APPENDIX 1

Event Display Boards

PLANNING THE FUTURE OF OUR LIQUID WASTE

Liquid Waste Management Plans are a tool used by communities to plan for the long-term management of their wastewater. They include engineering study, environmental assessment, financial analysis and significant public consultation. In 2018, the CVRD kicked off the Comox Valley Sewer Service Liquid Waste Management Plan:

1. SETTING THE STAGE + KICK OFF: JUNE-OCT 2018

The CVRD staff prepare to start the management planning process. This included the first public consultation in June 2018 and establishing public and technical advisory committees.

2. GOAL SETTING: NOV 2018

The committees reviewed information collected from the community to help them set goals and objectives for the management plan. The community reviewed these goals and provided feedback.

3. ESTABLISHING A LONG LIST: JAN-MAR 2019

A long-list of options for treatment, conveyance and resource recovery were brought to the community for comment in 2019. All feedback was considered by the committees.

4. NARROWING DOWN A SHORT LIST: MAR- SEPT 2020

Conveyance scenarios were narrowed down to a shortlist of three possible options, and the community was invited to share comment about impacts of each.

5. CHOOSING A PREFERRED OPTION: DEC. – FEB 2021

A preferred option is selected by the public and technical advisory committees after review of technical considerations and consideration of community feedback. The Sewage Commission selected the preferred option for treatment/resource recovery in Dec 2020, followed by conveyance in Feb. 2021.

6. BORROWING APPROVAL FOR CONVEYANCE: JUL. 2021

An Alternative Approval Process (AAP) was successful in summer 2021, approving the borrowing for construction of the conveyance infrastructure. This project is now proceeding as a project separate from the LWMP process.

7. PLAN SUBMITTED: SUMMER 2022

The draft plan will be submitted to the province in summer 2022, and approvals could take up to a year.

8. PLAN REVISED: SPRING 2024

The final draft stage of the LWMP, including a financing and implementation plan, will be shared with the community before it is submitted to the province.

9. PLAN APPROVED: SPRING 2025

Provincial approval of Comox Valley Sewer Service LWMP.

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DECISIONS ABOUT OUR WASTEWATER

The LWMP was an intensive process that led to some clear decisions about the future of our wastewater infrastructure. These included:

PROVIDE SECONDARY TREATMENT FOR ALL FLOWS

- The preferred treatment option selected will see secondary treatment to all flows – as the system does currently. Upgrades and expansion to existing components will occur to increase capacity and comply with regulations over time.
- Disinfection – to achieve 'recreational' standards – will be added as a new component to the treatment process.

RESOURCE RECOVERY DISCUSSION DEFERRED

- Consultants concluded the only financially feasible option for the use of reclaimed water is within the treatment facility. This is due to a short irrigation season and the very long distances required for conveying the reclaimed water to potential customers.
- A business case for reclaimed water use is being considered through the site master planning process underway at the treatment plant.
- Further assessment and decisions will be considered by the Sewage Commission in the future.

PREFERRED CONVEYANCE OPTION

- A blended option of trenched and tunneled forcemain along Comox Road/Comox Avenue to Lazo area, was selected as the preferred option.
- Work to be undertaken as one phase, to reduce operational risk by decommissioning aging infrastructure as soon as possible.
- Conveyance upgrades identified as the biggest priority, in order to address the urgent environmental risk posed by exposed pipes at Balmoral Beach (Willemar Bluffs)

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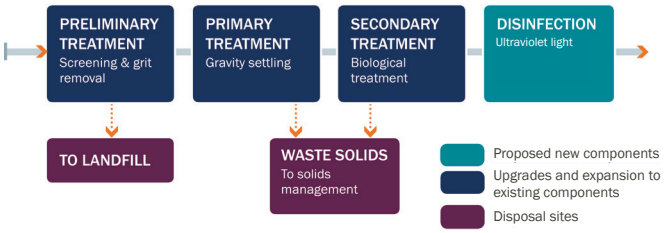
PREFERRED TREATMENT OPTION

As part of the planning process, the community provided comment on a long-list of four options for the future of wastewater treatment in the Comox Valley Sewer Service. That feedback, along with technical assessment, led to a narrowing of options until the preferred option of providing secondary treatment for all flows was selected. This option was approved by the Comox Valley Sewage Commission in December 2020.

