

## Realizing Community Goals For Water Quality

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Submission to Markham Council (amended)
December 14, 2021

#### Restoration Attainable But More Work Needed!

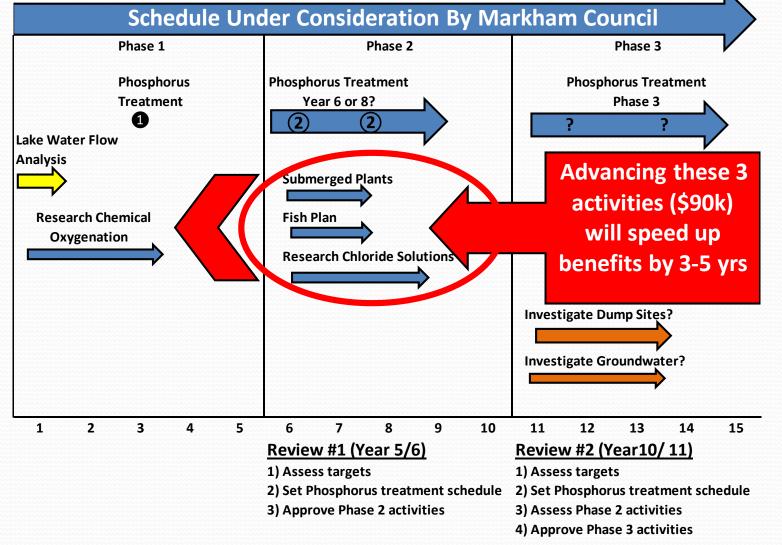
Proposed program an improvement but does not:

- Address Community Objectives
- Provide a Pathway Forward to Restoration

### Our Request:

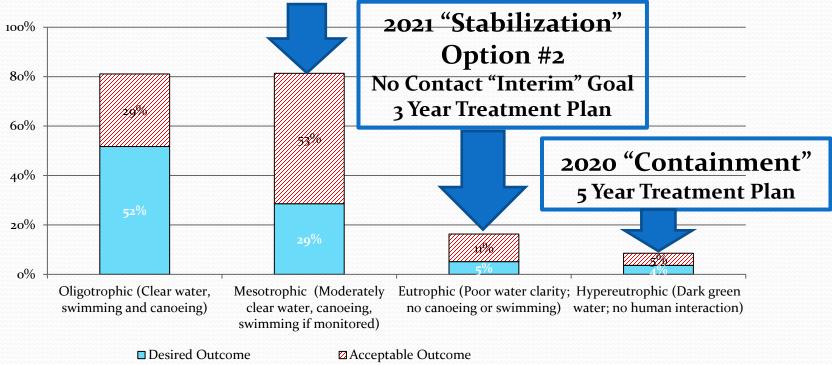
- 1) Endorse \$10k in 2022 for geese and fish management programs
- Endorse staff program including staff discretion to advance three low- cost programs (\$90k) into Phase 1 (initial 5 years)
  - i) Research into chloride solutions ii) planting submerged plants iii) stocking with small fish
- Direct staff to work with Friends of Swan Lake Park and report to Markham Subcommittee by June 2022 on an updated Lake Water Flow Analysis that will include a high-level analysis of:
  - Lake water quality benefits of reducing road salt inflows by reducing flows bypassing the ponds and rerouting flows from two OGS units
  - b) Flood control benefits of raising or regulating the level of the lake
  - c) Recommendations to include costs to be brought forward from Phase 3 for any further technical analysis (\$200k), implementation costs and to include an outline of jurisdictional/ ownership issues
- 4) Direct staff to outline possible actions to achieve and maintain goal of restoration of lake water quality

#### Advance 3 Essential Activities into Phase 1



#### Proposed Program Falls Short of Community Objectives Over 82% of Respondents Call For Restoration





#### Restoration Challenging but Attainable

- Restoration "almost" attainable by chemical treatment only
  - "If external sources reduced 50% (geese management) and internal sources neutralized then can attain <u>"almost mesotrophic"</u>, low phytoplankton biomass expected in 1<sup>st</sup>-2<sup>nd</sup> year AT"

[Scenario analysis, Freshwater Research (pg. 15/735) [Emphasis added]

 Chemical treatment only tool for neutralizing existing phosphorus in the lake ("internal sources")

#### **Our Restoration Plan:**

- 1) Treatment every 2 years (3-4 treatments then reduce)
- 2) Address oxygen and chloride issues

Ask staff to provide their plan!

#### Our Restoration Plan **FOSLP RECOMMENDED SCHEDULE** Phase 1 Phase 2 Phase 3 **Phosphorus Treatment Phosphorus Treatment Phosphorus Treatment** Year 2 and 4 Year 6 and 8/9 Phase 3 **Lake Water Flow Analysis Critical Analysis Completed.** Information Available to **5 Year Review Research Chemical Oxygenation** Make Long-Term Decisions. **Benefits Realized Sooner!** Research Chloride Solutions **Investigate Dump Sites?** Fish Plan **Investigate Groundwater?** Submerged Plants 5 7 8 12 13 15 2 10 11 14 Review #1 (Year 3) Review #2 (Year 5 or 6) Review #3 (Year 10) 1) Assess targets 1) Assess targets and program 1) Assess targets and program

2) Decision on Dump Sites

3) Decision on Groundwater

2) Decision on plants, fish

3) Decision on chloride options

4) Decision on oxygenation options



# FOCUSED ON RESTORING SWAN LAKE AND SWAN LAKE PARK

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Thank You!