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EFE 21-42

REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, OCTOBER 13, 2021

SUBJECT **Core Area Inflow & Infiltration Program – 2021 Summary**

ISSUE

To present a summary of activities and accomplishments of the Core Area Inflow & Infiltration (I&I) Program for the period of 2020 to mid-2021, including infrastructure work carried out by the participating municipalities, and efforts related to private property I&I.

BACKGROUND

The Core Area Liquid Waste Management Plan (CALWMP) sets out goals and commitments for the municipalities, First Nations and Capital Regional District (CRD) to manage I&I through the Core Area I&I Management Plan. Each year, the Core Area I&I Program documents progress toward meeting these commitments in an annual report that is distributed to each of the core area municipalities and First Nations. This staff report summarizes the highlights of that report, the full report, titled Core Area I&I Program 2021 Report, can be found through this site:

https://www.crd.bc.ca/about/document-library/documents/plans-reports/wastewater-stormwater/2021-reports

Overviews of municipal I&I actions, along with specific actions from this reporting period, are as follows:

- Colwood diligently inspects its new underground infrastructure to manage and prevent I&I. In 2020, Colwood started to update its Sewer Master Plan and its Sanitary Sewer Model (in progress). As part of the work, sewer flow data loggers were installed at several pump stations including three of Colwood's municipal pump stations and Department of National Defense's Belmont pump station. Colwood camera-inspected approximately 7,500 metres of sewer mains in 2020.

- Esquimalt completed an extensive infrastructure investigation between 2004 and 2016, including the relining of approximately half of its sanitary sewer system. In 2020 to mid-2021, Esquimalt completed a detailed I&I report that includes a 10-year plan for addressing I&I concerns within the township to get below 4xADWF (average dry weather flow). The action items will be combined with other sewer related projects such as those derived from sewer modeling and camera inspections. Esquimalt also carried out a number of sewer repairs and worked with CRD Source Control to determine possible cross connections into the Gorge Waterway (ongoing).

- Langford has a rapidly expanding new sewer system. Langford diligently inspects new connections and is incentivized to monitor and repair the sewer system to preserve sewer capacity for future growth. Since mid-2020, Langford has camera-inspected 2,305 metres of sewer mains and inspected 45 manholes for I&I. It also rehabilitated 27 sewer inspection chambers.

- Oak Bay is working on the Uplands combined sewer separation project. In 2020 to mid-2021, Oak Bay completed a 5-year program to camera-inspect its sanitary sewers, contracted a consultant to build a sanitary sewer model for the municipality (in progress), rehabilitated or replaced 3.66 km of sewer mains, fixed 14 cross-connections and initiated a number of specific infrastructure projects and studies.

- Saanich continues its sewer maintenance and repair program, including camera inspections, sewer relining, smoke testing and flow monitoring. In 2020/2021, Saanich relined or replaced 3,914 metres of sanitary sewer, 125 laterals and 2 manholes. It also completed 5 spot repairs. Saanich camera-inspected 5,656 metres of sewer main. It smoke tested 2,935 metres of the Brett pump station catchment and repaired 7 found cross-connections. During this reporting period, Saanich developed programs and procedures related to smoke testing, and the inspection and replacement of “no-corrode” sewer pipe, and updated its sanitary sewer model. Saanich is currently updating its sewer master plan.

- Victoria continues to manage its sewer repair and replacement work in its sewer master plan. In 2020/2021, Victoria contracted a consultant to complete a comprehensive I&I reduction plan for the municipality. Victoria installed, repaired or replaced 2,852 metres of sewer mains, 167 laterals, 4 manholes and 17 inspection chambers. It also camera-inspected 24,900 metres of sanitary sewer mains, 887 laterals, 650 manholes and added 2 high accuracy flow meters to its monitoring network. A highlight was securing a federal grant to upgrade some of its sewer, storm drain and water main infrastructure over the next 9 years to address challenges related to natural hazards (e.g., earthquakes, climate change).

- View Royal continued its programs related to sewer maintenance and repairs, camera inspections, sewer flushing and flow monitoring. In 2020/2021, View Royal camera-inspected 1,429 metres of sewer pipe. View Royal upgraded the Thetis Cove pump station, which included the addition of a flow meter. View Royal also found and fixed an abandoned sewer main that was contributing I&I to View Royal sewer system.

- Esquimalt Nation hired a consultant to inspect their sewer system and provide recommendations in 2018. Since then, the Nation followed up by removing / capping unused laterals, grouting a leaky manhole and completed a mainline repair. They also renewed/upgraded their pump station.