ABOUT THE PREFERRED OPTION

The preferred option for the Liquid Waste Management Plan (LWMP) will ensure all effluent passes through secondary treatment as it does currently. However, disinfection for all flows will be added as a new component in the treatment process. The disinfection process will be designed to achieve recreational standards and the following treatment and discharge standards will apply. Upgrades and expansion to existing components will occur over time to increase capacity and comply with regulations.



SECONDARY TREATMENT FOR THE ENTIRE PLANT FLOW:

- Secondary treatment removes 90% of organic material and solids on average (note that the treatment plant currently achieves greater than 95% removal of total suspended solids (TSS) and greater than 93% removal of 5-day Biochemical Oxygen Demand (BOD5)
- Secondary treatment removes 80-95% of microplastics on average
- Meets effluent quality for provincial and federal regulations
- UV disinfection system to disinfect wastewater to not exceed 200MPN/100mL fecal coliform concentration at end of the outfall pipe. Based on dilution modelling there will be sufficient dilution to stay well below requirements for protection of shellfish.

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ABOUT COMOX VALLEY SEWER CONVEYANCE PROJECT

The Comox Valley Regional District is currently planning an update to sewer conveyance infrastructure that currently services the City of Courtenay, Town of Comox and K'ómoks First Nation.

The project developed from the Comox Valley Sewer Service Liquid Waste Management Plan process – a multi-year planning exercise with extensive public consultation that outlines a long-term plan for sewer service.

The project will replace the pipes and upgrade the pump stations that move more than 14,000 cubic metres of raw sewage each day to the sewage treatment plant on Brent Road.

This project is urgently needed to protect the beaches and waters throughout the Comox Estuary, Point Holmes, Goose Spit coastline, as well as Baynes Sound.

This new system will route sewer pipes further inland where they will no longer be vulnerable to storm damage by waves, rocks and logs.

The project scope was approved in Feb. 2022. Construction is expected to begin in Spring 2023 with completion in Fall 2024.

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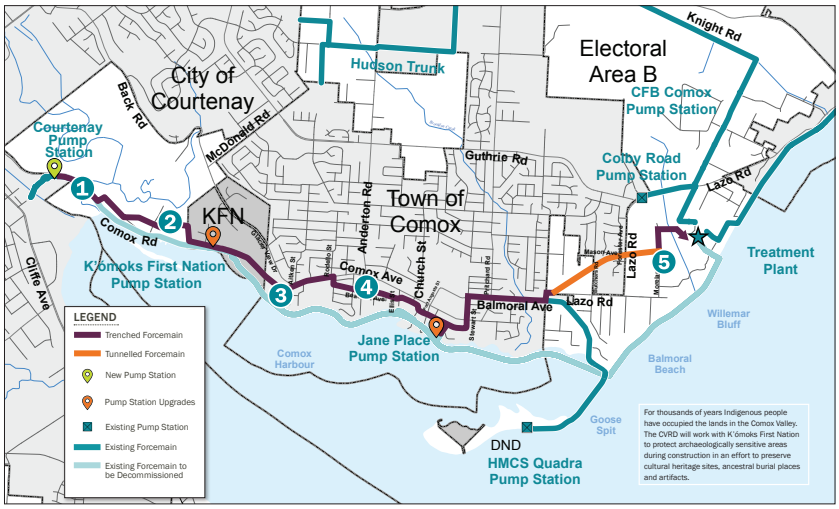
CONVEYANCE PROJECT: ROUTE ALIGNMENT

The overall project alignment includes some proposed changes from the preliminary map shared last year, including:

1. Proposed rebuild and re-location of Courtenay Pump Station for seismic upgrades and climate resiliency
2. Moving route away from areas of archeological significance along Dyke Road and working with KFN to reduce impacts in IR#1
3. Use of traditional trench/ cut and cover on Comox Hill instead of drilling
4. Moving portion of route from Comox Ave to Beaufort Ave to minimize traffic impacts
5. Further consideration of options for Lazo Marsh crossing: seeking alternative to drilling in the area.



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ROUTE DETAILS: PUMP STATION + COMOX RD.

