

**DATE:** August 5, 2022

**FILE:** 5330-20/SSCP

**TO:** Chair and Members  
Sewage Commission

**FROM:** James Warren  
Deputy Chief Administrative Officer

Supported by James Warren  
Deputy Chief Administrative Officer

*J. Warren*

**RE: Sewer System Conveyance Project Milestones and Decision Points**

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**Purpose**

To provide updates on project elements and make several recommendations for the Comox Valley Sewer System Conveyance Project (SSCP).

**Recommendations from the Deputy Chief Administrative Officer:**

1. THAT the remaining Sewer System Conveyance Project scope components not finalized in February 2022, and as noted in the staff report dated August 5, 2022 be fully endorsed, including:
  - Courtenay pump station location
  - Installation methodology within K'ómoks IR#1
  - Lazo marsh crossing (pending final permitting approval from Province of BC).
2. WHEREAS the Comox Valley Regional District and the Town of Comox recognize
  - The Comox Valley Sewer System Conveyance Project will realize substantial environmental and other benefits and both parties have a mutual interest in ensuring the successful design and construction of the Project; and
  - The construction of the Project will provide an opportunity to make certain improvements to the Town of Comox's infrastructure, and that it is in both parties' mutual interest to incorporate that work into the Project scope to reduce impacts and costs related to residents, businesses and infrastructure and respect interests of the ratepayers;

NOW THEREFORE BE IT RESOLVED THAT the Comox Valley Regional District and Town of Comox Sewer System Conveyance Project Agreement be approved in the form that is substantially compliant with Appendix D to the staff report dated August 5, 2022.

3. THAT the Sewer System Conveyance Project capital cost estimate be increased by \$19 million to a total capital cost estimate of \$101 million to reflect the project scope, market conditions, inflationary pressures, escalation to the mid-point of construction and sufficient contingency for the Class C/D cost estimate currently available for this project; AND FURTHER THAT the 2022-2026 financial plan and capital expenditure program for the Comox Valley Sewerage Service, functions 335-338, be amended by increasing total sewer infrastructure expenses for the project to \$101 million over four years with \$15.8 million in 2022, \$53 million in 2023, \$27.2 million in 2024 and \$5 million in 2025 with the project being funded by a combination of contributions from the service's Capital Works and Development Cost Charge reserves as well as from both long-term and short-term debt proceeds as outlined in Table No. 2 within Schedule B supporting the staff report dated August 5, 2022;

AND FINALLY THAT an Alternative Approval Process be undertaken in early 2023 to seek consent of the electors for an additional \$16.7 million in long-term borrowing that would replace the need for short-term debt of that amount in 2024.

4. THAT as per Bylaw No. 510 being the “Comox Valley Regional District Delegation of Purchasing Authority Bylaw No. 510, 2018” and the Comox Valley Regional District Procurement Policy, the board authorizes the award of the design-build and the design-bid-build contracts for the Sewer System Conveyance Project to staff, up to maximum contract value of \$56.3 million for the design-build component, and \$29.6 million for the Comox Valley Regional District’s conveyance scope included within the design-bid-build component but excluding the Town of Comox infrastructure improvements.

### Executive Summary

The SSCP is a multi-year construction project that will replace the pipes and upgrade the pump stations that move more than 14,000 cubic metres of raw sewage each day to the Comox Valley Water Pollution Control Centre on Brent Road. This new system will route sewer pipes further inland where they will no longer be vulnerable to damage by waves, rocks and logs.

This report provides an overall project update including specific information related to the final scope, permitting and other agency approvals, budget and cost escalations, funding strategy including new debt that is required, traffic mitigation, public engagement and plans for regular project reporting. An updated project timeline is also provided.

- The SSCP work includes new and upgraded pumps and pipes. The project is highly complex in the number of jurisdictions/agencies, property owners, rights holders and regulatory requirements involved.
- Strong partnerships have progressed through the evolution of project planning, including specifically with the K’ómoks First Nation (K’ómoks) and Town of Comox (Comox).
- Since approval of the scope in February, the construction industry has seen supply chain issues, unprecedented increases in fuel and material prices, and general inflation that is resulting in bid price increases locally and across North America. As a result, through a combination of adjusted indirect costs, scope increases and construction cost escalation, the project cost has increased by \$19 million to a total of \$101 million.
- Ongoing planning and project refinement over the coming weeks and months means that project elements, such as traffic mitigation strategies, permitting and public engagement, will result in project delivery that achieves stated goals to resolve environmental risk and increase sewer system resilience.

