

Why is Change Needed?

COMOX NO. 2 PUMP STATION PROJECT

This is a complex project that has a few very simple reasons driving it.

As the CVRD determines next steps, it's important these needs are met for the health of the environment and the long-term viability of the sewer system.

Protecting the Environment

The existing forcemain for the Comox Valley sewage service runs along Balmoral Beach (Willemar Bluffs) – over time waves and storms have lowered the beach putting both the infrastructure and the area where it's located at risk. The pipe needs to be rerouted.



Permanent Solution

In 2002, protective gabion baskets were installed to protect the at-risk forcemain in the interim. However, these required significant ongoing maintenance, and a risk of failure remains. As part of the sewer master plan, options for a new pipe route were considered, with a connection via Croteau Beach identified as the best option.



Limited Capacity

The existing pump stations for the Comox Valley sewer service are at capacity given the continued growth of Courtenay and Comox. Pump station upgrades or the construction of a new pump station is required to ensure infrastructure can keep up with increased rates of usage.



Timeline

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The need for a new forcemain route and increased pump station capacity have been on the CVRD’s radar for nearly 15 years. Below is an overview of how this priority project has developed over time.



Results of Research

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The results of the investigations and studies completed through 2017 as part of the indicative design stage offered three key pieces of information for staff and directors to consider:



1

Higher than expected costs

Cost estimates for a pump station on Beech Street are significantly higher than budgeted, due to challenges such as a difficult tie-in at the beach below Beech Street, extra measures to protect against possible risks, and the constraints of the small property size.



2

Better-than-expected pipe condition

The forcemain along Balmoral Beach (Willemar Bluffs) is in better condition than expected, and – thanks to some repair work on protective structures done this past winter – the risk of failure has been re-assessed as lower than previously understood. Regardless of these results, replacing this section of forcemain is still critical.



3

More cost-effective options

There may be other options for rerouting the at-risk forcemain and increasing capacity which are more cost effective over the lifecycle of the infrastructure. Early review by the project's engineer consultants suggest other routes – though presenting their own challenges – could potentially be a better financial decision.

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The forcemain between the Courtenay pump station and the water treatment plant is in good condition: this was a key piece of information required before the CVRD could make further decisions.

Results of Pipe Assessment

Using acoustic leak detection and electromagnetic investigations, it was found that:

- The pipe is in good condition with no leaks or broken reinforcing wires or bars.
- The section of forcemain from the Courtenay Pump Station to the Goose Spit should last until the end of its expected lifespan.
- The condition of the Willemar Bluffs section is better than expected.

As a result of this information and the repair work done to protective structures around the pipe completed in 2016, the overall risk posed has been downgraded.

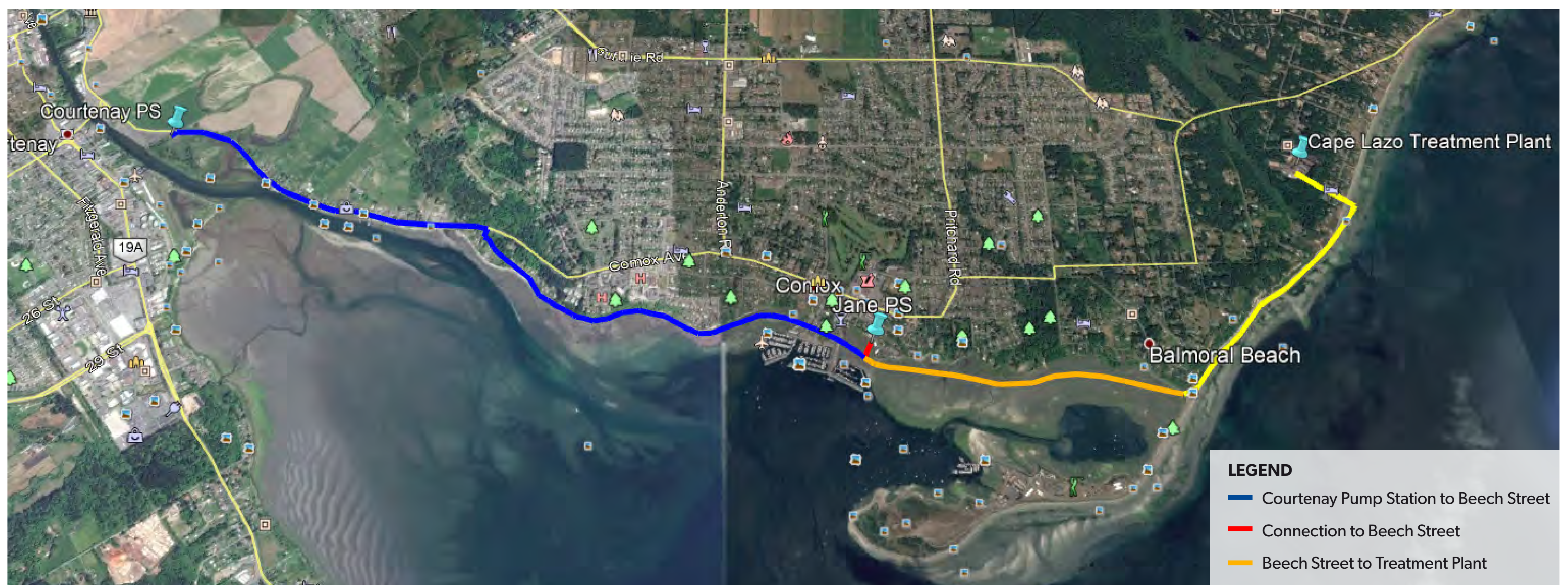
Removing the at-risk forcemain along Balmoral Beach (Willemar Bluffs) is still very important. The good results of this assessment offer the CVRD more time to ensure the best option is selected moving forward.