The approved project scope developed and approved by the Sewage Commission in February 2022 included key decisions about the final approach to these upgrades.

A NEW COURTENAY PUMP STATION

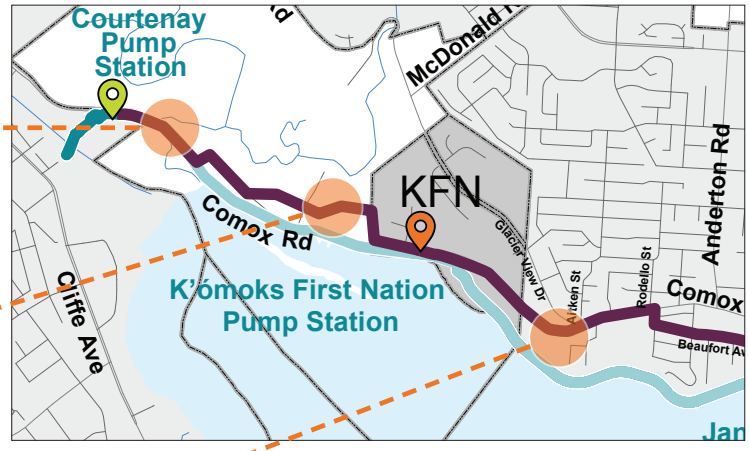
Replacing, rather than refurbishing, the Courtenay Pump Station was selected because:

- The cost of a new facility was the same as renovating the current one which is 40+ years old.
- It offers improved operations and maintenance access for a longer term.
- It allows the station to be relocated farther away from the estuary.

ROUTE AWAY FROM CULTURALLY SENSITIVE AREA

A section of the pipe has been rerouted from Comox Road because:

- It avoids areas already identified as having intact archeological findings – discoveries that could impact construction if found during excavation
- Our partners, KFN identified the disturbance of culturally sensitive areas as a concern
- By moving construction off Comox Road in this area, we can reduce some of the traffic impacts.



NO TUNNEL AT COMOX HILL

Using traditional cut and cover (trenching) to install the pipe at Comox Hill was selected over tunneling in this area because technical assessment and cost/benefit analysis indicated trenching is the better choice given the land elevations.

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ROUTE DETAILS: TOWN OF COMOX DETAILS

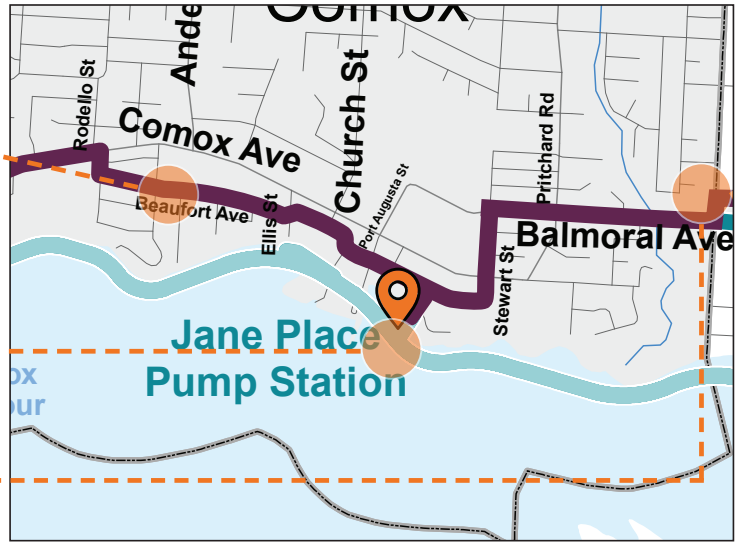
The CVRD project team has been working with the Town of Comox to create a project plan that reduces the impact on the community.

MOVING CONSTRUCTION OFF COMOX AVENUE
Between Rodello and Stewart streets, the pipe will be routed off of Comox Avenue, to Beaufort Avenue.

ALIGNING WITH TOWN OF COMOX UPGRADES
Pipe construction disruption can align with road and utility upgrades planned in this area. The project team will continue working with the Town of Comox to synergize with its existing plans. Further details on these upgrades will be confirmed with the public as contracts are awarded and construction planning begins.

