

**DATE:** June 10, 2021

**FILE:** 5600-05/CVWS

**TO:** Chair and Directors  
Comox Valley Water Committee

**FROM:** Russell Dyson  
Chief Administrative Officer

Supported by Russell Dyson  
Chief Administrative Officer

*R. Dyson*

**RE: Comox Valley Water System Hyprescon Watermain Leak Repair Close-out**

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### **Purpose**

To provide an overview of the leak repair work that was completed on the Comox Valley Water System's (CVWS) large diameter water main feeding East Courtenay and the Town of Comox.

### **Recommendation from the Chief Administrative Officer:**

For information purposes only.

### **Executive Summary**

For most of 2020, Comox Valley Regional District (CVRD) water operations had been tracking a small leak in the 900mm steel pipe that crosses under the Puntledge River. During a January test, the leak had jumped from approximately 10 L/min to 75 L/min (for context, the much larger leak in 2019 was over 700 L/min). This significant jump in water loss was cause for concern and the decision was made to expedite repair of the water main. Two factors that drove the timeline were the necessity to complete the repair before seasonal flows increased and before the line pressure increased with tie-in of the new water treatment plant.

Effectively, this was a very similar repair to the 2019 project and the infrastructure that was installed and the experience staff gained at that time enabled staff to manage this project internally and significantly cut down on costs. The valves installed in 2019 enabled the divers to perform the work safely without having to remove sections of pipe. Staff were able to re-use many of our lock out/tag out procedures, as well as WorkSafe submittals.

The repair was broken into three phases:

- Phase 1 – weld a 900mm hatch onto the 900mm water main for diver access (week of Feb 22)
- Phase 2 – run SmartBall, the acoustic device to help pinpoint the leak (week of March 1)
- Phase 3 – send divers into the main to make repair(s) (week of March 15)

All three phases went according to plan and by the end of Tuesday, March 16, the repair had been identified and fixed, as well as a good internal inspection completed of the entire length of the river crossing and the patches from the 2019 repair. The section of main was flushed, chlorinated and sampled, and put back into regular service one day ahead of the communicated schedule.

During the SmartBall inspection, another small leak was identified three kilometers further down the pipe, right before the pipe went under the Tsolum River. The decision was made to try to expedite the planning process and repair the pipe due to the same above mentioned two factors. This job was done in two phases:

- Phase 1 – site access, tree clearing and pipe/repair coupling fabrication (week of March 29)
- Phase 2 – excavation and repair (week of April 5)

After excavation, the leak could not be located. Staff and contractors carried out a thorough condition assessment, installed a monitoring well for regular inspections and re-pressurized and backfilled the pipe. After a successful pressure test, the pipe was sampled and put back into regular service.

In early 2021, the Water Committee approved a \$250,000 budget amendment for the Puntledge River crossing leak repair. Given the relatively minor costs of investigating the second potential leak, the budget amendment was sufficient to cover all work. The table below summarizes both repair projects.

**Table No.1: Puntledge and Tsolum Repair Costs Summary**

<b>Steel 900mm pipe repair (Puntledge)</b>	<b>Role</b>	<b>EST.</b>
Knappett	Site prime contractor	\$40,000
Canwest	Mechanical	\$60,000
Pure	SmartBall	\$40,000
Hydra Marine	Divers/welders	\$20,000
CVRD (Greaves water)	Temporary water system	\$10,000
	<b>Total</b>	<b>\$170,000</b>
<b>PCCP 750mm pipe repair (Tsolum)</b>	<b>Role</b>	<b>EST.</b>
Knappett	Site prime contractor	\$20,000
Iconix/CanWest	Parts	\$8,500
Koers	Consultant	\$2,000
CVRD (Greaves water)	Temporary water system	\$8,000
	<b>Total</b>	<b>\$38,500</b>
	<b>Total repair costs</b>	<b>\$208,500</b>

Through this second project, detailed repair plans and procedures were developed, and specialized parts required to repair this tricky type of pipe material were procured, to expedite a response should another leak occur.

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