pond (current study process)

Class Environmental Assessment (EA) Process

- City is following the Provincial Schedule B Class EA process for the Woodroffe stormwater pond
- Applies to “projects that have predictable and manageable environmental effects”
- Public consultation is mandatory and the City/Stage 2 intends to fully consult the public now and in the future as LRT/pond construction proceeds

Our Commitment to Future Public Engagement About the Pond

- Stage 2 LRT Project responsible for implementation of Woodroffe stormwater pond
- Stage 2 is committed to:
  - ❑ Being open and transparent
  - ❑ Being as consultative as possible on program implementation
  - ❑ Listening/responding to community issues and concerns about pond design and construction
  - ❑ Being pro-active/being a good neighbour during construction
  - ❑ Dedicated Stage 2 stakeholder relations team
- Reflects the reality that the pond is a Stage 2 requirement

Ownership of Woodroffe/ Baseline Stormwater Pond

- Land is currently owned by NCC
- Real estate negotiations are still in progress (City/NCC)
- 99 year easement for pond (NCC retains ownership) is the likely outcome
- Regardless of final real estate agreement with NCC, Stage 2 LRT Project/City will:
  - ❑ Award the construction contract for the pond
  - ❑ Supervise the design and construction of the pond
  - ❑ Obtain NCC and EA pond approvals required
  - ❑ Monitor the pond after construction for compliance with approvals
  - ❑ Maintain the pond over its life including mitigative measures

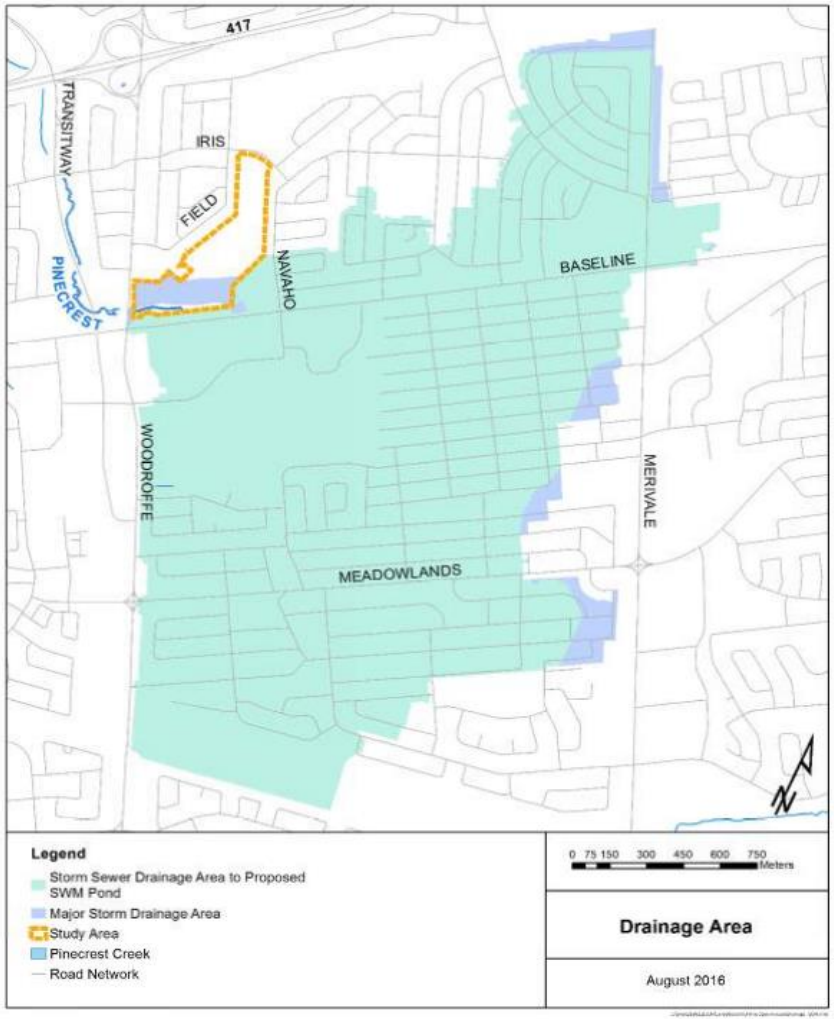
Funding for Design and Construction of the Baseline/Woodroffe Pond

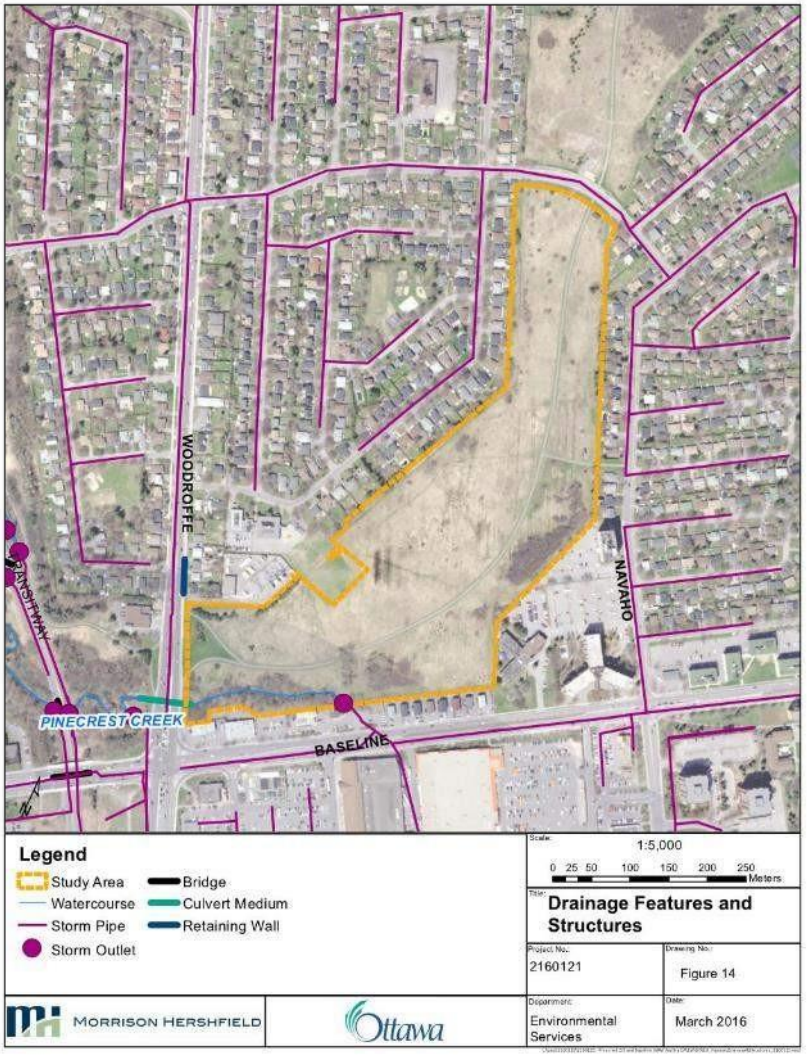
- Infrastructure Funding Agreement with the Province implemented in 2015
- $12.5M for pond design and construction (Province of Ontario)
- $9M approved in City rate budget in addition to Provincial funding for costs that are not eligible (e.g. real estate costs)
- With funding secured, feasibility confirmed and timing of LRT now known, EA study was initiated