UPGRADE JANE PLACE PUMP STATION
In order to serve the revised pumping requirements and ensure it meets current standards, the Jane Place Pump Station will be extensively upgraded, but will remain within the same footprint.

The pipe route will follow Balmoral Avenue until it reaches the tunnel entry pit at Lazo and Torrence. The project team will work with Town staff toward a construction plan that will reduce the impact on traffic flow where possible.



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ROUTE DETAILS: LAZO HILL ALIGNMENT

The forcemain will be tunneled below Lazo Hill. This confirmed alignment is the result of significant assessment, and consideration of community feedback.

Highlights

- Single shorter line from Torrence/Lazo to existing right-of-way at Morland Road
- Minimum 20-metre offset from all deep water wells in the area (as per recommendation by groundwater consultant)
- Impacts fewest properties
- Laydown on Morland/Brent Road reduces disruption
- Alignment allows for gravity flow in the pipe through Lazo Hill, reducing operational risks.

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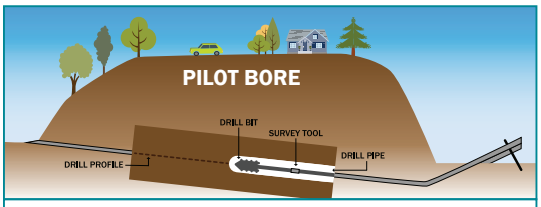
ABOUT HORIZONTAL DIRECTIONAL DRILLING

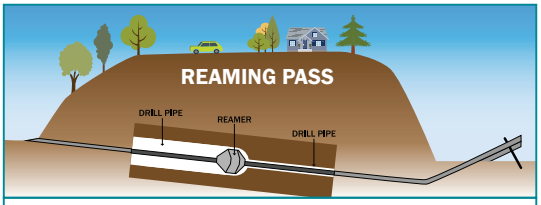
Horizontal Directional Drilling (HDD) will be used to avoid surface impacts through Lazo Hill and minimize the maximum pipe elevation to reduce lifecycle costs and risk.

HDD is typically used to install pipelines under environmental sensitive areas to avoid surface disturbance.

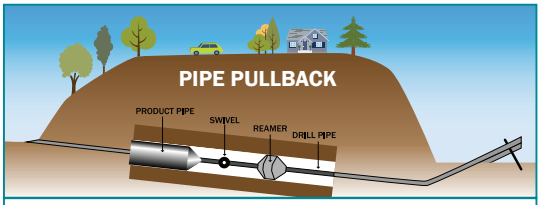
The contractor uses a drill rig to horizontally drill an underground pathway for the new pipe between an entry and an exit pit. This process happens in three stages.



1. Pilot Bore: A process called a pilot bore establishes the underground path for the new sewer pipe.



2. Reaming Passes: The contractor will enlarge the tunnel to the final pipe size using a reamer. A bentonite-based drilling fluid keeps the borehole stabilized – the drilling mud is collected and recycled.



3. Pipe Pullback: The pipeline is assembled at surface in a long single string and is then pulled through the tunnel into its final position.

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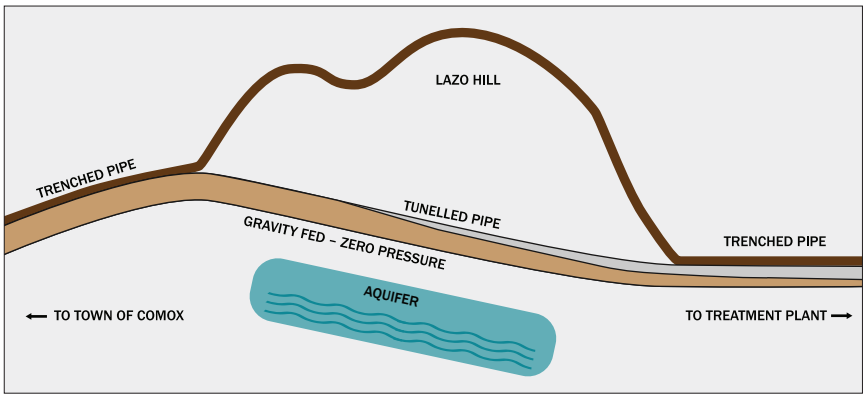
TECHNOLOGY

Engineering decisions about the method and materials for the new system provide ddditional environmental protection.

