

Welcome

Tamarac Park Stormwater Management Pond Retrofit

Open House – November 22, 2018

View display boards and speak one-on-one with the project team

The Purpose of this Open House is to:

- Introduce the Tamarac Park Stormwater Management Pond Retrofit project
- Present and obtain feedback on the proposed design concept and approach to construction
- Explain how potential impacts to the community and environment will be addressed
- Inform of next steps in the project design and construction



Background

The Lake Simcoe Phosphorus Reduction Strategy

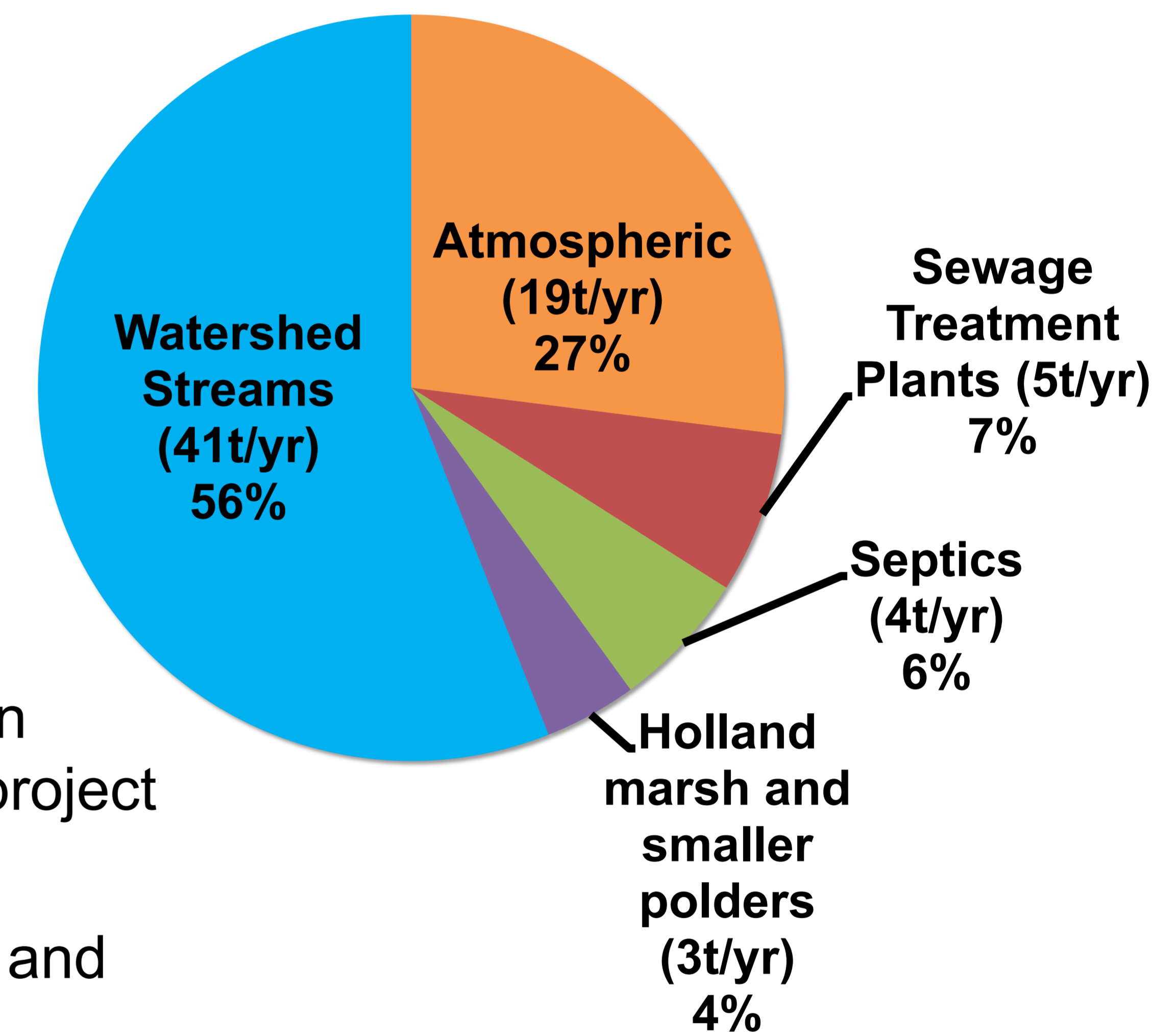
- The Lake Simcoe Phosphorus Reduction Strategy (2010) provides direction on how municipalities can reduce the amount of phosphorus entering local watercourses

Did You Know?