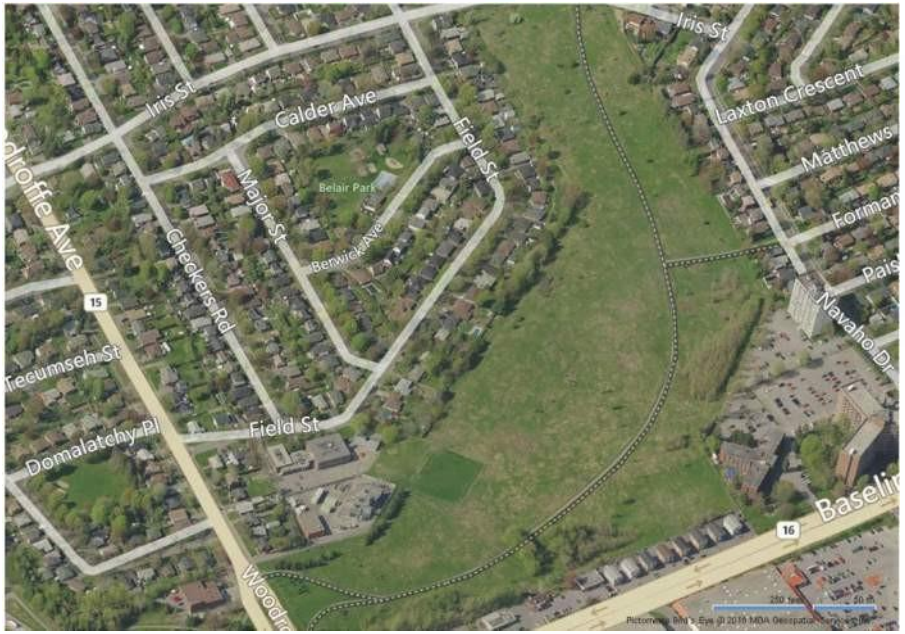
Remainder of Presentation

- Focuses on implementation of preferred pond design
- Proposed design concept responds to community and agency issues/concerns
- Specific design changes and new features have been made since the last public meeting
- We are listening/responding to concerns about pond design and community impacts from the presence of the pond

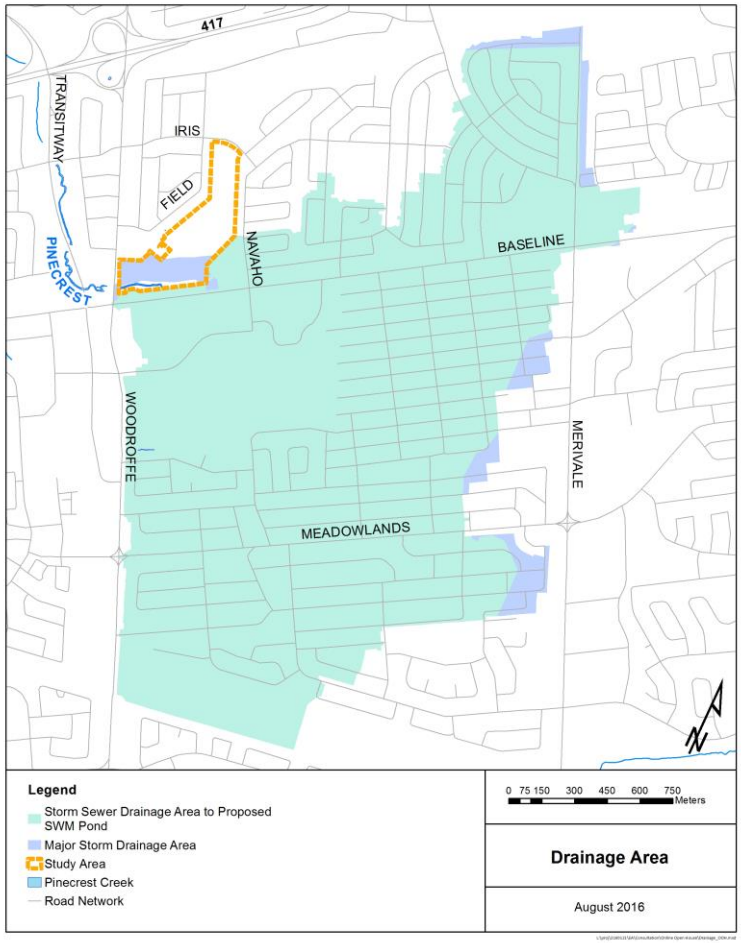
POND OPTIONS AND DESIGN FEATURES


417
TRANSITWAY
IRIS
FIELD
PINECREST
NAVAHO
BASELINE
WOODROFFE
MERIVALE
MEADOWLANDS
Legend
Storm Sewer Drainage Area to Proposed SWM Pond
Major Storm Drainage Area
Study Area
Pinecrest Creek
Road Network
0 75 150 300 450 600 750 Meters
Drainage Area
August 2016


