



Geese Management at Swan Lake

Overview of Options and Path Forward

September 21, 2020

**Environmental Services/Operations
General Committee**



Agenda

- Background/Purpose
- Swan Lake Geese Control
 - Current Activities
 - Options for Improvement
 - Staff Recommended Program Changes
- Next Steps



Background/Purpose

At the June 23rd, 2020 Council meeting, Staff presented the Swan Lake Water Quality Improvement Program. Council asked staff to report back:

- In Fall of 2020 on additional options relating to vegetation, tree planting and strobe lights with regard to geese control, and report back in fall of 2020 with recommendations (Phase 1);
- In 2021, on an overall water quality (with service levels) and park improvement program that will be sustainable (Phase 2);
- To General Committee through the Markham Sub-Committee with the participation of Friends of Swan Lake;

The purpose of this meeting is to obtain feedback from the Friends of Swan Lake on the Geese Control Program (Phase 1), prior to discussing the matter at the Markham Sub-Committee.

The overall water quality and park improvement program (Phase 2) will be discussed in 2021.



Swan Lake





Background – Swan Lake

- Swan Lake was formed through quarrying activities performed in the 1970s and 1980s
- It is a man made, 'closed' system, meaning that no watercourses flow into or out of the lake as in most natural systems
- Swan Lake has been experiencing water quality problems since the mid 90s, when the first chemical treatment was applied by a developer
- Swan Lake has been classified as being in a hyper-eutrophic state in most years because of the poor water clarity and frequent algal blooms that are present
- Mute Swans are brought in to the lake and cared for by residents in the surrounding areas. In the absence of mute swans, wild trumpeter swans are present





Geese Background

- Life span up to 30 years
- Mating is for life - average nest size is 4-7 eggs
- Typically return to the same nesting and birth sites every year
- Molting of adult birds occurs every summer, rendering them flightless for 6 weeks, usually in July
- Attracted to areas that have an easily accessible water body and an area with turf grass for grazing where they feel safe
- Consumes up to 4lb/day of grass
- An adult goose drops 2lb/day of fecal matter, high in phosphorus, which contributes approximately 20-30% of the total nutrient input into Swan Lake, worsening the water quality



Canada Geese are protected under the Migratory Birds Convention Act. It is illegal to disturb damage or destroy the nest or eggs of Canada geese unless permitted by Environment Canada.



Geese Management Overview

- At any given site, the geese population consists of:
 - Resident Geese
 - Inhabit the park for three seasons of the year
 - Nest within the park
 - Return each year
 - Molt migrants
 - Geese that nest elsewhere, but come to Swan Lake during the molting period (mid June – mid July)
 - Migratory geese
 - Present in spring and fall (longer stay in fall)
 - Often do not feed at Swan Lake, and hence do not need to leave the water
 - Only present for a short time



Geese Management Strategies Need to be Designed for Each of the Above Groups In Order to be Effective. The goal is to manage the geese population – complete eradication of geese from Swan Lake is not possible.



Current City Geese Management Program

- Geese management activities have been performed at Swan Lake (since 2016).
- Program components:
 - ☑ Hazing:
 - Specially trained dogs and experienced stalk geese to make them feel unsafe
 - Laser is used to deter geese from water and inaccessible areas during low light and at night
 - Remote control boats are used when stubborn geese are encountered, or the water deemed too cold or dangerous for the use of dogs
 - Visits performed 16 times per month in spring and fall, 8 times per month in summer
 - ☑ Egg Oiling: the contractor searches for nests and performs egg oiling to prevent goslings from being born

