

Stokke, Samantha

From: Kelly, Mary K
Sent: Monday, July 15, 2019 3:59 PM
To: Stokke, Samantha
Subject: FW: Junction Creek Subwatershed Study and Stormwater Master Plan

From: Paul Javor <Paul.Javor@greatersudbury.ca>
Sent: Thursday, April 18, 2019 4:30 PM
To: Paul Javor <Paul.Javor@greatersudbury.ca>
Subject: Junction Creek Subwatershed Study and Stormwater Master Plan

Good Afternoon,

The City of Greater Sudbury has posted the Junction Creek Subwatershed Study and Stormwater Master Plan to our website for download. We would welcome our agencies, stakeholders, and the public to review the document and provide comments or feedback. Typically a project like this would only be posted to the Environmental Registry Board (EBR) to satisfy Master Planning requirements. Given the great interest in the Watershed Study components we wanted to provide an opportunity for review. The documents can be found at the following and comments can be provided through the same or emailed directly to myself.

<https://overtoyou.greatersudbury.ca/watershed-study>

We would like comments to be provided by the end of May for consideration before we finalize the document and post to the EBR. Once the Master Plan components of the study are complete we will have a public meeting presenting the final report.

Best Regards,

Paul Javor, MAsC, P.Eng.
Drainage Engineer
Infrastructure Capital Planning Services
City of Greater Sudbury
Tel: 705-674-4455 Ext. 3691
Paul.Javor@greatersudbury.ca

From: [Junction Creek Stewardship Committee](#)
To: [Paul Javor](#)
Cc: [Erin Calder](#); [Paula Worton](#); [Rachelle Niemela](#)
Subject: comments for subwatershed study and stormwater master plan report
Date: Friday, May 31, 2019 3:49:10 PM
Attachments: [Subwatershed Study and Stormwater Master Plan_comments_JCSC.pdf](#)

Hi Paul,

Thank you again for the meeting to discuss the Junction Creek Subwatershed Study and Stormwater Master Plan report, you have been very patient and helpful in explaining the extensive document. We also greatly appreciate the opportunity for comments throughout the process. Enclosed is a letter outlining our comments for the report.

Please let me know if you have any questions or if you need any clarification.

Have a wonderful weekend,

--

Miranda Virtanen
Executive Director
Junction Creek Stewardship Committee
office: 705-525-8736
www.junctioncreek.com

Connect with us @JunctionCreek on Facebook, Twitter and Instagram



Junction Creek Stewardship Committee Inc.
30 Ste. Anne Road, #B4
Sudbury, Ontario, P3C 5E1
T: 705-525-8736 F: 705-674-7939
E: info@junctioncreek.com
W: www.junctioncreek.com

Comité d'intendance du ruisseau Junction
30 Rue Ste. Anne, #B4
Sudbury, Ontario, P3C 5E1
T: 705-525-8736 F: 705-674-7939
E: info@junctioncreek.com
W: www.junctioncreek.com

May 31st, 2019

Paul Javor, Project Manager
Drainage Engineer, Roads and Transportation Services
City of Greater Sudbury
200 Brady St.
Sudbury, ON P3A 5P3

Dear Mr. Javor,

RE: Junction Creek Watershed Study and Stormwater Master Plan Report

Thank you for the opportunity to provide comments to the City of Greater Sudbury's 'Junction Creek Subwatershed Study and Stormwater Master Plan Report', and for committing to continue that community engagement throughout the study process. The Junction Creek Stewardship Committee recognizes the importance of these studies to technical considerations such as water conveyance as well as to the long-term ecological integrity of our urban water bodies. We welcome the opportunity to act as a community partner to offer expert input and assistance throughout the planning, execution, and monitoring of the projects. We would like to provide the following comments for consideration:

1. Information that should also be included in the report

Greater Sudbury is a leader in environmental stewardship and climate change. The values of the ecological aspects and carbon footprint of projects are key factors for consideration in making sound decisions. Without them, the proposals do not accurately reflect the true extent of the projects. Therefore, it is important to include the potential environmental expenses (environmental assessment, mitigation, monitoring, value of natural heritage impact, habitat enhancement, and carbon footprint) in order to have a more accurate cost comparison for each project, a crucial component used for choosing which project(s) will be pursued further. In addition to calculating and including these costs for the proposed projects, future project proposals should evaluate these expenses as part of the initial stages of the proposals. The stormwater master plan should also integrate the recommendations identified in the subwatershed study whenever possible, and should be reflected in the project's total cost.

