



To: Public Works and Transportation Committee **Date:** October 31, 2008
From: Dave Semple **File:** 10-6175-04-01/2008-Vol
Director of Parks & Public Works Operations 01
Re: Non-Stormwater Discharges to City's Storm Sewer

Staff Recommendation

That staff bring forward an amended Pollution Prevention and Clean-Up Regulation Bylaw 7435 to specify the use of federal and/or provincial water quality discharge criteria as the guideline for assessing non-stormwater discharge requests to the City's storm sewer.

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Director of Parks and Public Works Operations
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Sustainability Office.....	Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>	
Building Approvals.....	Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>	
REVIEWED BY TAG	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	
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Staff Report

Origin

There are increasing requests from the private sector to discharge non-stormwater sources to the City's drainage system – principally related to dewatering associated with construction activities. This is due to a number of factors including increasing development activities, increased environmental awareness, demand side management principles from Metro Vancouver which seek to reduce non-sanitary flows, and changing provincial legislation.

The City's drainage infrastructure has been designed for the purpose of conveying storm water (naturally occurring rain water) all of which drains to the Fraser River. The City has environmental and legislative obligations to ensure our drainage system does not allow pollutants, regardless of the source, to be discharged to the City's surface water system and broader environment. Any processes that permit non-stormwater discharges to our drainage infrastructure must, therefore, be carefully managed to address capacity issues, liability risks and potential environmental and financial impacts.

This report describes current processes and recommends improvements to streamline and better define our approach for addressing groundwater discharge and other non-stormwater discharge requests.

Background

Non-stormwater discharges have the potential to convey pollutants into the City's storm sewer system. A key challenge in Richmond is the discharge of extracted groundwater from construction sites. Due to its salinity, Richmond's groundwater is characterized by high levels of dissolved iron and other minerals. As a result, discharge of groundwater has the potential to adversely impact freshwater environments. Other non-stormwater discharge requests include process wastewater and contaminated site remediation water.

Previous Management Regime

Prior to 2004, non-stormwater discharges to storm sewer were predominately regulated through the Province under the Waste Management Act. In 2004, the Province undertook a series of legislative changes to introduce a new era of environmental management. With respect to managing discharges to the environment, the Province moved away from a pervasive permit-based system to a "Codes of Conduct" objective-based system of business self-regulation. Activities not considered to be "high" risk are no longer reviewed, permitted or regulated through the Province.

Current Process for Non-Storm Water Discharge

In 2003, the City introduced Pollution Prevention and Clean-up Regulation Bylaw 7435 which states:

"1.1.1 A person must not discharge any polluting substance into any storm sewer, ditch, water course or onto the soil, other than as authorized under the Waste Management Act and Regulations."

The provincial Freshwater Aquatic Life Guidelines and/or the Canadian Water Quality Guidelines for the Protection of Aquatic Life are used in practise as the 'non-polluting' determinant. These guidelines are not specifically referenced in the bylaw.

The current protocol for managing requests for discharge of groundwater/non-storm water is summarized as follows:

- Engineering Planning leads the approval process (address capacity issues; consult with Environmental Programs on water quality issues, etc.).
- A stepped approach is used to try to minimize impact to the environment and drainage infrastructure. Proponents are requested to pursue demand side management as a first step (e.g., decrease volumes, water reuse, etc.) and pursue discharge application to other systems than the City's storm sewer (e.g., sanitary sewer through Metro Vancouver direct discharge to Fraser River through FREMP, groundwater recharge, etc.). Where discharge to sanitary sewer is permitted, a fee applies. The portion of the fee related to the discharge quantity is returned to the City of Richmond. If these options are not available, discharge requests to the City's storm sewer are considered.
- Proponents provide a certified sanitary sewer capacity analysis and water quality compliance assessment from qualified professionals. If approved/acceptable, proponents indemnify the City from liability associated with the discharge.

Analysis

Challenges

Some of the challenges with the current process are:

- Non-stormwater discharge is often not considered by the private sector at the early stages of projects. The issue is then perceived as a last minute obstacle, particularly when construction timelines are pressing and large discharge volumes are involved.
- The requirement to meet aquatic life guidelines is not legislated.
- Some developers have expressed concern that meeting the aquatic life guidelines is difficult and costly, noting that this standard may exceed the existing quality of the City's stormwater.
- The City bears the costs (e.g., resource capacity to address number of requests, maintenance impacts associated with use, design considerations to meet increased capacity needs, etc.) and potentially inherits liability for private sector use of the City's storm sewer system.
- No discharge review conducted to ensure that water discharged meets identified water quality.
- No coordinated system of management amongst agencies (i.e., municipal, Metro Vancouver, provincial, federal). In some cases, finding a suitable discharge option is difficult.

