CITY OF SURREY
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CORPORATE REPORT

NO: R161 COUNCIL DATE: September 9, 2024

REGULAR COUNCIL

TO:	**Mayor & Council**	DATE	**August 28, 2024**
FROM:	**General Manager, Engineering**	FILE:	**5600-43**
SUBJECT:	**City of Surrey Water System Annual Report for 2023**		

RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report for information; and

2. Authorize staff to forward a copy of this report and the related report titled "City of Surrey Water System Annual Report for 2023", a summary of which is attached to this report as Appendix "I", to the Medical Health Officer in accordance with the requirements of the *British Columbia Drinking Water Protection Act*.

INTENT

This report represents the Annual Report for 2023 of the City of Surrey Water System, which has been prepared in accordance with the requirements of the *British Columbia Drinking Water Protection Act* (the "Act").

DISCUSSION

The Act requires municipalities, and all other water suppliers, to report the results of water quality monitoring in accordance with the requirements described in Section 11 of the Act. The City, in cooperation with the Fraser Health Authority and Metro Vancouver, adheres to the "Water Quality Monitoring and Reporting Plan for Metro Vancouver (GVWD) and Local Government Members (2018)." This plan outlines the requirements for monitoring and reporting on the City's water distribution system. The protocol document specifies monitoring parameters, the reporting structure, and response plans for emergency situations such as incidents of high bacteria counts or other types of contamination. Accordingly, the City fulfills these requirements through the preparation of an annual written report, which is made available to water consumers and forwarded to the Medical Health Officer ("MHO") for informational purposes.

The 2023 Water System Annual Report confirms and demonstrates that the City continues to deliver drinking water that meets high standards, with no concerns regarding bacterial contamination. The City also continues to comply with the Act and Regulations, as well as the Guidelines for Canadian Drinking Water Quality. This track record ensures that the City's customers receive clean, safe, clear, and healthy drinking water.

In the analysis of 3,135 water samples conducted in 2023, E-coli bacteria were not found. While ten samples initially showed the presence of total coliform bacteria, further testing after flushing the system confirmed negative results. Monitoring of chlorine levels is consistently performed across the water distribution network. In 2023, a total of 3135 samples were collected, with 84% registering chlorine concentrations above
0.2 mg/L, marking a 7% decline from the previous year's figures

A summary of the City of Surrey's 2023 Water System Annual Report is attached to this report as Appendix "I" The full report will be available for viewing on the City's website and will be forwarded to the MHO, subject to Council's approval.

CONCLUSION

The City remains diligent and proactive in monitoring, operating, and maintaining the water distribution system to ensure that customers continue to receive safe and clean drinking water.

Based on the discussion above, it is recommended that Council authorize staff to forward a copy of this report, along with the "City of Surrey Water System Annual Report for 2023", to the MHO in accordance with the requirements of the Act.

Scott Neuman, P.Eng.
General Manager, Engineering

YY/RB/bn

Appendix "I" - Summary of the City of Surrey Water System Annual Report for 2023

APPENDIX "I"

Summary of the City of Surrey Water System Annual Report for 2023

The drinking water for the City of Surrey is provided by the Greater Vancouver Water District, which falls under the jurisdiction of Metro Vancouver. The urban water distribution system spans approximately 1876 kilometers, marking it as British Columbia's most extensive network. The system includes 30 distinct pressure zones and is supported by nine pumping stations.

In order to preserve the quality of water in the distribution network, the City employs a unidirectional flushing strategy to clean all water mains. The goal of this program is to systematically flush the entire municipal water distribution system every five years. Water quality assessments are performed at 51 different sampling sites. Every week, samples are gathered and examined by Metro Vancouver. The evaluations cover bacterial content, chlorine residue levels, pH value, water temperature, and clarity measurements.

In the analysis of 3,135 water samples conducted in 2023, E-coli bacteria were not found. While ten samples initially showed the presence of total coliform bacteria, further testing after flushing the system confirmed negative results.

In cases of water quality concerns or infrastructure malfunctions like water main breaks, the City adheres to established response protocols. These include specific measures for repairs and ensure coordination among the City, Metro Vancouver, and the Fraser Health Authority.

Monitoring of chlorine levels is consistently performed across the water distribution network. In 2023, a total of 3135 samples were collected, with 84% registering chlorine concentrations above 0.2 mg/L, marking a 7% decline from the previous year's figures. In instances where elevated heterotrophic plate counts (HPC) occur due to diminished chlorine residuals and circulation issues, operational staff conduct flushing operations in the affected zones to refresh mainline water and enhance chlorine residual levels. Efforts to ameliorate low flow regions are ongoing, including the integration of dead-end mains through looping, which helps boost water movement in these areas. Moreover, the city procures quarterly samples to test for disinfection by-products like Haloacetic Acids and Trihalomethanes and conducts biannual assessments for pH levels and metal content. Test outcomes align with the Guidelines for Canadian Drinking Water Quality established in 2022.

In 2023, there have been no instances of tampering or vandalism reported within the municipal water system. Security measures for the system include lighting, locking mechanisms, and alarm systems at pump locations, in addition to backflow preventers installed on service connectors. Additionally, the City has a program in place to prevent contamination from improper connections called the cross connection control program.

In the year 2023, there were 615 new backflow preventers that were registered for testing with the City. The cumulative total of registered assemblies reached 16,542, marking a 3.8% growth compared to the previous year. These devices have been fitted as part of new construction, renovation projects, or due to the requirements of cross-connection control surveys. It's mandatory for these assemblies to undergo testing annually. The City monitors and ensures that institutional, commercial, and industrial (ICI) operations comply with the Surrey Waterworks Cross Connection Control By-law, 2013, No. 17988.

Surrey continues to uphold rigorous standards in its water distribution maintenance, guaranteeing that residents and businesses receive superior quality water.