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Community Consultation – Junction Creek Subwatershed Study and Master Plan

@ 7-Dec-2017

The City of Greater Sudbury will continue the third of a series of consultation sessions for the Junction Creek subwatershed study. The public open houses will take place on:

Wednesday, December 13 4:30 to 6:00 p.m. T.M Davies Community Centre/Arena 325 Anderson Drive, Lively

Thursday, December 14 4:30 to 6:00 p.m. Percy Playground 600 Percy Avenue, Flour Mill

Our water resources are an important aspect of daily living in our community. From drinking water for our residents and animals to supporting habitat for our plants and wildlife, as well as providing great recreation opportunities, protecting our watersheds has been identified as a priority in the City of Greater Sudbury's Official Plan.

The third consultation session is intended as a mandatory point of contact with the public stipulated under the Municipal Class EA process and presenting possible alternative solutions developed for the subwatershed.

Can't make the meeting? Feedback may be submitted online at www.greatersudbury.ca/watershedstudy2016. Feedback will be accepted until Friday December 22, by 4:30 p.m.

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-30-

Stokke, Samantha

From:	Shelley Ahmed <shelley.ahmed@greatersudbury.ca></shelley.ahmed@greatersudbury.ca>
Sent:	Thursday, December 7, 2017 3:07 PM
То:	Shelley Ahmed
Subject:	Community Consultation – Junction Creek Subwatershed Study and Master Plan/ Consultation
	communautaire – Etude et plan directeur du sous-bassin hydrographique du ruisseau Junction

Community Consultation – Junction Creek Subwatershed Study and Master Plan

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-30-

Media Contact:

Shannon Dowling, Corporate Communications City of Greater Sudbury 705-674-4455 ext. 2539 Facebook: <u>www.facebook.com/greatersudbury</u> Twitter: @greatersudbury

Consultation communautaire – Étude et plan directeur du sous-bassin hydrographique du ruisseau Junction

La Ville du Grand Sudbury tiendra la troisième de toute une série de séances de consultation sur l'étude du sous-bassin hydrographique du ruisseau Junction. Les séances portes ouvertes auront lieu comme suit :

- le mercredi 13 décembre de 16 h 30 à 18 h Centre communautaire / Aréna T. M. Davies 325, promenade Anderson, Lively

le jeudi 14 décembre
de 16 h 30 à 18 h
Terrain de jeux Percy
600, avenue Percy, Moulin à fleur

Nos ressources en eau constituent un important aspect de la vie quotidienne dans notre communauté. Non seulement procurent-elles de l'eau potable à nos citoyens et à nos animaux, elles soutiennent aussi les habitats de nos plantes et de notre faune et procurent d'excellentes possibilités récréatives. Voilà pourquoi le Plan officiel de la Ville du Grand Sudbury identifie la protection de nos bassins hydrographiques comme une priorité.

Cette troisième séance de consultation est censée être un point d'accès obligatoire avec le public prévu par la démarche d'évaluation environnementale de portée générale municipale et elle visera à présenter les solutions de rechange élaborées pour le sous-bassin hydrographique.

Vous ne pouvez pas vous rendre à la réunion? Vous pouvez présenter vos commentaires en ligne au <u>www.grandsudbury.ca/etude-2016-bassins-hydrographiques</u>. Les commentaires seront acceptés jusqu'au vendredi 22 décembre à 16 h 30.

-30-

Renseignements : Shannon Dowling, Communications corporatives Ville du Grand Sudbury, 705 674-4455, poste 2539 Facebook : <u>www.facebook.com/greatersudbury</u> Twitter : @greatersudbury

Stokke, Samantha

From:	Paul Javor <paul.javor@greatersudbury.ca></paul.javor@greatersudbury.ca>
Sent:	Wednesday, December 6, 2017 8:31 AM
То:	Paul Javor
Subject:	Junction Creek Watershed Study Consultations

Good Morning,

The City of Greater Sudbury would like to extend an invitation to local agencies, stakeholders and members of the Watershed Advisory Panel to the third open house for the Junction Creek Subwatershed Study and Stormwater Master Plan, immediately before the public open house. The open house is on December 13, from 3 p.m. to 4 p.m. at the T.M. Davis Community Centre/Arena, 325 Anderson Dr., Lively.

