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| Presented To: | City Council |
| Presented: | Tuesday, Mar 22, 2016 |
| Report Date | Tuesday, Mar 08, 2016 |
| Type: | Presentations |

# Request for Decision

## Request for Decision - Subwatershed Studies

## Resolution

THAT the City of Greater Sudbury completes the subwatershed studies in the order identified in the report dated March 8, 2016 by the General Manager of Infrastructure Services.

## Finance Implications

These subwatershed studies will be fully funded by existing capital budgets and provincial funding.

## Background

Preserving and enhancing the natural environment within Greater Sudbury is of the utmost importance to our community. Many great initiatives by community groups, the City, industry and through responsible development have improved our natural environment in Greater Sudbury. One of the next steps toward further enhancing our natural environment is to study and develop plans for our subwatersheds as they are some of our most vulnerable ecosystems that are under pressure from resource extraction, industries, development and climate change.

A subwatershed is an area of land divided by natural features, where all water naturally drains to a particular watercourse or body of water. In Greater Sudbury some of our significant subwatersheds are Ramsey Lake, Junction Creek, Whitson River, Wahnapitae River, Onaping River, Whitewater Lake and Penache Lake.

Conservation Ontario has developed “Watershed Management in Ontario: Lessons Learned and Best Practices” to help guide the watershed planning process, which will set the framework for the City’s studies. The first step in the watershed planning process is to develop the terms of reference or scope of the study, at this stage it is determined what information there is and what information needs to be collected. The public and key agencies have been engaged to provide input to the terms of reference / scope for the request for proposal for the subwatershed studies. The City will issue a request for proposal and solicit qualified consultants to complete the studies. Once a qualified consultant(s) has been retained, work to

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characterize the system and gain an understanding of the existing conditions in the subwatershed can begin. This typically includes collecting information on:

- Surface water resources;
- Surface water quality;
- Groundwater resources;
- Stream morphology;
- Terrestrial resources;
- Aquatic resources;
- Land use; and
- Demographics.

At this point there will be a good understanding of the natural system and goals, objectives and targets can be set for the subwatershed with public and agency input. Management strategies can be developed to meet the goals, objectives and targets previously set. Through public and agency input an evaluation of the alternative management strategies can be completed. The preferred management strategy will be selected and targets will be finalized. Finally an implementation and monitoring plan is developed. For the study to be successful it is critical that public and agency input is gathered.

The key objectives of the subwatershed studies the City will undertake are to:

a. Identify priority stormwater best management practices (SWBMPs) within the subwatershed that serves the purpose of managing excessive stormwater runoff and minimizing the impacts from flooding for planned urban areas as identified in the Official Plan;

b. Identify priority SWBMPs within the subwatershed that preserves or enhances the quality of the runoff from the City's drainage systems. The quality of the urban storm drainage can impact the quality of downstream water systems which can directly affect municipal and private drinking water supplies;

c. Identify policy statements, and development criteria that could influence future City Official Plan policies, zoning by-laws, or development application comments, with the intent of preserving the necessary critical ecosystems and with the intent of managing quality and quantity urban runoff at the source of any developed property.

## Funding Agreement

On February 29th, MPP Glenn Thibeault announced $2.3 Million in Provincial funding for the completion of nine (9) subwatershed studies through the Ministry of Environment and Climate Change (MOECC). The funding will allow the City to accelerate the completion of subwatershed studies which will provide a baseline of the health of our watersheds, by considering stormwater-related risks in land-use decisions and community planning, and develop a strong framework for responsible development within the subwatershed to preserve and enhance the natural ecological environment. The studies will also develop a framework for addressing existing stormwater-related risks to the natural environment.

The funding agreement requires the City to complete draft terms of reference / scopes and select the nine (9) subwatersheds to be studied by March 31, 2016. The agreement stipulates that all nine (9) funded

studies be completed by March 2018, however due to seasonal opportunities to collect data, requests for extensions may be made during the course of regular required reporting.

## Study Prioritization

The funding agreement requires that the City reassess the subwatershed study priorities from the Stormwater Background Study, which was completed in 2006 to provide the technical foundation for Official Plan policies. The Stormwater Background Study recommended 17 priority subwatershed studies that should be undertaken. The Studies were prioritized using the following criteria:

a. Have existing water quantity problems that could be attributed to urban stormwater runoff;

b. Have significant development potential;

c. Have existing water quality problems that could be attributed to urban stormwater runoff; and

d. Require more detailed analysis to determine solutions to the problems listed above.

