



RM OF EAST ST. PAUL

Ponds Maintenance

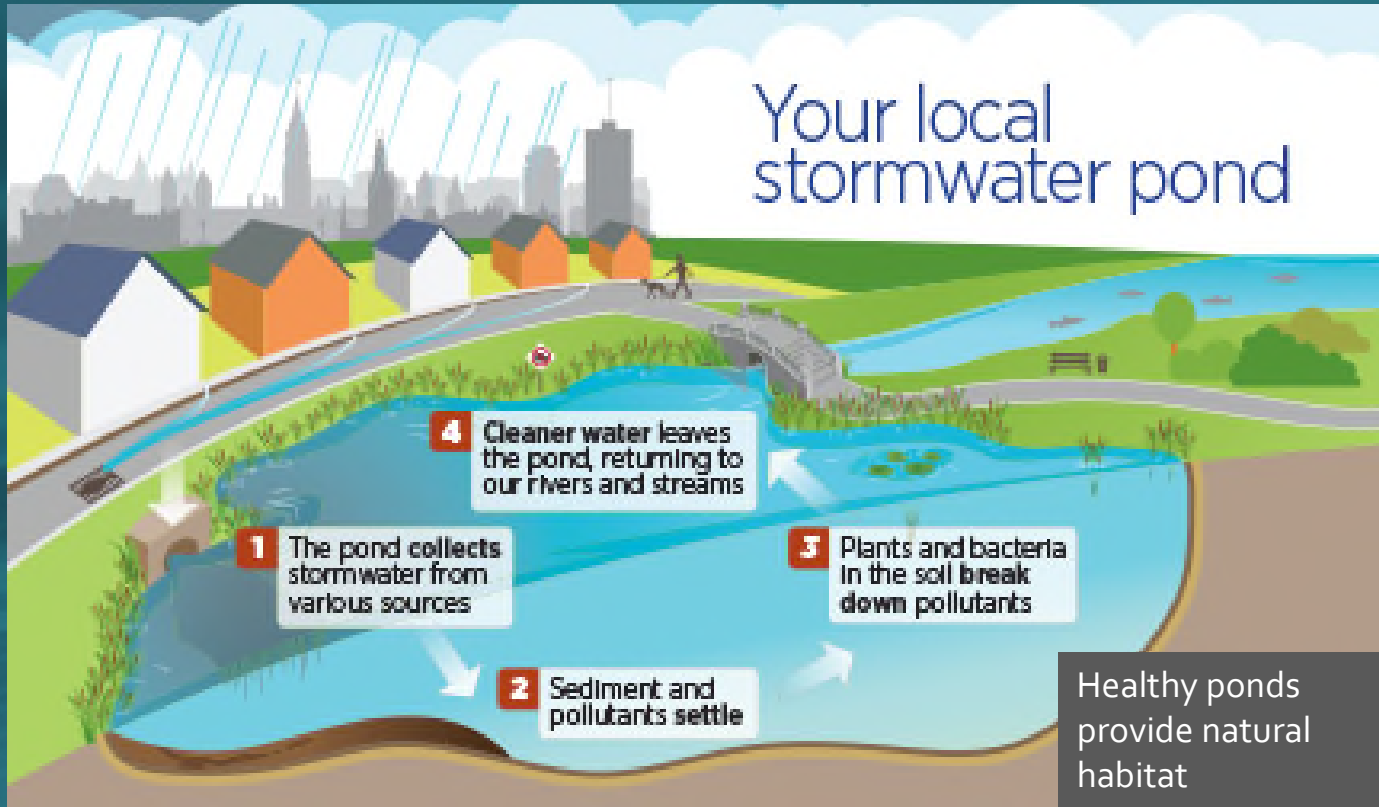
Open HOUSE



Pond Locations & Types



Purpose of Retention Ponds



Regulate and temporarily store runoff

- Melt water
- Storm water

Provides habitat

- Aquatic and shoreline plants
- fish and other aquatic species
- wildlife – birds, aquatic mammals

Aesthetic and recreation asset

- Vistas
- Walking paths
- Pond dipping

Filters water before released to larger waterbodies

- Captures soils, sand and gravel
- Accumulates garbage
- Collects and processes nutrients

Pilot Project for bacterial applications in retention ponds

- Objective to improve water quality with bacterial & herbicide treatments.
- Researched & secured comparable products to be used in 3 different retention pond systems.
- Product applications were properly calculated for each water body size with specific application dates.
- RM Staff were responsible for conducting applications and logging relevant data.

