



Subject: *Flood Risk Mitigation*
To: Executive Committee
Date Prepared: January 2024
Related Motions: C23(318)
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Approved by: Kim Ramsay, Chief Administrative Officer

Summary

Staff have reviewed documented Municipal efforts towards flood risk mitigation from 1994, to the current fiscal year. Key milestones and notable events related to stormwater management have been reviewed and commented on within the discussion section of this report, as mandated per Motion C23(318).

Staff have validated a continuous improvement approach related to flood risk mitigation by the Municipality over the last 3 decades, which has gained effective momentum in recent years with the successful use of collected in-field information and related studies.

The historic “Thunder Train” weather event from July 2023 has brought new challenges which will require further study and continuous improvement to both Municipal Standards and programming in the years ahead. The event was a clear demonstration of shifting and ever-changing weather patterns, providing uncertainty in projecting the impacts of climate change, and requiring continuous work into the future to support the Municipality and its stakeholders.

Financial Impact Statement

N/A

Recommendation

Staff are recommending to proceed with the existing Storm Drainage Policy as written, and allow programming to continuously improve as part of its operational evolution, versus changing to a strategic path forward related to flood risk from stormwater.

This would include frequent updates to the Municipal Standards document, commissioning studies related to flood mitigation and by seeking out future opportunities for capital improvements.

Recommended Motion

N/A

Background

Motion C23(318)

“Passed that Staff prepare a report outlining past decisions of Council with respect to Stormwater Management and a timeline of potential stormwater reviews (with cost estimates) for East Hants to undertake. The report should guide Council to a decision on what level of service for Stormwater Management that East Hants’ should and is able to provide in the short and long-term.”

Legal Review

After the motion was made, a question arose with reference to a 1989 drafted Provincial *Ditches and Watercourses Act*, which lead to this report. Individuals sought to understand the meaning and potential impact or obligation for the Municipality as a result of the Act. Key points from the legal review as follows;

- *“The Ditches and Watercourses Act deals with obligations on property owners to maintain and repair private ditches on private property. It provides a process where an owner can seek recourse against another owner who is not complying with their obligations under the Act. It does not make the Municipality responsible for ditches.”*
- *“The Municipality cannot be forced to conduct work unless the work is required by a legal statute.”*
- *“There is nothing wrong with existing Municipal policy”, referring to the Storm Drainage Policy.*

The Municipal Government Act (MGA) exists to *“give broad authority to councils, including broad authority to pass by-laws, and to respect their right to govern municipalities in whatever ways the councils consider appropriate within the jurisdiction given to them”*.

That wording is consistent throughout the ACT as each Municipality can use several approaches to govern or not through Bylaws and programs. The wording provides choice through the use of “May” in describing several possible service categories. The two relevant sections within the ACT demonstrating this are;

- *Section 9A (b)*
 - *9A The purposes of a municipality are to;*
 - *(b) provide services, facilities and other things that, in the opinion of the council, are necessary or desirable for all or part of the municipality*
- *Section 343 (1) (a) “Bylaw respecting stormwater”*
 - *(1) A council may make by-laws setting standards and requirements respecting stormwater management*

2020 Stormwater Program Review & Policy Amendments

Within the 2017-2020 Municipal Strategic Plan review, the completion of a Storm Water Plan project was prioritized, which was a focus on amending policy. Work officially began in May 2019, and a project plan for completion was presented at Executive Committee to gain

alignment on scope and priority. Once established, that work continued and resulted in a proposed draft amendment to the Storm Drainage Policy in August 2020. Council officially endorsed the amendment and took ownership of the policy update on September 23, 2020, whereby replacing the 2007 version.

Discussion

The Role of Asset Management

The Municipality has been establishing Asset Management structures and systems through the recent addition of an Asset Coordinator position. This long-term programming option will support the maintenance and sustainability of Municipal owned infrastructure in relation to stormwater management, and will continue to be built-out over the coming years.

1994

A documented review of storm drainage across the Municipality began in 1994 with a report titled “Task Force Report on Storm Drainage in the Municipality of East Hants”. At that time all drainage was related to either provincial or private lands as the Municipality did not own any roads or their related stormwater drainage infrastructure until 1995, as part of the Provincial Municipal Service exchange.

This effort was the start of information gathering on the topic which began defining pre-existing areas experiencing the negative effects of flooding, and built momentum for the Municipality to start establishing standards related to new development with respect to drainage.

Area reviews were conducted in house by Staff and became the basis for identifying future studies to be conducted by external consultants with expertise in the topic.

2006

Early in the 2006 (March), a technical report was submitted by SGE Acres titled “Stormwater Manager Solutions”. This report listed several project options throughout the serviced corridor, based on the areas of concern that had been largely flagged from the original Staff effort in 1994.

The consultant was given no constraints in project recommendations, as a framework of ownership had yet to be established. The result was a long list of projects that included large capital projects and work required on private property, but it did not set out a plan of how to fund or divide ownership to fund any of the recommended actions. Some capital work was implemented directly as a result of the report, which consisted of realigning Road Right of Way cross culverts that were assets owned by the Municipality.