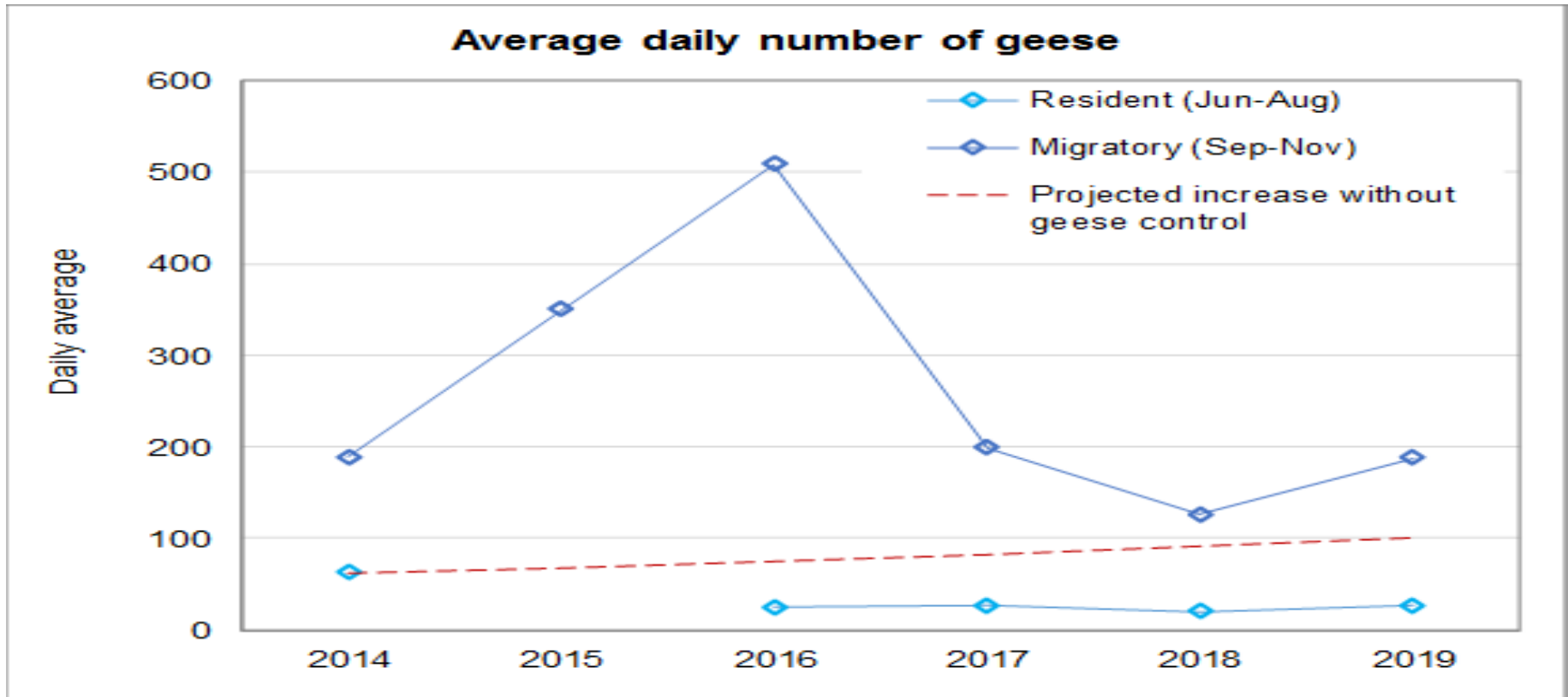


**City currently spends approximately \$14,000/year
on Geese Control at Swan Lake**



Geese Count at Swan Lake

- Geese population has declined at Swan Lake despite an increase in the overall population in Southern Ontario since geese management activities have been undertaken



Since 2016, geese counts are performed 2-4 times per week. Prior to 2016, geese counts were performed twice per month. Graph presents average values for the year.

Note: There is significant variability in migratory geese numbers based on when counts are taken. Migratory geese numbers are known to be much higher than the reported average at times.



Goals – Geese Management Improvements

1. To reduce the number of resident, molt migrant and migratory geese present at Swan Lake in order to reduce the impact to both the park and the water quality within the lake
2. To implement methods that will result in reduction in the geese population at Swan Lake in both the short and long term
3. To implement methods that will not increase the population in other parks and natural areas surrounding Swan Lake
4. To develop a program that is environmentally sustainable, and will support the diverse wildlife currently present at Swan Lake, and support the user experience of the park
5. To develop a program that can be delivered at a reasonable cost



Consultation - TRCA

- Consultation on geese management options have been provided by the Toronto and Region Conservation Authority (TRCA)
- Through its Restoration and Infrastructure Division, TRCA runs geese management programs, and undertakes geese and lake management plans, shoreline naturalization studies and develops public education campaigns related to geese management
- Danny Moro has 20+ year of experience in geese control with TRCA, undertaking works along the Toronto Waterfront, Ajax, Brampton, etc.