Eagle Creek ponds



Eagle Creek

2023 Treatments

- Airmax Inc. products that include MuckAway, EcoBoost PRx, Pond Clear Pro and Pond Dye.
- Product applications occurred bi-weekly from June 14th to September 20th, 2023.

Eagle Creek—Pond #1



Images taken on August 11th, 2023

Eagle Creek—Pond #1



Images taken on August 11th, 2023

Eagle Creek—Pond #2



Images taken on August 11th, 2023

Eagle Creek—Pond #2



Images taken on August 11th, 2023

Eagle Creek—Pond #2



Images taken on August 11th, 2023

Eagle Creek—Pond #2



Image taken in
previous years

Eagle Creek—Pond #3



Images taken on August 11th, 2023

Eagle Creek—Pond #3



Images taken on August 11th, 2023

Eagle Creek—Pond #3



Images taken on August 11th, 2023

Eagle Creek – Pond #3



Eagle Creek—Pond #4



Images taken on August 11th, 2023

Eagle Creek—Pond #4



Images taken on August 11th, 2023

Eagle Creek—Pond #4



Images taken on August 11th, 2023

Eagle Creek—Pond #4



Images taken on August 11th, 2023

Eagle Creek—Pond #5



Images taken on August 11th, 2023

Eagle Creek—Pond #5



Images taken on August 11th, 2023

Eagle Creek—Pond #6



Images taken on August 11th, 2023

Eagle Creek—Pond #6



Images taken on August 11th, 2023

Southlands pond



Southlands

2023 Treatments

- Natural Lake Biosciences product that includes MuckBiotics and Water Column Clarifier.
- Product applications occurred bi-weekly from June 14th to September 20th, 2023.