GRAVITY FED LINE

- Non-pressurized flow, virtually eliminating an already very-low risk of a leak
- Allows route to remain 10m above aquifer, eliminating penetration of aquifer
- Pipe wall designed to withstand installation stress, far exceeding the zero-pressure of operational flow



MATERIAL (High Density Polyethylene)

- Shorter route allows for use of HDPE, which is far more resistant to corrosion than steel
- HDPE is more flexible and better suited to withstand seismic activity
- Continuously fused to eliminate all joints
- More resistant to abrasion and has no coating that can be damaged during installation

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TIMELINE AHEAD

A lot of work has been completed to date, but there is still much to be done before this project is complete. Here's a look at upcoming key milestones to expect in the coming 18 months.

WINTER/SPRING 2022

Final project scope, including routing through Lazo Hill, confirmed by the sewage commission. Tenders for construction developed, and contracts awarded.

SPRING 2022

The final project scope for the Comox Valley Conveyance Project, starting from the Courtenay Pump Station and ending at the Sewage Treatment Plant, will be shared via public events.

SPRING/SUMMER 2022

Finalize plans with Town of Comox to synergize pipe construction work with planned road and utilities upgrades in the downtown core.

FALL 2022

The CVRD will engage with residents and businesses along all points of the Comox Valley Sewer Conveyance route as part of the pre-construction planning process. This will help us to create a plan for construction that considers everyone impacted by the project.

SPRING 2023

Estimated start of construction. Communication will continue throughout the project including notice of lane closures and traffic impacts. The CVRD will work diligently with its contractor to come up with a schedule that minimizes disruption as much as possible.

FALL 2024

Following review of Stage 2 sewer plan, province formally approves the full plan.

SHARE YOUR FEEDBACK

Planning continues for the Comox Valley Sewer Conveyance Project and the CVRD is committed to engaging with the community throughout the process. Please share with us any questions, concerns or comments that you would like the project team to consider as we enter the construction planning phase.

APPENDIX 2

Webinar Presentation

Comox Valley LWMP Update

April 13, 2022

Russell Dyson, CAO

Comox Valley REGIONAL DISTRICT

About Liquid Waste Management Plans

- Outline long-term plan for wastewater (sewage)
- Tool for local governments, with review/approval by province
- Require engineering study, environmental assessment and financial analysis
- Significant public consultation required

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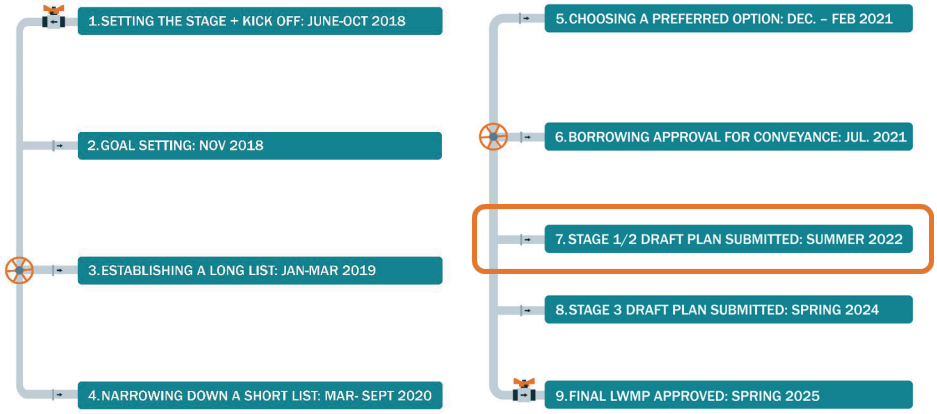
Timeline



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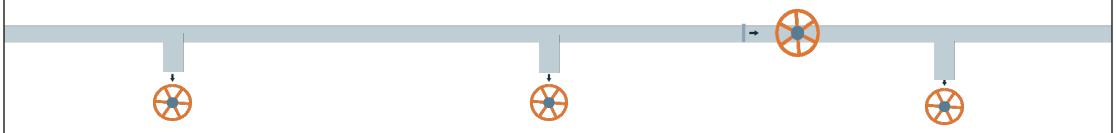
Decisions Made About Wastewater