WOODROFFE
TRANSITWAY
NAVAHO
PINECREST CREEK
BASELINE
Legend
Study Area
Watercourse
Storm Pipe
Storm Outlet
Bridge
Culvert Medium
Retaining Wall
1:5,000
0 25 50 100 150 200 250 Meters
Drainage Features and Structures
Project No.: 2160121
Figure 14
MORRISON HERSHFIELD
Ottawa
Department: Environmental Services
Date: March 2016


Iris St
Iris St
Calder Ave
Field St
Laxton Crescent
Matthews
Belair Park
Major St
Berwick Ave
Checkers Rd
Woodroffe Ave
15
Tecumseh St
Domalatchy Pl
Field St
16

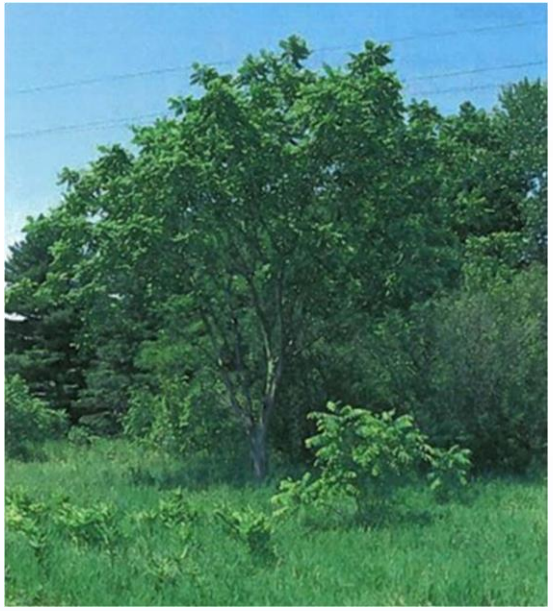
Class EA Process



- Schedule B Class EA includes:
  - Identification of existing conditions and constraints
  - Consideration of previous studies
  - Confirmation and assessment of the options for the SWM pond
  - Responding to community design issues
  - Documentation of the process
- Class EA has identified a preferred design concept for the pond

Existing Conditions and Constraints

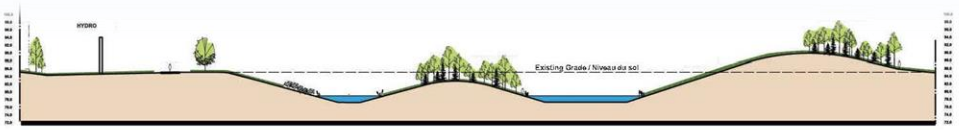
- Subsurface conditions
- Environmental contamination
- Fish and aquatic habitat
- Watercourses and wetlands
- Terrestrial vegetation
- Wildlife and habitat
- Species at Risk
- Aboriginal Land Claims
- Cultural heritage/archaeology
- Public land ownership
- Existing land use/Airport zoning
- Infrastructure networks
- Recreation and pedestrian/ cycling routes



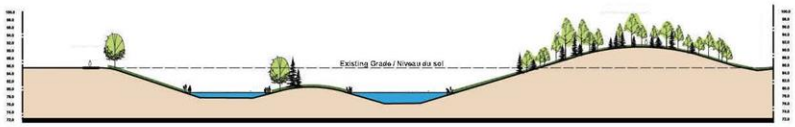
Pond Options

- 2015 Feasibility Study developed two options to further detail how a pond could be implemented
- Both options:
  - Maximize water quality and flood control benefits
  - Reduce frequent flow impacts (erosion) in Pinecrest Creek
  - Integrate existing pathways
  - Provide for significant landscaping improvements

Option 1



SECTION A



SECTION B

Legend / Légende

Proposed / Proposé

Bassin de gestion des eaux pluviales	Stormwater Management Pond
Pré	Meadow
Herbe tondue	Mown Grass
Aires de reboisement	Reforestation Planting
Plantation de gros arbres	Large Tree Planting
Plantation d'arbustes	Shrub Planting
Sentier récréatif asphalté de 3 m	3 m Asphalt Recreational Path
Contours (intervalles de 1 m)	Contours (1.0 m Intervals)
Limite de rabattement de 50 m	50 m Draw Down Limit

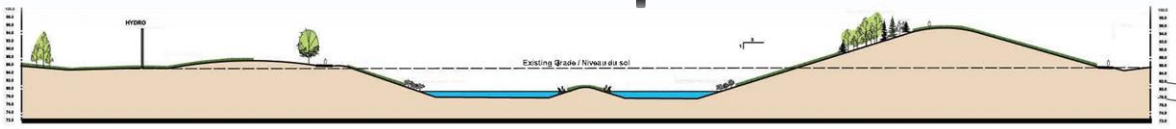
Existing / Existant

Contours (intervalles de 0.5 m)	Contours (0.5 m Intervals)
Ligne de transport d'électricité et poteau	Hydro Pole / Line
Végétation à garder	Vegetation to remain

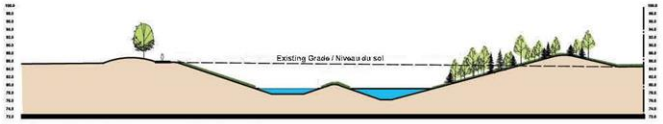
Pond Features / Components
Caractéristiques et composantes du bassin

Entrée du bassin	A	Pond Inlet
Débordement du rapide 79.61	B	Riffle Overflow 79.61
Berme de déviation du débit	C	Flow Diversion Berm
Bassin d'admission	D	Forebay
Berme de sortie du bassin d'admission	E	Forebay Outlet Berm
Décharge de quantité	F	Quantity Outlet
Décharge de qualité à faible débit	G	Quality Flow Outlet
Route d'accès pour l'entretien	H	Maintenance Access Road
Ruisseau Pinecrest	I	Pinecrest Creek

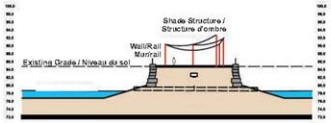
Option 2



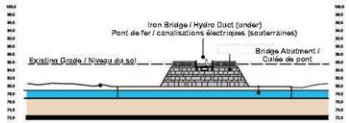
SECTION A



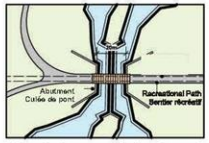
SECTION B



SECTION C (a)