Southlands



Images taken on August 14th, 2023

Southlands



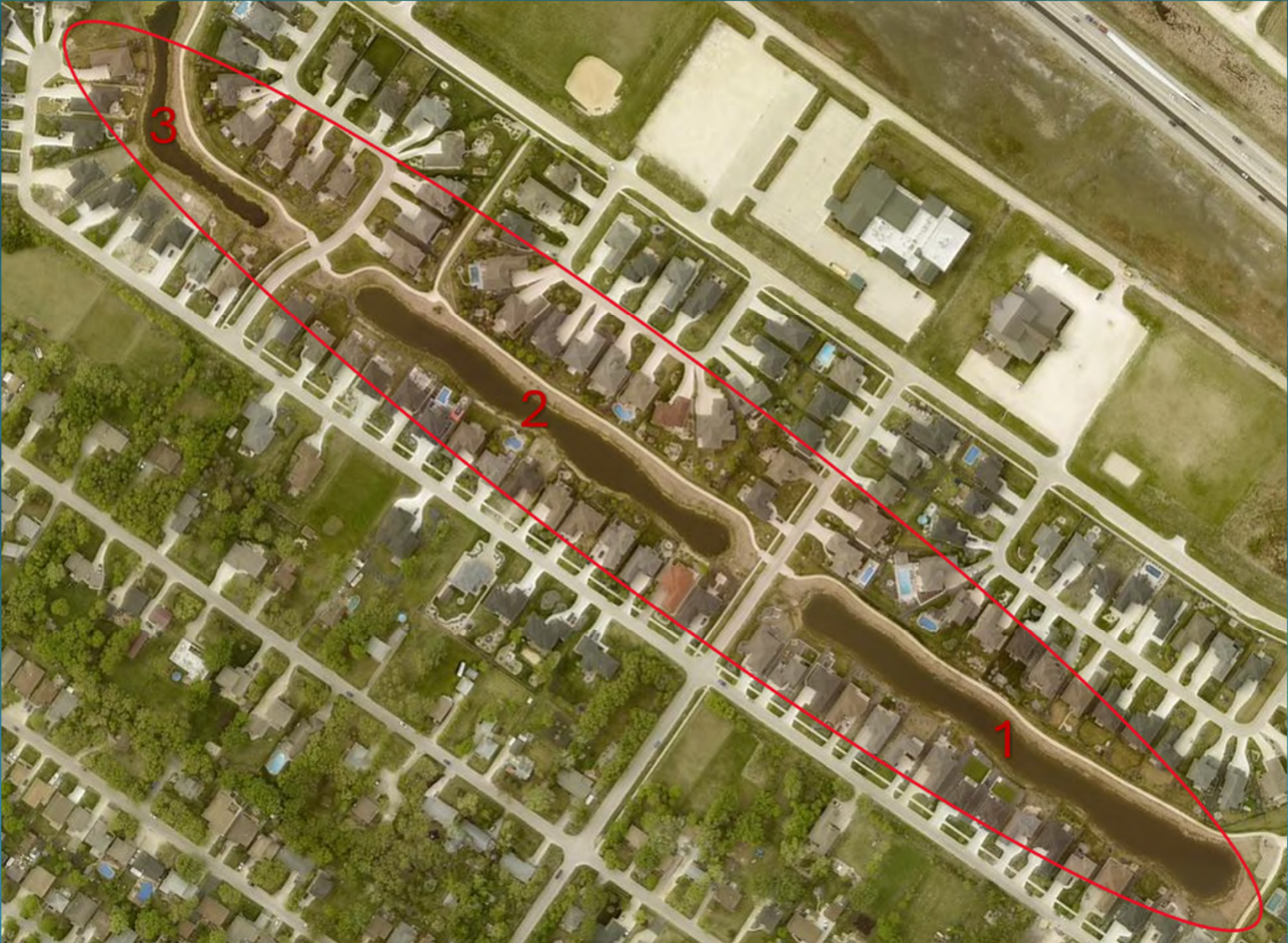
Images taken on August 14th, 2023

Southlands



Images taken on August 14th, 2023

Countryside ponds



Countryside Crossing

2023 Treatments

- Natural Lake Biosciences product that includes MuckBiotics and Water Column Clarifier.
- Product applications occurred bi-weekly from June 14th to September 20th, 2023.
- One time application of Reward Herbicide on July 7th, 2023.

Countryside Crossing



Images taken on August 14th, 2023

Countryside Crossing



Images taken on August 14th, 2023

Countryside Crossing



Images taken on August 14th, 2023

Countryside Crossing



Images taken on August 14th, 2023

Other Ponds not currently managed by the RM:

By the Park Pond



Gateway Point Pond





Gateway Point

Developer Managed



By The Park

Developer Managed

Summary of Treatments

- 2019 Aquatic Harvesting = \$45,000.00
- 2021 Dredging = \$1.3 million (grant funded)
- 2021 Floating Wetlands = \$38,000.00 (grant funded)
- 2021 Solar Aerators = \$25,000.00
- 2023 Bacterial Applications:
 - Airmax for EC = \$35,000.00
 - Natural Lake Bioscience for SL & CS = \$19,500.00
 - Reward herbicide for CS = \$4,000.00



What's Ahead...

Planned work for Retention Ponds

- Applications of bacterial treatments for Eagle Creek, Southlands & Countryside ponds will continue in 2024.
- Reward Herbicide treatments will occur in Eagle Creek, Southlands & Countryside ponds.
- Timeframe for 2024 treatments will be approximately the same as 2023 applications.

Question & Answer Session

- *Stormwater Retention Ponds*

Swistun ponds



History & Uniqueness of Swistun



Image Source: Google Map photos
Photo Credit: Marby Aguilar
Image Taken: June 2023