Municipal Consultation

In developing a plan, the City has consulted with or completed research on geese control programs in other jurisdictions. This includes:

Municipality/Location	Activities	Outcome
TRCA – Toronto Waterfront, Brampton, Pickering, Ajax	Egg Oiling/Relocation	Relocation program effective
St. Catherine's	Relocation	Relocation program effective
Toronto	City Wide Hazing Program	Not effective – frequency of hazing was insignificant
City of Powell River, BC	Strobe Lights	Strobe lights not effective
City of Massillon, OH	Strobe lights	Strobe lights not effective
City of Attleboro, MA	Strobe Lights Hazing	Strobe lights not effective Hazing has been effective
Denver	Culling	Effective, but public protests against activities



List of Available Options

1. Habitat Modification
2. Modify Existing Hazing Program
3. Other Scaring Techniques: Strobe Lights
4. Relocation
5. Culling
6. Education and Outreach



Option 1 – Habitat Modification



Overview of Option

- Improve the current vegetation surrounding the lake to make the areas less friendly to geese
- Would require multi-year planning and implementation
- Design would have consideration for lake access and viewing by the public to ensure that aesthetic benefits of lake are realized

Cost

- \$35,600 to TRCA for design (future year request)
- Construction and annual operational costs TBD

PROS

- Proven to be a long term, effective solution in reducing resident geese populations by City, TRCA and Canadian Wildlife Service
- Environmental-friendly and non-intrusive – may attract a larger variety of wild bird species
- To be designed to enhance and not detract from the user experience of the park/lake

CONS

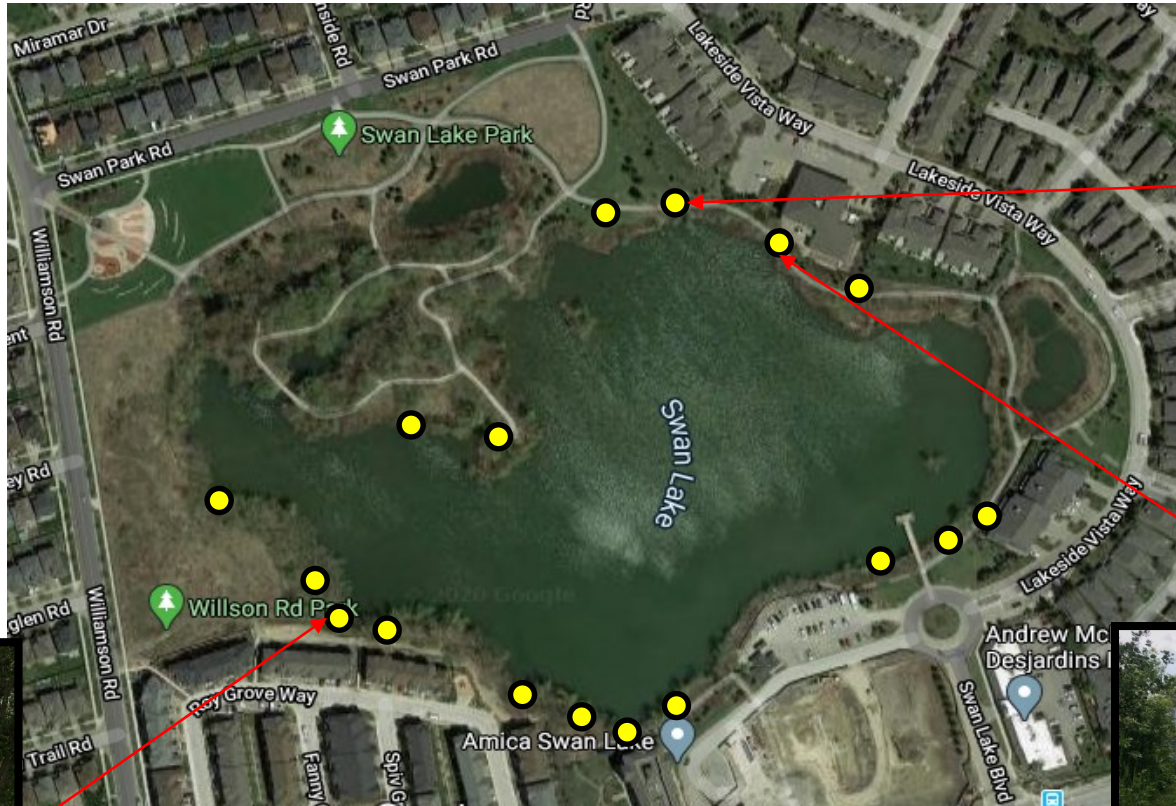
- Could not be implemented in the short term
- Has no significant impact on migratory geese
- May increase the number of geese in surrounding parks/open spaces

