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Town of Aurora

General Committee Report

No. OPS23-002

Subject: David Tomlinson Nature Reserve Phase 2 Options

Prepared by: Sara Tienkamp, Manager of Parks and Fleet

Department: Operational Services

Date: March 7, 2023

Recommendation

1. That Report No. OPS23-002 be received; and
2. That staff be directed to implement Option 2, including the Phase 2 trail connections, boardwalks, and associated landscaping, and that the offline wetlands and Marsh Creek realignment be deleted from the Phase 2 scope of works.

Executive Summary

This report is to provide Council information and recommendations associated with the design of the David Tomlinson Nature Reserve (DTNR) Phase 2 scope of work options and costs.

- Implementation of the David Tomlinson Nature Reserve (formerly Community Wildlife Park) works phased over several years.
- Original proposal by David Tomlinson included utilizing existing online pond to develop habitat for waterfowl.
- Lake Simcoe Region Conservation Authority (LSRCA) Policy prohibits online ponds.
- Large portion of Phase 2 scope of works includes new wetland habitats, in addition to trails, boardwalks, and buffer plantings.
- Multiple options can be contemplated for the completion of the Phase 2 portion of the DTNR.

Background

Implementation of the David Tomlinson Nature Reserve (formerly Community Wildlife Park) works phased over several years.

Implementation of the David Tomlinson Nature Reserve was based on the Community Wildlife Park Master Plan Feasibility Study (June 2015) (the "Feasibility Study"). The project was structured with phased construction of the park over a five (5)-year timeframe and with an overall budget of \$5 million (not including the signage strategy).

Detailed design to support implementation of the Feasibility Study commenced in 2016; however, due to delays in coordination with Ducks Unlimited Canada and other extenuating factors, construction of Phase 1 did not commence until summer of 2019. These works included extensive trails throughout the east end of the park, as well as a pedestrian bridge, boardwalks, lookouts, retaining walls, fencing and buffer plantings. Phase 1 works were completed in December of 2020.

Original proposal by David Tomlinson included utilizing existing online pond to develop habitat for waterfowl.

Mr. David Tomlinson's original proposal for the wader scrape and mudflats habitat stemmed from the remnant online farmer's pond, that existed in the late 1970's and 1980's. The dam on Marsh Creek that created this pond was left to deteriorate and eventually the dam was breached; however, sufficient ponding resulted with spring run-off which created wader scrape conditions, and when the water slowly dissipated as the season progressed, the rich, soft mud was exposed which attracted many shorebirds. The proposal was to reinstate the dam, implement a water control feature such as an Agri-drain and manually create the wader scrape and mudflats habitat conditions.

Lake Simcoe Region Conservation Authority (LSRCA) Policy prohibits online ponds.

Throughout the hydrological study period that informed the Feasibility Study, it was made clear to the Town that the LSRCA policy did not support online ponds. For this reason, the Feasibility Study focused entirely on an offline scenario that would simulate the habitat conditions that Tomlinson desired. The detailed design followed accordingly, with the focus of offline wetland features. Throughout the detailed design Tomlinson expressed dissatisfaction with the offline design and questioned whether it would, in fact, provide the desired features, and questioned the associated costs of an offline design which would be much more expensive than the original online proposal.

LSRCA indicated that the proposal of an online pond would not meet the Implementation Guidelines of Ontario Regulation 179/06: Lake Simcoe Region Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses made under the *Conservation Authorities Act*, R.S.O. 1990, c. C. 27, specifically section 9.2.2 which states “The construction of a new in-stream or by-pass ponds which are directly connected with a watercourse will not be permitted”. LSRCA has provided the associated rationale:

- Re-instating the dam would create the online pond at the expense of marsh habitat (i.e., wetland habitat would be lost) and that marsh habitat is already provided within the wetlands system at the 2 existing downstream online ponds.
- The two existing downstream ponds are “historic” ponds and dam structures that pre-date current regulations. The preference would be to remove these structures as there would be a net environmental benefit; however, in more recent years, permits to repair dam structures in these ponds were supported by LSRCA as there was no increased impact to maintain existing conditions.
- Reports of identification of a sedge wren (uncommon species) and Least Bittern (threatened species) were reported in the general area of the existing south marsh habitat where the online pond is proposed; this area should be maintained for diversity and breeding habitat.
- Introducing an online pond will inherently create warmer water temperatures. The focus should be on opportunities to decrease water temperatures and improve habitat functions. Restoration of forested riparian corridors along these reaches will improve habitat and wildlife movement through the area and improve hydrologic function.
- Introducing an online pond has the potential to impact water quality by increasing nutrients which decrease oxygen levels and can lead to algal blooms.
- Sediments accumulate within online ponds instead of flowing through the system. Balanced sediment flowing through a system helps to control erosion downstream.