Prepared by:

Concurrence:

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**Government and Community Interests Distribution (Upon Agenda Publication)**

City of Courtenay	✓
Town of Comox	✓
K'ómoks First Nation	✓

**Final Scope Approval**

In February 2022, the Sewage Commission approved a scope that included the alignment from the Courtenay Pump Station (CPS) to the K'ómoks IR#1 boundary, installation of the forcemain up Comox hill via trench, installation of the forcemain through Lazo hill via horizontal direction drilling and crossing the Lazo marsh via trench. Outstanding scope aspects at the time included the location of the CPS, installation methodology within K'ómoks IR#1, and specifics related to installation of the forcemain through Comox including incorporating any Comox infrastructure improvements. Further details on these outstanding elements are provided below.

*Courtenay Pump Station*

As described within the February 2022 report, construction of a new CPS is preferred over retrofitting the existing. Since February 2022, staff have worked with HDR, engineering consultants, to complete a detailed assessment of four potential locations for a new CPS, and subsequently with a property negotiator for the proposed location, as summarized in Appendix A. An application to the Agricultural Land Commission for the subdivision of this property has now been approved, and negotiations with the property owner are underway for acquisition of this parcel.

*K'ómoks IR#1 Installation Methodology*

Building off previous work and recommendations to complete the installation of the forcemain through K'ómoks IR#1 using cut and cover, the concept has been further developed to utilize the previously disturbed trench of the existing forcemain, and a temporary bypass, summarized in the memo attached as Appendix B.

While this approach requires installation of a temporary bypass, it eliminates the need for a pre-dig through IR#1 and avoids most of the impact to previously undisturbed archaeological material that would have been encountered with the previous concept, as summarized within the Cultural Heritage Permit Mitigations Plan presented to K'ómoks Chief and Council and attached as Appendix C to this report. Comox Valley Regional District (CVRD) staff will work with Dr. Morin to complete the application for a K'ómoks Cultural Heritage Inspection Permit for the project and will complete the necessary investigations as outlined in the mitigations plan.

*Town of Comox Installation and Comox Infrastructure Improvements*

The project includes 3.5km of cut and cover forcemain installation through Town of Comox streets. The CVRD and Comox recognize the environmental and other benefits that will be realized through the SSCP, and have a mutual interest in ensuring the successful design and construction of the project. To this end, CVRD and Town of Comox staff have been collaborating on a project agreement to ensure smooth and efficient delivery of the project, and to mitigate the impacts that Comox and its residents and business community experience during SSCP construction.

A copy of the agreement is attached to the report as Appendix D. The agreement is largely finalized and is undergoing final legal review with a few minor outstanding items yet to be resolved that will result in only modest changes to the agreement. The minor, outstanding items being:

- Final review of the base project scope and assumptions as described in Schedule A and B are being completed by Comox and CVRD staff pending receipt of the 60 per cent design drawings for the Comox portion.

- Final review of cost sharing (section 9.2): This has been agreed to in principle by both Town and CVRD, however clarification on when the cost sharing mechanisms as described within the agreement are implemented needs to be finalized to ensure fairness in division of costs as design of these projects are being completed separately.
- Separation thresholds for notification and review of Town projects in vicinity of the forcemain after construction (section 18.2). Final review of horizontal and vertical separation that requires notification from the Town to the CVRD is under review.
- Ownership of fibre optic conduit within the Town.

The key aspects of the agreement are summarized below and are agreed on by staff from both parties; minor changes to reflect the above noted items may occur but key aspects will not change.