Staff Recommend that this option be brought to General Committee as part of Park Refresh Plan for Swan Lake



Potential Habitat Modification Opportunities

Access Points from Land to Water



- Locations where no barrier between lake and geese feeding areas are present



Habitat Modification

Lake Wilcox
Before & After



Potential shoreline improvements act as geese deterrent, but also allow public to still view the lake



Option 2 – Modify Existing Hazing Program

Overview of Options

- Frequency of hazing visits could be increased in fall such that hazing is completed on a daily basis
- Frequency of hazing visits could be reduced in summer during geese molting period

Cost

- \$7,500 one-time cost in 2020 (as Spring/Summer Works Already Undertaken)



PROS

CONS

- TRCA recommended hazing as most effective method of addressing migratory birds in later fall on a site specific basis
- Environmentally friendly, as dog is trained to haze humanly

- Over time, resident geese get use to hazing
- May increase geese population at nearby sites
- Not effective during molting season, as birds are flightless, and cannot leave when scared

Staff recommend this option and that it be funded from project 20250 Water Quality Improvements and Geese Control



Option 3 - Installed Scaring Devices: Strobe Lights

Overview of Option



- Solar Powered, flashing lights disturb geese sleep and makes them seek a more peaceful setting
- Strobe lights can be installed as a pilot in 2020, when mute Swans are not present

PROS

- Can be installed in short term

CONS

- Several other municipalities and City's current goose control contractor reported units are not effective
- Based on reports, geese get used to the deterrent and ignore it after a short period, or from first installed
- It is likely that strobe lights may impact other species of birds/wildlife at the lake (TRCA)
- Manufacturer would not provide references – only lists anonymous referrals on website

Staff do not recommend this option



Option 4 - Relocation

Overview of Option

- Relocation involves identifying an appropriate site for the geese to be relocated to; and rounding up and transporting the geese to the new site
- It is carried out when geese are moulting and flightless; this is typically done in mid-June

Cost

- \$10,000 cost, starting in 2021



PROS

- Method is proven effective by TRCA at reducing number of resident geese and molt migrants at several locations across the GTA
- Would not increase population at other sites within Markham
- Environmentally friendly

CONS

- Some geese will return (minimum 15%)
- No direct impact on migratory geese
- Need to ensure the health and well-being of the geese throughout the relocation
- The public may perceive the rounding up operation as inhumane
- Relocation could not be completed until June 2021

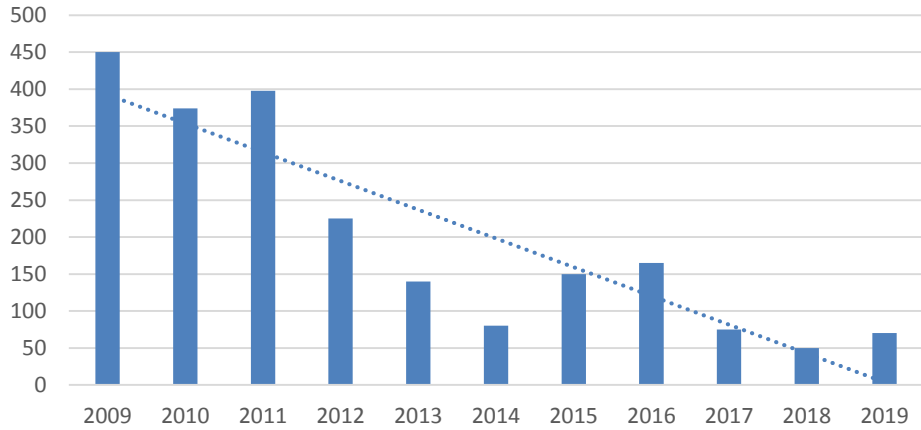
Staff recommend this option.