ipe driver



pipe driver exit

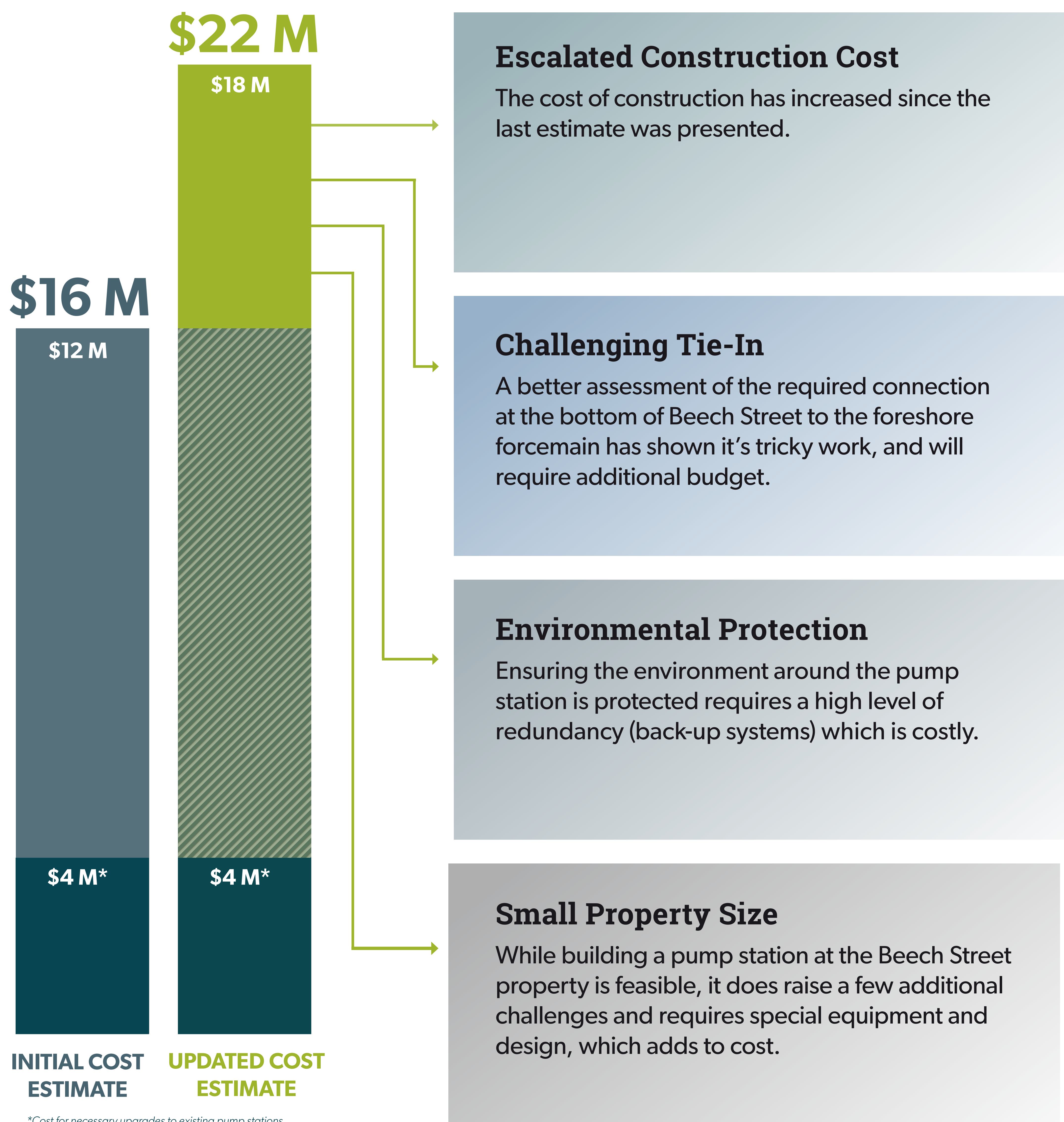


Forcemain map

Updated Cost Estimates

COMOX NO. 2 PUMP STATION PROJECT

An update to the estimated costs of the Comox No. 2 Pump Station has shown an increase, from \$16-million to \$22-million. Along with being a more accurate estimate (Class B rather than Class D), other factors contributed to this increase.



*Cost for necessary upgrades to existing pump stations.

Groundwater and Well Study

COMOX NO. 2 PUMP STATION PROJECT

Protection of groundwater and wells is a critical concern to all. Studies show there could be risks to some water in the area if construction proceeds – and mitigation would be required to ensure protection.

Survey and Study:

GW Solutions (contractor) has completed a survey of local wells, installation of new monitoring wells in the road right of way, and establishment of baseline water quality and groundwater levels.

The results of this study shows:



Risk to water:

The study concludes that wells near the Beech Street property would be at high risk should there ever be a release of wastewater from the pump station, and could experience a drop in groundwater level during construction.



Core sample



Mitigation and Monitoring:

Should the Comox No.2 project proceed at the Beech Street location, GW Solutions recommends that the CVRD work to mitigate risks to groundwater and monitor for impacts to water quality and quantity in the area.



Monitoring well



Impact on cost:

While risk of failure is minimal, backup protection required to address the risk adds significant cost to the project's budget.



Drill rig

Alternative Alignments

COMOX NO. 2 PUMP STATION PROJECT

The CVRD will review alternative options for re-aligning the at-risk forcemain along Balmoral Beach (Willemar Bluffs) and offering the increased capacity needed in the system.

A preliminary review by engineering consultants suggests another option may be more cost effective when considering the full life-cycle of the infrastructure.

The assessment will:



Consider all feasible options

While the preliminary review conducted as part of the indicative design stage looked at four potential options, the next stage of assessment will consider these and others in further detail. The CVRD will work with municipalities and other stakeholders to identify which options warrant further review. The proposed Comox No. 2 Pump Station on Beech Street will be one option assessed.



