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Date: 10/3/2017 3:15:53 PM
Subject: Memo - False Creek Water Quality
Attachments: ENG - Memo to Mayor & Council - False Creek Water Quality.pdf

Dear Mayor and Council,

Please see the attached memo from Jerry Dobrovolny providing information related to False Creek Water Quality.

- By way of an electronic newsletter, Fraser Riverkeeper published the results of a Citizen Science Investigation conducted at the end of the summer on water quality in False Creek.
- Metro News contacted the City for comments after the publication, asking for details around water quality in False Creek.
- The findings of the Fraser Riverkeeper are aligned with information already known to staff.
- The E.coli levels reported are not consistent with sewerage discharge but out of prudence, staff is investigating the storm pipe network for a possible cross-connection.
- Staff is appreciative of the efforts from Fraser Riverkeeper and will continue to work jointly with them.

Best,
Sadhu

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MEMORANDUM

October 3, 2017

TO: Mayor and Council

CC: Sadhu Johnston, City Manager
Paul Mochrie, Deputy City Manager
Janice MacKenzie, City Clerk
Lynda Graves, Manager, Administration Services, City Manager's Office
Rena Kendall-Craden, Director, Communications
Kevin Quinlan, Chief of Staff, Mayor's Office
Katie Robb, Director, Communications, Mayor's Office
Naveen Girn, Director, Community Relations, Mayor's Office
Daniel Roberge, Director, Water & Sewer Green Infrastructure

FROM: Jerry Dobrovolny, General Manager of Engineering Services

SUBJECT: False Creek Water Quality

On September 21, Metro News published an article regarding water quality in False Creek. Metro News contacted the City based on a newsletter from Fraser Riverkeeper which reported findings from a Citizen Science Investigation they undertook in August and September.

In their findings, Fraser Riverkeeper reported that they found unmarked pipes in the east basin of False Creek, located directly south of the intersection of Pacific Boulevard and Pat Quinn Way. They report finding that these pipes were spewing brown water into False Creek, and did independent analysis that returned high E.coli levels.

Staff met with Fraser Riverkeeper on Tuesday, September 12 at the location to discuss their findings.

The three outflows identified by Fraser Riverkeeper are storm sewer only, and are part of our separated sewer system in the downtown area. These pipes are listed publically as part of the City's VanMaps system (Select City Utilities > Sewer > Sewer Mains and ensure you are zoomed in far enough). As storm sewers, they should only contain storm water and potential street-level pollutants.

The E.coli levels found by Fraser Riverkeeper are in line with the current testing results from Metro Vancouver which take place twice weekly, and which include a sample location that coincides with where the Fraser Riverkeeper sample was taken. This summer, the 30 day average E.coli levels are within a range of what we typically experience in the summer in the False Creek Basin.

As these E.coli levels are in line with what Metro Vancouver testing shows, we anticipate that the outflow from these pipes may be a result of tides going into the pipes and the water coming back out. We feel confident that this is not a sewer outflow, as sewer outflow E.coli numbers can reach upwards of 10,000 MPN/100ml. Other sources of E.coli pollution in False Creek in the summer include such things as pollution from storm drain flow (urban runoff pulling pollutants off of the street, such as animal waste), recreational boats dumping their tanks, and illegal discharge to catch basins. Our water quality colleagues from the Park Board provided additional background from a study of fecal coliform levels from a project completed for UBC Utilities. It looked at fecal coliforms in the main storm outfalls from the UBC campus during the late summer dry period and has helped to inform our understanding of what may be happening at these storm drains. The study found:

- (1) fecal coliforms are consistently high in many conventional stormwater systems even without residential cross-connections (UBC is similar to downtown Vancouver but without the transportation component)
- (2) there is high variability in fecal coliforms concentrations over time; some of this is related to rainfall (although this sampling was during dry weather) and some related to source variability
- (3) finding patterns as well as sources/causes was very challenging. UBC did lots of dye and smoke testing with limited benefit to fecal coliform concentrations

Staff have not observed sanitary sewer outflow in the past in this location but in response to this new information, a systematic investigation of the pipe network is being conducted to ensure that no illegal cross-connections have been made. In addition to the three storm pipes identified by Fraser Riverkeepers, we will also investigate an adjacent outflow at Carrall Street. Our further investigation will include:

- We have taken our own samples at each of the locations assessed by Fraser Riverkeepers, which we will send to Metro Vancouver's lab for testing
- We are installing investigation chains in three manholes nearby that allows us to track if a pipe is experiencing sanitary sewer outflow, this then allows us to follow up that pipe to find out where it may be coming from.
- If we observe sanitary debris on the chains, further upcatchment investigation will take place, which may include plumbing fixture and service connection investigation.
- If needed following this process, we may use green dye testing to identify any sanitary discharge are leading to the manholes and outfalls

The catchment area is approximately 35 hectares and will take some time to complete.

East False Creek remains a challenge for water quality but E.coli levels in Central and West False Creek have consistently been below the primary contact levels of 200 since the middle of June indicating promising results from our pump-out campaign, and our continued efforts in sewer separation.

Staff is appreciative of the efforts from Fraser Riverkeeper and are looking forward to continued joint efforts in keeping our waterways clean.



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