- Phosphorus is a natural element in the environment that is needed for plants and animals to survive. While some phosphorus is needed, too much phosphorus is not good for the environment.
- Approximately 56 percent of phosphorus, 41 tonnes per year (t/yr), released to Lake Simcoe is from urban stormwater runoff from streams.

(Source: Lake Simcoe Phosphorus Reduction Strategy, 2010)

Lake Simcoe Phosphorus Sources in tonnes per year (t/yr) and percent (%)



Phosphorus Removal Demonstration Project Partnership

- In 2017, York Region, in partnership with the Lake Simcoe Region Conservation Authority (LSRCA), began to undertake a phosphorus removal demonstration project
- Through a review of stormwater management pond retrofit opportunities and constraints in the East Holland River Watershed, York Region, with the LSRCA and the Town of Aurora, plan to retrofit the existing stormwater management pond located at Tamarac Park
- This is a Schedule A+ project under the current Municipal Class Environmental Assessment (Class EA) process. This means the project is pre-approved and the public will be notified prior to construction

Tamarac Park Stormwater Management Pond Retrofit



Existing playground



Groundwater monitoring



Existing outfall to pond



Existing vegetation



Existing trees

Completed Field Investigations and Studies

Field Investigations Completed

- **Topographic Survey** – confirms existing ground elevation and map features such as trees and park amenities; used to design and prepare drawings for the project
- **Utilities Investigations** – confirms existing infrastructure under and along the boundary of the proposed stormwater management pond retrofit; used to design and prepare drawings for the project
- **Aquatic and Terrestrial Environment** – consists of tree inventory, Ecological Land Classification, vegetation communities, bat habitat assessment, and breeding bird, amphibian call, fish and aquatic surveys; used to avoid or minimize impacts to the environment and guide restoration
- **Geotechnical and Hydrogeology** – involves drilling boreholes to confirm soil and groundwater conditions; used to design the proposed pond retrofit

Studies Completed

- **Hydrology and Hydraulics** – informs management of stormwater flows from weather events to and from the proposed pond retrofit
- **Water Budget** – calculates all water flowing into and out of each cell
- **Water Quality** – provides estimates of the amount of phosphorus entering the stormwater management pond and how much can potentially be removed as a result of the completed stormwater management pond retrofit



Field investigations – aquatic and terrestrial environment



Field investigations – geotechnical and hydrogeology

Preferred Design Option

- Different grading and treatment options were evaluated and a **free-water surface constructed wetland** was selected as the preferred option.
- A constructed wetland means it is human-made. Constructed wetlands have been previously shown to successfully reduce phosphorus and can be cost effective solutions for the management and treatment of stormwater as it flows overland.
- Phosphorous removal in a constructed wetland is achieved by evenly distributing stormwater across the constructed wetland.
- The constructed wetland is planted with wetland plants, where the root and stems treat the stormwater.
- The proposed design concept requires tree removal to construct the wetland. Approximately 43 trees will be removed as shown on the map, excluding trees potentially impacted by trail relocation.
- Loss of trees will be compensated through planting of approximately 200 new trees as shown on the map.



