

**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, MAY 13, 2015**

SUBJECT **Inflow and Infiltration Management Plan Presentation and Sample Model Bylaw for Private Property Sewer Laterals**

ISSUE

To provide background information supporting the Inflow & Infiltration Management Plan and present a sample model bylaw relating to private property sewer laterals.

BACKGROUND

On February 11, 2015, the Core Area Liquid Waste Management Committee (CALWMC) requested that a workshop on inflow and infiltration (I&I) be provided to the committee at a later date, including information on design capacity, jurisdictional responsibility and a model bylaw relating to private property I&I.

This staff report provides a brief overview and background information in support of the I&I presentation on this committee agenda and a sample model bylaw relating to private property sewer laterals. The I&I presentation material is provided in Appendix A.

Inflow and Infiltration

Rainwater and groundwater that enter the sanitary sewer system are referred to as inflow and infiltration (I&I). Inflow refers to rainwater that enters the sewer system through improper plumbing connections, such as cross connections with storm and roof drains. Infiltration refers to groundwater that seeps into the sanitary sewer through cracks or joints in the sewer pipe.

Based on overall pipeline length, the core area sewer system consists of approximately 5% Capital Regional District (CRD) trunk mains, 40% municipal collector mains and 55% private property sewers. The public (CRD and municipal) sewers and private property sewers contribute approximately the same amount of I&I flow to the overall system.

Both the CRD and core area municipalities tend to proactively inspect and fix their sewers through planned asset management. Conversely, private property owners rarely inspect or perform maintenance on their sewer laterals unless there is a problem.

Core Area Inflow and Infiltration Management Plan

Since 2001, the CRD has collected sewer flow monitoring data throughout the core area with monitoring points at more than 100 locations. The flow results are documented in I&I analysis reports, which are submitted to the CALWMC annually. In addition, the CRD has prepared a number of reports for the Province as required by the Core Area Liquid Waste Management Plan (CALWMP), including biennial update reports (2005, 2007 and 2009), the Overflow Management Plan (2008) and the I&I Management Plan (2012).

As part of the CALWMP, the approved Inflow and Infiltration Management Plan documents the approach being used to address I&I in the core area through to the year 2031. The plan was developed by the CRD in collaboration with representatives from the engineering departments of the core area municipalities that form the I&I Subcommittee. Catchments that exceed the agreed-upon threshold I&I rate are investigated and the data collected is used to determine what work needs to be completed. Rehabilitation work is then prioritized and carried out by the appropriate municipality or the CRD, subject to available funding.

The progress report titled *Sanitary Sewer Overflow Management Plan: 2014 Update* submitted to the Ministry of Environment in February 2015, provides an update on the reduction efforts by each participating municipality and the CRD, including tables of the prioritized work items committed to by each participant. Each work item listed includes an estimated completion date, estimated cost and status update. Appendix B provides these prioritized work item tables.

Based on infrastructure upgrades identified by the program and completed by both the CRD and core area municipalities over time, a downward trend in the I&I rate and peak wet-weather flow should be achieved.

The I&I Management Plan also contains a sub-plan for developing and implementing an approach to address I&I originating on private property starting in 2016.

Design Capacity

A certain amount of I&I is unavoidable and is accounted for in routine sewer design. However, when I&I flows exceed these design allowances, sewer capacity is used up and may result in overflows, risks to health, damage to the environment, and increased conveyance costs.

In keeping with the CALWMP, the CRD and core area municipalities have committed to reducing the overflows and I&I to less than four times average dry weather flow at Clover Point and the wastewater treatment plant(s) by 2031.

Private Property Sewer Laterals

Private property owners generally own and are responsible for the portion of the sewer lateral connection that extends from their buildings out to the property line. Municipalities, in turn, own the portion of the lateral from the property line to the municipal sewer main. An exception to this is in Oak Bay, where private property owners own and are responsible for the entire lateral from their buildings out to the municipal sewer main.

Private property laterals are rarely maintained but the municipalities have the legal authority to implement tools (i.e., bylaws, education) to aid in the inspection and repair of private property laterals. The portion of the lateral located within private property should be maintained appropriately to ensure continued performance of the overall municipal/regional sewer system.

Sample Model Bylaw for Private Property Sewer Laterals

Appendix C provides a sample model bylaw for regulating private property sewer laterals based on sections of Metro Vancouver's model bylaw and other sewer bylaws from across Canada.

The sample model bylaw provides the required maintenance standards expected of private property owners, clarifies the authority of municipalities to inspect and require action to bring private laterals into compliance, and outlines penalties that may be imposed if they are not brought into compliance.

The sample model bylaw was prepared to assist the core area municipalities in developing their own municipal bylaws for regulating the inspection and maintenance of private property sewer laterals in their municipalities.

If implemented, the individual municipal bylaws for regulating private property sewer laterals are expected to vary in form and content, depending upon their individual circumstances and needs.

ALTERNATIVES

Alternative 1

That the Core Area Liquid Waste Management Committee recommend to the CRD Board that staff be directed to forward the sample model bylaw for private property sewer laterals to the core area municipalities for consideration.

Alternative 2

That the Core Area Liquid Waste Management Committee direct staff to revise the sample model bylaw and bring it back to the committee for further consideration.

FINANCIAL IMPLICATIONS

Private property owner costs to repair a private sewer lateral may range from \$5,000 to \$10,000. Alternate approaches include relining existing laterals through partnership projects similar to the one that the City of Victoria is planning to pilot next year, wherein the City would initiate a project to fix the municipal lateral from the main to the property line and the property owner would pay for additional liner material costs. Since the installation equipment would have already been mobilized as part of the City's work, there is only a marginal increase in costs to the property owner for the additional repair of the private lateral section.

INTERGOVERNMENTAL IMPLICATIONS

The sample model bylaw was developed through discussion and collaboration with the I&I subcommittee, made up of technical representatives of the core area municipalities.

CONCLUSION

The CRD and core area municipalities have developed a plan to meet the CALWMP commitments to reduce sanitary overflows and I&I through public infrastructure improvements. The program continues to monitor, evaluate and report on I&I rates in the core area on an annual basis. Action is now required to address private property sewer laterals in areas of elevated I&I.

RECOMMENDATION

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

That staff be directed to forward the sample model bylaw for private property sewer laterals to the core area municipalities for consideration.

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- Attachments: Appendix A – Inflow and Infiltration Presentation
Appendix B – Prioritized Plan Tables – Sanitary Sewer Overflow Management Plan: 2014 Update
Appendix C – Sample Model Bylaw