Potential Solutions

Various options for addressing some of these key challenges are discussed below.

1. *Streamline Current Process (Recommended) – Add Clarity Provisions to Pollution Prevention and Clean-Up Regulation Bylaw 7435 and Develop Guidance Document*

Under this option staff propose to provide a higher degree of environmental protection and lower degree of liability to the City, while at the same time providing an avenue for proponents to proactively address the challenge of managing non-stormwater discharge during the early approval stages of a project.

To improve the process for proponents, it is recommended that the federal and provincial aquatic life guidelines be identified as the discharge guideline in the City's Pollution and Prevention bylaw. A guidance document would also be developed which outlines the City's process for reviewing requests for discharge of non-stormwater to the City's storm sewer. Staff will proceed to develop this guidance document should the recommendation be approved by Council. This guidance document will be posted on the web and made available at the early stages of projects to better assist proponents in their planning. For those circumstances where anomalies might arise, staff will include an exemption process in the proposed bylaw.

Clear identification of these non-stormwater discharge standards and addressing the process through construction will also be added to the City's engineering specifications as well as on development plans. Providing this information at an earlier stage will ensure a clear understanding of this issue and allow for planning to take place accordingly.

There are no additional costs to the City associated with implementing Option 1. It is noted, however, that there has been increased demand on staff time associated with processing the increasing number of requests. Clarifying the process may reduce demands on staff. Staff will monitor this and may propose a cost recovery fee to address the resource impact.

This is the recommended option.

2. *Adopt Richmond-Specific Criteria*

The City could adopt Richmond-specific criteria which better reflect local and site-specific conditions. This would encompass bylaw provisions which list prohibited materials and identify maximum allowed quantities of specified materials.

This approach is not recommended for the following reasons:

- Establishing standards is a complex, rigorous and costly activity which requires substantial levels of expertise and continuous management.
- The City would assume greater liability risk for potentially permitting a standard which may not meet federal and provincial legislation.
- Substantial additional staffing resources would be required to develop and administer this process.

3. Adopt Existing Conditions as Discharge Standard

Some proponents have suggested that the discharge standard to the City's storm sewer be established based on existing storm sewer water quality levels. Where natural conditions exist, the use of existing or background conditions is often used as a means for establishing appropriate discharge quality. However, it is not valid to use this approach in highly urbanized areas where the storm water quality has already been impacted and no longer reflects natural conditions. This approach is most likely to result in deteriorating levels of storm sewer quality.

This option is not recommended as it is likely to result in environmental degradation and increase the risk of municipal liability.

4. No Discharge Allowed

The City could not allow any discharge of groundwater/non-storm water to the City's drainage system. This is the approach used by some Lower Mainland municipalities. This option would provide maximum liability protection for the City and would be the easiest to administer. Ideally, it would also afford a high level of environmental protection and minimize impacts to the City's storm sewer system.

This option is not recommended as it is likely impractical for the private sector community to manage in those circumstances where no alternatives exist. This option could also result in significant levels of unlawful activity, resulting in unintended environmental damage and operational impact.

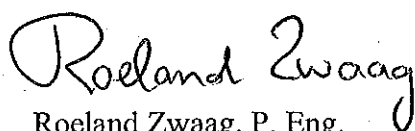
Option 1 is recommended as it provides the best environmental protection, minimizes the City's liability, reduces impacts to the City's storm sewer system and provides greater clarity and guidance to the private sector.

Financial Impact

None.

Conclusion

Requests for groundwater and other non-storm water discharge are increasing in frequency. The City's current practise for evaluating discharge requests-- where alternative options are not feasible, and where sound approaches are employed to address system capacity, water quality and City indemnification issues -- ensures a sound management approach. By embedding decision-making criteria into the City's Pollution Prevention Bylaw and providing information/guidelines at the early stages of projects, greater clarity will be provided to proponents to assist them in better managing their waste water discharges.



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