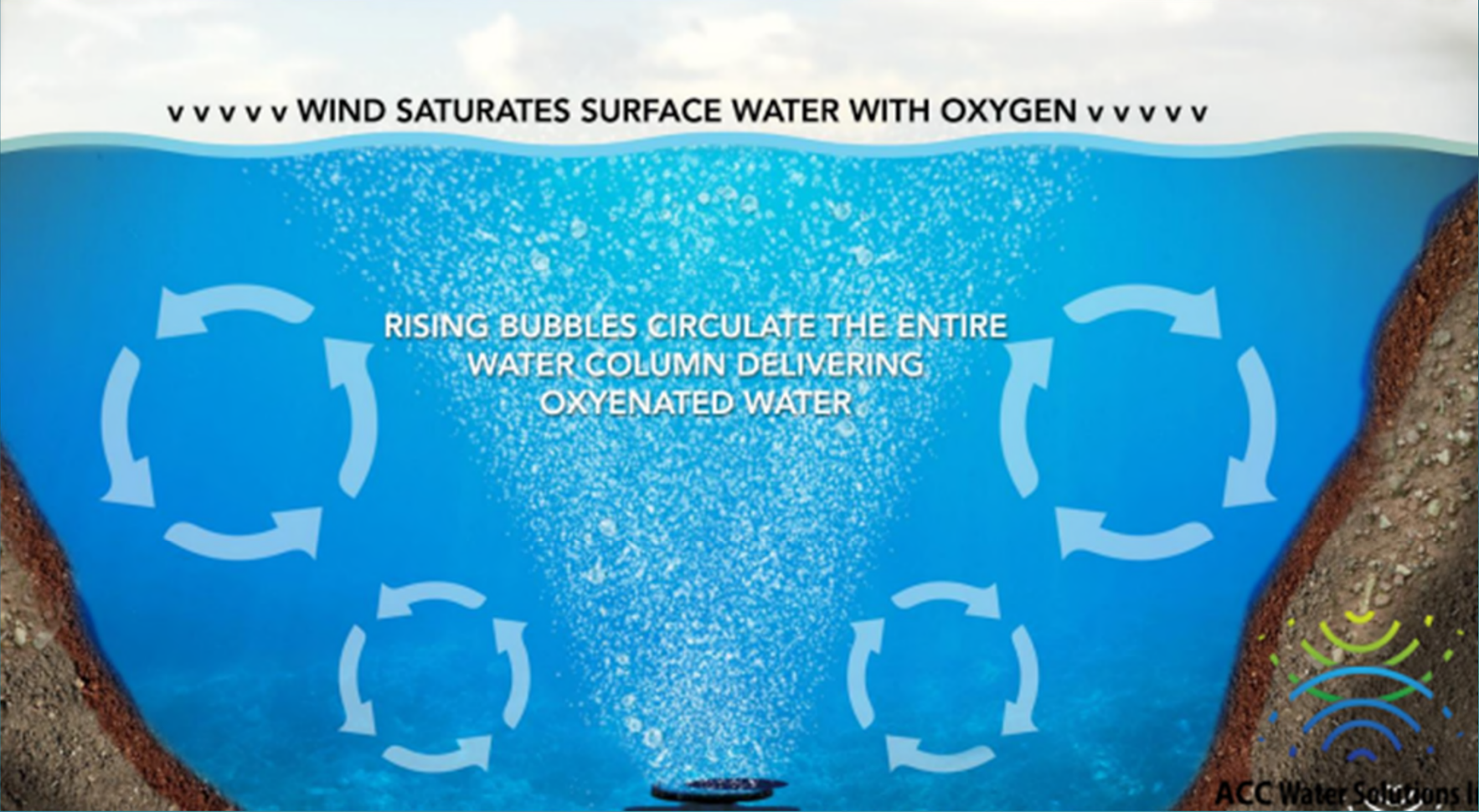


Images from 1992

Work conducted in 2023 for Swistun Ponds

- Ongoing aerators & geese deterrent lights were again operational for season.
- Pilot project regarding the possibility of bacterial applications.
- Toews Environmental engaged to provide a water maintenance study.
 - Aeration
 - Phosphorus Inactivation Treatments
 - Ultrasonic Algae Control

Aeration/Oxygenation



Aeration/Oxygenation

- Increase mixing can cause negative effects.
- Wide variety of systems have and continue to be developed.
- Regulatory approval is not required.
- Cost for equipment & installation.
- Chemistry data reports previously gathered from Swistun indicate that aeration is likely not an appropriate solution.

