

**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT PLAN COMMITTEE
MEETING OF WEDNESDAY, OCTOBER 10, 2018**

SUBJECT **Core Area Inflow & Infiltration Program – Annual Report 2017**

ISSUE

To present a summary of activities and accomplishments of the Core Area Inflow & Infiltration (I&I) Program in 2017, 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. The purpose of this Core Area I&I Annual Report is to document progress towards meeting these commitments for the period of 2017 to mid-2018.

In general, municipalities with aging sewer infrastructure are addressing areas with elevated I&I through sewer catchment analysis, investigations, rehabilitation and targeted sewer renewal. The municipalities with newer sewer infrastructure are focusing on I&I prevention. Overviews of municipal I&I actions, along with specific actions from 2017 to mid-2018, are as follows:

Colwood diligently inspects its new underground infrastructure to manage and prevent I&I. Colwood continues its program of manhole and cleanout visual inspection and sewer flow monitoring and analysis from its pump stations.

Esquimalt completed an extensive infrastructure investigation between 2004 and 2016, including: camera inspection and smoke testing, relining of approximately half of its sewers, targeted repairs to manholes, and separation of its combined manholes. This work increased the performance of the sewer system and reduced I&I. In 2017 and 2018, Esquimalt has interpreted results of its smoke testing program to find cross connections, is developing a pilot project to install inspection chambers on public and private sewer laterals, and is preparing a sewer model.

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. In 2017 and 2018, Langford camera inspected 8 kilometres of sewer and inspected 136 manholes, resulting in the rehabilitation of 75 sewer inspection chambers and two significant sections of sewer line.

Oak Bay has been working since 2010 to satisfy the CALWMP commitments to develop a solution for separating its combined sewer system serving the Humber and Rutland catchment areas in the Uplands. In 2017, Oak Bay finalized a plan to separate the sewers in the Uplands and received conditional approval of its Uplands Combined Sewer Separation Plan under Amendment No. 12 to the CALWMP. The conditional approval is subject to additional plan submissions, due by December 31, 2019. In addition to the Uplands separation work, Oak Bay is currently in year 3 of a 5-year program to camera inspect all its sewers. In 2017 and 2018, Oak Bay rehabilitated 1.4 kilometres of sanitary sewer, replaced 3 manholes, and separated 21 cross-connections.

Saanich continues its program of sewer maintenance and repair, including camera inspections, smoke testing and flow monitoring. Annually, Saanich replaces or relines approximately 3 kilometres of sanitary sewer and relines or replaces approximately 80 sewer laterals to the property line.

Victoria continues to manage its sewer repair and replacement work in its sewer master plan. This plan was greatly influenced and affected by the site of the core area treatment plant. During the site selection, Victoria camera inspected and smoke tested its entire sewer system. In 2017 and 2018, Victoria completed its sewer master plan, rehabilitated or repaired 3.8 kilometres of sewer main and replaced 11 sewer manholes. Victoria also camera inspected 17 kilometres of sewer main.

View Royal continues its program related to sewer maintenance and repairs, camera inspections, sewer flushing and flow monitoring. In 2017, View Royal completed a drainage master plan and is currently working on its sewer master plan. View Royal also repaired two sections of sewer and four manholes.

Esquimalt Nation continues its program related to sewer maintenance, including active flow monitoring of their pump station.

Songhees Nation continues its program related to sewer maintenance and repairs. Initiated in late 2015, Songhees completed an I&I study to investigate I&I sources, along with detailed design, to remediate. In 2017, the Songhees Nation initiated the implementation of sewer improvements to address the study findings.

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 efforts related to regional flow monitoring, standardizing I&I approaches, preparing management plans and annual reports, private property I&I initiatives, and education programs. This also involves coordination with municipalities and related national organizations that are dealing with similar issues. Key actions completed in 2017 and early 2018 include:

- Updated the private property I&I educational approach and related materials. The approach is focused on encouraging the inspection and maintenance of private sewer laterals to prevent basement flooding. The work included substantial regional and national stakeholder engagement. The private property I&I education program is scheduled to be formalized and delivered to the public in 2019-2020.
- Carried out a project to confirm flow data accuracy from municipal pump stations.
- Conducted a pilot study designed to identify “semi-combined” sewers using GIS, historical plumbing codes and interviews with municipal staff.
- Developed a draft I&I benchmarking template for use nationally. The CRD is leading this effort, with help from the National Water & Wastewater Benchmarking Initiative.

The work described above 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 LWMP commitment of reducing wet weather flows below four times average dry weather flow at Clover

Point and McLoughlin Point wastewater treatment plant by 2030. The municipalities with older sewers, and inherently higher I&I, will need to allocate additional resources and accelerate their I&I reduction efforts to meet their respective I&I reduction targets.

ALTERNATIVES

Alternative 1

That the Core Area Liquid Waste Management Committee recommend to the CRD Board:

That the Core Area Inflow & Infiltration Program – Annual Report 2017 be approved.

Alternative 2

That the Core Area Liquid Waste Management Committee direct staff to submit a revised report.

FINANCIAL IMPLICATIONS

The I&I Program 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 2017 budget for this work was \$397,509. Municipal infrastructure repair initiatives are wholly funded by the respective municipality. Monitoring, reporting, strategy and leadership are facilitated by the I&I Program.

ENVIRONMENTAL IMPLICATIONS

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

SOCIAL IMPLICATIONS

Reduced I&I and overflows will reduce the number of beach closures and the impact on the natural environment. As residents and businesses become more aware of I&I through ongoing public education and outreach programs, there will be a greater understanding of how everyone can contribute to I&I reduction.

CONCLUSION

The Core Area Inflow & Infiltration Program – Annual Report 2017 summarizes the activities and accomplishments of participating Municipalities and First Nations for 2017 to mid-2018.

RECOMMENDATION

That the Core Area Liquid Waste Management Committee recommend to the Capital Regional District Board:

That the Core Area Inflow & Infiltration Program – Annual Report 2017 be approved

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

SM:mr

Attachment: Appendix A – Core Area Inflow & Infiltration Program - Annual Report 2017