RESOURCE RECOVERY
- Resource recovery deferred
- Business case for reclaimed water part of site master plan

CONVEYANCE
- Urgent environmental risk
- Involves working closely with K'ómoks First Nation, Town of Comox and Lazo residents

TREATMENT PLANT
- Continue to provide secondary treatment for all flows
- Current standard
- Add disinfection as new component

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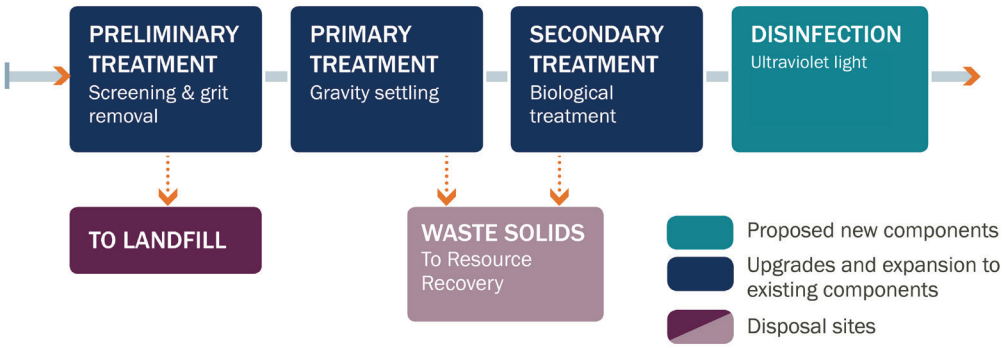
Preferred Treatment Option



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About the Conveyance Project

Urgent need identified by Liquid Waste Management Plan

Upgrade to pipes + pump stations

Protect estuary, beach + Baynes Sound

Move pipes inland away from water

Construction start spring 2023

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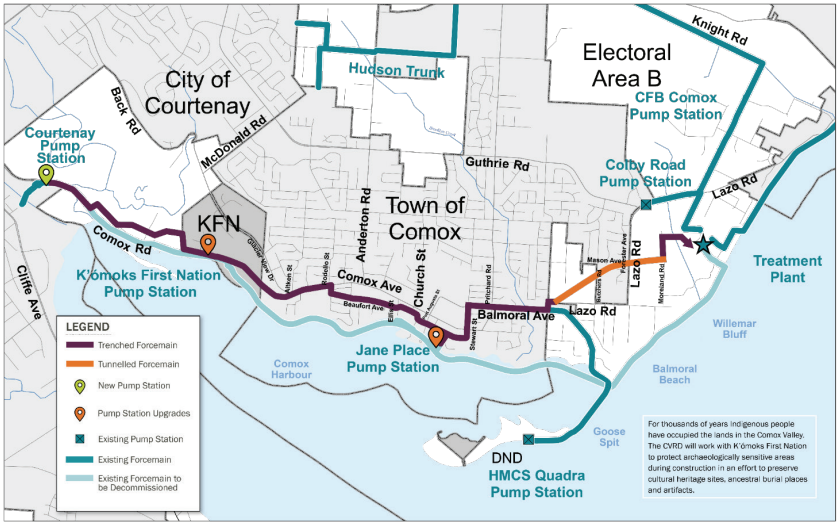

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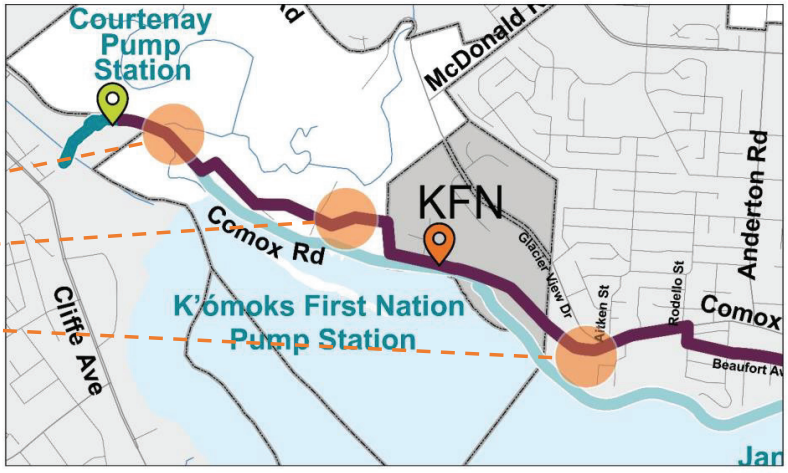
Route Details: Pump Station + Comox Rd.