The Nephawin Subwatershed has been studied and recommendations were successfully implemented in 2009. A Study of the Algonquin subwatershed was completed in 2004, and was not included in the priority list. The Ramsey Lake subwatershed study will be the first to be initiated as requested in the funding agreement as it is a primary source of drinking water for the City and has been identified as a priority of the Greater Sudbury Source Protection Plan.

The funding agreement requires the City to determine which eight of the remaining 15 subwatershed studies will be selected for completion on the basis of;

a. existing water quality;

b. run-off quantities;

c. use of watershed for drinking water;

d. conveyance; and

e. development or growth potential.

Using these criteria, staff recommends starting with the Ramsey Lake, Junction Creek and Whitewater Lake (Azilda) subwatershed studies. As stated, the Ramsey Lake watershed has been identified as the first priority in the funding agreement.

Next staff recommends completing a comprehensive Junction Creek subwatershed study, which comprises the seven priority; Junction Creek, Mud Lake, Simon/McCharles Lake, Garson, Meatbird Creek – Lively, Copper Cliff and Kelly Lake, subwatersheds. The completion of these studies as a single study will allow the City to gain a holistic assessment of the Junction Creek subwatershed. Completing the seven Junction Creek studies as a single Junction Creek subwatershed study is also a recommended best practice by Conservation Ontario in their document “Watershed Management in Ontario: Lessons Learned and Best Practices.”

The 2006 Stormwater Background Study identified these studies as ranging in priority from six to 17, however these priorities were established with the understanding that the financial resources may not be available to undertake a study of the entire Junction Creek subwatershed. This existing prioritization would see downstream areas of the Junction Creek subwatershed studied before upstream areas, using

assumptions that may change as the upstream areas are studied. The City will realize a more efficient study with less duplication and a shorter schedule. Since the 2006 Stormwater Background Study Council received a report dated June 18, 2014 entitled “East Branch Junction Creek” supporting the need to further study and develop a work program for flooding issues on Junction Creek upstream of Elm St. A subwatershed study of Junction Creek will accomplish the proposed project to study flooding issues as well as considering many other essential subwatershed issues. There is great development pressure and potential within the Junction Creek subwatershed, specifically in the Garson, New Sudbury and Lively/Walden areas according to data provided from the 2014 Hemson Service Area Forecast.

The Whitson River subwatershed has the next highest development pressure and potential followed by Azilda. Staff recommends completing the Whitewater Lake (Azilda) subwatershed study as the final study though the Provincial funding, ahead of the Whitson River subwatershed study. There have been significant drainage improvements in the Whitson River subwatershed since the Stormwater Background Study was completed, including the Lavallee, Horizon, Val Caron and Hope Municipal drain improvement projects. Significant study and preliminary design has been completed on the Paquette-Whitson municipal drain and future stormwater management pond. Until detailed design and construction is complete it is not recommended to move forward with a Whitson River subwatershed study.

In summary staff recommend completing the Ramsey Lake, Junction Creek (7 studies combined) and Whitewater Lake (Azilda) subwatershed studies with the funding provided by the MOECC. Staff recommends continuing with the Whitson River, Richard Lake, Wahnapitae (Wahnapitae and Coniston) and Dowling subwatershed studies as budgets allow. Council has committed $250,000 a year, beginning in 2015, to support subwatershed planning and staff will continue to complete priority studies beyond the Provincial funding.

The table below prioritizes the order of future studies.

| Subwatershed Study | Subwatershed Name | 2006 Background Study Priority | 2016 Priority |
|---|---|---|---|
| Studies to be Completed with MOECC Funding | | | |
| Ramsey Lake | Ramsey Lake | 2 | 1 |
| Junction Creek | Junction Creek | 6 | 2 |
| | Garson | 11 | |
| | Kelly Lake | 17 | |
| | Copper Cliff | 16 | |
| | Meatbird Creek – Lively | 12 | |
| | Mud Lake | 7 | |
| | Simon / McCharles Lake | 8 | |
| Whitewater Lake | Azilda | 4 | 3 |
| Studies to be Completed with City Funding | | | |
| Whitson River | Whitson River | 3 | 4 |
| | Whitson Lake | 10 | |
| | Chelmsford | 9 | |
| Richard Lake | Richard Lake | 5 | 5 |
| Wahnapitae | Coniston | 13 | 6 |
| | Wahnapitae | 14 | |
| Dowling | Dowling | 15 | 7 |

## Recommendation

Staff recommends following the prioritization provided as it; follows best practices, supports the funding agreement, provides efficiencies and will support our commitment to enhance our natural environment. Staff will continue to complete subwatershed studies beyond the funding agreement as budget permits.