SECTION C (b)



Bridge Option
See Section C(b)

Option du pont -
Voir la section C(b)

Legend / Légende

Proposed / Proposé

Bassin de gestion des eaux pluviales		Stormwater Management Pond
Pré		Meadow
Herbe tondue		Mown Grass
Aires de reboisement		Reforestation Planting
Plantation de gros arbres		Large Tree Planting
Plantation d'arbustes		Shrub Planting
Sentier récréatif asphalté de 3 m		3 m Asphalt Recreational Path
Contours (intervalles de 1 m)		Contours (1.0 m Intervals)
Limite de rabattement de 50 m		50 m Draw Down Limit

Existing / Existant

Contours (intervalles de 0.5 m)		Contours (0.5 m Intervals)
Ligne de transport d'électricité et poteau		Hydro Pole / Line
Végétation à garder		Vegetation to remain

Pond Features / Components
Caractéristiques et composantes du bassin

Entrée du bassin	A	Pond Inlet
Débordement du rapide 79.61	B	Riffle Overflow 79.61
Berme de déviation du débit	C	Flow Diversion Berm
Décharge vers la cellule n° 2	D	Outlet to Cell No.2
Décharge vers la cellule n° 3	E	Outlet to Cell No.3
Décharge de quantité	F	Quantity Outlet
Décharge de qualité à faible débit	G	Quality Flow Outlet
Route d'accès pour l'entretien	H	Maintenance Access Road
Ruisseau Pinecrest	I	Pinecrest Creek

Initial Comments & Responses

Comment	Response
Background Information and Decision Making Process *Justification for the pond/proposed location*	•Project following through on recommendations from previous studies – see Part A of this presentation
Consultation and Notification *Insufficient and inadequate notification to date*	•During the consultation undertaken in 2010 for the *SWM Retrofit Study (2011)*, residents abutting the proposed pond location should have received greater notice; at that time, standard notification included newspaper advertisements and open houses •For current Class EA, public meeting provided in response to Online Open House; properties abutting pond site were notified of public meeting by direct mail . On line forum and two public meetings held to address community issues
Recreation • *Protection and enhancement of pathways for pedestrians and cyclists* • *Opportunity for complementary community uses*	•Pedestrian pathways to be incorporated/connected to City and NCC pathway networks •Complementary land uses may be considered at detailed design
Habitat and Creek Health *Enhance habitat for native wildlife and vegetation*	•Proposed options have accounted for protection/enhancement of creek •Landscaping with native species
Health and Safety Concerns • *Undesirable byproducts of stagnant water* • *Risks associated with unsupervised body of water and proximity to vulnerable populations*	•Pond will have sufficient water movement (minimize mosquitoes/algae) •Clear signage •Safe grading/side slopes •Pathway connections to consider “desire lines” and key destinations
Pond Operation and Drainage • *Concern that existing drainage issues will worsen* • *Maintenance of pond*	•Site re-grading will not affect adjacent properties •City required to maintain pond/ensure it continues to function properly
Property and Residences • *Decreased property values* • *Concern that litter will worsen*	•Based upon experience with SWM ponds throughout the City, environmental, aesthetic and recreational benefits have made them valued community assets

Additional Comments & Responses

Comment	Response
Pathway connections *Connections to the school*	Pathways can be re-oriented to connect to the school respecting desire lines Redesign includes a pedestrian crossing of the pond (Pond Option 2)

Additional Comments & Responses

Comment	Response
Operations and Maintenance *How will dredging be managed?*	All City stormwater management facilities are regularly inspected and maintained to ensure continued performance Pond will require dredging approximately once every 10 years, in winter Area for storage of sediment with reseeding

Additional Comments & Responses

Comment	Response
Wildlife and Habitat *Species at Risk Act* • *Monarch* • *Butternut*	Seed mixes can be used that attract butterflies including milkweed for monarch Additional surveys for butternut have been conducted and hybridity testing is scheduled to be undertaken this spring

