



**Notice of Meeting and Meeting Agenda
Fernwood and Highland Water Service Commission**

Tuesday, January 20, 2026

1:00 PM

SIMS Boardroom
124 Rainbow Road
Salt Spring Island BC

Special Meeting

[MS Teams Meeting Link](#)

G. Holman, K. Harris, G. Schroeder, L. Travelbea,

The Capital Regional District strives to be a place where inclusion is paramount and all people are treated with dignity. We Pledge to make our meetings a place where all feel welcome and respected.

- 1. Territorial Acknowledgement**
- 2. Election of Fernwood and Highland Water Service Commission Chair**
- 3. Approval of Agenda**
- 4. Presentations/Delegations**

Delegations will have the option to participate electronically. Please complete the online application for "Addressing the Fernwood and Highland Water Service Commission" on our website and staff will respond with details. Requests must be received no later than 4:30 p.m. two calendar days prior to the meeting.

Alternatively, you may email your comments on an agenda item to the Commission at saltspring@crd.bc.ca.

- 5. Special Meeting Matters**

5.1. [26-0093](#) Capital Projects Funding - Fernwood and Highland Water Service Voter
Approval for Borrowing

Recommendation: That the Fernwood/Highland Water Service Commission recommends:

1. That the petition process be initiated to borrow up to \$400,000 over 15 years debt term to complete the capital improvement projects.
2. If the petition process is successful, that a loan authorization bylaw be advanced to the Electoral Areas Committee and Capital Regional District Board for readings and adoption; and
3. That staff complete the remaining steps required to secure the funds and begin the projects.

Attachments: [Staff Report: Capital Projects Funding - Fernwood and Highland Water Service](#) '
[Presentation: SCADA Project Overview](#)

6. Adjournment



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**REPORT TO FERNWOOD AND HIGHLAND WATER SERVICE COMMISSION
MEETING OF TUESDAY, JANUARY 20, 2026**

SUBJECT Capital Projects Funding - Fernwood and Highland Water Service Voter Approval for Borrowing

ISSUE SUMMARY

To provide information to the Fernwood Highland Water Service Commission outlining options for Voter Approval for Borrowing to replace the obsolete Supervisory Control and Data Acquisition (SCADA) infrastructure and to develop a replacement strategy and preliminary design for replacing the Asbestos Concrete (AC) water main.

BACKGROUND

SCADA Upgrades – Communications and controls upgrades

This project involves the replacement of obsolete Supervisory Control and Data Acquisition (SCADA) components at the Fernwood/Highland Water Treatment Plant. The existing SCADA infrastructure has reached end-of-life, resulting in increased risk of complete system failures, lack of vendor support, due to components no longer available by manufacturers, and incompatibility with modern equipment. The upgrade will include replacing outdated hardware, software, and communication equipment with current, supported solutions that meet industry standards and regulatory compliance.

Additionally, the upgrade would enhance communication capabilities between the water treatment plant and the main operations hub at Ganges. The improvement would ensure real-time data sharing, centralized monitoring, including alarms, and streamlined operational control across the entire water system. Similar upgrades are planned for at the Fulford Water Treatment Plant, Beddis Water Treatment Plant, and are in progress at Ganges Wastewater Treatment Plant.

The scope of work includes developing and implementing a migration plan, upgrading communication networks, wiring and installation of equipment, testing the new controls hardware and SCADA system and training operations staff.

Water Main Replacement Strategy and Preliminary Design

Funding is also required to conduct a water main replacement assessment of 13 KM of AC water main piping. Initial preliminary designs will be drafted along with a phased replacement strategy for the AC piping. Detailed designs and execution of pipe replacement is currently planned for 2029 but could be modified based on the results of this assessment.