Large portion of Phase 2 scope of works includes new wetland habitats, in addition to trails, boardwalks and buffer plantings.

Phase 2 scope of works, currently under design, is focused on three (3) offline wetland features (open water ponds) separated by water control structures which would allow manipulation of the water levels. The largest of the three (3) ponds will be designed to release water slowly in late spring creating wader scape conditions (shallow depressions filled with water for part of the year) for wading birds as well as mudflats which would provide regionally rare habitat for shore birds. The remaining two (2) ponds

would provide reservoir opportunities as well as open water habitat. To implement these offline wetlands, the existing Marsh Creek will need to be re-aligned around the proposed works.

Additional Phase 2 works also include a west trail connection from the Tonner Crescent stormwater management pond, with a boardwalk spanning the Marsh Creek lowland, a formal trail connection to the northwest end of Scrivener Drive, as well as a trail and boardwalk connection between Conklin Crescent and William Graham Drive.

Analysis

Multiple options can be contemplated for the completion of the Phase 2 portion of the DTNR.

On September 20, 2022, the following motion was carried by Council:

Now Therefore Be It Hereby Resolved That staff report to Council at its earliest convenience regarding options for the design of the phase 2 wetland components and costs, more in line with David Tomlinson's original design intent for the Nature Reserve.

Staff have prepared the following options for Council consideration for Phase 2 of the DTNR:

Option 1: Complete all Phase 2 works as per Council approved Feasibility Study

This option includes the completion of the detailed design and implementation of the construction works for an offline wetland system and construction of the remaining trail connections, associated boardwalks and landscaping. This is in accordance with the Feasibility Study recommendations; however, the offline wetlands component is not supported by David Tomlinson.

Preliminary construction cost estimates for this option's Phase 2 works would exceed the original budget.

With the receipt in August 2022 of the 60% completion submission for the Phase 2 detailed design it was noted that the preliminary construction cost estimate for the portion of the costs associated with the offline wetland works alone is in the order of \$1.2 to \$1.4 million. The total construction budget for this option was estimated to be approximately \$3.4 million, not including contingencies and taxes. If the Town were to

proceed with this option, the currently approved capital budget authority for this project would be exceeded by at least \$1.1 million resulting in further capital budget authority being required.

Option 2: Complete a portion of Phase 2 including only the trail connections, boardwalks, fencing, and associated landscaping.

This work will include the western trail connections, from the Tonner Crescent stormwater management pond, with a boardwalk spanning the Marsh Creek lowland, to connect with the existing trail network; a formal trail connection to the northwest end of Scrivener Drive with a lookout platform over the pond; and a trail and boardwalk connection between Conklin Crescent and William Graham Drive. Buffer plantings, compensation plantings and fencing will be included in these works as well.

The preliminary construction cost estimate for this portion of works is in the range of \$2 million to \$2.2 million. The current available approved capital budget authority for phase 2 of this project is approximately \$2.3 million.

Option 2 does not include the offline wetland habitat component and the realignment of the Marsh Creek.

Staff feel that completing the proposed trail connections is an important and timely endeavor as the gaps currently within the Phase 1 trail system have resulted in pedestrians accessing meadow areas and forest areas as shortcuts. These meadows and forested areas are environmentally sensitive areas that were originally identified in the Feasibility Study as areas that should be restricted to pedestrian activities. Completing these trail connections will result in a more complete trail system while protecting sensitive areas.

Option 3: Pursue online pond/wetland design.