Given the large area that the Junction Creek Study covers the City will be hosting two meetings in different locations of the Junction Creek subwatershed for each of the five public meetings. The second public open house will be on December 14, from 4:30 p.m. to 6 p.m. at the Percy Playground, 600 Percy Avenue, Flour Mill.

The third consultation session is intended as a mandatory point of contact with the public stipulated under the Municipal Class EA process and will focus on gaining input and feedback from the public on the alternative solutions developed for the subwatershed.

Additional information and a comment form will be available on the City web page at the link below.

www.greatersudbury.ca/watershedstudy

Thank You,

Paul Javor, MASc, P.Eng. Drainage Engineer Roads and Transportation Services City of Greater Sudbury Tel: <u>705-674-4455 Ext. 3691</u> Paul.Javor@greatersudbury.ca

Junction Creek Subwatershed Study and Stormwater Master Plan **Alternative Solutions Identification and**

Assessment Public Meeting No. 3 **December 13 and 14, 2017**





1. Introduction and Meeting Goals

• The goals of this 3rd Public Meeting are to:

Present highlights from the Background

- Natural heritage
- Water quality
- Hydrogeology
- Geomorphologic assessment
- hydraulics (water levels)
- general water quality issues

Junction Creek Subwatershed Study and Stormwater Master Plan

Characterization Report specific to the system:

Discuss Junction Creek hydrology (flows) and

Provide preliminary alternative management strategies being considered in the Study Area for critical locations at risk of flooding and erosion, and

Present an overview of the evaluation process

Provide an opportunity for the public to offer feedback on the Study and to discuss with staff



What is a watershed? An area of land that collects water from rain and snow and drains through surface waterways (wetlands, streams, rivers, and lakes) or seeps beneath the surface to groundwater. The area of land is defined by the shape and height (elevation) of the ground surface.



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2. Subwatershed Study and Stormwater Master Plan **Purpose and Objectives**

Purpose:

Objectives:

tributaries

Water Quality

Water Quantity

Natural Environment

- ecological corridors

Junction Creek Subwatershed Study and Stormwater Master Plan

Subwatershed Study and Stormwater Master Plan

Develop a long-term plan that will provide policy and management actions to protect, maintain and enhance the surface water, groundwater and natural resources of Junction Creek and its

Improve surface water and groundwater quality Minimize pollutant loadings to surface water and groundwater Improved aesthetics of Junction Creek and its tributaries

Preserve and re-establish the natural hydrologic processes to protect, restore, and replenish surface water and groundwater resources Reduce the impacts of erosion on aquatic and terrestrial habitats and property Minimize the threats to life and property from flooding

Protect, enhance and restore natural features and functions of wetlands, riparian and

Improve warmwater and coldwater fisheries as appropriate





3. Municipal Class Environmental Assessment Process

- Municipal projects that are similar in nature, routinely carried out and have predictable effects that can be effectively managed are examined according to the Municipal Engineers Association process, outlined in "Municipal Class Environmental Assessment," (October 2007, 2011 and 2015)
- Distinguishing features of Master Plans are:
 - Broad in scope, but require more detailed investigations at the project-specific level
 - Focused on the analysis of a system for the purpose of outlining a framework for the provision of future infrastructure
 - Focused on providing recommendations for specific projects that are part of a larger management system
- The Stormwater Management Master Plan will follow the Class EA process for Master Plans and is intended to satisfy Phases 1 and 2 of the process

Junction Creek Subwatershed Study and Stormwater Master Plan

The Class EA defines a Master Plan as: "A Long Range Plan which integrates infrastructure requirements for existing and future land use with environmental planning principles. These Plans examine the whole infrastructure system or group of related projects, in order to outline a framework for planning subsequent projects and/or developments."





