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EEP 23-29

REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, JUNE 28, 2023

SUBJECT **Liquid Waste Management Plan – Amendment 13**

ISSUE SUMMARY

The Core Area Liquid Waste Management Plan's Inflow and Infiltration section requires an update to meet a provincial requirement from the conditional approval of Amendment 12.

BACKGROUND

Inflow and Infiltration (I&I) is the ingress of stormwater and groundwater into sanitary sewer systems. In general, I&I issues are related to improperly cross-connected stormwater collection pipes, and the age of sewer systems, which deteriorate and allow groundwater intrusion into the sewer over time. I&I becomes a problem in sewer systems by exceeding the capacity of the system to convey and/or treat the high volume of clean rain or groundwater that infiltrates the sewer during wet winter months and rain events. When this capacity is exceeded, the excess flow of mixed stormwater and wastewater overflows to the marine environment at various emergency discharge points. The system is designed to overflow under these conditions to prevent major damage to infrastructure. Under the provincial Municipal Wastewater Regulation (MWR), overflows are not to occur for any storms less than a five-year return period.

Based on a commitment in the Core Area Liquid Waste Management Plan (CALWMP) to reduce maximum daily wet weather flows to less than four times the average dry weather flow by 2030, the goal of the Capital Regional District's (CRD) I&I program is to develop and implement a strategy aimed at reducing the amount of rainwater and groundwater entering the core area's sanitary sewer from both the publicly-owned and privately-owned parts of the system, in order to reduce and eventually eliminate overflows.

As part of the Core Area wastewater treatment project, conveyance system upgrades have reduced overflows at smaller overflow locations to storms greater than a five-year return period, meeting provincial regulatory requirements. However, the Clover Point outfall continues to overflow during smaller and more frequent storms. The Ministry of Environment and Climate Change Strategy (ENV) has given the CRD an informal waiver from installing wet weather treatment at Clover Point, as previous wastewater characterization efforts determined that Clover Point storm overflow effluent quality was similar to primary treatment. Further characterization monitoring is required at Clover Point over the next few years. If effluent quality is determined to be worse than expected, ENV may require additional treatment be installed.

As a condition of the ENV approval of Amendment 12 to the CALWMP, the CRD was required to update the CALWMP with respect to management of I&I and sanitary sewer overflows (following work done for the Wastewater Treatment Project) for ENV approval by December 31, 2021.

The CRD advised ENV on September 16, 2021 that it would be delaying its submission to amend the I&I section of the CALWMP as:

a) the CRD had yet to operate new core area wastewater infrastructure for a wet weather season and would have been reliant on theoretical predictions for sewer flow;

b) the CRD was in the process of updating detailed I&I management plans for each core area municipality, which were completed in 2022; and
c) because the CRD was intending to update all sections of the CALWMP to bring it up to date with new core area wastewater infrastructure and operations.

Municipal staff have requested that the I&I section be updated more proactively so that reduction strategies can be integrated with infrastructure asset management, budgeting and service planning processes. Given the time required to update the entire CALWMP, CRD staff are recommending an amendment to the CALWMP to update the I&I section while continuing to pursue the overall CALWMP update process on a more extended timeline.

Amending I&I commitments in the CALWMP will require public and First Nations consultation. As such, staff recommend reconvening the Technical and Community Advisory Committee (TCAC) to partially satisfy this requirement and to advise on the scope of broader public consultation. The TCAC was formed in 2006 to assist the CALWMP in making appropriate recommendations to the CRD Board related to the Wastewater Treatment Project. The TCAC may also be consulted on other upcoming CALWMP activities, including long-term biosolids management planning, and overall update of the CALWMP. Revised Terms of Reference for the TCAC are included in Appendix A. Staff will first approach previous members of the TCAC to determine their interest in participating again; but due to the extended length of time since the committee last met, staff anticipate a public call for new membership.

First Nations consultation will be conducted with Nations having territorial interests in the core area and surrounding waters. Nations will also be invited to participate on the TCAC. Technical, municipal input has been ongoing since 2021 with local government staff. Information from CALWMP will be referred to local government councils prior to submission to the provincial regulator.