Assess the full lifecycle costs of each option

The first, high-level review suggests that there may be a more cost-effective option than the Comox No. 2 Pump Station when the full lifecycle of infrastructure options is considered. This analysis will look at cost estimates – including construction, maintenance and operations.



Analyze the risks associated with each option

Along with assessing the full life-cycle cost for a range of options, the risks for those options will also be considered. This is an important part of fully understanding the potential cost of whichever option is ultimately selected.

Regardless of the options, upgrades to the existing Courtenay and Jane Place pump stations will be required.



Be completed through 2018, with results in early 2019

Results of this assessment will be presented to the Comox Valley Sewage Commission in early 2019. During 2018, further hydrological assessment will also be done on the Beech Street property, to ensure the project can proceed without threatening the supply of safe drinking water to the area if the Comox No. 2 Pump Station project is found to be the preferred option.

What's Next?

COMOX NO. 2 PUMP STATION PROJECT

With the sewage commission's recent decision, a plan has been set for 2018 to complete the review of alternative options and report back to the commission and the community early in 2019. Below are some of the key activities that CVRD staff will be undertaking in 2018.

1

Ongoing Protection of the Willemar Bluffs forcemain

This includes increased monitoring and protection as well as the continued roll out of a spill protection plan which ensures that the CVRD would be able to respond in case of any failure.

2

Assessment of Alternatives

Other options that would enable the rerouting of the at-risk forcemain and increase capacity in the sewer system will be assessed considering the full-lifecycle for the infrastructure.

3

Further Review of Beech Street

While Beech Street is on hold, it isn't off the table. Additional review work regarding water and risk mitigation will be completed in the case that it remains the best option following assessment of alternatives.

4

Stakeholder Engagement

The CVRD is committed to engaging stakeholders and keeping the community informed wherever possible. Stakeholders impacted by the potential alternatives will be engaged as part of the assessment process.