The cost is included in 2021 Water Quality Improvements and Geese Control capital project request.

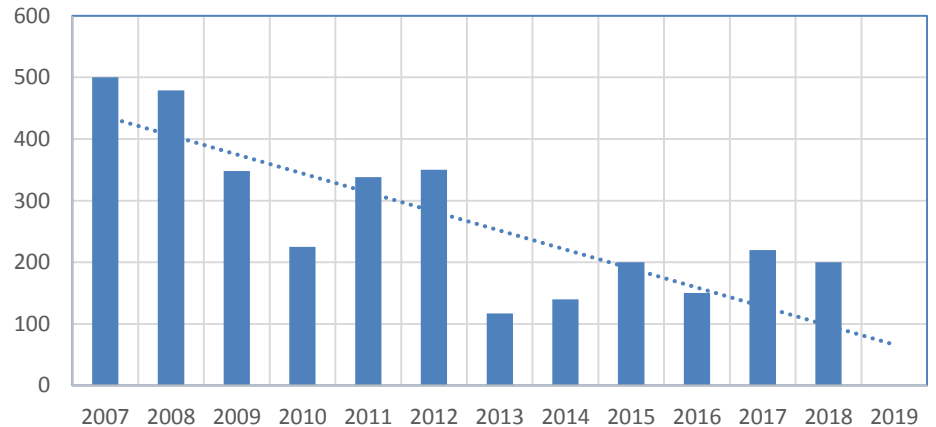


TRCA Relocation Program Results

Western Beaches - Canada Goose Relocation Program



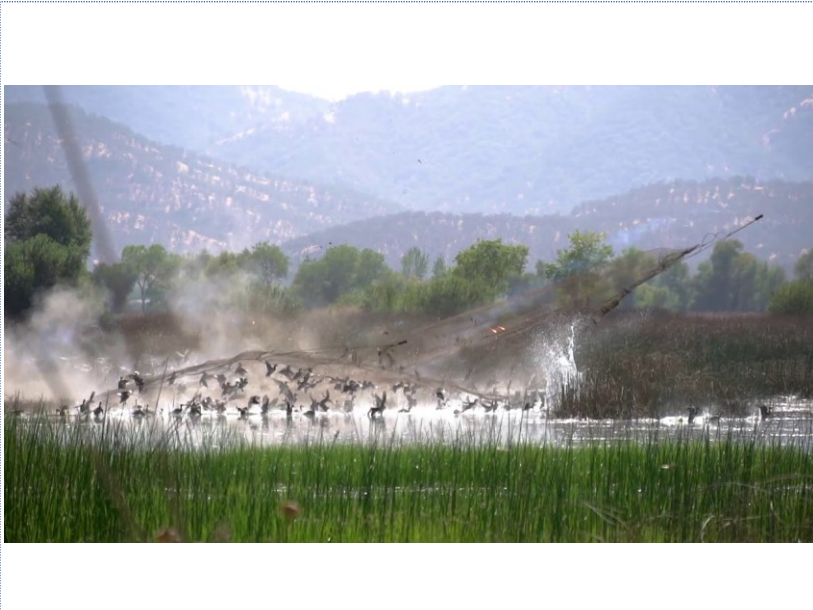
Ajax Waterfront - Canada Goose Relocation Program





Option 5 - Culling

Overview of Option



- Geese would be captured in July when they are flightless and then euthanized humanely

PROS

- Effective against resident and molt migrant geese
- No risk that the geese will return
- Does not increase population elsewhere

CONS

- Not considered humane by animal rights advocacy groups – City of Denver faced intense backlash for culling program, including public protests
- TRCA does not support culling – this is not considered environmentally friendly
- Not effective against fall migratory birds
- Difficulty finding contractors and obtaining permits
- Process would need repeating as geese from other sites likely to come to Swan Lake

Staff do not recommend this option



Option 6 – Volunteer Program

Overview of Option

- Institute multi-language or pictorial signage at Swan Lake to increase understanding of the geese management initiative at Swan Lake
- Institute volunteer programs to conduct the following:
 - Reporting nest locations
 - Collecting Information on the geese, other wildlife and Water Quality at Swan Lake
 - Supplementary hazing, where appropriate