New Courtenay Pump Station

Route Away from Culturally-Sensitive Areas

No Tunnel At Comox Hill



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Route Details: Town of Comox

Moving Construction Off Comox Ave

Aligning with Town of Comox Upgrades

Balmoral Pipe Route

Upgrade Jane Place Pump Station

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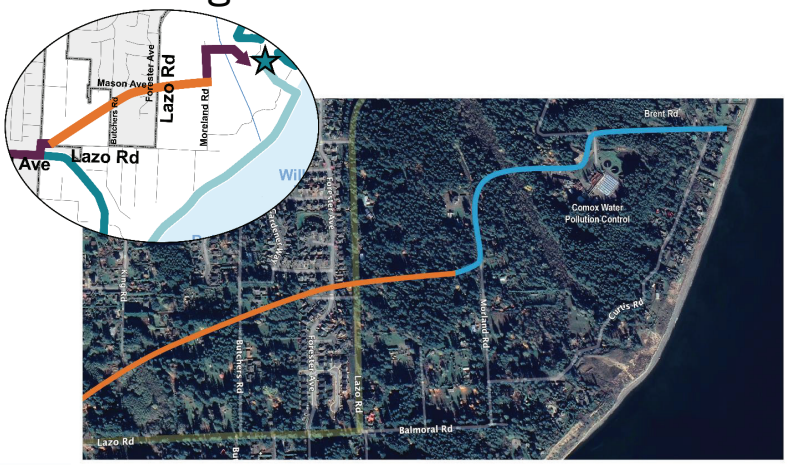
Route Details: Lazo Hill Alignment

BENEFITS

- Single shorter HDD Line
- Minimum 20m offset from all deep groundwater wells
- Impacts fewer properties
- Laydown on Morland/Brent Road reduces disruption
- Gravity flow at Lazo Hill = reduced operational risks



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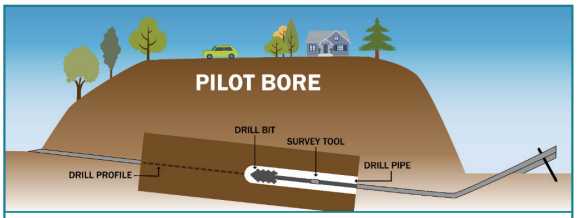
About Horizontal Directional Drilling (HDD)



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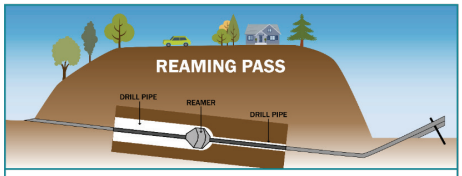

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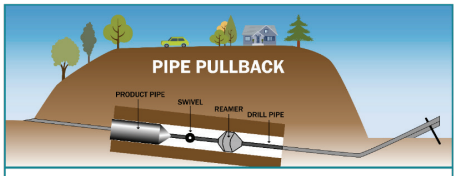

3. Pipe Pullback: The pipeline is assembled at surface in a long single string and is then pulled through the tunnel into its final position.