Acknowledging that LSRCA staff will not recommend approval of a permit for an online wetland design as originally proposed by David Tomlinson, the option exists to delegate before the LSRCA's Board of Directors in accordance with the *Conservation Authorities Act*. This would require the following information in support of a complete application:

1. The need for alteration of the current Marsh Creek to implement an on-line wetland to be clearly demonstrated.
2. The alteration must be designed in accordance with natural channel design principles.

3. The alterations must demonstrate no increase to upstream or downstream flood elevations (i.e., provide hydraulic model and associated analysis including geotechnical support, dam failure breach analysis, safety assessment, etc.).
4. An Environmental Impact Study is required to demonstrate no adverse effects to the ecological function of the watercourse because of this proposal.
5. Design information is required to support a permit from the Ministry of Natural Resources and Forestry (MNR) under the Lakes and Rivers Improvement Act. (Pursuing a permit from MNR is a lengthy process and may not guarantee that a permit will be approved).

It should be noted that following through with Option 3 is not simply a matter of obtaining agency approvals and re-instating the existing dam structure. The current dam has been breached and has suffered years of erosion, and the existing water control structure and culvert are well beyond re-use. To put this in context, the Town undertook the renovation of the dam structure in the north pond back in 2018. This included re-instatement of the dam and replacement of the water control structure but did not include the creation of additional online ponds or require creek realignment which would be necessary in this scenario. The cost to complete the north pond dam renovation was approximately \$750,000. This option would be in addition to the above presented Options 1 or 2.

The online wetland design scenario has never been investigated as part of the Feasibility Plan. Furthermore, the outcome of a design proposal to investigate an online pond is uncertain as there is no existing process for approvals (MNR/LSRCA) and these ponds have not been approved in high level plans since the 1990's. Should Council wish to pursue Option 3, staff recommend the first step would be to engage a consultant for agency consultations which would then inform the decision and costs to follow through with an actual design proposal.

Advisory Committee Review

Not applicable.

Legal Considerations

None.

Financial Implications

Staff recommend that Council proceed with Option 2 being the construction of only the trail connections, boardwalks, fencing and associated landscaping at an estimated cost of \$2 million to \$2.2 million. This option does not include the wetland component of the originally proposed project scope of Phase 2 at this time. Should Option 3 be selected, its cost would be in addition to that noted for Option 2. As can be seen from Table 1, the proposed Option 2 works as designed and recommended by staff can be completed within this project's existing approved capital budget authority of \$5 million.

Table 1
David Tomlinson Nature Reserve (Project # 73169)

Description	Total
Total approved capital budget authority	\$5,000,000
Less: Phase 1 Construction & consulting costs	\$2,726,800
Budget authority available for Phase 2	\$2,273,200

Communications Considerations

Communications staff to inform residents on the design and construction of the David Tomlinson Nature Reserve through normal communications channels.

Climate Change Considerations

The park design has an overall natural theme, utilizing natural products and incorporating extensive landscape plantings that all play an important roll mitigating the impacts of a changing climate. Recommendations from this report do not immediately impact greenhouse gas emissions or impact climate change adaptation; however, if design of components change there could be some minimal impact.

Link to Strategic Plan

Phase 2 of the David Tomlinson Nature Reserve supports the Strategic Plan Goal of Supporting an Exceptional Quality of Life for All, by encouraging an active and healthy lifestyle.

Develop a long-term needs assessment for recreation programs, services and operations to match the evolving needs of the growing and changing population.

Alternative(s) to the Recommendation

1. Council provide further direction.

Conclusions

Staff propose that the Phase 2 construction of the David Tomlinson Nature Reserve proceed as per the recommended Option 2, including, the trails to provide connectivity to existing trails in the reserve, boardwalks, fencing and naturalized buffer plantings. It does not include construction of the wetland habitat component. Proceeding with Option 2 will allow for the remainder of the nature reserve to be constructed within the currently approved capital budget authority for this project, based upon consultant construction cost estimates, and will deliver a completed trails network for resident enjoyment while achieving protection of sensitive natural habitat for wildlife.

Attachments

None.

Previous Reports

None.

Pre-submission Review

Agenda Management Team review on February 16, 2023

Approvals

Approved by Allan D. Downey, Director, Operational Services

Approved by Doug Nadorozny, Chief Administrative Officer