Project budgets and funding sources are noted in Table 1 and 2 below:

Table 1: Capital Projects Requiring Debt Funding

Project #	Capital Project Description	Debt Budget	Scope
23-07	WTP Scada Upgrades – WTP Communications and Controls Upgrade	\$300,000	To upgrade RTU programming software to Workbench. Replace the RTU and PLC controller due to age and criticality to current CRD I/O standards. At end of life for SCADAPAC 357e Series PLCs and add equipment feedback wiring to monitor valve position, motor speed etc.
21-04	Water Main (AC) Replacement Strategy and Preliminary Design	\$100,000	Conduct water main replacement assessment and develop a phased replacement strategy.

Table 2: Budget Funding Breakdown

Project	Funding Source	Budget (2026)
WTP SCADA Upgrades	Debt	\$ 300,000
	Grant (Community Works Fund)	\$ 120,000
AC Pipeline Strategy	Debt	\$ 100,000
	Reserve	\$ 15,000

Capital Reserve Funds (CRF) are used to pay for capital expenditures that are not funded by other sources such as grants, operating budget, or debt, but due to insufficient levels in this reserve, debt funding with a loan authorization bylaw is required to borrow the necessary estimated \$400,000 to complete these projects and system upgrades. Under the Local Government Act, participating area approval is required prior to adopting a loan authorization. Approval may be obtained for a service in an electoral area in one of three methods: by petition, by Alternative Approval Process (AAP), or assent voting (referendum).

ALTERNATIVES

Alternative 1

That the Fernwood/Highland Water Service Commission recommends:

1. That the petition process be selected to borrow up to \$400,000 over 15 years debt term to complete the capital improvements projects.
2. If the petition process is successful, then a loan authorization bylaw be advanced to the Electoral Areas Committee and Capital Regional District Board for readings and adoption; and
3. That staff complete the remaining steps required to secure the funds and begin the projects.

Alternative 2

That the Fernwood/Highland Water Service Commission recommends:

1. That the Alternate Approval Process (AAP) be selected as the method for obtaining participating area approval to borrow up to \$400,000 over 15 years debt term to complete the capital improvement project.
2. If the AAP process is successful, then a loan authorization bylaw be advanced to the Electoral Areas Committee and Capital Regional District Board for readings and adoption; and
3. That staff complete the remaining steps required to secure the funds and begin the project.

Alternative 3

That the Fernwood/Highland commission refers this report back to staff for additional information.

IMPLICATIONS

Elector Approval of Loan Authorization Bylaw

Elector approval may be secured through a petition if the owners representing at least 50% of the parcels in the service area, that in total must represent at least 50% of the assessed value of land and improvements, submit signed forms supporting the proposal to borrow funds.

The petition process is the least costly and most efficient approval process and typically takes up to six months to complete the process; however, if less than 50% support it, assent voting (referendum) will be required prior to borrowing the funds.

Elector approval is obtained from an AAP when less than 10% of estimated eligible electors in the participating area oppose the proposed borrowing unless an assent voting (referendum) is held. The estimate of eligible electors will include the count of non-resident property owners and tenants residing in the service area as provided from Elections BC voters list. If less than 10% respond in opposition, then no further assent is required. If 10% or more oppose then an assent vote or referendum is required, which can cost upwards of \$70,000 and must be held within 80 days of the AAP deadline date.

Overall, the petition process is the most efficient, cost-effective method to obtain voter approval; it is simple, has the least risk of failure and offers direct engagement between property owners and CRD project staff.

Implementation of Petition Process

The steps required to obtain elector approval via the petition are outlined below:

- Confirm committee approval for a petition process to obtain elector approval.
- Complete and send petition letter addressed to each owner(s) of the parcel/folio within the participating area.
- Advertise the petition within the Fernwood/Highland Water Service (direct mail, notice boards and website).
- Host a public open house to share information and gather signatures. (not required but recommended).
- Results of the petition will be determined after the petition has been closed, which will be no sooner than 30 days after letters have been issued to each owner(s).
- If a 50% approval threshold is exceeded, present the loan authorization bylaw to the Electoral Areas Committee and CRD Board with a recommendation to introduce and provide up to three readings.
- Send the loan authorization bylaw to the British Columbia Inspector of Municipalities.
- Following approval by the Inspector, return the loan authorization bylaw to the CRD Board for final approval.
- Following the one-month bylaw challenging period, complete process to draw upon loan and begin projects.