In addition, sensitivity analysis should be shared to reveal the uncertainty of parameters, including the most recent climate change modeling. The level of confidence in modeling and outcome, along with data deficiencies, should be part of the project evaluation comparison and be considered during project selection.



Junction Creek Stewardship Committee Inc.
30 Ste. Anne Road, #B4
Sudbury, Ontario, P3C 5E1
T: 705-525-8736 F: 705-674-7939
E: info@junctioncreek.com
W: www.junctioncreek.com

Comité d'intendance du ruisseau Junction
30 Rue Ste. Anne, #B4
Sudbury, Ontario, P3C 5E1
T: 705-525-8736 F: 705-674-7939
E: info@junctioncreek.com
W: www.junctioncreek.com

We also feel that the information presented would be easier for the layperson to understand if summarized in a simplified, shorter document, and would be beneficial for the next phases. A series of fact sheets summarizing the historical and natural heritage information of the subwatershed study would also be of great interest to the community.

2. Natural heritage

We understand that the projects will lead to the alteration of natural habitat. Our concern is for projects that are in Sensitive Natural Features, in particular the Ponderosa wetland. As a Provincially Significant Wetland that acts as a large natural carbon sink, Ponderosa is highly sensitive to changes in flow and water levels. It has known threatened species sensitive to adult mortality using significant habitat features in the proposed area to be altered. Even the smallest impact will alter the dynamics of this sensitive wetland.

The proposed alteration to Ponderosa in 'Option E', can have irreversible negative effects on the ecosystem, including the possible loss of hibernation sites for threatened turtles due to the projected lowered levels in the Ponderosa 3 area. We cannot afford to cause further degradation to such an important valued wetland in our watershed. Furthermore, the costs required for additional studies, an environmental assessment of a Provincially Significant Wetland, and the protection of local species would be substantial. For these reasons, 'Option E' should not be considered a reasonable option to pursue further. For a more accurate comparison of the alternative purchase of affected lots, the proposed project costs in 'Option E' should also include the environmental expenditures mentioned previously.

Another concern is how these proposed projects will change significant habitat features for Brook Trout. In particular, the proposed dredging should take careful consideration in the alteration of in-stream and shoreline habitat, as well as the disturbance of contaminants held within the streambed. Loss of mature trees (which provide shade to cool the water), overhanging vegetation, and alterations to other key habitat features cannot be easily replaced and are essential for species like Brook Trout - clean water and cool temperatures are limiting factors for the survival of Brook Trout in the creek. Since 2000, over 3,000 community members have been involved in the reintroduction of trout into Junction Creek, bringing over 400 community members together each spring at the Annual Junction Creek Festival & Trout Release event. Citizen stewardship in trout release, tree planting, and garbage clean-ups has strengthened the community's admiration and protection for our natural assets.

We would also like to note the importance in maintaining the function of the Junction Creek Waterway Park trail during project construction, as it is a main transportation corridor that is used on a regular basis.



Junction Creek Stewardship Committee Inc.
30 Ste. Anne Road, #B4
Sudbury, Ontario, P3C 5E1
T: 705-525-8736 F: 705-674-7939
E: info@junctioncreek.com
W: www.junctioncreek.com

Comité d'intendance du ruisseau Junction
30 Rue Ste. Anne, #B4
Sudbury, Ontario, P3C 5E1
T: 705-525-8736 F: 705-674-7939
E: info@junctioncreek.com
W: www.junctioncreek.com

Prior to pursuing projects that will alter Sensitive Natural Feature, a combination of less intrusive measures that have positive ecological and community impacts, such as enhanced greening, should be explored first. We know from historical records and archived photographs that flooding in Sudbury was a direct result of the 'deforestation' of the surrounding landscape and reduction in permeable surfaces. Trees and soil absorb and hold water, while also providing a means of natural filtration and erosion control. One of the striking findings during the subwatershed study was that greening in Sudbury has increased rainwater storage capacity to off-set the large amount of development of impervious surfaces in the watershed. VETAC has identified barren rocks and other areas that still need greening. Let us then use a natural method to control flooding while also increasing carbon storage, reducing erosion and sedimentation, creating habitat, and increasing our green spaces for residents to access nature. Greening is an easy, low-cost measure for reducing flooding that also improves ecological and economic health, beautifying the city further.

