CITY OF PRINCE GEORGE

STAFF REPORT TO COUNCIL

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DATE: February 26, 2021

TO: MAYOR AND COUNCIL

NAME AND TITLE: Ian Wells, Acting Deputy City Manager

SUBJECT: Integrated Stormwater Management Plan Overview & Technical Background

ATTACHMENT(S): Technical Working Paper #1 – Technical Background
ISMP Overview & Technical Background Powerpoint

RECOMMENDATION(S):

That Council RECEIVES FOR INFORMATION the report dated February 26, 2021, from the Acting Deputy City Manager, titled "Integrated Stormwater Management Plan Overview & Technical Background".

PURPOSE:

To provide an update on the Integrated Stormwater Management Plan (ISMP) project identified in the 2020 Corporate Plan Priorities.

PROJECT BACKGROUND:

Stormwater management is becoming a higher priority because of more intense storms, aging infrastructure, and development. As the community grows, there is the potential for a drastic decrease in natural spaces and increase in 'hard' impervious surfaces, such as roads and buildings. Improper management of stormwater can lead to issues such as; erosion, contaminants in creeks and rivers, and flooding of roads and properties.

Over the last 19 years, watershed drainage plans (WDP) have been developed in various areas of the City. These plans provide predictive information on how the stormwater system will perform in each watershed as development occurs and climate changes. They also provide recommendations for improving the stormwater infrastructure and watershed quality. These plans are tactical in nature and are focused on individual watersheds. Incorporating them into an ISMP is the next step in moving towards sustainable stormwater management.

STRATEGIC PRIORITIES:

This work was identified as a priority under the Environmental Leadership and Climate Action myPG pillar. It assists with three of Council's Focus areas:

- Incorporate adaptation to climate change in relevant operations;
- Prioritize infrastructure re-investment and renewal to ensure the delivery of critical recreation, emergency, transportation, and utility services; and

- Maintain fiscal sustainability, balance service levels with the affordability of the City's services, facilities, and operations.

PROJECT OVERVIEW:

An ISMP is a strategic plan that outlines the City's short to long-term goals for its stormwater management program and acts as a guide on how to achieve these goals. It examines the relationship between land use, infrastructure and the environment and takes a comprehensive look at policy, procedures, regulations, and infrastructure needed to guide community growth in a way that maintains or ideally improves the health of its watersheds. It provides a proactive approach that considers the entire ecosystem, anticipates future rainwater volumes and identifies more holistic and natural solutions that protect property and habitat.

The format of the ISMP includes four (4) Technical Working Papers (TWP) that roll up into an overarching Guiding Document and Action Roadmap. The TWP's are described as follows:

Technical Working Paper Title	Focus Area
TWP #1 – Technical Background	Watershed Drainage Plans, project prioritization and asset inventory.
TWP #2 – Engineering Issues	Recommendations for incorporating green infrastructure, risk assessment of stormwater network, condition assessment program, and develop a rain gauge monitoring program to help predict climate change and impacts to the stormwater system.
TWP #3 – Policy & Regulations	Review & recommendations for Bylaws related to Stormwater, erosion and sediment control.
TWP #4 – Financing Options	Provide options for sustainable funding for the stormwater system and provide examples from other municipalities for comparison.

The outcomes of the first working paper are discussed below.

TWP #1 - TECHNICAL BACKGROUND:

This working paper primarily consists of consolidating the existing WDP's and reviewing stormwater related Geographical Information System (GIS) asset inventory data. Tasks for this stage of the ISMP include:

a) Reviewing watershed drainage plans for technical (capacity, environmental, geotechnical, hydrogeology, etc.) issues and to note any gaps;
b) Applying climate projections for consideration, where needed;
c) Developing a framework for prioritizing stormwater actions/projects;
d) Prioritizing recommendations for addressing stormwater technical issues (with cost estimates, where possible);
e) Developing a WDP gap reduction plan;
f) Reviewing existing GIS data; and
g) Preparing a GIS asset data inventory gap reduction plan.