Red Maple



American Beech



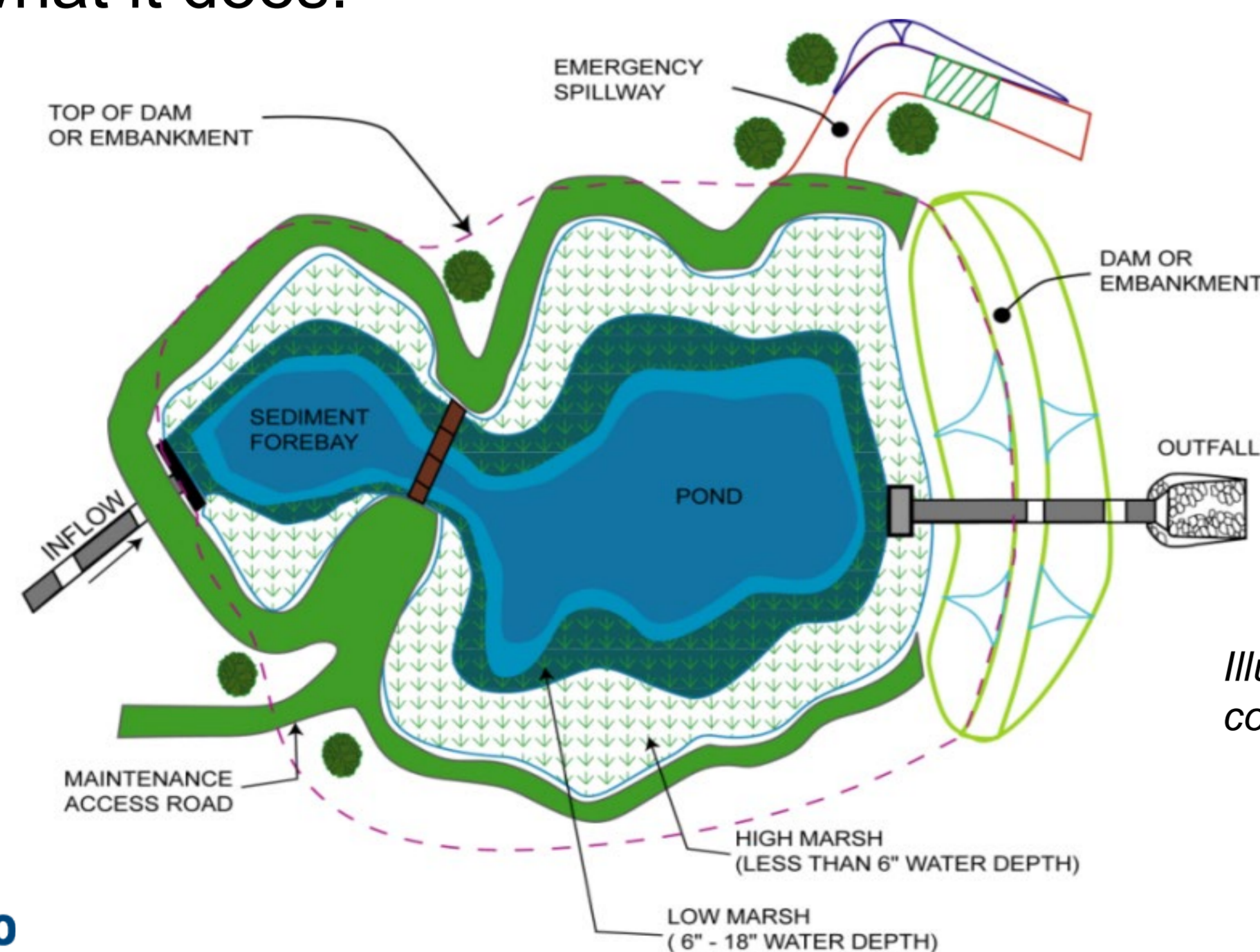
Showy Mountain Ash



Proposed Design Concept

Highlights of the proposed design include:

- Introduction of landscape design that features new species native to the Town of Aurora, that are also adjustable to the specific site conditions.
- Habitat creation in the constructed wetland to attract birds and wildlife.
- No significant changes to downstream stormwater flows. This means there will be no potential for stream bank erosion or disruption to downstream habitat.
- Coordinated restoration with other planned improvements to Tamarac Park – the park is only disrupted once to undertake the stormwater management pond retrofit and planned park amenity upgrades.
- Potential use of the pond for educational purposes, such as permanent signage explaining how the stormwater management pond works and what it does.