3. Collaborating with local experts and organizations

Greater Sudbury has exceptional experts in the environmental and restoration field, experienced in dealing with the unique dynamics of the Sudbury landscape and ecosystems. We encourage the City to collaborate with these experts for optimal project success. The JCSC welcomes the opportunity for collaboration and would like to offer their expertise and services during the development of project design and management of ecological integrity.

We would be able to facilitate the integration of the restoration, monitoring, and stewardship activities recommended in the subwatershed study, and encourage the following:

A. Filling data deficiencies in water monitoring

- Constructing water quality monitoring stations for continuous readings of target parameters to be used in watershed reports and making sound decisions.
- Including data-logger probes with new rain/flow gauges (Garson headwaters, Ponderosa, Nolin Creek, Copper Cliff Creek).

B. Enhancing water quality and habitat

- Creating Brook Trout habitat features within the reconstructed stream.
- Conducting 'enhanced greening' in riparian areas of the creek and tributaries.
- Detering beavers using tree guards and planting unfavourable tree species.
- Implementing sediment catch basins for flood management.
- Encouraging LID and green infrastructure projects as opportunities arise.
- Installing trash booms; using data from garbage monitoring surveys to identify sites, and JCSC staff/volunteers to monitor and manage them.



Junction Creek Stewardship Committee Inc.
30 Ste. Anne Road, #B4
Sudbury, Ontario, P3C 5E1
T: 705-525-8736 F: 705-674-7939
E: info@junctioncreek.com
W: www.junctioncreek.com

Comité d'intendance du ruisseau Junction
30 Rue Ste. Anne, #B4
Sudbury, Ontario, P3C 5E1
T: 705-525-8736 F: 705-674-7939
E: info@junctioncreek.com
W: www.junctioncreek.com

C. Community education and outreach

- Dispersing educational resources to residents and private businesses along Junction Creek regarding creek friendly practices (ie. stormwater, garbage, LID, snow management and salt alternatives).
- Providing public educational programs and stewardship activities related to water quality and quantity management.

We would also like to recommend that the extent of environmental assessment and measurement of ecological impacts be set as a priority, especially for Sensitive Natural Features. In addition to mitigation efforts to minimize environmental impact, we encourage exceeding minimal requirements for environmental assessments, setting high standards on survey expertise and effort, as well as conducting site monitoring before, during, and following completion of the projects. In addition, proactive measures should also be explored to reduce the cost of flooding management in the long-term (ie. sediment catch basins, bioengineering erosion control, etc.). Taking the time to produce a thorough project design and assessment will reduce costly mistakes that would need to be fixed in the future.

We look forward to provide further comments and assistance in the next phases.

Sincerely,

Miranda Virtanen, Executive Director
On behalf of the Junction Creek Stewardship Committee

cc. Rachelle Niemela, JCSC Co-Chair
Paula Worton, JCSC Co-Chair
Erin Calder, JCSC Co-Chair

From: [Naomi Grant](#)
To: [Paul Javor](#)
Subject: Junction Creek Subwatershed Study draft - Coalition for a Liveable Sudbury comments
Date: Monday, June 3, 2019 7:41:04 AM
Attachments: [JunctionCreekSubwatershedStudy_May2019.pdf](#)

Good morning,

Thanks again for taking the time to meet with us.

Attached are Coalition for a Liveable Sudbury's comments. Thank you for the opportunity.

In looking through the Appendices, I could not find a map of the Natural Heritage System. Did I miss it? I can only see that information in table form.

Regards,

Naomi



Coalition for a
Liveable
Sudbury

Making connections. Working toward sustainability.

May 31, 2018

Coalition for a Liveable Sudbury

Written submission – Junction Creek Subwatershed Study and Stormwater Master Plan

Thank you for the opportunity to provide feedback on the draft Junction Creek Subwatershed Study and Master Plan. Here are our main comments.

Addressing flooding

A community priority driving the Junction Creek Stormwater Master Plan is the need to solve flooding in the watershed, most especially in the Flour Mill area, where it causes on-going stress and harm to residents and their homes.

It is important to note that even if/when all the recommended stormwater management projects are completed, neighbourhoods in the floodplain or otherwise vulnerable to flooding will still flood in larger storms (50-100+ year storms) which will become more frequent with climate change. Many of the stormwater management projects also have long timelines to study and implement, which means a long wait for flood mitigation for residents.