Concurrent with the TCAC review, staff recommend an independent engineering review of the I&I approach developed with municipal staff in 2022. Once the TCAC has reviewed and commented on the proposed changes, staff will prepare an amendment submission to ENV, due by end of December 2023, that outlines new I&I commitments.

ALTERNATIVES

Alternative 1

The Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:

1. That staff be directed to:
    a) retain an engineering consultant to review options regarding the CRD's proposed amendments to the Inflow and Infiltration section of the Core Area Liquid Waste Management Plan;
    b) reconvene the Technical and Community Advisory Committee to review and provide recommendations to staff on Liquid Waste Management Plan updates and scope of public consultation; and
    c) return to the Core Area Liquid Waste Management Committee with a report detailing the results of the consultant review and the Technical and Community Advisory Committee prior to making a submission to the Province regarding Amendment 13 to the Core Area Liquid Waste Management Plan.

2. That the revised Terms of Reference for the Technical and Community Advisory Committee be adopted.

Alternative 2

That this report be referred back to staff for additional information.

IMPLICATIONS

Environmental & Climate Implications

As noted above, the MWR stipulates that overflows must not occur, unless during a storm with a greater than five-year return period. The Clover Point outfall is the only location that does not meet this requirement and (using a conservative model) is predicted to overflow for 60 hours per year during the eight largest winter storm events. In the single complete winter that all project upgrades have been operational, there were only 10 hours where dilute sewage overflowed from the Clover Point outfall, although it is acknowledged that 2022-2023 was an uncharacteristically dry winter. These overflows consist of highly dilute sewage mixed with rainwater, are generally short in duration, and are predicted to represent a negligible risk to the marine receiving environment. Monitoring is ongoing to confirm negligible risk.

The goal of updating the CRD and municipal commitments in the CALWMP is to clarify efforts to reduce sub-five-year return period overflows in the core area by 2030. The proposed approach of reducing and eliminating overflows during sub-five-year storm events is intended to be a practical solution that meets regulatory requirements and provides appropriate environmental protection.

This goal will be supported with a study assessing the impacts of storm event overflows from the Clover Pump Station long outfall, including environmental and social impacts, budget estimates to eliminate sub-five-year overflows and impact on taxpayers.

Intergovernmental Implications

An amendment to the CALWMP to address management of I&I satisfies a provincial regulatory requirement as a condition of the provincial approval of Amendment 12.

Financial Implications

Major improvements to core area marine wastewater discharges were completed in 2020, with $785M in projects delivered through the Core Area Wastewater Treatment project. A preliminary estimate of the cost in achieving the current CALWMP requirement to reduce I&I through conveyance system upgrades sufficiently to reduce maximum daily wet weather flows to less than four times the average dry weather flow by 2030 is $260M. Alternatively, should ENV require wet weather treatment at Clover Point, the anticipated cost is approximately $100M. Both options represent an excessive cost for limited environmental benefit to address 10-60 hours of overflows per year.

CONCLUSION

As a condition of the Ministry of Environment and Climate Change Strategy (ENV) approval of Amendment 12 on June 20, 2018, the Capital Regional District is required to update Inflow and

Infiltration (I&I) commitments in the Core Area Liquid Waste Management Plan. Staff advised ENV that it would be delaying its I&I submission while preparing a broader Liquid Waste Management Plan (LWMP) update; however, several municipalities are waiting for the I&I section update to proceed with infrastructure and asset management planning, and staff are now recommending focusing on the I&I update separately and address the broader LWMP update afterwards.

RECOMMENDATION

The Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:

1. That staff be directed to:
   a) retain an engineering consultant to review options regarding the CRD's proposed amendments to the Inflow and Infiltration section of the Core Area Liquid Waste Management Plan;
   b) reconvene the Technical and Community Advisory Committee to review and provide recommendations to staff on Liquid Waste Management Plan updates and scope of public consultation; and
   c) return to the Core Area Liquid Waste Management Committee with a report detailing the results of the consultant review and the Technical and Community Advisory Committee prior to making a submission to the Province regarding Amendment 13 to the Core Area Liquid Waste Management Plan.
2. That the revised Terms of Reference for the Technical and Community Advisory Committee be adopted.

Submitted by:	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
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ATTACHMENT

Appendix A: Technical and Community Advisory Committee - Core Area Wastewater Treatment – Terms of Reference (Revised)