4. Study Process and Schedule



Junction Creek Subwatershed Study and Stormwater Master Plan

Identify environmental opportunities and constraints Confirm problem/opportunity Establish objectives and targets

Develop alternative subwatershed management

Evaluate alternative subwatershed management

Identify preferred subwatershed management

Develop implementation, monitoring, adaptive management and reporting plans

Finalize Subwatershed Plan and Master Plan



Ongoing Public and Community Outreach with Public Meetings





1	Main Junction Creek
2	Maley Drive
3	Nickeldale Dam
4	Nolin Creek
5	Copper Cliff Creek
6	Robinson Lake
7	Ramsey Lake
8	Nepahwin Lake
9	Lively
10	Whitefish Lake
11	Frood/Stobie Mine
12	Central Tailings

Symbol Legend:





Junction Creek Subwatershed Study and Stormwater Master Plan

but analyzed separately through the Ramsey Lake





6. Natural Heritage Characterization

Objectives:

- Review background information and data collected
- Perform Species at Risk screening of the subwatershed
- Identify significant terrestrial and aquatic features and sensitive areas
- Perform Environmental Impact Studies were necessary

Background Characterization Highlights:

- potential to improve summer thermal conditions



Junction Creek Subwatershed Study and Stormwater Master Plan

Purpose: Make recommendations to protect sensitive features and fauna within the subwatershed

The upper section of the subwatershed has been identified as the most likely area to support a brook trout population, with

Water quality conditions are generally improving as evidenced through improvements in fish and bug communities

Photos on this page were retrieved from articles from The Sudbury Star.





7. Hydrogeology (Groundwater) and Water Quality Characterization

Hydrogeology:

Purpose: Provide direction for related mitigation measures

Objectives:

- Characterize the subwatershed hydrogeology
- Assess potential changes to groundwater recharge
- Assess potential reduction to groundwater levels, hydraulic gradients and groundwater discharge
- Background Characterization Highlights:
 - Characteristics of the Wanapitei Esker present a high recharge potential, but also expose the groundwater to a greater risk of contamination from surface or near surface activities

Surface Water Quality:

- Purpose: Identify approaches to address and improve water quality in receiving waterbodies
- Objectives:
 - Establish an understanding of the existing water quality conditions using historical data
 - Assess potential impacts of development on future water quality
 - Provide recommendations and mitigation strategies for the continuing management of waterbodies within the subwatershed

Background Characterization Highlights:

- Water quality has improved drastically since the 1970's and chemical water quality parameters have remained consistent throughout the 21st century
- Copper, iron and nickel are still routinely above the Provincial Water Quality Objectives

Junction Creek Subwatershed Study and Stormwater Master Plan







Location of Vale monthly water sampling sites





8. Geomorphologic Assessment

scale

Objectives:

- unstable banks
- Characterize watercourses within the study area

Background Characterization Highlights:

- Frood and Maley branches have abundant tree cover



Junction Creek Subwatershed Study and Stormwater Master Plan

Purpose: Identify site-specific opportunities for restoration and stormwater management and describe conceptual restoration approaches at the subwatershed

Perform rapid geomorphic assessment and record observations of erosion and

Conduct detailed site assessments at areas identified as being sensitive to erosion

Active erosion sites or evidence of erosion were found in every reach studied Tree cover along the creek is low throughout much of the upper reaches, though the









What is geomorphology? The study of the physical features







10. Urban Infrastructure Assessment (Storm Sewers and Roadways)

Purpose: Evaluate the performance of the sewer pipes and road network drainage systems

- **Objectives:**
 - Prepare models of various rain and snowfall storm events to gauge system performance
 - Consider climate change impacts by projecting increases in storm intensity
 - Analyze model response to various storm events to identify the most critical areas and optimal improvements for flood mitigation
- **Background Characterization Highlights:**
 - 7 design storm scenarios considered
 - Focus on "trunk" storm sewer systems, larger than 900mm diameter
 - Construction of the overflow channel from Mountain Street to the rail corridor has greatly reduced flooding potential along Leslie and Mountain Streets
 - Sediment deposition in the Ponderosa area has caused substantial blockage of sewer outlet pipes, resulting in regular flooding