Cost

- \$2,000 (one-time to make the signs)
- \$400 in ongoing costs, for maintenance of signage, to be absorbed in the 2021 operating budget

PROS	CONS
<ul style="list-style-type: none"> • Low cost option that can be implemented immediately • Recommended by TRCA 	<ul style="list-style-type: none"> • n/a

Staff recommend this option and that it be funded from project 20250 Water Quality Improvements and Geese Control



Summary of Options for Geese Control Improvement at Swan Lake

Option #	Title	Evaluation	Cost
#1	Habitat Modification	To be referred to Park Refresh Plan (Long Term Improvement – Resident Geese)	\$35,600 for design (timeline to be determined through the Park Refresh Plan)
#2	Hazing Program	Recommended (Short Term Improvement – Migratory Birds)	One-time cost of \$7,500 in 2020
#3	Scaring Technique: Strobe Lights (pilot)	Not Recommended by Staff	N/A
#4	Relocation	Recommended (Long Term Improvement – Resident Geese)	Cost of \$10,000/year starting in 2021
#5	Culling	Not recommended	N/A
#6	Volunteer Program	Recommended (Short Term Improvement – Resident & Migratory Geese)	One-time cost of \$2,000 Ongoing operating cost of \$400 starting 2021 to be absorbed in the 2021 operating budget

Based on recommendations, the cost of \$9.5k in 2020 be funded from project 20250 Water Quality Improvements and Geese Control and the cost of \$10k in 2021 be included in the 2021 Water Quality Improvements and Geese Control project request



Consultation

The public consultation consisted of the following:

- Meeting with Friends of Swan Lake and Mark Henschel on July 31, 2020
- Additional correspondence with Fred Peters and Mark Henschel

The following summarizes the feedback received from the public:

- The public has supported the staff recommended approach of Habitat Modification, Hazing, Relocation and Volunteer Program
- Friends of Swan Lake requested that strobe lights be instituted at the lake as an additional deterrent to migratory geese
- Mark Henschel expressed concern over the impact of the strobe lights on the mute swans that are brought into the park by the community



Markham Subcommittee

- Presentation and discussion at Markham Sub-Committee on August 14, 2020
- Per minutes:
 - That the Swan Lake Geese Management Program proposed by staff be endorsed; and,
 - That the components of the geese management public education volunteer program be further defined in the staff report to General Committee; and further,
 - That the use of strobe lights be recommended for a trial period during the Fall 2020 season.
- Staff recommendation differs from Markham Subcommittee regarding Strobe Lights
 - Strobe light units are not effective based on other municipalities
 - Strobe lights may impact other species of birds/wildlife at the lake (TRCA)
 - If installed in October 2020, it will be have to removed within 2 months as Swan will be returning to the Lake in 2021
 - One-time cost of \$8,000 for one short period and unable to use it for 2-3 years is not recommended
- If Strobe light is approved to proceed, it would increase the cost of the recommended initiatives in 2020 from \$9.5k to \$17.5k (\$9.5k for Hazing and Volunteer program + \$8k for Strobe Lights)



Next Steps

- In the Fall, 2020
 - Begin revised fall hazing program;
 - Initiate volunteer program
- Request budget increases through 2021 capital and operating budget process
- Return to Council with Water Quality and Park Refresh Options



Staff Recommendation

1. THAT the presentation entitled “Geese Management at Swan Lake – Overview of Options and Path Forward”, dated September 21, 2020, be received;
2. AND THAT Council approve the proposed changes outline in the presentation to the existing Swan Lake Geese Control program;
3. AND THAT a review of options for modifying the habitat to deter geese from Swan Lake shall be considered through the Park Refresh Plan;
4. AND THAT the budget shortfall, in the amount of \$9,500, be funded from the Non-DC capital contingency for project 20250 Water Quality Improvements and Geese Control for the implementation of 2020 fall hazing and volunteer program;
5. AND THAT the 2021 Water Quality Improvements and Geese Control project request include \$10,000 for the TRCA managed geese relocation program;
6. AND THAT Staff be authorized and directed to do all things necessary to give effect to this resolution.