- **Delivery of Comox surface improvements:** To mitigate the combined impact of the SSCP and Comox roadworks anticipated over the short term, five Comox infrastructure improvement projects will be managed by CVRD staff, consultants and contractors under the SSCP construction contract. Costs associated with the Comox infrastructure are not borne by the Sewage Commission, aside from the financial contribution noted in the following bullet.
- **CVRD financial contribution:** In acknowledgement of the potential impact of SSCP construction on Comox residents and businesses, and the permanent constraining presence of the forcemain on siting and replacement of Comox utilities along the pipe alignment, the agreement includes a total of \$3,000,000 towards the Comox infrastructure improvement projects.
- **Town of Comox representative:** The CVRD contributes funds towards a term Comox full-time position for coordinating Comox reviews, requests for clarifications, and instructions or directions concerning construction of Comox infrastructure improvements; and generally acting as liaison between the SSCP project team and Comox public works department.
- **Commitments by the CVRD and Town to mitigate risks of disputes:** The agreement describes various elements in an attempt to proactively address potential contentious elements before disputes arise. Elements include scope; design process; design principles; maximum review times; managing delays or changes, procurement, contracts and awards; roles and responsibilities; reporting; lines of communication; and dispute resolution.
- **Public safety and traffic management:** Dedicated schedule attached to the project agreement outlining specific traffic mitigation measures, constraints, restrictions and prioritization to help guide development of the traffic management strategy, and individual contract traffic management plans to minimize disruption to Comox residents and businesses.
- **Communication strategy:** The CVRD and the project contractors will be primarily responsible for communications, including community relations, stakeholder consultation, media relations, service interruptions and emergency communications. All media contact will be through the CVRD.

The project agreement is focused on delivery of the conveyance project; a separate document will be developed in coordination with the Town that speaks to operation and maintenance of the forcemain within Town roadways and requirements around notification and communication with the Town.

Staff are recommending that the Sewage Commission approve the CVRD and Town of Comox agreement, attached as appendix D to this staff report. Minor changes may be required depending

on the outcome of the final discussions with Town staff on the outstanding items noted earlier. Town of Comox staff will present the agreement to Mayor and Council in early September for final ratification. If any of the key aspects are changed or the agreement is not supported by the Town in September, CVRD staff will update the Commission on options for proceeding.

### Permitting and Other Approvals

CVRD staff are working with K'ómoks First Nation, including its legal counsel, to propose updates to the Community Benefit Agreement (CBA) that would allow for earlier payment to K'ómoks and eliminate long-term capital liabilities arising from the agreement for the CVRD. The revisions would ensure payment for K'ómoks upon receipt of a letter of support for the Liquid Waste Management Plan, instead of waiting for final provincial approval of the Liquid Waste Management Plan, which could take until 2025. The proposed changes to the CBA will be brought forward for Sewage Commission consideration at a subsequent meeting.

Given the number of jurisdictions that the conveyance line must cross and the regulatory requirements that must be met, permitting at various levels is required. A number of long lead time permits have been identified and are being completed by the CVRD; all other relevant and required permits, such as building permits, development permits and highway use permits will be the responsibility of the contractor to obtain. Summarized in Table No. 1 are the predominant approvals the project team has initiated and an update on status.

**Table No. 1: Long Lead Time Permits and Status Update**

Agency	Permit	Status
<b>Ministry of Forests, Lands, Natural Resource Operations &amp; Rural Development</b>	Archaeology Branch - HCA Site Alteration and Heritage Inspection Permits	Submitted January 2022 (permit approvals can be up to 12 months)
	Crown Land Tenure for Lazo Marsh	Submitted Fall 2021, further environmental investigations requested, works are season dependent, additional information provided in July 2022
<b>K'ómoks First Nation</b>	Cultural Heritage Investigation Permit	Mitigations Plan under review by K'ómoks Chief and Council, will submit permit application once approval received
<b>Agricultural Land Commission</b>	Transportation, Utility and Recreation Trail Use Permit	<b>Complete:</b> ALC approval received
<b>Private Property</b>	Statutory rights-of-way for private properties	Consent agreements for all properties <b>complete</b> , working on final SRWs
	Temporary Workspace Agreements for HDD Entry/Exit Pit	<b>Complete:</b> Temporary workspace agreement for HDD in place

### Project Budget

The project team and its advisors have been working diligently to reduce project scope and associated costs since the onset of the project and this work has resulted in approximately \$16.6 million of costs being avoided. However, since approval of the scope in February, the construction industry has seen supply chain issues and unprecedented increases in material prices resulting in bid price increases. Since development of the updated project cost estimate in early 2022, the project team has worked with advisors to refine the project scope and construction costs using the Engineering News Record Construction Cost Index. This adjustment has resulted in a 5.2 per cent

increase to account for inflation on material costs to facilities and portions of the linear works from early 2022 to June 2022. In addition to inflation seen on direct costs, escalation to the midpoint of construction needs to be accounted for and as such an adjustment to the escalation factor to nine per cent until the end of 2022 and five per cent for 2023 as recommended by BTY Group has been completed. Table No.2 summarizes the direct costs, escalation to midpoint of construction and contingency to account for the current class of cost estimate. Further details are provided within Schedule A, including discussion surrounding options and considerations for reductions to the project scope.