11. Storm Sewer Systems

In order to assess the most critical areas of flooding within the Study Area, storm trunk sewer systems in the following areas have been modelled:

- Garson
- New Sudbury
- Flour Mill
- Gatchell
- Donovan
- South End
- Downtown
- Lively
- Over 30 storm sewer systems and more than 20km of pipe analysed
- More than 1250 hectares of drainage area modelled
- The most significant areas of urban flooding were indicated in the Flour Mill, and Leslie and Mountain Street areas

Limited trunk sewer infrastructure in the Lively area may restrict future development potential

Critical Flooding Area











12. Critical Area: Mountain & Leslie Street

2009 Flood Event – Pre Channel Construction



2009 Flood Event – Post Channel Construction











- Construction of the overflow channel (see photo below) has greatly alleviated the risk of catastrophic flooding
- More than 40 hectares of sewershed modelled
- Some existing storm sewers are insufficient to handle even minor storms
- Stormwater management strategies for the upstream existing and development areas are being considered







12. Surface Water Quality in the Lower Junction **Creek Subwatershed**



- lakes average of 11 μ g/L

Junction Creek Subwatershed Study and Stormwater Master Plan



Surface Water Quality Report Card

The Conservation Ontario Watershed Report Card for surface water quality indicator guidelines were used to calculate grades for E. coli and phosphorus concentrations

Biological indicators are normally included in the overall surface water grade, but data was not available for all locations

The grades listed in the table below are based on spring and summer data from 2013-2015, provided by the Vermillion River Stewardship

Based on data from 2013-2015, E. coli is not an issue in the lower Junction Creek subwatershed

High phosphorus concentrations continue to lead to large algae blooms throughout the summer months within Kelly Lake and the lakes below it

Location	E. Coli Grade	Phosphorus Grade	Overall Surface Water Grade
Lily Creek	А	С	В
Junction Creek (Fielding Road)	А	С	В
Mud Lake	А	С	В
Simon Lake	А	С	В
McCharles Lake (East)	А	С	В
McCharles Lake (Middle)	А	С	В
McCharles Lake (West)	А	А	A





13. Critical Area: Flour Mill

2 Year Chicago Design Storm 100 Year Chicago Design Storm









Junction Creek Subwatershed Study and Stormwater Master Plan





- More than 220 hectares of sewershed modelled
- Stream instability and sediment transport from urbanization and industry has caused partial blockage of many culverts in the area
- The flat Ponderosa and wetland areas nearby are susceptible to flooding from beaver activity

Overland flow network sag point





13. Algae in the Lower Junction Creek Subwatershed





Junction Creek Subwatershed Study and Stormwater Master Plan

Chlorophyll-a:

Related to the trophic state of a lake, generally a large concentration of chlorophyll-a means that a lake is

Algae Biomass:

- Large algae blooms mostly consist of green and blue-green
- Blue-green algae can be toxic, but is not an issue in the lower Junction Creek subwatershed, as seen to the right



wheeler

Mean Algae Biomass

2.5

(qdd) 2.0

Biomass 0.1

0.5

0.0

14. Hydrologic Model









15. Riverine Floodplain Assessment

Purpose: Make recommendations to mitigate or reduce flood risk for critical stream reaches and crossings

Objectives:

- Determine flood impacts to municipal infrastructure and private properties associated with different rain and snowfall storm events
- Determine flood control storage recommendations for each study reach
- Consider climate change impacts by projecting increases in storm intensity
- Include the effects of the hydraulic crossing structures on hydraulic performance
- Evaluate the effectiveness of various flood control and mitigation alternatives

Background Characterization Highlights:

- More than 55 structures and crossings have been modelled
- The Maley and Nickeldale Dams provide control of flood waters entering downtown Sudbury
- The generally flat topography, beaver activity, stream instability, and debris compound to make areas of the subwatershed susceptible to flooding
- Frequent elevated road and railway crossings through the upper reaches of the creek create substantial areas of local flooding

Junction Creek Subwatershed Study and Stormwater Master Plan



What is a floodplain? The area adjacent to a river channel that experiences flooding during storm events







16. Upper Floodplain Delineation







17. Climate Change Impacts

Purpose: Make recommendations for climate change adaptation planning

Objectives:

- Determine the potential for climate change to influence precipitation and temperature in the future
- Ensure the potential for climate change influences are recognized in the assessments via stress testing, where relevant
- Inform flood mitigation and storm drainage approaches with adaptation planning
- Ensure recommended infrastructure approaches address resilience

Background Characterization Highlights:

- Indication of near-term downward trend in longer duration rainfall intensity
- Future temperatures trending upward, particularly in winter
- Future precipitation, as rain, trending upward in winter













18. Evaluating Alternative Management Strategies

Alternative management strategy:

Two evaluation approaches are proposed depending on the land use:

Environmental Assessment Approach

- Used for Existing Lands that are already developed or will remain undeveloped
- Follows a step-wise process that includes:
 - Develop a long list of alternatives
 - Establish a set of evaluation criteria
 - Conduct an evaluation of the alternatives
 - Identify a preferred alternative

Junction Creek Subwatershed Study and Stormwater Master Plan

 A measure or combination of measures that when implemented will protect property and people from flooding and erosion, and enhance and/or restore environmental resources

Planning Approach

- Follows a process that includes:

 - regulations and acts

Used for Proposed Development Lands that are proposed for future development

Review of appropriate regulations and acts Define appropriate policy, regulations and acts Develop a framework for ensuring Proposed Development is consistent with policy,





- Alternatives may be implemented by the City, Conservation Sudbury, local stewardship groups, businesses or homeowners
- Alternatives have been broadly classified as:
 - Source
 - Conveyance
 - End-of-pipe
 - Restoration measures

Restoration & Beaver Habitat Management

Development and destruction of natural habitats can cause beavers to migrate to urban areas, creating dams to restore their natural wetland fishing habitat. Restoration of natural wetland areas and stream reaches, along with targeted beaver management in critical areas, can help alleviate urban flooding.

Junction Creek Subwatershed Study and Stormwater Master Plan

19. Alternatives – Existing Lands

Objective: to protect the public from flood and erosion risks, and enhance or restore existing environmental conditions

Traditional Source Control Measures

These measures are typically used within high-density forms of development such as commercial or industrial land uses. Rooftops, parking lots, or oversized storm sewers can be used to temporarily store rainfall from large storm events, while oil-grit separator device's can improve water quality.









Image retrieved from www.beaverdeceivers.com





20. Alternatives – Existing Lands

Source Control Measures (Low Impact Development Best Management Practices)

Homeowners and businesses can implement aesthetically pleasing measures that assist in cleaning and reducing the rate of runoff from their property.



End-of-pipe Measures

Potential opportunities to implement measures such as Oil-Grit separators or stormwater ponds to treat water prior to discharge natural environment.



Photos on this page were retrieved from site visits, the Credit Valley Conservation's Grey to Green Low Impact Development Retrofit Guides, and articles from The Sudbury Star.

Junction Creek Subwatershed Study and Stormwater Master Plan

Conveyance Control Measures

There are several local streets in the Junction Creek watershed serviced by sewer systems which have become clogged with sediment. Existing outfalls must be daylighted and maintained, and Low Impact Development techniques (LIDs) can help reduce both flooding and sediment loading.



Restoration Measures

Development along Junction Creek is extensive. In some locations the creek channel has bee altered, which has impacted the aquatic habitat. Restoration can improve conditions more suitable to aquatic habitat.