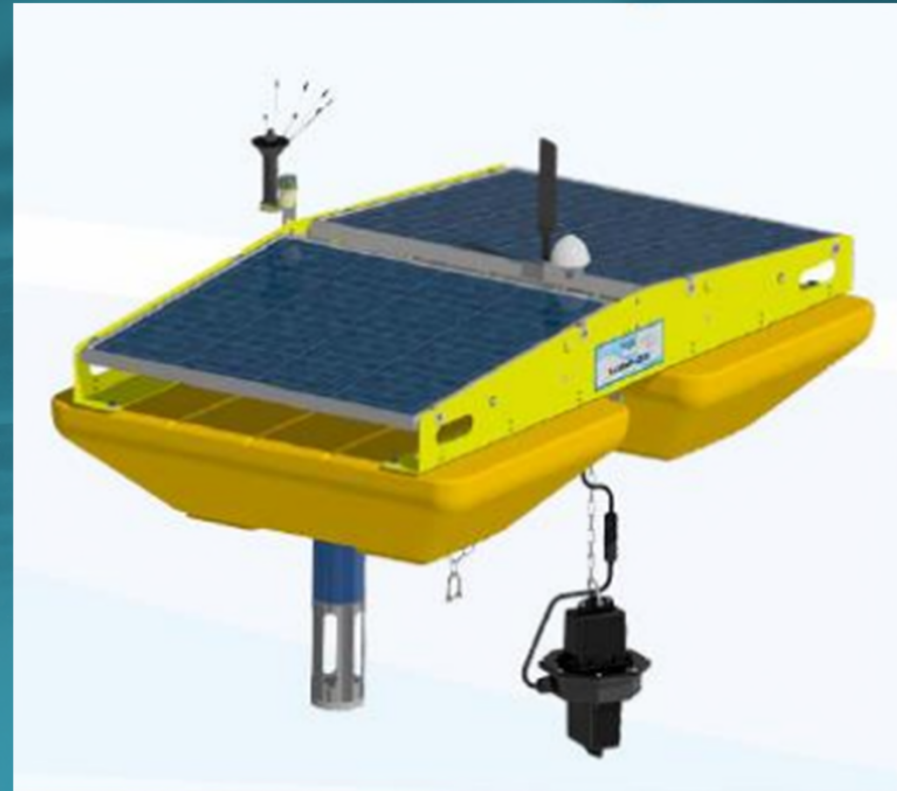
Phosphorus Inactivation



Phosphorus Inactivation

- This application requires significant study and chemical analysis of water & sediment.
- Ongoing monitoring required by an Aquatic Scientist.
- Approval required from Pesticide Management Regulatory Agency (PMRA), Fisheries & Oceans (DFO) and others.
- Upfront costs are significant.
- Water quality corrected for 25 to 35 years after treatment.
- Safely used in water treatment for decades.

Ultrasonic Algae Control




Ultrasonic Algae Control

- Bathymetric survey & continued chemical analysis required.
- Approval required from Pesticide Management Regulatory Agency (PMRA), Fisheries & Oceans (DFO) and others.
- Limited understanding of impact on other aquatic life.
- Devices require install and removal each Spring & Fall.
- Commonly used method in other parts of world.
- Cost for equipment & installation.


Summary of work related to Swistun Ponds:

- 2019 Assessment = \$6000.00
- 2021 Geese Lights purchase & install = \$10,500.00
- 2023 Options for Water Quality Management = \$6,300.00
- 2023 Bacterial Pilot Project (costs assigned to other ponds)



What's Ahead...

Scheduled work for 2024

- Continued engagement with provincial water branch to share results of bacterial treatments.
 - Conduct bathymetric survey of Swistun ponds to determine feasibility of PI or UAC applications.
 - Timeline for approval of Phosphorus Inactivation or Ultrasonic Algae Control is unknown.
- 

Residents can do their part by...



Fertilize so phosphates are not entering ponds

Keep yard waste out of ponds

Discourage geese: have tall grass by the water and do not feed them

Protect the plants around the ponds

Consider native plants that stabilize soils without watering or fertilizers

Question & Answer Session

- *Swistun Ponds*