Residents should be fully aware of this information and the implications for their homes, and for insurance coverage.

This also underlines the importance of more localized and more rapid solutions that could provide immediate benefit to residents. These could include:

- Lot-specific measures to direct water away from homes (e.g. landscaping, downspout placement) and/or store or absorb rainwater, on-site landscaping (e.g. trees, rain gardens)
- Neighbourhood level efforts to increase rainwater retention capacity (e.g. greening of neighbourhood uplands contributing to run-off; neighbourhood-wide rain garden and bioswale installations).
- Wet floodproofing homes

We would like to see recommendations for these more localized and rapid solutions included, to reduce the wait for residents impacted by flooding.

Climate change

Stormwater modelling is done with historic data for 5, 10, 25, 50, 100 year and regional (Timmins) storms. Storm sewers are planned to accommodate 5 or 10 year storms. Overland systems (water running in the roads up to the curb) are planned to accommodate 100 year storms.

It is problematic that climate change is not factored in to the modelling or the predictions. Climate change impacts should be more integrated into the recommendations, and use more recent climate predictions (2009 predictions are referenced).

We can expect that rain storms will be more frequent. A five year storm can be expected to happen much more frequently than every five years on average. A 100 year storm may be expected to happen multiple times in our life time, or even every few years, as [experienced](#) by some communities in Ontario, Québec and New Brunswick.

We can also expect big storms to be larger and more intense. The 'Timmins' Regional storm may no longer be a good bench mark – a [new design storm](#) may be needed to reflect the more intense rain events we can expect.

Our stormwater management plan should plan for more frequent storms, bigger rain events, and failure of storm sewers and stormwater management systems (and electric). This planning is needed to mitigate impacts on residents, property and infrastructure, as well as to communicate realistic expectations to residents and property owners.

Our stormwater management plan and subwatershed study should also take into account the direct impacts of climate change on water quality, as well as on watershed health (terrestrial and aquatic components) that will ultimately also lead to water quality and quantity impacts. Climate change resilience should be an objective of this study/plan, and should be integrated into the recommendations.

Cost-benefit analysis of stormwater projects

A more thorough cost-benefit evaluation of the listed stormwater management projects would make the stormwater management plan a more useful tool for decision-making. ***In particular, more information should be easily viewable about the projected effectiveness of each project.*** Option Evaluation Summary Tables currently list approximate storage volume. However, more relevant metrics of effectiveness would give a clear picture of whether the project will mitigate or eliminate flooding that is currently experienced in problem areas, and under what storm events.

This is especially important because many of the projects have a high financial cost and/or a high ecological or social cost. More information should be available about the ecological and social costs as part of every assessment (and the associated financial expenses).

In some cases, the ecological or social costs are too high to proceed, and other options should be pursued. Option E: Diversion & Facility East of Ponderosa would cause serious negative impacts to this provincially significant wetland and result in loss of habitat for species at risk. We do not feel this is an acceptable outcome.

Other options also have high ecological or social costs and should be considered very carefully before proceeding, and if undertaken, include special measures to protect ecological health and include the community, including thorough environmental assessments and monitoring.

Option G: Restoration and Reprofiling of Junction Creek Downstream of Ponderosa will have large impacts on the creek, vegetation in the riparian zone (planted by the community), and the Junction Creek waterway trail. Special attention should be paid to: avoid the removal of mature trees as much as possible; include the Junction Creek Stewardship Committee and other local expertise and stakeholders in the design and implementation process; protect and enhance in-stream and shoreline habitat; maintain connectivity of the Junction Creek Waterway Park trail during and after construction; design and resource maintenance so that silting does not reoccur.

It is unclear from the information presented why some of the stormwater management projects are recommended, given the limited benefits or high cost listed. This is especially concerning because most of the projects are listed as Class B EA, which means they would have met EA requirement with this Master Plan. Some examples where the overall benefit is unclear:

- The Garson Facility (\$2.6M) has very limited potential for flood mitigation and no effects downstream of O'Neil Drive, but has a very high ecological cost.
- There is no reference of expected impact on flow for the Twin Forks facility (\$5.6M), where there are technical challenges (and high groundwater limiting storage capacity), and a high social impact.
- The Ponderosa Diversion (\$24M) is modelled to significantly reduce flow in a problem area, but not to reduce the number of lots flooded. The proposed project has a very high ecological cost, as it is in a Provincially Significant Wetland.
- The Donnelly Drive diversion (\$28M) provides no benefit downstream of the immediate area (Falconbridge railway).