**Table No.2: Updated Project Costs and Escalation**

Project Component	February 2022 (\$M)	July 2022 (\$M)
<i>Direct Costs</i>		
Pump Stations	\$11.2	\$12.6
Cut and Cover	\$23.4	\$30.2
HDD	\$8.0	\$8.7
Ancillary Projects	\$12.5	\$12.5
<i>Indirect Costs</i>		
Escalation to Midpoint of Construction	\$2.1	\$5.7
CVRD and DB Engineering	\$7.0	\$7.6
Land/ Legal/ Other	\$1.4	\$3.4
Contingency	\$16.4	\$20.3
<b>Total Project Costs</b>	<b>\$82</b>	<b>\$101</b>

### Project Funding Strategy

To fund the resulting difference, a number of options were reviewed and discussed with the Chief Financial Officers (CFOs) of both Courtenay and Comox. The following amendments to the funding strategy are now being recommended and are further detailed within Schedule B.

- Amend the 2022-2026 financial plan for the Comox Valley Sewerage Service, functions 335-338, to reflect the revised total project budget of \$101 million.
- The revised funding model for the project currently includes \$16.7 million in short-term borrowing being required in 2024 to enable the complete project to proceed as presented. This is being recommended as an interim strategy until such time that an Alternative Approval Process (AAP) can be undertaken, likely in early 2023.
  - Once the design-build procurement process is complete and greater cost certainty is in hand, the intent is to obtain consent of the electors for an additional \$16.7 million in long-term borrowing that would then replace the need for short-term debt. Upon a successful AAP, the financial plan for the service would be adjusted to shift the short-term debt to long-term debt. In the event that the AAP is not successful, then the short-term borrowing would remain as a key part of the funding model for the project.

The implications on the annual sewer levy for the service, stemming from the long-term versus short-term strategies noted above, will differ over the next ten years and are further summarized in Schedule B.

### Procurement Strategy

The project is being delivered under two separate contracts, the design-build (DB) and design-bid-build (DBB) contracts, based on results from the Procurement Model Assessment, the Value Engineering process, and detailed discussions with the Town of Comox and Sewage Management

Advisory Committee; and as summarized within the Sewer System Conveyance Project – Implementation Strategy staff report presented in April 2021. Further detail is provided within Schedule C, and summarized below.

- The overall project budget is \$101 million. However, this cost includes both the DBB and DB project scopes, along with contingencies, indirect costs and ancillary project costs, and is not reflective of the actual contract values to be awarded to the DB team or contractor for the DBB work.
- The total project budget for the DB component is \$69.2 million and the anticipated maximum DB contract dollar value is \$56.3 million. DB proposals shall be evaluated to confirm they are compliant and fit within the overall project budget.
- The total project budget for the DBB component is \$31.8 million, and the maximum DBB contract dollar value is \$29.6 million. The total project budget and contract values for the DBB component listed are solely for the CVRD's scope, all Town of Comox infrastructure improvements that will be delivered under the same contract are not included in the above noted values, and will be the responsibility of the Town to ensure proper funding and approvals are in place prior to contract award.
- Per the CVRD's purchasing policy, should either the DB or DBB contract values exceed the maximums noted above, staff will engage with the Sewage Commission for approval prior to award.