From a Planning perspective, this was the year that the Subdivision Bylaw began requiring storm drainage plans, and also individual lots began requiring a lot grading plan.

Following the submission of the SGE Acres report, significant review and discussions on funding and responsibility began. This effort was accumulated and refined resulting in a financial report presented to Council in October 2006. The report was highly influential in how future policy would be formed and how responses to storm drainage have been dealt with ever since. Some key points from that presentation established go-forward principles;

- Storm Drainage work is General Tax Rate, not Local Area Rate.
- When fixing historic issues, Council needs to be cautious not to provide cost free benefit to existing taxpayers while new taxpayers would pick up the cost when they develop (You pay for the value you received, alluding to higher costs of purchase can be linked to higher quality work with lower risks).
- The Municipality needs to proceed with caution in relation to esthetic complaints, as the primary purpose of stormwater structures is functionality.
- Despite the continuous updates to standards, bylaws and other work, weather patterns change in ways that cannot be designed for with absolute certainty to avoid flooding.
- Affordability of spending public dollars needs to be a consideration for setting up any program or completing any work related to stormwater.

2007

In June 2007, the first adoption of a municipal Storm Drainage Policy took place.

2014/15

In 2014 the Municipality successfully applied for funding support from the province to study flood risk mitigation options for Alderney Subdivision. The result was the completed “Alderney Park Flood Study” that included recommendations across broad ownership areas; private, provincial, and municipal.

2020

The Storm Drainage Policy was updated and the cost sharing consideration was removed for unique private property requests as there had been no inquiries approved in over a decade, therefore the option didn't provide any positive results. A new option for consideration was put in place to review drainage impacts from stormwater that negatively impacted sewer systems. That clause has seen positive use since being adopted. The wording was also updated to highlight the Municipal role as an advocate for improvements on land not owned or governed by the municipality. This role has continued to be demonstrated since the policy update, with collaborative staff level information exchanges and several official letters being sent to the province.

July 2023

East Hants experienced one the largest rain storm events in history, resulting in extensive damage to infrastructure both public and private. In a report received via email in January

2024 which was completed by a resident, the historic storm was referred to as a “Thunder Train”.

Municipal standards could not have anticipated such an event, but now that one has happened there is an opportunity to review the standards and update them with a broader look into the impacts of Climate Change. This would be in line with existing policy which focuses on a continuous improvement approach.

Future Studies

Section 8 of the Storm Drainage Policy lists one of the tactics that the Municipality uses to identify future opportunities;

“The Municipality may consider studying large areas to seek out flood mitigation options, as funding is available. The purpose of the studies will be to provide owners of infrastructure in the study area with options for mitigation which could include the Municipality, other levels of government, or private property owners.”

The following are areas of potential study identified by Staff for future budget consideration;

Projected over next 5 to 10 years

- Paley Brook watershed (Estimate \$50,000)
- Barneys’ Brook watershed (Estimate \$250,000)
- Groundwater system with portion through Elmwood Subdivision (Estimated \$100,000)
- Updated Floodplain projection for Shubenacadie projecting out Climate Change forecast along with localized infrastructure condition assessment for stormwater and mitigation analysis (Estimate \$150,000)
- Expanded study of the Alderney Subdivision water catchment area, including climate impact considerations (Estimate \$150,000)

Future Study Considerations

- Nine Mile River (flows into Shubenacadie River)
- Five Mile River (flows into Shubenacadie River)
- Kennetcook River (flows into the Minas Basin)
- Head of the Sackville River (flows into the Bedford Basin)

The approach of past studies has been to focus on specific neighborhood boundaries, however in hindsight this has limited the potential to find improvement opportunities when looking at full watershed catchment areas. An adjustment in effort would support long term strategic planning of areas upstream of one experiencing issues in today’s world, and a broader review will likely result in more long-term sustainable options that can be identified with respect to managing flood risk and flood mitigation approaches.

These types of studies could be eligible for funding support from other levels of government, an example of which is the provincial “Flood Risk Infrastructure Investment Program” (FRIP), which has been historically undersubscribed and would create a strategic opportunity to pursue studies given the current climate.

Past studies have yielded beneficial information such as the SGE Acres report from 2006 and the Alderney Flood Mitigation Study in 2015. These types of reports are regularly referred to as informational resources for technical staff when planning capital projects, years after their initial publication.

Alternatives

[Undergo a policy review](#)

If Council identifies a need to go in a different direction on stormwater than is listed in the existing Storm Drainage Policy, a new review of the policy should then begin.

Attachments

- Brief Chronology of Storm Drainage Issues (December 2006)
- Lew Landers Email (Oct 2006)
- Storm Drainage (December 2006)
- Assumption of Financial Responsibility for Drainage Issues - Memo (October 2006)
- Nova Scotia Environment Grants for 3 Flood Study Projects (August 2014)
- Stormwater Plan - Project Startup (May 2019)
- Stormwater Program Review & Policy Amendments (August 2020)
- Storm Drainage Policy (September 2020)