Objective: to maintain or enhance the natural environment as development proceeds

Potential impacts include:

- Increased surface water runoff volumes
- Increased flood frequency
- Decreased water quality
- Lower groundwater recharge to aquifers
- Potential decreased baseflow to surface watercourses
- Negative impacts to downstream fisheries
- - City of Greater Sudbury
 - **Conservation Sudbury**
 - Ministry of Environment and Climate Change
 - Ministry of Natural Resources and Forestry
 - Fisheries and Oceans Canada
- classified as:
 - Source
 - Conveyance
 - End-of-pipe
 - **Restoration measures**

Junction Creek Subwatershed Study and Stormwater Master Plan

21. Alternatives – Proposed Development

Existing standards from the following organizations need to be considered:

Similar to Existing Lands Alternatives, Proposed Development Alternatives have been broadly





22. Alternatives – Proposed Development **Stormwater Management (SWM)**

Low Impact Development (LID) Source Control Measures

Addressing SWM using property level / source controls to encourage the infiltration of water into the ground and reduce stormwater runoff. They can include green roofs, permeable pavement, soak away pits, bio-retention, downspout disconnection, etc.



End-of-pipe Measures

Addressing SWM using conventional stormwater facilities at the end of the flow conveyance system (i.e., end of pipe). These facilities are used to control erosion and water quantity and quality.



Junction Creek Subwatershed Study and Stormwater Master Plan

Conveyance Control Measures

Stormwater transport systems generally located within the road right-of-way to encourage infiltration of water into the ground, improve water quality and reduce runoff. They can include traditional curb and gutter systems, bio-swales, grassed channels and subsurface perforated pipe systems.





Restoration Measures

Replanting of floodplain and creek banks to improve waterway functions and water quality, slowing runoff, moderating stream temperatures, reducing erosion and improving aquatic and terrestrial habitat conditions.



Photos on this page were retrieved from the Credit Valley Conservation's Grey to Green Low Impact Development Retrofit Guides







23. Next Steps

- Complete numerical modelling of urban stormwater system (sewer & road network) and riverine floodplain analysis
- Further develop and evaluate alternative solutions
- Identify preferred solutions
- Finalize Subwatershed Study and Stormwater Master Plan





24. How Can You Get Involved?

- Join our Project Mailing List for timely, relevant updates by adding your name to the sign-in sheet
- **Review information shared at this Stage 3** public meeting
- Attend upcoming public meetings:
 - Stage 4: Recommended Preferred Solution
 - Stage 5: Subwatershed Study Completion
- **Provide input on your observations regarding:**
 - priorities and interests
 - opportunities to enhance the health of the ecosystem
 - constraints that may be sensitive to disruption

Junction Creek Subwatershed Study and Stormwater Master Plan

WAYS TO PROVIDE YOUR INPUT

- City's website:
- Comment form:
 - Paper copy
 - Online
- members:

greatersudbury.ca/watershedstudy2016

Speak with one of the Study Team

Paul Javor, MASc, P.Eng.

City of Greater Sudbury Phone: 705-674-4455 ext. 3691 Fax: 705-560-6109 Email: Paul.Javor@greatersudbury.ca

Brian Grant, P.Eng. Amec Foster Wheeler Phone: 705-682-2632 Fax: 705-682-2260 E-mail: <u>brian.grant@amecfw.com</u>





Sent from my iPad

Good afternoon Paul,

My neighbor informed me of a watershed survey that is taking place. We live on Cranbrook Crescent and are part of the Junction Creek watershed I believe.

Our home is at **construction** It is built on land higher up than many of our neighbors. We have not experienced any water problems in our yard or within our home.

I feel developers must take into account when planning and developing new land that their initiatives could effect properties on my street as several properties sit lower than mine.