Financial Implications

Long-term debt must be arranged through the Municipal Finance Authority (MFA) which offers a maximum lending term of 30 years. MFA will set a fixed interest rate for an initial term, generally 10 years, and subsequently refinance the loan, typically in five-year increments. The loan authorization bylaw will define the maximum debt term; however, the length of the initial fixed term and the subsequent refinancing terms are at the sole discretion of the MFA.

For analytical purposes only, five different amortization term scenarios are simulated in Table 3. The cost of borrowing is the total of the estimated principal and interest payments over the borrowing term. The information in Table 3 is a high-level estimation only, based on the indicative interest rates published by MFA at the time of this staff report. The actual cost of borrowing will be dependent on the loan amount, actual interest rates at the time of borrowing and refinancing, and the amortization term selected.

Table 3: Debt Servicing Costs - Simulation

Borrowing Amount	\$400,000				
Borrowing term (years)	10	15	20	25	30
Indicative Interest Rate*	4.10%	4.59%	4.83%	4.83%	4.83%
Cost of Borrowing \$	507,336	588,652	667,838	738,037	810,150
Annual Debt Payment \$	50,734	39,243	33,392	29,521	27,005
Annual Parcel Tax per taxable folio \$ **	152	118	100	89	81

*MFA Indicative Market Rates used for analysis, taken from MFA Website, December 19, 2025.

** Calculated parcel tax assuming no change in total folios, set at 2025 level of 333 folios.

CRD staff consider multiple guidelines with respect to 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. Although a debt term of 10 years has the lowest total borrowing costs, a 15-year term is recommended in balancing the annual debt payment requirement for ratepayers, the interest rate risk and the useful life of the capital assets.

Staff will continue pursuing other funding opportunities and if any become available, debt borrowing will be reduced. Debt funds are only accessed on an as needed basis.

If debt borrowing is not approved through the commission, then reserve funds will need to be built up to execute the projects.

Service Delivery Implications

Completing the approval process and borrowing funds sooner will minimize service disruptions caused by obsolescence of SCADA equipment. The likelihood of disruptions will increase until a solution is implemented.

The AC pipe replacement strategy will also provide opportunities to minimize service disruptions through the validation and pre-planning of this critical infrastructure replacement.

CONCLUSION

SCADA equipment obsolescence and aging water main infrastructure in the Fernwood/Highland Water Service must be actioned to ensure safe, reliable delivery of water service to rate payers. Staff have assessed technical solutions, funding options and electoral approval processes to determine the most efficient and cost-effective path forward. Staff are recommending proceeding with a petition process to authorize borrowing up to \$400,000 to complete the SCADA equipment replacement and assessment of AC water main piping. If supported staff will advance the loan authorization bylaw and complete the steps needed to secure the funding.

RECOMMENDATION

That the Fernwood/Highland Water Service Commission recommends:

1. That the petition process be initiated to borrow up to \$400,000 over 15 years debt term to complete the capital improvement projects.
2. If the petition process is successful, that a loan authorization bylaw be advanced to the Electoral Areas Committee and Capital Regional District Board for readings and adoption; and
3. That staff complete the remaining steps required to secure the funds and begin the projects.

Submitted by:	Carolyn Hopp, P. Eng., Engineering Manager, Salt Spring Island Administration
Concurrence:	Dan Ovington, BBA, Senior Manager, Salt Spring Island Administration
Concurrence:	Stephen Henderson, MBA, P.G.Dip.Eng, BSc, General Manager, Electoral Area Services

ATTACHMENT

Presentation: SCADA Project Overview

Highland Fernwood SCADA Renewal Project Information



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20 January 2026





SCADA is Supervisory Control and Data Acquisition and includes hardware components such as a server computer to host data, a PLC, RTU for remote or standalone equipment and an HMI for operator interface

A **PLC** is a Programmable Logic Controller which is 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.