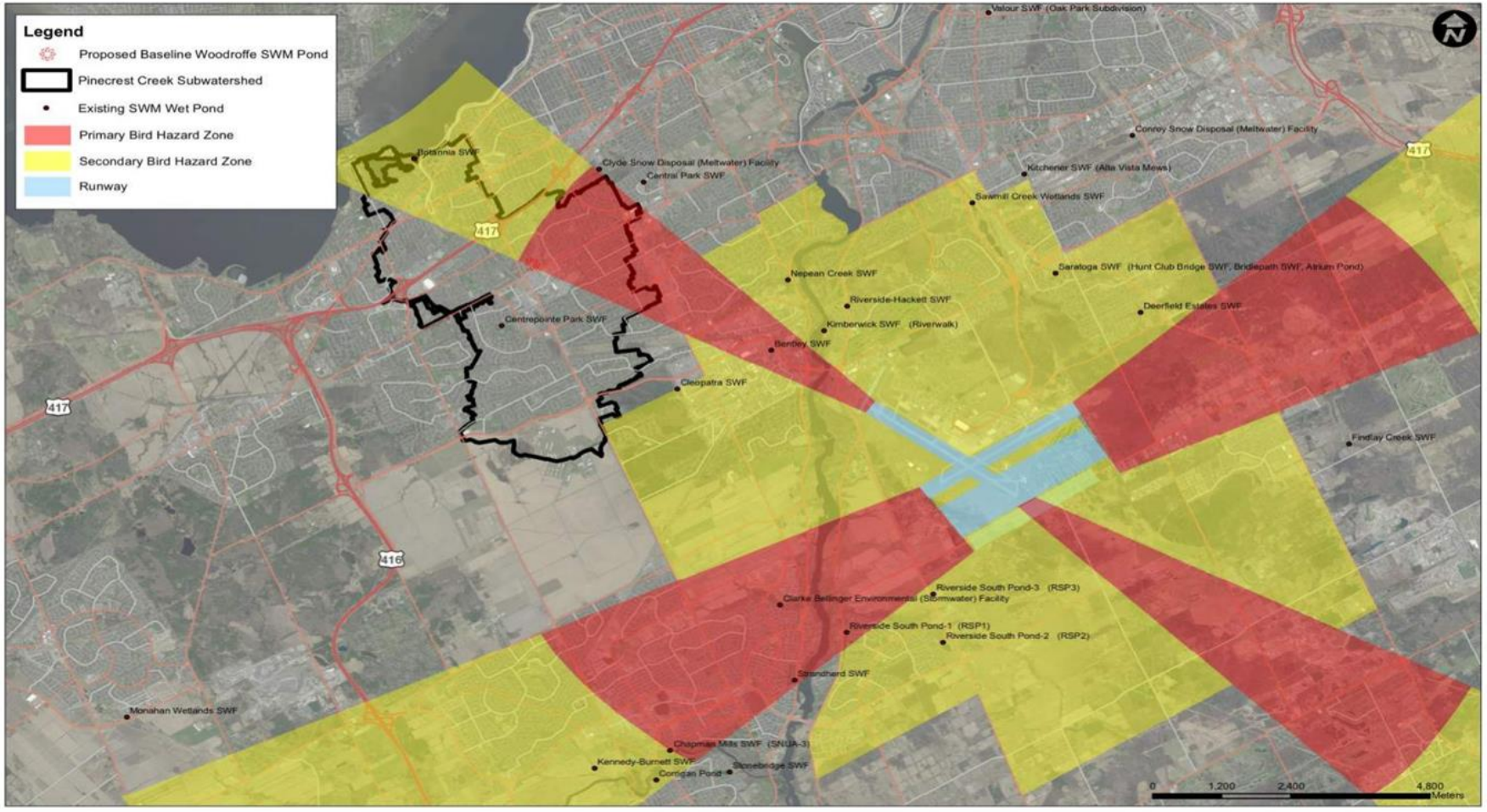
Additional Comments & Responses

Comment	Response
Bird Hazard Zone *Site is on outer edge of Primary Bird Hazard Zone of Ottawa Airport*	Wildlife expert retained to assess risks and recommend mitigation measures and contingency plans. Working with Transport Canada/Airport concerning: • Vegetation: types/ height, limit grass areas • Slopes and water edge treatments • Reduce nesting areas • Configuration of open water • Decoys • Monitoring

Refinements to Preliminary Pond Concept

- Reconsideration of Option 2 for improved pedestrian connectivity across middle of pond
- Butternut Trees:
  - Additional surveys undertaken
  - Precautionary buffers and reduced work in northeast part of pond site
- Transport Canada:
  - Bird Hazard Zoning

Ottawa Airport AZR



Risk Assessment from Beacon Environmental(wild life expert)

- Proposed pond is 6.6 km from Runway 14-32
- Pond at the extreme outer edge of Primary Bird Hazard Zone (PBHZ)
- At a typical 3% glide slope to Runway 14, aircraft will operate at or above 305 m (1000 ft) above ground at the location of the pond
- As a result of the steeper incline of the takeoff, aircraft will operate at higher altitude above the pond on departure
- Local bird movements are typically below 150 m (500 ft) above ground below altitude of aircraft in this area

Bird Mitigation Strategies

- Based on risk assessment approach by wild life management expert
- Design pond to avoid it being an attractive area for gulls/geese to frequent
- Design elements to be implemented to mitigate potential risks
- Requires a site specific design approach…not your typical SWP

Design Features to Mitigate Bird Risks

- Extent of mowed grass areas strictly limited to 1.5 m on either side of pathways
- Plant trees, shrubs, long grass meadow to discourage geese from entering pond from grassed areas near pathways
- Tall grass habitat/high density plantings not preferred by geese/gulls due to predators being able to use this as cover
- Root wads at waters edge to limit access to shoreline/tall grass
- Use stone/wood retaining walls to make pond slopes steep/uncomfortable for geese/gulls
- Long linear ponds not preferred by geese (they prefer large expanses of open water)
- Trees/bushes on peninsulas to discourage bird nesting