High groundwater is a challenge for many of the proposed projects, which limits storage capacity.

Many projects have a localized effect only, while others may interact. However, a clear picture is not available in the report. This information should be clearly presented to inform decisions that will be weighing financial cost, effectiveness in addressing flooding in problem areas, and ecological and social impacts. I.e. Decision makers should be aware of the impact on flooding of individual projects, and combinations of projects. There is an immediate interest in knowing the individual and collective impacts of the four funded projects.

Information should also be clearly summarized regarding confidence in the model, including sensitivity analysis (sensitivity of the model in regards to variables for which there is missing or uncertain data).

Implementation of subwatershed study

The subwatershed study includes some very important information and recommendations. Natural heritage features and sensitive features are identified, as are core areas and linkages for a natural heritage system, and areas requiring further study. We support the recommendation to complete Natural Heritage System mapping for Greater Sudbury. The importance of all wetlands for this watershed is highlighted, as well as the importance of regreening the riparian zone. There are recommendations for areas that should be protected, as well as enhancement and restoration recommendations such as increasing natural vegetation in the riparian zone, and reforestation in the watershed.

These are important recommendations for natural health, climate resilience, and water quality and quantity.

It would also be good to see goals for reducing the percent impervious cover in each subwatershed. Anything greater than 10% impacts water quality.

Recommendations from the subwatershed study part of the Study should be clearly listed in an implementation section, with a clear process for these projects to move ahead and be included in the municipal budget.

Integration of the subwatershed study and stormwater management master plan

Implementation plans for the subwatershed study and stormwater management plan should be integrated. Ideally, the best solution to meet all objectives (including flood prevention and ecological health) should be found. Currently, recommendations are listed separately for each, and there are conflicts between these two sets of recommendations.

There is a strong connection between improving ecological health and reducing flooding. One of the striking findings during this study is that the regreening already done has increased rainwater storage capacity more than enough to off-set the large amount of urbanization (increase of hard surfaces) in the watershed. ***This bears repeating: without the regreening efforts, flooding would be considerably worse today in the Junction Creek watershed.*** Trees and soil absorb and hold rainwater that would otherwise quickly run off bald rock.

These impacts should be better quantified and seriously presented as options for reducing and mitigating flooding.

Regreening within the watershed and in the riparian zone also improves water quality and ecological health, and is recommended in the subwatershed study for that reason.

Targeted regreening in floodprone areas of the watershed can alleviate flooding, improve ecological health, and improve residents' access to nature. It is also an easy, low-cost measure compared to built stormwater management projects, which have a high initial and subsequent maintenance cost.

Regreening, natural restoration, green infrastructure, and low impact development should be included where possible in all stormwater management projects, and development site plans.

One result of the lack of integration between the subwatershed study and the stormwater management study is the conflict between the recommendations. Most notably, several of the recommended stormwater management projects are located in sensitive areas of natural significance to the watershed. There are a number of examples, the most difficult being the project located in/impacting the Ponderosa wetland. ***The Ponderosa wetland is a provincially significant wetland, habitat for species at risk, with a high ecological value, as well as a high social and recreational value (with the trail also filling an active transportation need).***

Just as removing homes from the floodplain is not seen as a viable or acceptable option, damaging or significantly altering some natural features should not be seen as options for consideration (the Ponderosa wetland being one clear example). From a practical standpoint, choosing a provincially significant wetland as a proposed project site also comes with many barriers, which may be insurmountable, or at the very least cause lengthy delays, not desirable for a potential solution to flooding issues residents wish to see resolved as quickly as possible.

Options not explored

An important limitation in this Plan is that some options are dismissed or not fully explored. For example:

- Changes in land use designations are not modelled or considered. Leaving areas currently zoned for future development in a natural state would of course mean more water retention and less run-off. How big of a difference would it make for different land parcels, and what would the relative cost be for land acquisition versus building and maintaining any additional stormwater management facilities needed due to increased impervious surfaces? This information should be available to decision makers.
- Although regreening in the watershed is recommended in the subwatershed study, and it is recognised that it increases water storage capacity, it is not included in modelling. On-site low impact development and green infrastructure are similarly referenced as good ideas (within limitations from geography), but not fully incorporated. These measures should be integrated into stormwater management planning to reach quantitative targets with a combination of grey and green infrastructure. Although there are challenges with private land ownership and retrofitting existing developed sites, there are also advantages to these measures. A combination of green and grey infrastructure is usually the most financially sound and effective option for stormwater management. Decision makers need to have access to good information about all options to make sound decisions.
- Roadways and road allowances comprise a large area of city owned property and already play a role in stormwater management. Storage capacity below and beside roadways should be explored as options.