This first working paper focuses on prioritizing actions that were recommended in the various WDP's. Over two hundred actions were identified in those plans, some had cost estimates and others did not. One of the issues that became clear was that each of the WDP's used different ways to prioritize its recommended actions. With limited funding for stormwater it is crucial to prioritize the actions that will provide the community with the 'best bang for its buck'. As part of this working paper, a prioritization framework was developed and used to rank all of the actions identified in the WDP's.

Some asset replacement projects placed within the top ten; however, some of the highest-ranking actions that will have the most positive impact on the stormwater system as a whole are actually policy and regulation type actions. These include; developing regulations that address erosion and sediment control, update existing bylaws related to stormwater (i.e. Tree Protection Bylaw), creating policies that better protect ecological sensitive areas (i.e. wetlands and riparian areas), updating the City's design guidelines and standards to include low impact development and consider climate change, and secure sustainable levels of stormwater funding.

All of the actions from the WDP's and a few new ones that have come up recently, are worth a significant amount of money in the range of $31M to $125M. The table below shows the range of estimated costs to perform the recommended actions grouped by priority. Another reason why it was so important to prioritize where to spend money where it matters most. A complete list of prioritized actions can be found in the attached working paper Appendix C.

Score	# of Action Items	Lower range (-50%) Cost Estimate	Upper range (+100%) Cost Estimate
9	1	$ 500,000	$ 2,000,000
8	4	$ 15,000	$ 60,000
7	26	$ 730,000	$ 2,920,000
6	24	$ 2,093,000	$ 8,371,000
5	45	$ 4,135,000	$ 16,542,000
4	88	$ 9,006,000	$ 36,024,000
3	52	$ 7,549,000	$ 30,196,000
2	9	$ 6,096,000	$ 24,384,000
1	4	$ 1,100,000	$ 4,400,000
0	0	$ -	$ -
Total	253	$ 31,224,000	$124,896,000

There were two additional tasks included in this working paper. The first was to provide recommendations on what future WDP's need to include. Now that there is a formal project prioritization framework developed, it should be used when updating or creating new WDP's. Consistent stormwater modeling software should also be used and GIS ready data needs to form a part of any WDP project deliverable. This leads into the last task for this working paper, identifying GIS updates.

Risk data for the City's stormwater assets will be added to our GIS once this project is complete; however, there are many assets that still need to be surveyed and entered into the GIS mapping system. This data will allow for tracking maintenance work on those assets, assisting with the review of new developments, and will provide a more accurate forecast of future spending to replace these assets at the end of their useful lives. We are also participating in a Municipal Natural Assets Initiative with the end goal of having a complete natural asset inventory included in the GIS.

NEXT STEPS:

The next working paper outcomes that will be brought to Council are all about engineering issues and asset management. It is expected that this part of the ISMP project will be completed in April. After that, the policy & regulations working paper, as well as, the financing options will be brought to Council sometime in May/June. Lastly, prior to doing some public engagement around stormwater, the final project presentation on the overarching Guiding Document and Action Roadmap will be brought to Council in June/July.

SUMMARY AND CONCLUSION:

An Integrated Stormwater Management Plan (ISMP) is a policy document that provides direction to local government, developers and landowners to preserve and enhance the overall health of the watersheds while balancing and integrating the requirements of land use planning, stormwater engineering, flood and erosion protection, and environmental protection.

Actions from the existing Watershed Drainage Plans have been prioritized in order to spend money where it has the most impact. There are over 200 action items identified totaling approximately $31M to $125M. The next working papers focus on engineering issues, asset management, policy & regulations, and financing options. An overarching guiding document and roadmap will be completed and will be used for public engagement.

The final outcome of this project is to have a working ISMP strategic document that will provide the City and community with an action plan to ensure healthy watersheds and sustainable stormwater services, all while addressing the impact of existing development and allowing for future development and economic growth.

RESPECTFULLY SUBMITTED:

Ian Wells, Acting Deputy City Manager

PREPARED BY: Kristy Bobbie, Asset Manager

APPROVED:

Walter Babicz, Acting City Manager

Meeting Date: [2021/03/08]