



REPORT

REPORT TO: Mayor Bonnette and Members of Council

REPORT FROM: Kevin Okimi, Director of Parks and Open Space

DATE: January 18, 2021

REPORT NO.: RP-2021-0003

RE: Fairy Lake Water Quality Study Update – Project Charter and Terms of Reference

RECOMMENDATION:

THAT Report RP-2021-0003 regarding the Fairy Lake Water Quality Study Update Project Charter and Terms of Reference be received;

AND FURTHER THAT the project charter attached as Appendix B to Report RP-2021-0003 be approved;

AND FURTHER THAT staff be directed to proceed with the issuance of a Request for Proposal for the Fairy Lake Water Quality Study Update as outlined in Appendix C of Report RP-2021-0003;

AND FURTHER THAT staff report back on the Fairy Lake Water Quality Update project as outlined in Report RP-2021-0003.

BACKGROUND:

In May of 2010, Council approved the Fairy Lake Water Quality Study, which included various management strategies with respect to Fairy Lake. The key recommendations from the report included:

- Preserve existing aquatic communities in their existing condition
- Educate the public on ecology, waterfowl and aquatic vegetation
- Continue egg oiling program
- Improve shoreline naturalization on private and public lands
- Promote “poop and scoop” on a watershed basis
- Eliminate/reduce use of fertilizers on turf areas
- Reduce contaminant loads from upstream sources and stormwater outfalls.

The 2010 study confirmed that Fairy Lake was actually a wetland complex, and not a true lake, and Council approved the management of the “lake” based on this.

In December of 2019, Council approved the 2020 Capital Budget, which included an update to the Fairy Lake Water Quality Study.

In November 2020, Council approved the Recreation & Parks Strategic Action Plan, which included Goal 3, Connecting People and Nature, as well as related actions regarding incorporating climate change initiatives into parks, and ensuring opportunities for the public to access nature based spaces and programs.

In December of 2020, Council approved the 2021 Capital budget which included funding for a partnership project with Credit Valley Conservation Authority and the University of Guelph for additional study of Blue Green Algae in Fairy Lake.

COMMENTS:

The purpose of this report is to seek approval for the project charter and terms of reference for the Fairy Lake Water Quality Study Update project to be launched in 2021.

Fairy Lake is a man-made lake approximately 26 hectares in size located in Acton near the headwaters of Black Creek adjacent to Prospect Park and Rotary Park, surrounded by residential properties. The lake is also adjacent to rural lands, campground/trailer parks, and natural open spaces. Prior to the creation of the lake, the area was a wetland, and the 2010 study confirmed that it is currently a wetland complex, and not a true lake. Today, the dam remains in place and maintains the water levels creating the ‘lake’ which is used for boating, swimming and fishing providing scenic views from various vantage points. The Town in conjunction with the Region of Halton has recently completed upgrades to the dam in order to ensure proper functioning related to Regional infrastructure in the vicinity. Fairy Lake is part of a designated Provincially Significant Wetland (PSW) and the surrounding area also includes additional PSWs southwest of the lake. See Appendix A for a location map of Fairy Lake.

The Town has undertaken various studies of Fairy Lake over the years; most recently the Fairy Lake Water Quality Study referenced above. There have been a number of improvements over the years to enhance public access to the lake.

The ongoing management of Fairy Lake is handled by various Town departments, including Recreation & Parks; Transportation & Public Works/Park Operations as well as broad interest from the Town’s Climate Change & Asset Management division. Fairy Lake is one of the Town’s key natural assets.

There is also significant interaction with Halton Region and Credit Valley Conservation Authority who both have interests in water quality issues surrounding the lake due to the Acton Waste Water Treatment Plant downstream on Black Creek, the Prospect Park Water Treatment Plant located in Prospect Park, and the key location in the Black

Creek Watershed. Both agencies have been involved with ongoing activities related to Fairy Lake due ongoing programs or associated impacts to plant operations.

Since the completion of the 2010 Water Quality Study, the Town's ongoing management has focused on creating or maintaining naturalized buffers to the lake, egg oiling, and public education. Recently, the Town has worked to reduce use of fertilizers containing phosphorous for parks adjacent to Fairy Lake. The Town has also been working with the Region of Halton on a phosphorous reduction program, which included the recent improvements to the storm water infrastructure in Bovis Park. Since the completion of the original study, there has been no ongoing testing conducted to determine the effectiveness of these ongoing programs, or additional works to identify a nutrient balance model for the lake as recommended by the 2010 study.

Over the past two years, blue green algae has been identified in the lake, and there has been increasing public concern about the conditions in the lake both from an ecological standpoint and a recreational standpoint.

In order to review the effectiveness of current practices, and update the baseline water quality levels, it is recommended that a consultant be retained to complete an update to the Fairy Lake Water Quality Study. The update to the study would not be duplicating the 2010 Study, but would be focused on evaluating the results of the actions taken to date, as well as reestablishing a testing baseline and building on the other actions completed by partner agencies since the completion of the 2010 study. The update study would also look to confirm the management approach to Fairy Lake, as well as any recommended changes.

