Highland-Fernwood Water Treatment Plant Upgrades

Frequently Asked Questions

Capital Regional District | February 2026

The Capital Regional District (CRD) is making progress on upgrades to the Highland-Fernwood Water Treatment Plant to replace obsolete process and controls equipment as well as an assessment and strategy for asbestos cement (AC) water main replacements. Before the projects begin construction, local ratepayers will need to approve borrowing to secure funds for the project.

What is involved in the upgrade?

WTP SCADA Upgrades

The main scope of work will focus on controls and automation hardware and software replacements and/or upgrades and reprogramming. The key components are defined here:

- **Supervisory Control and Data Acquisition (SCADA)** – Hardware components (such as a server computer) to host data, a PLC, an RTU (for remote or standalone equipment) and an HMI for operator interface
- **Programmable Logic Controller (PLC)** - hardware equipment that contains a logic program which accepts inputs and gives outputs (I/O) to control equipment. Inputs can be from sensors and timers, and outputs can be to valves, switches and alarms
- **Human Machine Interface (HMI)** - allows the operator to monitor and interact with the process and equipment through the PLC. The HMI can be used for monitoring or can be for resetting or adjusting setpoints and operating parameters
- **Remote Terminal Unit (RTU)** – A unit that has minor control logic and I/O terminals to feed into a PLC.

Water main AC replacement strategy and preliminary design

To manage the long term health of the Highland-Fernwood distribution system, a condition assessment and phased replacement strategy is required. The AC water main in Highland-Fernwood is approximately 13km long, other aging components include reservoirs, pressure reducing valves (PRVs) and pump stations.

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Why is the Water Treatment Upgrade required?

WTP SCADA Upgrades

A PLC upgrade is required to provide secure, reliable communications. The current PLC and I/O cards are obsolete with no available replacements. The HMI will be replaced to allow more local and remote control. The upgrade will provide expansion capacity for communications to the Ganges server . The upgrade at H/F WTP will provide improvements to control, communications and data acquisition saving operator emergency call outs and emergency failure, resulting in a more reliable system with improved process oversight.

Water main AC replacement strategy and preliminary design

Highland-Fernwood has been experiencing an increased rate of emergency interventions on the AC pipe water mains. As part of a long term asset management plan a condition assessment and water service model need to be completed. Modelling of the water service system will help determine replacement strategies as well as highlight any design opportunities available to improve the water service delivery.

How will the project be funded and how much debt borrowing is required?

The water treatment plant upgrade projects will be funded by grants, reserves and debt as the Highland-Fernwood Water Service's reserve fund does not have all of the required funds available. The total remaining amount not covered by grants and reserve funds is $400,000. A borrowing bylaw would enable the CRD to fully fund the projects and proceed with the work. This includes the SCADA upgrades to the water treatment plant ($300k) and development of AC water main replacement strategy ($100k). The summary for funding sources for the projects is outlined in the table below:

Project #	Capital Project Description	Funding Sources	Scope
23-07	Highland-Fernwood WTP SCADA Upgrades	**$300,000 – Debt** $120,000 – Grant(CWF)	SCADA communications and controls upgrade
21-04	Highland-Fernwood AC Pipe strategy	**$100,000- Debt** $15,000 - Reserve	Conduct a water main condition assessment and

			develop a phased replacement strategy

How will the borrowing be approved?

The Highland-Fernwood Water Service Commission and the CRD Board approved this upgrade as part of the Five-Year Capital Plan , but elector approval for the debt is still required. The petition process is the most cost-effective method for obtaining approval and is the only method which limits participation to property owners only. Approval is reached, when the owners of at least 50% of the properties consent, and those properties must represent at least 50% of the net taxable value in the service area. If a property is owned by more than one person, the *Local Government Act* requires that a majority of the owners must sign the petition and return it to the CRD in order for it to be counted in the affirmative (i.e. 2 owners – 2 signatures, 3 owners – 2 signatures).

What is the borrowing process?

Once elector approval is obtained and the Loan Authorization Bylaw adopted, long-term debt must be arranged through the Municipal Finance Authority (MFA). The Loan Authorization Bylaw defines the maximum debt amount and term. MFA at the sole discretion will set a fixed interest rate for an initial term (generally 10 years), and subsequently refinance terms (typically in five-year incrementals) and refinancing rates. Highland-Fernwood Commission has chosen a 15-year maximum term.

How will the debt cost be collected from the ratepayers?

Annual repayments, including principal and interest payments will be collected as a parcel tax through property taxes on each taxable folio in the Highland-Fernwood Water Service Area.

The Province collects taxes for the services provided on behalf of Capital Regional District. Property owners have access to tax programs administered by the Province if all criteria are met for eligibilities, such as the Home Owner Grant and the Property Tax Deferment Program.

Additional informationon property taxes in rural areas can be found at the province website:
https://www2.gov.bc.ca/gov/content/taxes/property-taxes/annual-property-tax/rural-area

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What is the cost to each property owner?

The actual cost of borrowing will be dependent on the loan amount, interest rates at the time of borrowing and refinancing, and the amortization term selected. CRD staff consider multiple guidelines with respect to the amortization term, including estimated useful life of the infrastructure, the impact of the annual debt payment requirement, the total cost of borrowing over debt term, and the interest rate risk. A longer amortization term will minimize the annual debt payments, but results in higher total cost of borrowing and higher interest rate risk exposure with uncertainty regarding future refinancing rates. A 15-year term has been chosen by the Commission to optimize payments, cost of borrowing and interest rate

For analytical purposes only, using the indicative interest rate of 4.59% published by MFA at the time of this cost simulation and 15 years amortization term on $400,000 debt, the **simulated annual cost per taxable folio is approximately $118**. The actual borrowing cost can only be determined with the interest rate at the time of debt issuing and refinancing intervals, which will be different than the estimation of $118 if the actual interest rates differ from the indicative rate of 4.59%.

When will the borrowing occur and what will it look like on our property tax?

The MFA issues long-term loans twice a year, once in the spring and again in the fall. To provide timely access for the cashflow requirement of the project delivery, the short-term temporary borrowing will be authorized under the terms specified in the long-term Loan Authorization Bylaw. Associated financing costs for temporary borrowing will be monthly variable interest only payment.

As the project progresses, the CRD will gradually convert the temporary borrowing with long-term issues throughout the project with the last issue near or at the project completion when the total debt amount can be determined. The staggered debt payment schedule through different issues will allow the full debt cost to be reflected on property tax notices in a phased in manner over multiple years rather than all at once.

What happens if the petition does not pass?

The Highland-Fernwood Water System SCADA equipment is in need of upgrade/replacement as the current equipment is no longer supported or available. If the Petition to borrow funds for this project was unsuccessful, an Alternate Approval Process or Referendum could be considered, but at additional cost to the ratepayers.

If fund borrowing was ultimately not approved through any electoral assent process, and the project is delayed the equipment will experience higher likelihood of failure. With the current SCADA equipment no longer supported this could increase the chance of service interruptions to ratepayers.

How does the upgraded Water Treatment Plant work?

The facility will operate in a very similar fashion to before the upgrade, with no noticeable change or interruption to regular water service for ratepayers. Benefits include increased reliability and feedback to the operations team. More efficient operation is possible with improved remote and local control.

Contact Information

Questions and/or comments may be submitted in person at the SSI CRD Administration Office, located at #108-121 McPhillips Avenue, or by email at saltspring@crd.bc.ca.

For more information on the Highland-Fernwood Water System please visit www.crd.ca/highfern-ws