Comox Valley REGIONAL DISTRICT

Staff Report

DATE: February 19, 2021

FILE: 5600-05/CVWS

TO: Chair and Directors
Comox Valley Water Committee

Supported by Russell Dyson
Chief Administrative Officer

J. Warren, for:

FROM: Russell Dyson
Chief Administrative Officer

RE: **Puntledge River Water Main – Leak Repair**

Purpose
To provide an update on plans to repair a new leak from the Puntledge River water transmission main crossing within the Comox Valley Water System (CVWS).

Recommendation from the Chief Administrative Officer:
For information in advance of an amendment to the 2021 – 2025 financial plan. The proposed resolution is part of the financial plan staff report on this agenda.

Executive Summary
Currently, water for the CVWS is drawn from BC Hydro's penstock and treated at the water treatment facility located on Powerhouse Road. Following completion of the Comox Valley water treatment project in the summer of 2021, the intake location will change to the lake, and treatment will occur at the new water treatment plant but water will still be conveyed through the Powerhouse Road facility. The water exits the facility by one of two transmission pipelines, these pipelines provide water to the entire CVWS. One of these lines is a 900mm diameter steel pipeline that runs directly from the chlorination station under the Puntledge River and onwards into the system.

In early 2019 a major leak was discovered in the section of pipe under the Puntledge River. In April 2019 this leak was repaired during an intensive one week project that due to unusually dry weather, required implementation of stage four water restrictions. Post repair, the pipe was pressure tested to confirm that all leaks were repaired, and infrastructure was installed to facilitate future repairs, and allow for monitoring for additional leaks.

Leak Detection
In mid-2020, using the leak monitoring system installed in 2019, water staff identified a small leak in this section of pipe. When staff checked again six month later, at the end of January 2021, they found that the leak had grown significantly in size – to approximately 75 L/min. While much smaller than the approximately 700 L/min leak fixed in 2019, this rate of water loss is still significant, and requires immediate repair.

Risk Assessment and Mitigation
As in 2019, during the repair the CVWS will be relying entirely on a single, smaller line to supply water to the majority of the CVWS (approximately 25,000 people) in East Courtenay and Comox, resulting in a loss of redundancy while the repair is underway – requiring execution of the repair within as narrow a window as possible.

Given the smaller capacity of the back-up line it is also imperative that the repair be completed as soon as possible, prior to the end of the rainy season and the start of irrigation season when water demands increase significantly.

Leak Repair Approach

Due to the urgency, the Comox Valley Regional District (CVRD) is contracting directly with the contractors used in the previous repair. Total cost of the repair is anticipated to be less than $250,000, or about 20 per cent of the cost of the original repair in 2019, and will include upgrades to the pipe that will further reduce the cost of any future repairs to this pipe.

The CVRD's approach to resolving the leak is as follows:

1. **Week of February 22, 2021:** shutdown the pipe and install new 36 inch access hatch that will provide easy access for the divers for this repair and any others required in the future.
2. **Week of March 1, 2021:** undertake acoustic leak detection inspection of the forcemain to pinpoint the location of leaks prior to sending in the divers to repair.
3. **Week of March 15, 2021:** shutdown the pipe and send divers into the pipe to patch the leaks and perform a visual inspection to ensure all holes are identified and repairs.

Because of the extensive disinfection and testing process required after the divers complete their repair, the third step above is anticipated to require the longest shutdown. The CVRD is therefore planning to implement stage three water restrictions for the week of March 15 to ensure the public is aware of the repair taking place, and minimizes water consumption during this period.

Assessment of the Pipe Moving Forward

Given the known issues of corrosion in the steel pipe under the Puntledge River, recurrence of leaks along this section of pipe is not unexpected. However, the relatively quick emergence of new leaks, and the rapid growth of the leaking rate raises fresh concerns about the future of this pipe. In 2021, staff will undertake an engineering study to identify, assess and develop cost estimates for options to rehabilitate or replace the pipe.

Concurrence:

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