Project Charter:

Staff have prepared a project charter (Appendix B), which outlines the key goals and objectives for the project and can be summarized as follows:

Project Goal

- To provide an update to the 2009 Fairy Lake Water Quality Study, including a review/update to the testing data/results, as well as evaluate existing and future management strategies to achieve the Town's objectives

Objectives:

- Establish an updated baseline and an ongoing monitoring program for water quality data;
- Review and evaluate the current best practices being undertaken by the Town (i.e. egg oiling, buffers) and make recommendations for ongoing management;
- Review Recreational Water use (i.e. beach use, boating, fishing, trails/boardwalks, etc.) and impacts of Recreational Water use on the natural systems;
- Review rare or significant species in Fairy Lake, as well as invasive species impacts;
- Review considerations for Blue Green Algae in Fairy Lake;

- Consider the Town's climate change goals and initiatives, as well as integrating with the Town's Natural Asset Management strategy as related to Fairy Lake.

Request for Proposal (RFP):

Staff have also prepared the draft Terms of Reference for the consultant lead study. The draft scope of work is included as Appendix C and is summarized as follows:

- Undertake water testing to reestablish the baseline of testing results from the original water quality study and design and provide an implementation strategy for ongoing testing and monitoring of the water quality;
- Review and update the outcomes and recommendations from the original study;
- Identify generally any rare or significant species of plants or animals known to be present in Fairy Lake and the potential impacts of current and future water conditions;
- Evaluate the impact and issues surrounding Recreational Use and compatibility with the current conditions of Fairy Lake;
- Review considerations for Blue Green Algae. Coordinate with CVC/University of Guelph project on Blue Green Algae Monitoring as needed;
- Consult and Coordinate with CVC and Halton Region on related studies and ongoing initiatives;
- Consult with Halton Region Health Department on water quality standards and approaches for Recreational Water;
- Consult with the Public and make recommendations for an ongoing communication strategy;
- Review and identify Climate Change impacts on the ongoing management of Fairy Lake; and
- Work with a Cross Departmental/Agency Team.

It is anticipated that the RFP would be issued in February/March of 2021, with completion expected by summer/fall of 2022 to allow for a year of testing updates.

RELATIONSHIP TO STRATEGIC PLAN:

Staff notes the following alignment of the Fairy Lake Water Quality Study Update with the approved Council Strategic Plan 2020-2025:

Shaping Growth: Water and Wastewater infrastructure

Climate Change and Environment: action on climate change

Fiscal and Corporate Management: service levels that support the quality of life; Capital assets and liabilities management;

Local Autonomy and Provincial Advocacy: working collaboratively with other agencies, governments and other bodies

In addition, the Strategic Action Plan will align with some of the key goals of the United Nations Sustainable Development Goals including:

Ensure availability and sustainable management of water and sanitation for all
Combat climate change and its impacts

Conserve and sustainably use marine resources
Good health and wellbeing
Sustainable cities and communities
Partnerships for the goals

FINANCIAL IMPACT:

There is no direct financial impact related to this report. Funding of \$50,000 was approved in the 2020 Capital Budget (Project 8500-11-2001), which is allocated for this project.

CONSULTATION:

Staff consulted with the members of a cross functional staff and agency team during the preparation of the terms of reference and the project charter.

PUBLIC ENGAGEMENT:

Public engagement will be included in the Fairy Lake Water Quality Study Update project and consultation will be carried out in 2021 in alignment with the Corporate Public Engagement Charter. In early 2020, as part of the preliminary preparation for the project to inform the Terms of Reference and scope of work, a project website was set up on the Town's website and a public survey was also completed on Let's Talk Halton Hills. The survey received over 250 responses, and a summary of the results of the survey can be found in Appendix D (detailed comments excluded). The website and Let's Talk site will be used for providing information to the public throughout the study update.

SUSTAINABILITY IMPLICATIONS:

The Town is committed to implementing our Community Sustainability Strategy, Imagine Halton Hills. Doing so will lead to a higher quality of life.

The recommendation outlined in this report advances the Strategy's implementation.

This report supports the Environmental Health, Social Well-being, and Economic Prosperity pillar(s) of Sustainability and in summary the alignment of this report with the Community Sustainability Strategy is Very Good.

COMMUNICATIONS:

A communications strategy will be launched upon award to the successful proponent in coordination with the Town Corporate Communications team.

CONCLUSION:

Staff are seeking approval for the project charter and terms of reference for the Fairy Lake Water Quality Study Update in order to undertake the project in 2021, with an anticipated completion date of Summer/Fall 2022.

Reviewed and Approved by,

A handwritten signature in black ink, appearing to read "Warren Harris". The signature is written in a cursive, slightly slanted style.

Warren Harris, Commissioner of Recreation and Parks

A handwritten signature in black ink, appearing to read "C. Mills". The signature is written in a cursive, slightly slanted style.

Chris Mills, Acting Chief Administrative Officer