Design Elements

Root Wads

Design Elements

Retaining Walls

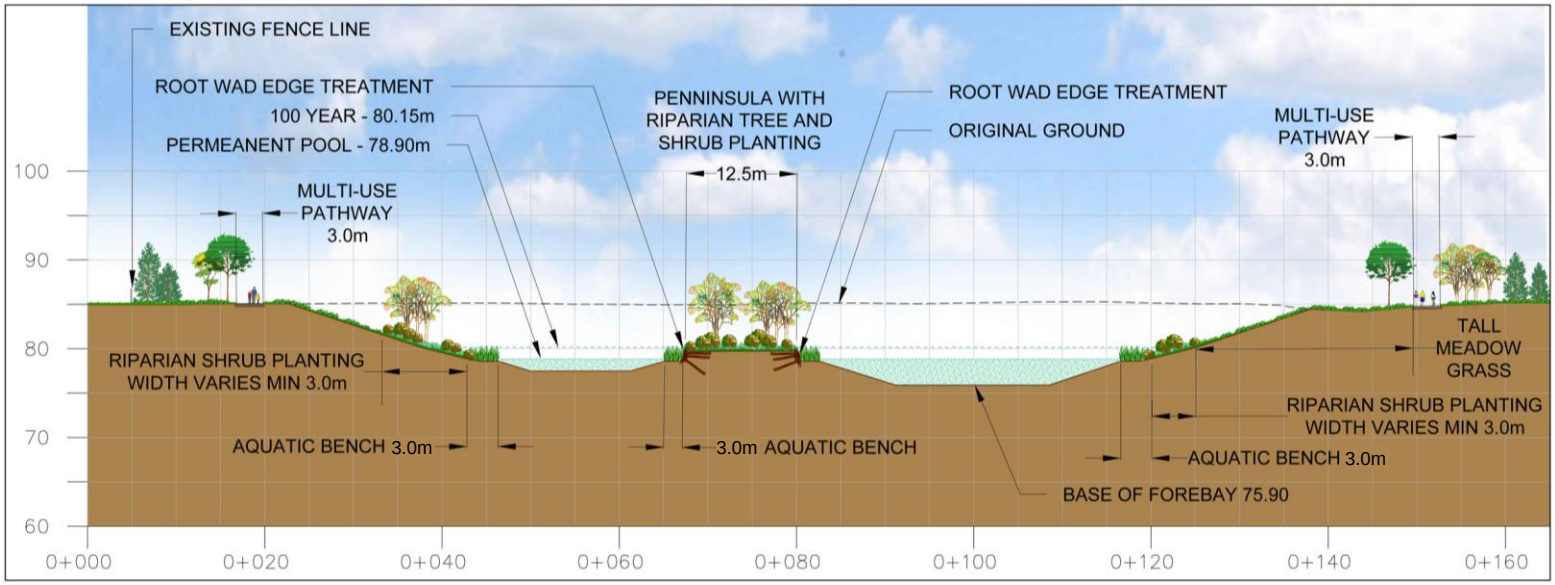
Design Elements

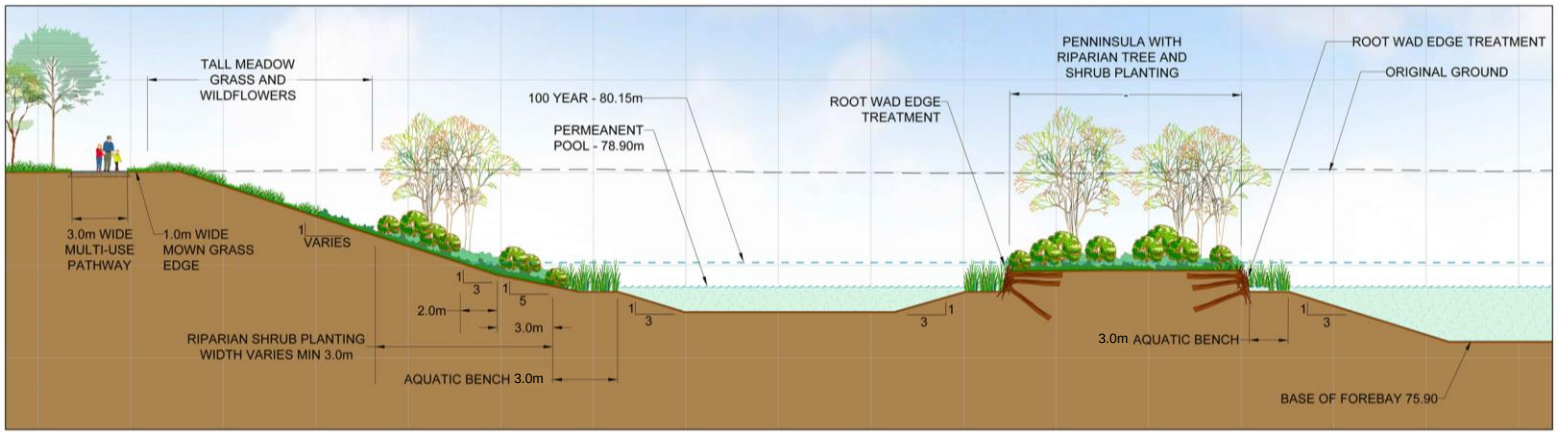
Riparian Planting

Design Elements

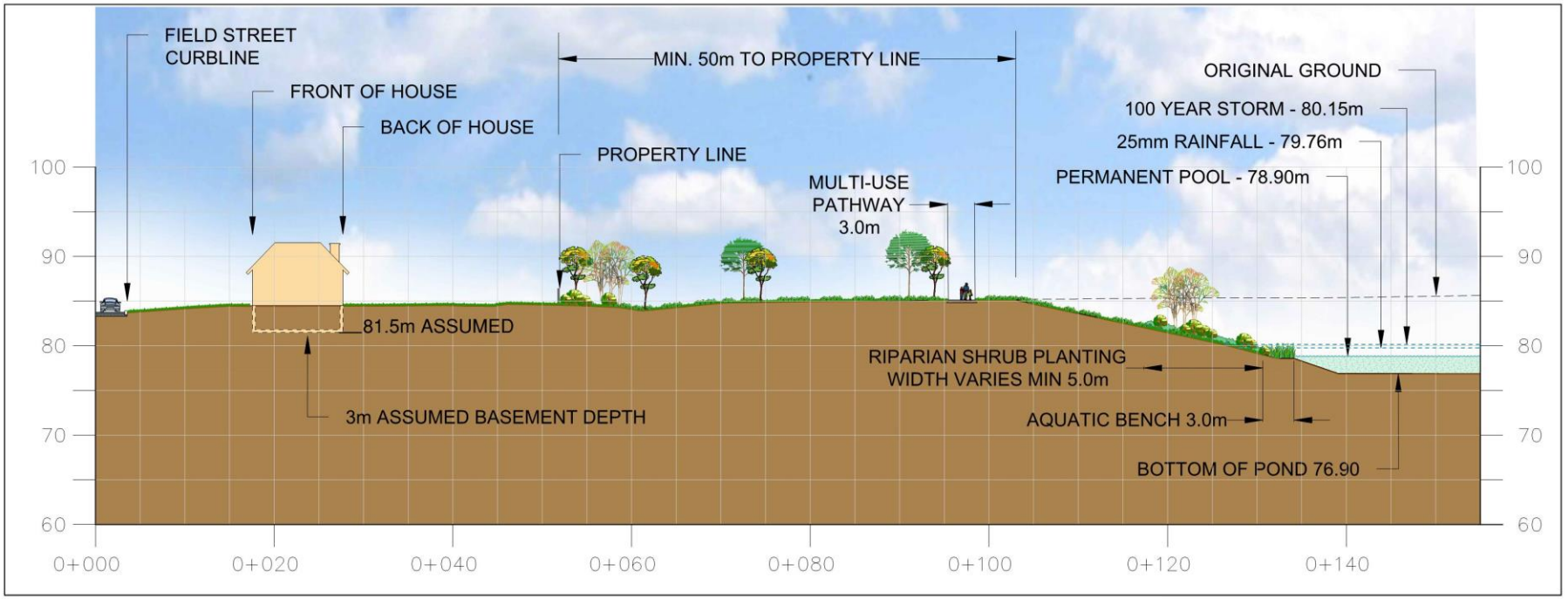
Upland Planting

Preliminary Revised Pond Concept





Cross Section A-A



Cross Section B-B: Typical cross section near Field Street

Contingency Measures

- Baseline and ongoing monitoring after construction of pond
- In the event there is hazardous bird activity in the vicinity of the pond, contingency measures would apply
- Design Modification and Wildlife Management
- Transport Canada response to risk assessment/mitigative measures/contingency plans is pending