### Traffic Impacts Mitigation

Due to the extent and anticipated duration of construction for the SSCP, the project will have significant impacts to traffic throughout the course of construction. As such, traffic impacts have been identified as a key project risk and the project team has developed a number of mitigation measures looking to address and manage the traffic impacts of the project as best as possible. These include:

- **Establishment of the intergovernmental Conveyance Project Traffic Mitigation Working Group:** The working group includes representatives from the Town of Comox, City of Courtenay, K'ómoks First Nation and Ministry of Transportation and Infrastructure (MOTI). The key objective for the group is to identify projects and coordinate works as best as possible.
- **Targeted stakeholder engagement:** Meeting invites, presentation requests and surveys have been sent out to varying stakeholder groups to provide an overview of the project, discuss traffic impacts and solicit feedback. Engagement includes meetings with key stakeholder groups such as emergency services, BC Transit and the School District, presentations to Comox and City of Courtenay Councils and downtown business associations, and engagement through a survey for other private utilities and stakeholders.
- **Completion of a traffic management strategy:** Guiding document for development of the traffic management plans by the contractors for the DB and DBB construction components with the intention of minimizing the traffic disturbances where possible. The strategy will incorporate feedback from stakeholders and will be presented to the Sewage Commission in September for review and approval.

The CVRD understands that keeping the public properly informed about traffic impacts will be key to managing traffic flows during the project and to maintaining public trust in the process. The project team is committed to keeping the public informed about this project and is starting the recruitment process for a term position to lead the development and execution of a public engagement strategy. A dedicated role for the Sewer System Conveyance Project will ensure open

and consistent communications with partners, stakeholders and the public leading up to and during project construction.

### **Related Projects and Costs**

Once the conveyance project is completed, consideration needs to be made on what to do with the existing forcemain once it is no longer in use. A review and assessment of options and associated costs for the existing forcemain is underway and will be presented to the Sewage Commission in fall 2022. Timing and inclusion of these costs will be embedded within the 2023-2027 financial plan and this work will be completed as a separate project following completion of the Sewer System Conveyance Project.

Minimizing the scope of the upgrades to the Comox Pump Station to not include flood proofing or upgrades to meet post disaster requirements will result in the structure reaching the end of its service life in approximately 40 years. Within this time frame the CVRD will need to look for options and sites for a new pump station to replace the Comox Pump Station as it reaches the end of its service life.

### **Public Engagement**

Open houses are planned for early November to present the project to the community and share information about traffic management planning and construction impacts. These sessions will review the route, share the traffic strategy and explain how stakeholder input will be reflected in the construction planning process. Public sessions will be communicated via direct mail to homes and businesses along the route and through a comprehensive advertising plan for other Comox Valley residents, understanding that this construction will have a valley-wide impact.

Prior to construction beginning in spring 2023, further public engagement in winter 2023 will be completed, including development of an information campaign.

### **Reporting**

Regular reporting to the Sewage Commission and the public throughout project implementation will be critical to inform on progress, identify risks and setbacks and maintain accountability. Three primary methods of reporting will be used:

- Pre-construction updates (from present to approx. April 2023 when construction begins)
  - Monthly or bi-monthly regular report listing project elements with status for each (initiated, in-progress, nearing completion, complete including the anticipated completion date)
  - Summary of highlights since previous update
  - Upcoming activities (forecast significant expectations in coming month or two)
  - Includes a route map
  - Issue #1 of the pre-construction update is included on the August 9, 2022 Sewage Commission agenda
- Construction updates to Sewage Commission (monthly from beginning to end of construction)
  - Report showing budget, schedule, public engagement, safety (incidents)
  - Route maps providing updates on construction activities (recently completed, underway and planned) and traffic impacts (closed roads, timing, alternate routes)
- Construction updates to public and key stakeholders and project partners (weekly)
  - This is very preliminary and will need input/framing from communications resource, but focus should be on traffic and construction over the reporting timeframe providing information on public interests on a frequent (if not real-time) basis

- Attachments: Appendix A – TM#3 Courtenay Pump Station Siting Study, HDR Inc., April 6, 2022  
Appendix B – Installation Options for K'ómoks First Nation IR#1 Pipe, HDR Inc., May 25, 2022  
Appendix C – K'ómoks Cultural Heritage Mitigations Plan, Dr. Jesse Morin, June 13, 2022  
Appendix D – Comox Valley Regional District and Town of Comox Sewer System Conveyance Project Agreement  
Appendix E – Summary of Scope and Cost Savings Already Implemented
- Schedule A – Updated Project Costs and the Impact of Escalation  
Schedule B – Sewer System Conveyance Project Funding Strategy  
Schedule C – Sewer System Conveyance Project Procurement Strategy