Thank you,

Hello Mr. Javor,

I was told you are involved with various watersheds in Sudbury. I am a resident on Charlotte St. whose home is on Junction Creek. I have only lived here 2 years and since that time have been very concerned about the water situation in this area. I discovered quite by accident, while walking along the other side of Junction creek, that my property is the lowest lying yard on the block. The last two springs I've seen flooding in my backyard as I've witnessed the creek go over its banks or almost do so on several occasions. I am greatly concerned about the flooding and fast flowing water as I have a son (who I remind continuously to stay away from the creek).

I also experience water pressures at the top of my property, especially with prolonged or torrential downpours as the drainage system doesn't seem to keep up with large amounts of precipitation. Again the water always pools directly in front of my property (as well as my neighbour whom I share a driveway with). So far I have not experienced any flooding in my basement but my neighbour has told me that several years ago there was catastrophic flood in the basement of this home. I'm not sure exactly what your work entails but if any of it relates to relieving pressure on water flow through creeks and other waterways as a way of preventing injury or property damage I would appreciate talking with you.

Thank you for your consideration,

From:	
То:	Paul Javor
Subject:	Junction Creek Watershed study
Date:	Thursday, January 18, 2018 4:19:14 PM

Hello Paul- Thank you for returning my call- just got the message .

I live on Cranbrook Crescent which is in the watershed. The Crescent was built in the mid 50's and on the Lily Creek flood fringe

. We have lived here since 1994. The lots are deep on the crescent and the last 70 feet of the properties usually become covered with water in the spring depending on snow cover and other weather related events.

As development has happened upstream and on this wetland the water covering on my property happens increasingly frequently and with more severity. I know I am a fair distance from the James Jerome sports field but development on and around this area causes more water to come downstream. With the addition of more homes around Gold and Copper streets there is more hard surface runoff that collects in storm drains and collects into the Lily Creek system. During severe thunderstorms the drainage ditch beside my home overflows and runs across my yard.

In 1995 we had native highbush cranberry growing along the creek and absorbing water. With climate change they dried up and died off. In the last 5 years they have started to come back as there is increased water.

Last year I was unable to access the last 70 feet of my yard without rubber boots on. As wetlands are the best natural way of storing and releasing water I wanted to bring my concern to your attention.

As well most of our land is bedrock so once the peat layer is removed there is no storage capacity left. Should I be concerned for my property? Thank you

From:	
То:	Paul Javor
Subject:	Junction Creek watershed discussion
Date:	Sunday, January 21, 2018 3:29:49 PM

Thank you for the discussion on wetlands and flood prevention within the City of Greater Sudbury. A wetland will always be the best method in which to store and filter water. Damage of a wetland due to whatever causes will never be able to be remediated back to its best function.

I agree that Sudbury poses many challenges due to the amount of bedrock. Perhaps it is time for Sudbury developers and planners to work with the land and to reuse some of the land that is already in use.

I will encourage many of my friends living in the area to comment on the watershed study Thank you Hi Paul,

I was told you are looking for feedback regarding the watershed study. I am writing as a citizen who is concerned for the health and future of the Junction Creek watershed.

I grew up not far from Junction Creek, and many of my greatest childhood memories include spending time in the nature that surrounds the creek. To this day, I regularly walk the trails along the Maley branch of the creek where I enjoy watching birds and other critters. There has been much progress made in the restoration of the creek from when I was young, and for that I am grateful. However, I still think there should be further consideration for protecting the creek when developing roads and buildings.

Ecosystem services that streams and wetlands provide for free are often overlooked and taken for granted. They filter and clean water, reduce erosion, control flooding, provide recreational opportunities, increase biological diversity, create habitat for wildlife, and improve human health and well-being. If it weren't for these free services, our taxpayers would be spending millions of dollars on replacement infrastructure. Further, there have been an increase in studies regarding the effect of nature on human health, where it's been proven that nature can reduce stress, fatigue and depression in humans, as well as help the process of recovery in people with illnesses. The areas surrounding Junction Creek are an excellent way to provide this type of environment for people.