Potential Contingency Measures

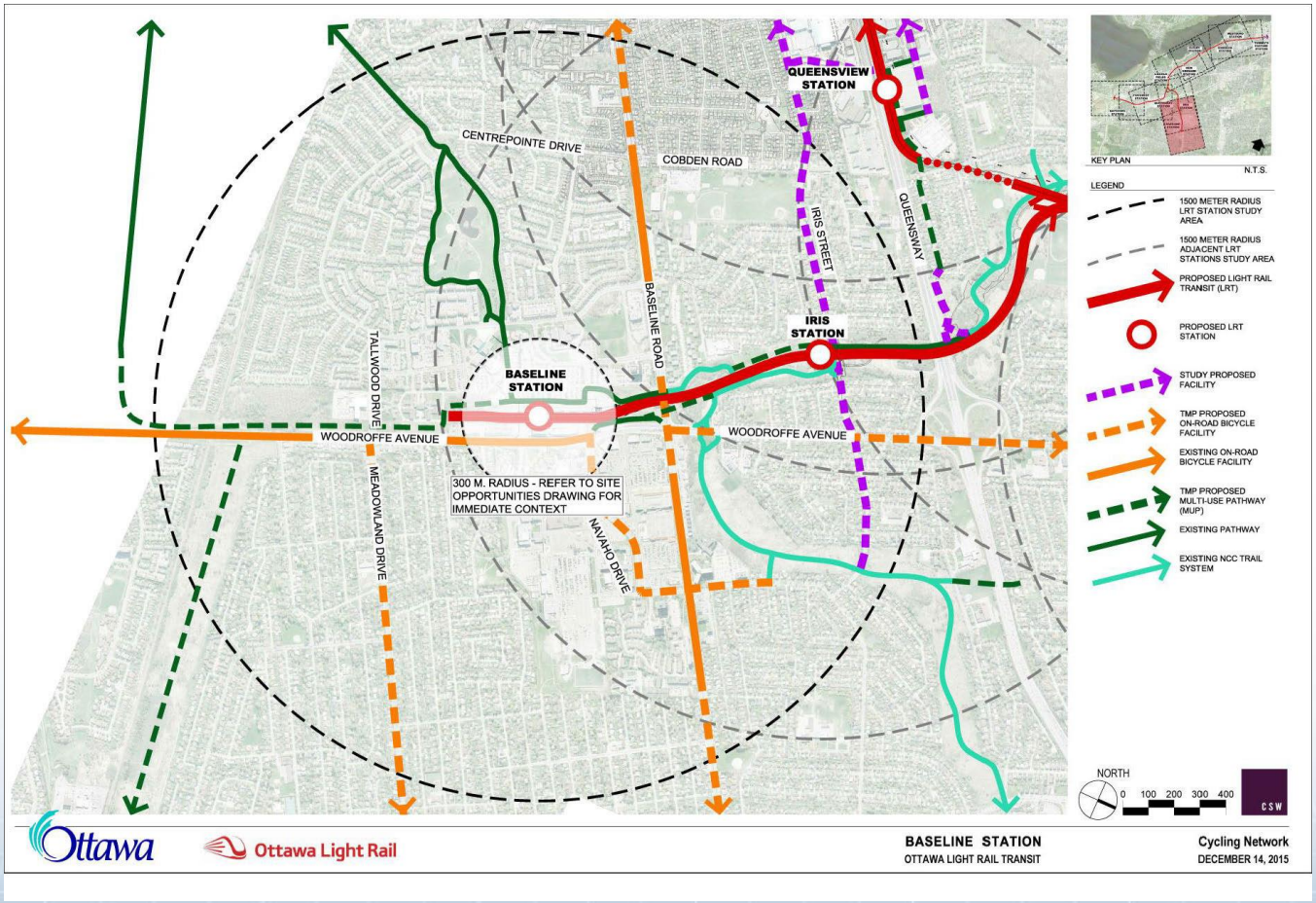
- Redesign:
  - Over wiring
  - Additional landscape / hardening
  - Alternate landscape planting to reduce use of specific areas
- Wildlife Management:
  - Egg oiling/addling
  - Capture/release
  - Harassment

