From: Office, Clerks
To: Campbell, Catherine
Cc: Vining, Krista
Subject: FW: Sackville Rivers Association
Date: Tuesday, August 22, 2023 4:59:13 PM
Attachments: [redacted]

Logging as presentation request to ESSC.

From: Ann Angelidis <[redacted]>
Sent: Tuesday, August 22, 2023 4:16 PM
To: Office, Clerks <clerks@halifax.ca>
Cc: Damon Conrad <[redacted]>
Subject: [External Email] Sackville Rivers Association

[This email has been received from an external person or system]

Hello,

Myself and our Office Manager/Environmental Engineer, Damon Conrad would like to give a 10 minute presentation to the Environment and Sustainability Committee when they next meet.

We would like to discuss the recent flooding, the changes in the river flow after the flood and the vulnerabilities as a result.

Thank you

Ann Angelidis
President Sackville Rivers

We acknowledge that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People.

Sackville Rivers Floodplain Study – Phase II

https://cdn.halifax.ca/sites/default/files/documents/business/planning-development/FinalReport.SRFS_.Phase2_.12April2017.pdf

*The Sackville Rivers floodplain has existed since the last glacial retreat over 10 000 yrs ago. Humans have been developing on this flood plain for the last 100 yrs. During that time some of the river has been 'straightened' to accommodate human activities such as forestry and human habitation. The river is constantly shifting and meandering within it's floodplain. The Sackville Rivers Association **(SRA)** is a group of people who are trying to return the river to it's normal meandering path through the flood plain.*

*As the climate changes and we begin to experience an increase in extreme weather floods become a problem for the humans who live on the flood plain. HRM requested a Floodplain Study to "*provide(s) the Halifax Regional Municipality with the suitable tools to undertake the next steps in the planning process and increasing public safety in the floodplain area."

Flood Mitigation Options:

SRA believes that the best way to control the loss of property and lives **and** protect the environmental integrity of the Sackville Rivers is to have no developments at all within the floodplains. SRA recognizes that thousands of people and businesses are already located on the floodplain and removal of all of the developments is unrealistic. The **Sackville Rivers Floodplain Study – Phase II** provides the following potential flood mitigation options:

1. **Stormwater Infiltration - Best Management Practices (BMPs) and Low Impact Development(LID):**
   The least intrusive and most cost-effective flood mitigation option is to implement stormwater infiltration measures (LID and BMPs). It is recommended that such measures be enforced for all future development (more effective than detention ponds) through planning regulations and during resurfacing or repair works. BMPs and LID can have a very low direct cost but make a clear impact in flood reduction, in a manner that mimics natural processes;

   Prevent future development in flood prone areas by planning and zoning by-laws

   SRA encourages HRM to enact the planning and zoning by-law options outlined in the 2017 CBCL report, and consider incorporating the Sackville River and Little Sackville River flood plain zones from this report. SRA believes that the most effective actions to be taken in relation to the flooding issues in the Sackville River Watershed are to reduce stormwater runoff from development (LID and BMPs) and to control/prevent development within the watershed (planning and zoning by-laws).

2. **Increasing channel capacity through river restoration**:
   Other recommended approaches include conducting river restoration to increase capacity and storage in river sections that have been channelized. Significant ecosystem benefits are also achieved;

   SRA does not recommend " ...increas(ing) the channel size (through) widening the rivers...involving large excavation. The study itself states "This approach would also be

difficult to support from an environmental perspective and would not likely receive approval by Nova Scotia Environment."

SRA supports the restoration of the river to its natural state, but cannot support the modification of the river for increased flow capacity or storage (i.e. the widening/straightening of the channel or the online/offline storage of flood waters). The problem of flooding is not with the river, but with what development has done to the river (increased runoff) and its floodplain (land use and elevation changes).

3. **Purchasing properties at risk**:
   The impacted individuals are now permanently safe, properties at risk can be restored to the natural floodplain, upstream flooding risks can be reduced, there is no further maintenance cost or residual risk, and the riverfront area can now be enhanced for public enjoyment. The challenges are its cost and resistance from property owners. Where not yet developed, purchasing floodplain lands can ensure their protection in the future;

   Whenever commercial and residential properties are removed from the flooplain it is always a win for the river as it provides opportunities to return parts of the floodplain to a natural state, allowing natural mititgation of flood waters. Once the structures (buildings, parking lots, roads, etc.) are removed and the land returned to its original elevation, the property can once again flood during high water events and relieve flood levels elsewhere on the river. Benefits also include reducing runoff on that property and increasing stormwater infiltration, reducing that land's contribution to the flood.

4. **Flood Protection Infrastructure**:
   Options such as upgrading bridge structures, building berms, or raising the level of the land or homes, should only be used after the above options have been exhausted. They will be expensive, require maintenance, will move the problem downstream and will place public safety at increased risk for events greater than the design event.

   SRA encourages the upgrading of infrastructure, especially the upgrading of a culvert to a bridge – aside from the improvements in fish habitat and improved fish passage, this also removes a throttle-point on the river and can help improve flood flows and return at least some of the floodplain lost (preferably with larger spans across the river).

   Building berms only serves as a temporary relief from flood waters at that location and can actually increase the potential impact of the floods through shifting of flood patterns, increasing flooding levels, and in the event of a berm breach greatly increase the impact of any given flood. The construction of berms, as well as the raising of land, only serves to increase the risk of the flood while not addressing the cause.