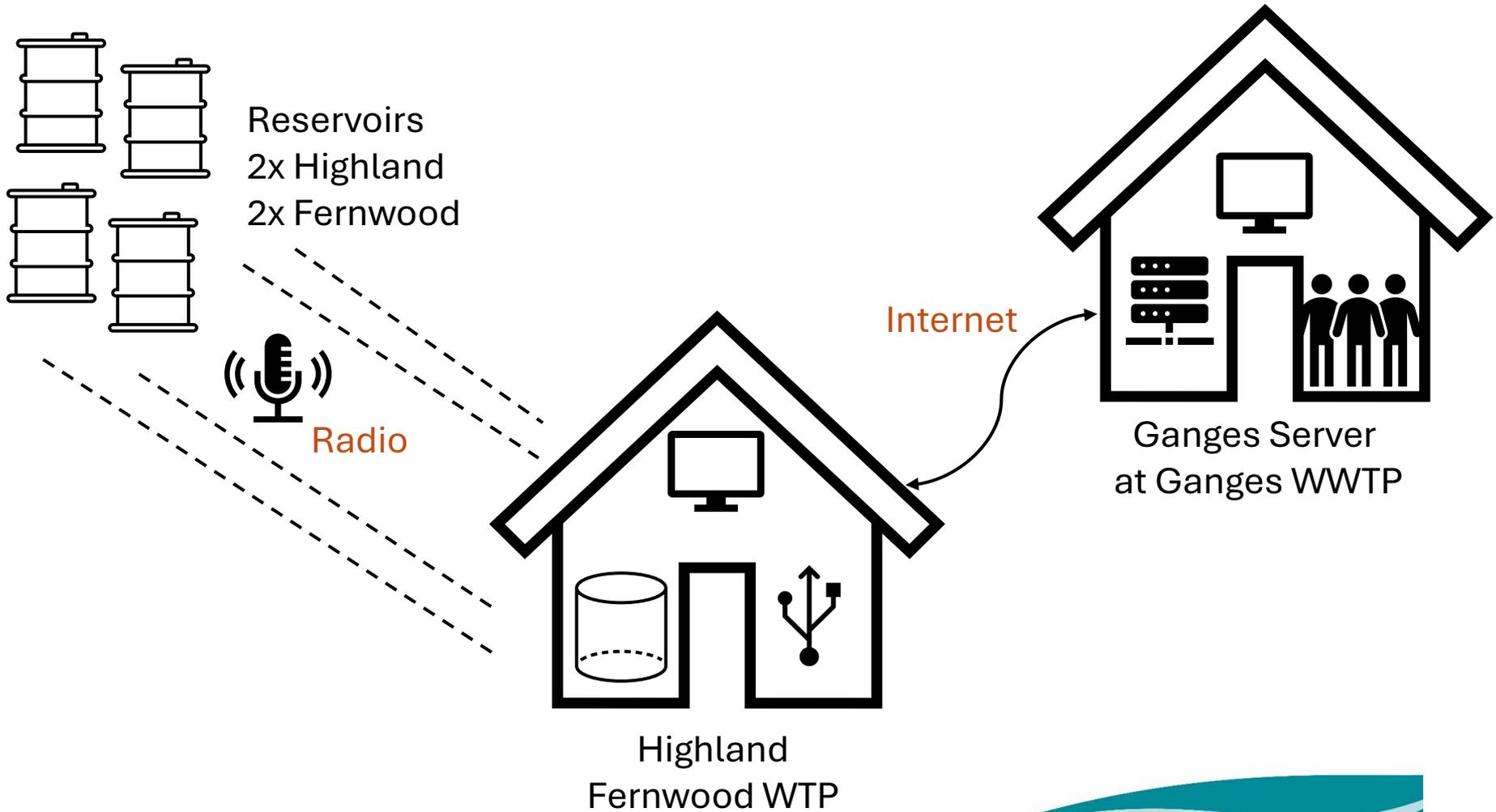
An **HMI** is a Human Machine Interface that allows the operator to monitor and interact with the process and equipment through the PLC. The HMI can be used for monitoring or can be for resetting or adjusting setpoints and operating parameters.