Next Steps

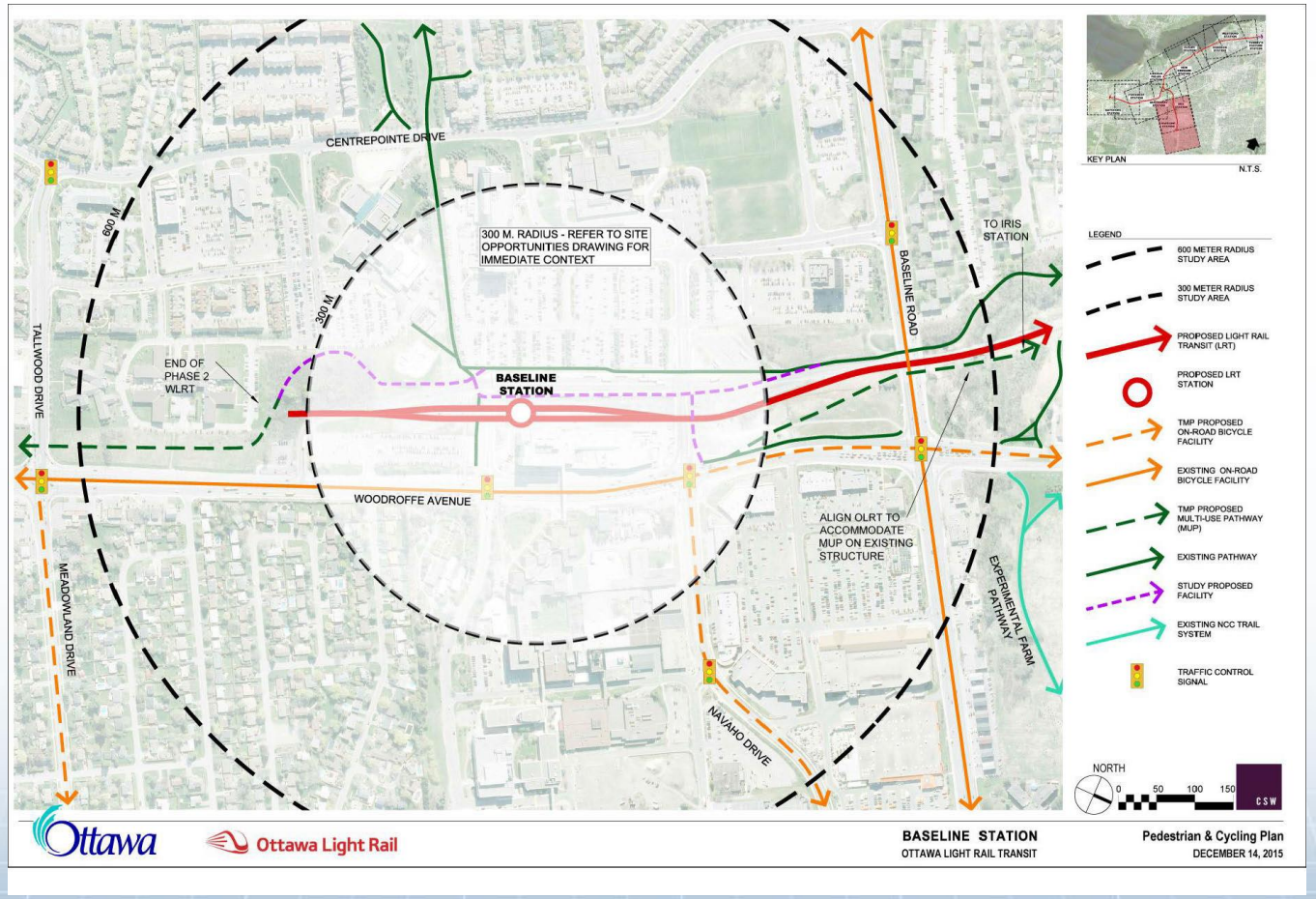
- Address remaining public concerns about pond design (now, ongoing)
- Prepare the Class EA report (Spring 2017)
- Environment Committee and City Council approvals (June 2017)
- 30-day public review of Class EA Report (Summer 2017)
- Detailed design (2017)
- Construction as part of LRT program (timing TBD, after 2018)

Questions?

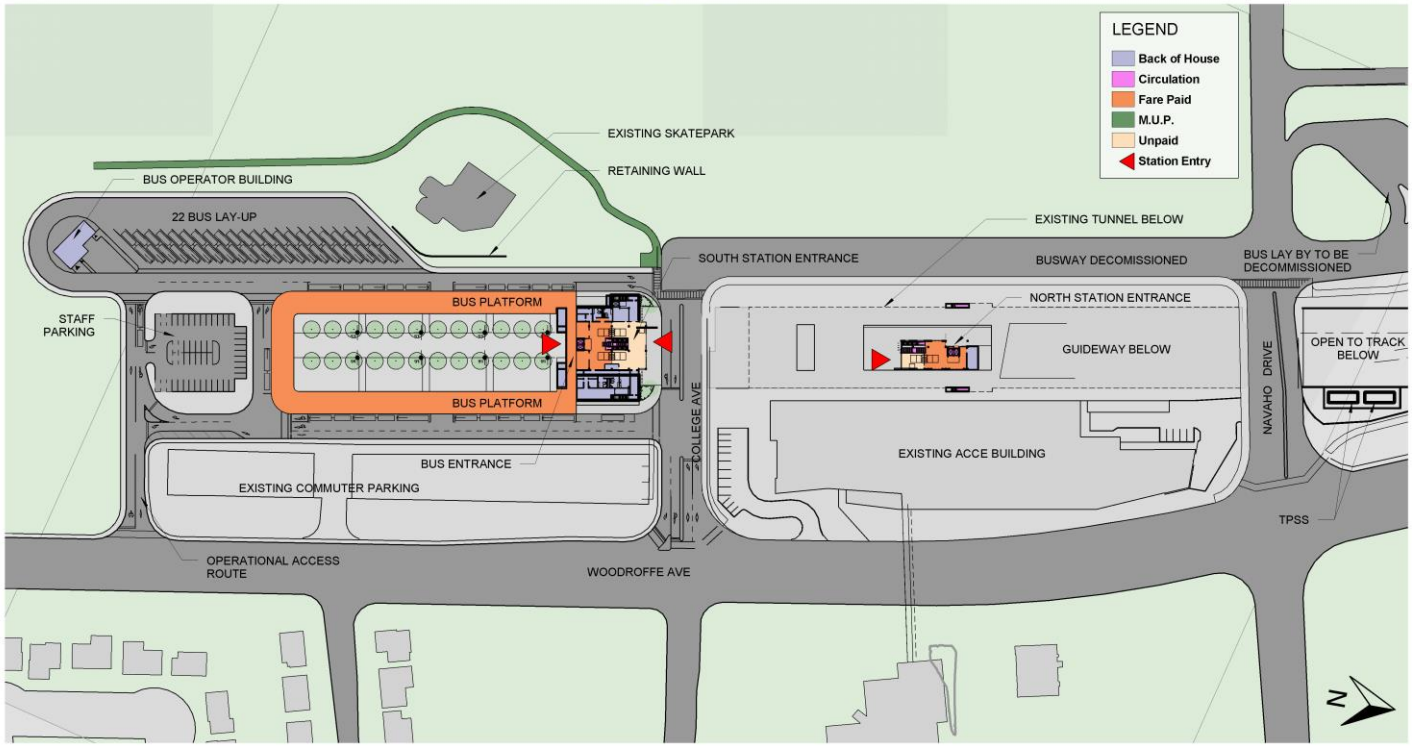
Baseline Station Connectivity



Baseline Station Connectivity



Baseline Station Configuration



OTrain

Baseline Station

STAGE 2 ETAPE 2