Other comments

The importance of consultation and collaboration on design and implementation of the recommendations and projects cannot be overstated, both to include community expertise, and to have community buy-in.

Implementation of some of the recommendations of the subwatershed study will be much more successful and possible with the involvement and in some cases leadership of the community.

In all projects, the full value of Junction Creek should be included, including ecological, social, recreational, connectivity, as well as its value for sense of place and community pride. The community ownership of Junction Creek, grown through two decades of stewardship, must always be respected.

Implementation plans should always include maintenance plans (including resourcing and enforcement), and incorporate measures to prevent recurrence of problems. Large, disruptive projects to remove silt should not have to be repeated in the future. Ecological recovery from dredging and disruption to the shoreline takes a very long time.

A section should be added to this report which explains in easy to understand language:

1. possible options,
2. recommended options and other recommended measures,
3. the cost(s) and effectiveness of each (in terms most relevant to decision makers), and
4. the implications of climate change.

This should include easy to read maps of the proposed project locations, areas currently flooding & areas projected to flood if projects are completed (for each project and for different storm events), and the natural heritage system.

The subwatershed study contains historical and natural heritage information of great interest to the community. It would be good to follow up this report with a leaflet or series of fact sheets summarizing this information in an accessible manner.

The Ramsey Lake subwatershed study results should be integrated as much as possible, since this subwatershed is within the Junction Creek watershed.

We look forward the posting of the notice of completion and a final opportunity to provide input.

Regards,
Naomi Grant
Co-Chair, Coalition for a Liveable Sudbury
grant_naomi@hotmail.com

From: [Ramsey Lake](#)
To: [Paul Javor](#)
Subject: Ramsey Lake Stewardship Committee Input to JC Watershed Study
Date: Tuesday, June 4, 2019 10:46:44 AM
Attachments: [2019 JUNE 3 RLSC INPUT TO JC WATERSHED MASTER PLAN.docx](#)

Hi Paul,
Please accept this doc as our input.
Elaine Porter
Co-Chair,
RLSC



June 3, 2019

Paul Javor, MASc, P.Eng.

Drainage Engineer

Infrastructure Capital Planning Services

City of Greater Sudbury

Tel: 705-674-4455 Ext. 3691

Paul.Javor@greatersudbury.ca

Re: Input from Ramsey Lake Stewardship Committee on the Junction Creek Subwatershed Study and Stormwater Master Plan

Thank you for this opportunity to comment on a very important study for our waterways and City.

We have examined the Junction Creek Subwatershed Study Master Plan and find it to be a comprehensive document that is principally directed at the question of how to address the issue of flooding in high water periods that are anticipated through Climate Change projections. At the same time, as a watershed study, it serves the function of amalgamating current information that has been gathered to date that can be used as benchmarks for future studies to study the ecological health of the natural environment. As the Coalition for a Liveable Sudbury has noted in their submission, there is a need to look at how they are interrelated. We would add that the Junction Creek Stewardship Committee has endeavoured to be a link between the human and natural environment and it would be helpful to have an audit of the role of restoration that planting and anchoring the soil along the Creek has played and can play as a factor in decreasing flood potential.

In general, the stormwater management recommendations have not only been made independently of the environmental consequences, but concerns over flooding lead the discussion of actions to be taken. In fact, in some cases, the recommendations for solutions, as for example, increasing the size of storm sewers is made despite the fact they are not rated as efficient (see p. 201) and, as is the case for all alternatives (p. 199) they have not been thoroughly evaluated along other essential criteria such as environmental considerations. The ways in which stormwater management and environmental factors can be at odds with one another can be seen in the area of the Ponderosa, especially in terms of a drainage ditch that might connect the Ponderosa wetland more directly to the Junction Creek area. Draining the

wetland or eroding the existing waterways can set the stage for even greater erosion with each storm event and affect the viability of these areas. Even then, there is no guarantee that there would not be further run-off that would not necessitate building berms as high as 3 metres in the Mountain Street area.