An **RTU** is a Remote Terminal Unit that has minor control logic and I/O terminals to feed into a PLC.



- The Highland Fernwood Water Treatment System (WTP) treats water for 320 of 333 properties in the Highland Fernwood Service area. The Service Area consists of the legacy Highland Service that joined the CRD in 2004, and the Fernwood Service that joined the CRD in 1989. The Water Treatment Plant was constructed in 2010 after the merger of the services to initiate the joint Highland Fernwood Water Service.
- The WTP is controlled remotely through different operating modes and flowrates through SCADA to a Programmable Logic Controller (PLC) locally at the WTP as it acquires signals from the equipment. All control logic is currently on SCADA (remote).
 - Alarms and some limited operating conditions are visible to the operators at Ganges through the Ganges server.
 - Communications for alarms and data are via the SCADA equipment which is currently over internet.
- The SSI operations team operates and maintains the system for it to run 24/7 year-round.
 - Regular site visits to Highland Fernwood are 5 days/week for 2 hours each.

Highland Fernwood SCADA Renewal Background





- The upgrades required at Highland Fernwood consist of the PLC replacement & HMI (operator interface) to facilitate local control and remote control options via internet communications, to allow stable and secure communications to the Ganges server.
- A PLC upgrade is required to expand communications and control. The current PLC is obsolete, with no I/O cards available and no expansion capacity for communications.
- Design of the PLC/SCADA system is underway, funded by reserve. CRD experts in house are assisting in the design.





The improved communications will allow for remote assessment and reset, with potentially less site visits, including following power outages



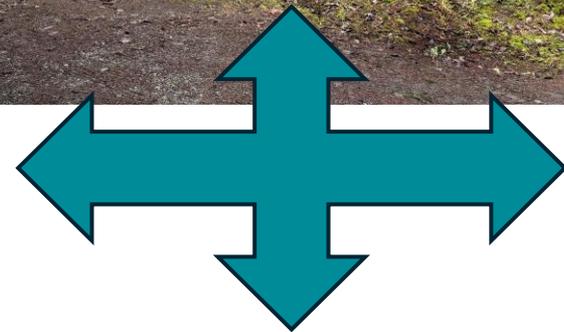
The improved hardware will prevent system failure due to I/O card failure. This is a current risk for operations. Manual operation is not supported



Improved operation modes and data collection will be possible with an upgraded PLC and I/O



- The Asbestos Concrete (AC) Pipe Strategy project is also proposed as part of the debt borrowing
- The Highland Fernwood system has approximately 12,000m of AC pipe
- The replacement of these aging mains will be expensive and therefore it is important to strategically plan and prepare for the work
- The strategy will look at condition assessment and overall system design to determine cost-effective, long-term program for distribution main longevity
- Replacement strategy is part of the essential asset management for the service





Funding sources for projects

Project	Funding Source	Budget (2026)
WTP SCADA Upgrades	Debt	\$ 300,000
	Grant (CWF)	\$ 120,000
AC Pipe Strategy	Debt	\$ 100,000
	Reserve	\$ 15,000

- The two projects that are proposed for the borrowing are the WTP SCADA Upgrades and the AC Pipe Strategy.
- Community Works Funds (CWF) are available to supplement the SCADA Upgrades project (\$120,000).





- The Parcel Tax associated with the new borrowing would be added to each rate-payers annual property tax.
- The borrowing amount will be up to **\$400,000**. If less is required to complete the projects, less will be borrowed.
- CRD Finance team recommend the 15 year term.

Debt Servicing Costs - Simulation

Borrowing Amount	\$400,000				
Borrowing term (years)	10	15	20	25	30
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Next Steps



For additional information please check back at the Highland Fernwood Water webpage : <https://www.crd.ca/programs-services/water/drinking-water-systems/highland-fernwood>

For questions, please contact saltspring@crd.bc.ca or 250-538-4448