Over the past decade, I've had the opportunity to live in four different cities, including small, mid-sized and large urban centres, and I've realized that we often take the nature that surrounds Sudbury for granted. It is very rare for such a large urban centre to include clean and healthy lakes, and be surrounded by so much forested and vegetated areas. Most citizens of Sudbury live within walking distance to a portion of Junction Creek and enjoy its trails. We often forget how lucky we are to have access to these areas, and unfortunately don't consider them enough when it comes to development. Because there is so much of it, we think of it as a waste of land, or that we have an unlimited supply. We should learn from the mistakes of southern Ontario and ensure to protect the areas surrounding Junction Creek and wetlands today - before it's too late.

There should be greater riparian buffers surrounding the creek when developing, and absolutely no roads that cross or border the creek if a species at risk is found to be habituating an area of the creek. Not only do roads act as a barrier (increased road collisions), but salt and

sand wash into the creek that changes its chemical composition. This can make it uninhabitable for many species.

Development and economic growth are tempting, however they are only a short-term solutions and benefit very few people. Although they may not immediately be the easiest method, many development projects can be done in a sustainable manner. If we want to conserve our areas for future generations, the decisions we make today will have a drastic impact on our city, its residents and environment in the future.

Thank you for your time.

Sincerely,

Morning Paul,

At this point you seem to have a mish-mash of new and old water resources information, but in my opinion have no formulation of the question.

I am also sure you have also spent most of our budget, and thus developing an truly integrated water resources model is not going to happen.

My recommendation would be that you have AMEC develop a simple mass balance for the watershed.

This will be crude, in that there is only two active Federal gauges in the watershed, but by pro-rating the watershed and using either Vale's and/or Linda Heron data, and the data from the various STP's and Vale's inputs,

a picture will emerge.

Years ago, I did this desk-top exercise when I was with MOE and as a result metal by-passing at then INCO was identified, and a highly effective collect and treat system put in-place.

Your answer, a priori is Stormwater, but don't be surprised if Kelley Lake is identified as a major nutrient contributor.

The one major criticism of the plan I do have is that it appears to exclude the newer and expansive Moonglow area of development (I.e. Lily Creek).

This also may be an aberration of the scale of your mapping presentation.

Without a mass balance, it is beyond me, how you are going to set future priorities for contaminant reductions. It is true that things are greatly improved, but the catchment is still does not meet PWQO or the Provinces' Sediment Quality Guidelines. You and/or AMEC have attempted to gloss this over, but MOE's review will not. In fact the issue of sediment quality has not even been included in the Terms of Reference.

Cheers,



Junction Creek Subwatershed Study / Étude et plan directeur du sous-bassin hydrographique du ruisseau Junction



Name/nom Adress/ addresse Email address/ courriel

Phone Number/ Numéro de telephone

Comments/commentaries

DVIMAI

Submit your feedback online at www.greatersudbury.ca/ watershedstudy2016. Feedback will be accepted until Friday, December 22 at 4:30 p.m.

Notice of Collection

Your personal information is collected for the purpose of providing feedback on the Junction Creek subwatershed, pursuant to the Municipal Act, 2001. Questions about collection of this information may be directed to the Project Manager at 705-674-4455, ext.3691 paul.javor@greatersudbury.ca Box 5000, Stn A, 200 Brady Street, Sudbury ON, P3A 5P3.

Vous pouvez transmettre vos commentaires en ligne à www.grandsudbury.ca/etude2016bassinshydrographiques jusqu'au vendredi 22 décembre à 16 h 30.

Déclaration de confidentialité

Les renseignements personnels recueillis serviront à la rétroaction au sujet du Le plan de sécurité de l'Étude et plan directeur du sous-bassin hydrographique du ruisseau Junction, conformément à la Loi de 2001 sur les municipalités. Veuillez transmettre toute question concernant la collecte de ces renseignements à la gestionnaire des Communications corporatives et des Services en français en composant le 705 674-4455, p. 4507. Adresse : marie.edsall@grandsudbury.ca, C. P. 5000, succ. A, 200, rue Brady, Sudbury