- Songhees Nation does routine sewer maintenance and repairs as needed. In 2015, the Nation hired a consultant to investigate their sewer system for I&I sources and to provide detailed designs for remediation. The work is ready for tender and awaiting funding from Indigenous Services Canada.

Through the Core Area I&I Program, the CRD continues to work with its municipal and First Nations partners on I&I related management and reduction efforts. This includes regional flow monitoring, standardizing I&I approaches, preparing management plans and annual reports, education programs and private property I&I initiatives. This also involves coordination with municipalities and national organizations that are dealing with similar issues. Key actions completed in 2020/2021 include:

- Updating I&I rates for the core area. Appendix A contains a map summarizing these rates.
- Comparing measured flows to the sewer flow allocations in Bylaw 4304 (Appendix B).
- Working with the CRD's Integrated Water Services Department; vetted sewer flow data and produced monthly municipal sewer reports for each of the core area participant areas - each area gets its own custom report. The key audience for the reports are municipal engineering staff and First Nation's administration. The reports quantify monthly sewer flows and compare it to previous years. They also quantify I&I rates, overflows, and periodically compare the flows to the CRD sewer allocations. The reports are distributed quarterly and started in January 2020. Appendix C contains an example of these reports.
- Working on the 5-year update to the I&I Management Plan. (The last version was submitted to the Province in April 2017).
- Finalizing a project documenting the flow data accuracy from core area municipal pump stations.
- Completing a study looking at downspout disconnection programs and best practices from around Canada.

The work accomplished by all participants will continue to support the regional effort to control and reduce municipal I&I flow rates; however, continued and focused work is still needed to meet the CALWMP commitment of reducing wet weather flows below four times average dry weather flow at the Clover Point and McLoughlin Point wastewater treatment plants by 2030. Municipalities that contribute to Clover Point with older sewers, and inherently higher I&I, will need to allocate additional resources and accelerate efforts to meet their respective I&I reduction targets.

ALTERNATIVES

Alternative 1

That the Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:
That this report be received for information.

Alternative 2

That staff report back to the committee with further information.

IMPLICATIONS

Environmental & Climate Implications

The work documented in the report supports CALWMP commitments related to reducing overflows, which will have a positive impact on local creeks, beaches and ecosystems.

Intergovernmental Implications

As a condition of the Ministry of Environment& Climate Change Strategy's (ENV) conditional approval of Amendment 12 to the CALWMP, the CRD was required to submit an amendment to the commitments pertaining to management of I&I and sanitary sewer overflows for ENV approval by December 31, 2021. Staff have advised ENV that updating the CALWMP I&I and sanitary overflow commitments will be delayed, pending:

1. Operation of all new core area wastewater treatment and conveyance infrastructure during two wet-weather seasons to confirm modelled predictions for sanitary flows, I&I and overflows.
2. Submission of updated detailed municipal I&I management plans, currently anticipated for Q2 2022.

In addition to the above, the CRD is currently preparing to update the CALWMP, which will also require an amendment process approved by ENV. The CRD's current planning process anticipates the update to be prepared for submission in 2023, and staff expect to include the above amendment at that time.

Social Implications

Reduced I&I and overflows will reduce the number of beach closures and impacts on the natural environment. Public education and outreach programs for residents and businesses raise awareness of the issues and provide greater understanding of how everyone can contribute to I&I reduction.

Financial Implications

The CRD engages with core area municipalities and First Nations to identify and reduce the amount of rain and ground water that enters the sanitary sewer system. The core budget for this program is $425,000.

Municipal infrastructure repair initiatives are funded by the respective municipality. Monitoring, reporting, strategy and leadership are facilitated by the CRD I&I program.

CONCLUSION

This staff report summarizes the I&I related activities and accomplishments of Core Area I&I Program, participating municipalities and First Nations for 2020 to mid-2021. While much work has been done to date, modelling indicates that municipalities contributing to Clover Point, with older sewer catchments, need to enhance their efforts on I&I reduction to meet the commitment

in the CALWMP to prevent overflows for less than 5-year rainfall events by 2030. The annual report will be forwarded to the core area municipal engineers for use in their I&I reduction programs.

RECOMMENDATION

That the Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:
That this report be received for information.

Submitted by:	Stephen May, P.Eng., Senior Manager, Facilities Management & Engineering Services
Concurrence:	Larisa Hutcheson, P.Eng., General Manager, Parks & Environmental Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENTS

Appendix A: Map Summarizing Inflow & Infiltration in the Capital Regional District's Core Area
Appendix B: Table Comparing Measured Flows to Allocated Flows in Bylaw 4304
Appendix C: Example of the Monthly Sewer Reports Distributed to the Core Area Municipalities and First Nations