Illustrative Image of a constructed wetland





Legend

- Property Boundary
- High WaterMark
- Normal Water Level
- Pond Grading
- Future Playground
- Future Trail
- - - Existing Trail
- Park boundary

How will we Address Impacts to the Community and Environment?

The impacts to be addressed for the proposed Tamarac Park stormwater management pond retrofit are described below:

Potential Impact	How will we address this Impact?  
<p>Closure of the park to the public during construction</p>	<ul style="list-style-type: none"> • Provide advanced notification • Put up signage and fencing • Optimize construction sequencing to minimize the duration of closure
<p>Minor noise/vibration/dust from construction</p>	<ul style="list-style-type: none"> • Follow best management practices: <ul style="list-style-type: none"> ○ Complete work during the day in accordance with the Town’s noise by-law: <ul style="list-style-type: none"> ▪ Work will occur between 7:00am and 7:00pm ▪ No work on Sundays and Public Holidays ○ Use low noise equipment during construction, where possible ○ Control dust by spraying water and street sweeping
<p>Coordination of the stormwater management pond design and construction with the Town of Aurora’s future playground design and construction</p>	<ul style="list-style-type: none"> • Coordinate construction timing and phasing • Restore areas where construction has taken place • Complement the open park space design with additional park benches and picnic tables for residents’ enjoyment
<p>Impacts to existing trees</p> <ul style="list-style-type: none"> • Forty three* trees will be removed (13 Eastern Cottonwood, 11 Weeping Willow, 5 White Spruce, 4 White Cedar, 3 Silver Maple, 2 each Norway Maple, White Ash and Manitoba Maple, and 1 Paper Birch). Diameters are 30 trees >20mm, 10 trees 11-20mm and 3 trees <10mm <p>* Excludes trees potentially impacted by trail relocation</p>	<ul style="list-style-type: none"> • Remove trees prior to construction and plant new trees following construction. The new planted trees will be native and adjustable to wet conditions and specific soil conditions. New trees will include: <ul style="list-style-type: none"> ○ 79 deciduous trees (at 60mm diameter), 48 deciduous trees (200mm height) and 73 coniferous trees (200mm height) • Set up tree protection fences • Involve an arborist in onsite tree removals and protection measures during construction
<p>Potential impacts to Species at Risk</p> <ul style="list-style-type: none"> • There is potential for the following Species at Risk to be present within the vicinity of the park: Kentucky Coffee tree, Butternut tree, and bat species 	<ul style="list-style-type: none"> • Confirm the presence of Species at Risk based on further investigations within the defined construction limits • Obtain required permits and approvals and comply with any permit and approval conditions • Develop mitigation measures to avoid impacts to Species at Risk
<p>Potential utility conflicts requiring possible relocation</p>	<ul style="list-style-type: none"> • Address conflicts with utilities during detailed design

Next Steps

Following this Open House, the Project Team will:

Fall 2018



Consider feedback from this Open House to finalize the design

Winter 2018



Gather all required permits and approvals

Winter/Spring 2019



Issue notice to the public and proceed to tender and construction

Thank you for Attending!

- We appreciate the time you have taken to learn more about the Tamarac Park Stormwater Management Pond Retrofit
- We value your input and encourage you to visit the website: york.ca/waterconstruction
- To submit additional questions, comments or to be added to the project mailing list, please contact:

Glen McArthur, P.Eng., P.M.P.

Municipal Engineer

Town of Aurora

Planning and Development Services

100 John West Way, Box 1000

Aurora, Ontario L4G 6J1

905-727-3123 ext. 4322

gmcArthur@aurora.ca

Brook Piotrowski, C.E.T., CAN-CISEC

Urban Restoration Construction Specialist

Lake Simcoe Region Conservation Authority

Restoration Watershed Services

120 Bayview Parkway

Newmarket, Ontario L3Y 3W3

1-800-465-0437 ext. 124

b.piotrowski@LSRCA.on.ca

Norman Cato, P.Eng.

Project Manager

The Regional Municipality of York

Environmental Services Department

17250 Yonge Street

Newmarket, Ontario L3Y 6Z1

1-877-464-9657 ext. 75006

norman.cato@york.ca