Further to the point that the consultants note concerning the possible use of environmental solutions, in assessment of various options, these are not included for implementation. The environmental solutions are viewed, it seems, primarily as mitigation efforts after the assessment of damages due to the building of stormwater storage facilities (which are only temporary holding devices for water). Instead, consider Option D which involves the Nickeldale Dam. The authors note that this option would be able to be a catchment area for water coming from a large parking lot. That water might well be captured through permeable paving on that lot rather than led to further stormwater facility construction. One further consideration would then be that the costing should look at comparisons between environmental measures that can be taken. If these were factored in, it may be that the costs of buying homes and buildings in the flood zones might seem more reasonable. Instead, the report attempts to show that these costs are prohibitive and may make otherwise costly alternatives look more doable.

Junction Creek has already been altered in so many ways throughout history and the most recent effect is from the housing development in the Mountain/Leslie Street area. We are surprised that no study of the effect of placing even more housing on top of the rocky hill would have in the area. Placing an overflow diversion has only served to add to the pressure on the Ponderosa wetland, now considered as a provincially significant wetland. Generally, the approaches to development in urban areas have assumed that a one-time environmental sacrifice can be absorbed and healed by nature. The nature of the Ponderosa as a Provincially Significant Wetland (PSW) means that it needs support to be viable and serve the variety of purposes for neighbourhood and city dwellers and considered as a significant planning asset. It cannot become a stormwater management pond and still be a PSW.

Expanding dams is not likely to be a 'no-regrets' approach. Adding to dam capacity also has a negative impact on the riparian growth and other plant life. If we are seeing that Climate Change events would expand greatly the capacity demands of the dam and other tributaries to Junction Creek, we also need to see beyond the ability to simply move the water and sustain one huge event. These events can become bigger and more frequent and we need to be able to ensure that the aftermath of the event does not leave the area even more susceptible to further flooding in the next round. Whatever destroys habitat and ground cover leaves the area more vulnerable in the next high-water event. The hydrology of the water is given the greatest consideration rather than the quality, in this study. If dredging is factored into the solutions, the quality of the water heading downstream might lead to even greater phosphorus inputs to city lakes like Simon and McCharles lakes which are already stressed.

I believe what the study does is to show that Junction Creek still reflects the general problems that Sudbury has with respecting and maintaining flood plains which will just become worse in the future. The evaluation company, Wood Environment and Infrastructure Solutions, does not provide a clear guide for moving forward but gives disjointed kinds of recommendations each of which have its own set of problems. None of the environmental effects have been evaluated as the authors rightly indicate so that decision-making is invited on the purely mechanical solutions. Solutions upstream are less effective in reducing the overall flow which is concentrated in the Ponderosa area and may produce such incremental changes that the costs would not be merited.

We would suggest that addressing the stormwater and environmental issues offers an opportunity to address Climate Change from, literally, the ground level up. The Creek, like Climate Change action endorsements, goes through a wide swath of the city and its various neighbourhoods. It might be a way to involve citizens in taking care of the ways in which people can plant and generally tend to the health of their segment of the streams and inputs. Each of the main segments has different kinds of problems. The Garson area is heavily mineralized, the middle section is in the urban area in terms of a wetland and a confined underground stream. The lower area has high levels of phosphorus which is partly due to erosion.

Instead of organizing the solutions in terms of engineering approaches, given that this is a watershed study, would it not be better to organize solutions in terms of the natural areas needing attention and seeing the engineering solutions as auxiliary to those or at least, in equilibrium. This general framework would avoid having the natural areas largely being treated as 'consequence' of engineered solutions and rather be treated as assets and solutions in their own right.

In light of Sudbury's unique history and ability to transform and re-green our injured environment and lower SO2 emissions, we believe Sudburians can 'plant our way' out of these flooding issues and tackle the urgency of climate change at the same time.

Sincerely,

Elaine Porter,

Co-Chair,

Ramsey Lake Stewardship Committee

From: [Richard Witham](#)
To: [Paul Javor](#)
Subject: response to Junction Creek Subwatershed Final Report
Date: Friday, May 31, 2019 4:12:58 PM

Hi Paul

We are still working on our response to the report and hope to submit it on Monday.
thanks
Richard Witham
Chair GSWA