

Union Bay Public Works

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Annual General Meeting Public Works Report

The 2018 year was a busy one for the Union Bay Improvement District (UBID) and one that brought us a new challenges that we never had before. Between Nov. 23 - 27 there was 130mm of rain that fell in the watershed and raised the lake 19cm. The turbidity was on a slow rise and a boil water advisory was issued December 15th and lasted until April 9th 2019. This was initiated as the turbidity in Langley Lake was trending upwards and had exceeded the limit set by VIHA of 1.0 Nephelometric Turbidity Unit (NTU). The advisory would remain in effect until the treated water was trending under 1.0 NTU. The entire time of the boil notice the UBID Public Works staff stepped up sampling on the water distribution system for total coliforms, E-Coli. All water samples were negative in the distribution system. The chlorine and turbidity were also being analyzed 24/7 for any interruptions in quality or failure in the treatment process. The water passed all bacteria sampling as the turbidity climbed over 1.0 NTU and up to the highest point of 1.64 NTU in the finished water. The water passed all the tests under the boil notice, but it was still above the VIHA mandate and the boil notice had to stay in place until the water met the criteria set by VIHA. The Emergency Response Plan was also updated in 2018.

This year also had another long hot smoky summer without much rain and Langley Lake did very well with reservoir levels. At the lowest point the lake level dropped to 59 cm below the spillway and 5cm above stage 2 water restrictions going into effect. Every year stage 1 restrictions are mandatory in the summer, but we have not had to go to stage 2 since the water meters were installed in 2004. UBID was very lucky to have a donation of new log boom sticks and chains to replace the original boom from 1976 from Mike Hamilton this was a savings of approximately \$6000 to UBID.

2018 also brought the Public Works its fair share of repairs to the water system and with the aging infrastructure there will be many more to come. There were 8 major leaks that would require a vacuum truck, gravel delivery, moles under the road and excavator rentals. These large leaks are mostly the failure of direct tapped Corporation Stops into the Asbestos Cement (AC) water mains. There was one failure of the 8" AC main as a semi-circular crack had developed due to settling. These large leaks often require the isolation of water mains and service to multiple households interrupted for

sometimes a few hours. There were also 5 minor repairs due to small leaks on the water service and its appurtenances. These leaks are often repaired by hand digging and short service interruptions. A 'Source to Tap' review was completed of the water supply system for the UBID and identified risks to the system and the next steps for ensuring a safe water supply system in compliance with regulatory standards and guidelines. Challenges to this water system include aging infrastructure, water source contamination, and extreme drought. Overall, this plan is intended to guide the future steps to mitigate risks to the water supply system in Union Bay.

Last year also saw 6 new services and house being built in Union Bay. This is a little more than usual and nice to see people investing in our community. These services usually require the use of a large air compressor and a mole to go under the roads without removing asphalt.

As everyone knows the new water treatment plant is underway. This will be a well-deserved capital addition for Union Bay and will provide the best quality water to the residents. It will meet VIHA's 4-3-2-1-0 water quality objectives and see improvements in Ph, color, removal of organics and the reduction of chlorination by products. All surface waters contain natural organic compounds. These compounds come from decaying vegetation and are primarily humic and fulvic acids. With the addition of chlorine these organic compounds react and produce complex chloroorganic compounds known as Trihalomethanes (THMs). Ensuring that the watershed is closed to recreational activity is one way to mitigate source contamination. Upgrades to the treatment process will further increase the robustness of the system by introducing new treatment processes in compliance with the Surface Water Treatment Objectives that are under the direction of Island Health. This plant will require a Qualified Water Treatment Operators and added training throughout the year to remain in good status with the regulatory authorities. Staff have already been certified in Water Plant Treatment Operations and others are working towards certification for 2019.

There was a total of 210,744m³(46,363,680 gal.) of water treated for consumption this year with the highest day of use being July 18th 863m³(198,860 gal.) and the lowest day use being December 3rd 242m³(53,240 gal.). Total water license of water from the lake is 647,363m³. We're using 1/3 of the current allowable license.

I would like to thank the Trustees, office staff, Sonya Jensen (Water Women Consulting) and Public Works crew staff for all the dedication to the waterworks system over the last year.

Respectively Submitted

Dan McGill
UBID Public Works Superintendent