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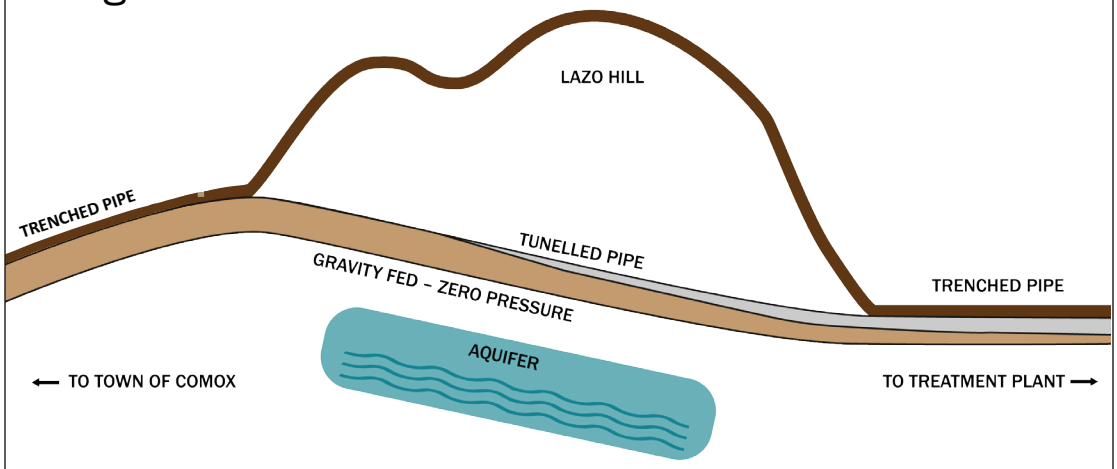
Designed Risk Reduction



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Timeline Ahead

Winter/Spring 2022
Finalize Project Scope

Fall 2022
Public Engagement on Construction

Fall 2024
Estimated Project Completion

2021/2022 — 2022 — 2022 — 2023 — 2024

Spring 2022
Public Update on Final Project Scope
AND
Finalize plans with Town of Comox

Spring 2023
Estimated Start of Construction

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APPENDIX 3

Print & Radio Advertisement Samples

PRINT

We've Got Big Projects Coming Down the Pipe

We are ready to share our long term plan for sewer services, including the final route for the Comox Valley Sewer Conveyance Project and future upgrades at the Sewage Treatment Plant. Join us to learn about how this plan will protect the beaches and waters throughout the Comox Estuary, Point Holmes, Goose Spit coastline and Baynes Sound.

COME LEARN MORE

Attend an Open House
Monday, April 4
4:00 pm to 6:00 pm
Comox Rec Centre,
1855 Noel Ave., Comox

Join a ZOOM Webinar:
Wednesday, April 13
12:00 pm to 1:00 pm
Visit link below to register

Visit **www.comoxvalleyrd.ca/lwmp** to learn more about the work to come, register for webinar, and sign up for updates moving forward.

Questions?
Call: **250-334-6000**
Email: **engineeringservices@comoxvalleyrd.ca**

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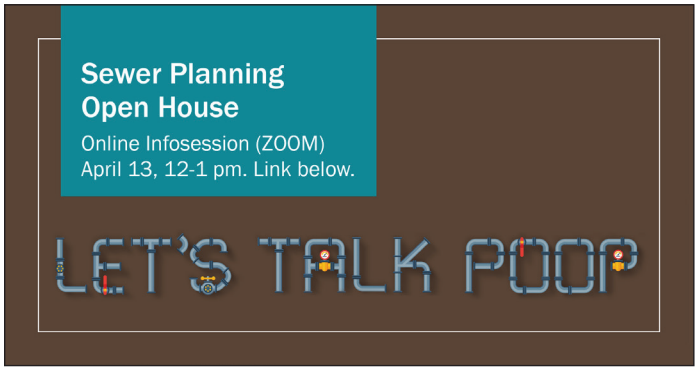
SOCIAL MEDIA



RADIO

RADIO AD SCRIPT (DRAFT)

PROJECT: CV Sewer Conveyance /LWMP
MEDIA: 30 second ads
CAMPAIGN: Open House/Project Update Invitation
RUN DATES: March 28 – April 3
FREQUENCY: 6x/day

SCRIPT – Ad #1 Mar. 28 – Apr. 3

There are big things coming down the pipe for the Comox Valley Sewer Service – and the Comox Valley Regional District is ready to share the long-term plan for wastewater collection and treatment in the community.

You're invited to learn more about planning, construction and how these plans will protect beaches and waters of the area.

Join us at an in-person open house on Monday, April fourth from four p-m to six p-m, at the Comox Rec Centre. Or, register to join an online webinar April thirteenth from noon until one p-m.

For details, visit connect -C-V-R-D <dot> C-A <slash> L-W-M-P.