



**REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, SEPTEMBER 25, 2024**

SUBJECT **Regional Water Supply Service 2025 Budget Requirement for Bear Hill Extension Project**

ISSUE SUMMARY

To recommend project delivery coordination and cost sharing between the Regional Water Supply (RWS) and Saanich Peninsula Water (SPW) services for the Bear Hill Trunk Watermain Extension (Bear Hill Trunk).

BACKGROUND

To support understanding of the project references below, a schematic has been provided in Appendix A.

Saanich Peninsula Water:

In 1991, a SPW Management Plan report identified system upgrades to the SPW system which included the Bear Hill Tank system, complete with a Bear Hill trunk watermain from the Bear Hill tank to Dean Park Lower tank. The Bear Hill trunk was determined to be constructed in three separate phases, of which the first two were completed in the early to mid-1990s. The Bear Hill Trunk currently extends from Bear Hill tank to the Saanichton area at East Saanich Road and Wallace Drive and consists of a 762 millimeter (mm) and 610mm diameter ductile iron watermain.

In 2015, a SPW Watermain Condition Assessment report recommended that the Bear Hill Trunk watermain be completed with approximately 3 kilometers (km) of watermain within 10-years (by 2025). Benefits of completing the trunk watermain include improving system redundancy, improving the ability to complete maintenance work on Main No. 4, and providing a higher tolerance/acceptance to main breaks, thus improving the overall resilience of water supply to the Saanich Peninsula. The Saanich Peninsula Water Supply Commission have endorsed this project to be completed under Capital Project No. 21-05.

In November 2023, Capital Regional District (CRD) entered a contract with a design consultant to progress CRD's Transmission Main Upgrade Program, which included seven projects between both the SPW and RWS systems. As of August 2024, the design team is working toward the 90% design deliverable for the Bear Hill Trunk and have provided a Class C cost estimate ranging from \$17.7 million (M) to \$24.6M in construction costs. This cost estimate exceeds the available \$12.9M funding in the SPW Loan Authorization Bylaw No. 4411, which poses risk of delay or cancellation of the project.

Regional Water Supply:

As part of the same Transmission Main Upgrade Program that is delivering the Bear Hill Trunk project, a separate project is being delivered to replace an approximately 2.9km section of concrete cylinder pipe in RWS Transmission Main No. 4 from the intersection of Lochside Drive and Island View Road to the intersection of Central Saanich Road and Mount Newton Cross Road. This project was selected to improve resiliency by replacing some critical sections of concrete cylinder pipe with more resilient steel mains. The project has been awarded \$6M in grant

funding through the Strategic Priorities Fund and has been endorsed by the RWS Commission under RWS Capital Project No. 23-17. As of August 2024, the design team is working toward the 90% design deliverable for the Main No. 4 - Mt Newton to Highway 17 project and have provided a Class C cost estimate ranging from \$21.7M to \$30.1M in construction costs. Construction of this pipe replacement, particularly the tie-ins at the project limits, would pose significantly lower risk if an additional water supply to the Saanich Peninsula, such as the Bear Hill Trunk connection, was available. This is a significant indirect benefit to the RWS system to have the Bear Hill trunk project tendered concurrently and commissioned before tie-ins of RWS Capital Project No. 23-17.

In 2022, CRD completed the Regional Water Supply Master Plan (“Master Plan”). Within this Master Plan, was project M11 – Twin Critical Main No. 4, which included the recommendation to twin 3.1km of Main No. 4 (610/762mm diameter) from the intersection of Central Saanich Road and Mount Newton Cross Road to the intersection of Aldous Terrace and Lowe Road. Cost estimates within the Master Plan were preliminary, but based on those estimates, the portion of work related to the 3.1km scope listed above could be estimated to exceed \$25M, when filtering out other project components and adjusting to 2025 dollars. The intent of this project was to increase capacity and improve resiliency for the Saanich Peninsula water service. The capacity and resiliency improvements proposed by this scope within the Master Plan would largely be achieved by the Bear Hill Trunk project being undertaken as part of SPW Capital Project No. 21-05 but it is also noted that there are still additional segments of concrete cylinder pipe on the Saanich Peninsula portion of Main No. 4 that will still be gradually transitioned to more seismically resilient pipe materials over time.

SPW, RWS and Municipal Shared Benefit:

There is mutual benefit in combining all the works described above, which is why CRD staff have initiated this work under a larger program. Having the Bear Hill Trunk extended to Lower Dean tank will provide greater resiliency to the Saanich Peninsula system and mitigate risk when completing the tie-ins as part of RWS Capital Project No. 23-17. CRD staff have been frequently in discussion with municipal staff from both District of North Saanich (North Saanich) and District of Central Saanich (Central Saanich) and intend to coordinate the installation of their distribution watermains and surface improvements for both municipalities.

ALTERNATIVES

Alternative 1

That the cost of the Bear Hill Trunk Watermain Extension capital project No. 21-05 be cost-shared between the Regional Water Supply and Saanich Peninsula Water services, with up to 50% of the total cost being included in the 2025 Regional Water Supply Capital Plan.

Alternative 2

That funding not be provided for the Bear Hill Trunk Watermain Extension.

IMPLICATIONS

Financial Implications

The Bear Hill Trunk (part of SPW Capital Project No. 21-05) and RWS Master Plan Option M11 both recommend projects of similar cost that will provide similar hydraulic capacity and resiliency improvements to the water supply on the Saanich Peninsula.

The Bear Hill Trunk will also meet the hydraulic improvement requirements proposed under RWS Master Plan Option M11, which would have a value exceeding \$25M in 2025 dollars. While savings are to be expected from no longer needing to twin this section of main for hydraulic reasons, it is also prudent to point out that this 3.1km section of piping is still among the more than 9km of concrete cylinder pipes on the section of Main No. 4 that serves the Saanich Peninsula, all of which will still require eventual replacement for end of life and/or seismic resiliency at some point in the future. The Bear Hill Trunk will be of great benefit to the water supply during all future pipe upgrades to Main No. 4, including the replacements being proposed under RWS Capital Project 23-17.

The Bear Hill Trunk is currently in the detailed design stage and will be ready to tender for construction as early as the first quarter (Q1) of 2025. Sharing the cost of the Bear Hill Trunk between RWS and SPW services is believed to be a cost-effective means for both services to address capacity requirements and improve resiliency of their water systems on the Saanich Peninsula. Existing SPW Loan Authorization Bylaw No. 4411 provides insufficient funding for the full cost of this project. Without funding support from the RWS service, SPW would require a new Loan Authorization Bylaw to fund the project, which requires time and an approval process, exposing the project to the risk of deferral or cancellation, in which case, the RWS service would still be expected to complete the works recommended within the Master Plan, at a greater total cost. Not proceeding with the Bear Hill trunk extension project could also impact the ability to complete RWS Project No. 23-17, which has \$6M in grant funding available and is scheduled to start construction in 2025.

CRD proposes that RWS funds up to 50% of the cost of the Bear Hill Trunk project, which is currently estimated at \$20.5M (+/-20%) and that the 2025 RWS Capital Plan include an update to Capital Project No. 23-17 to include Bear Hill Trunk funding, in addition to the +/-3km of Main No. 4 segment replacement, to a combined maximum RWS funding of \$39M for both projects. This budget reflects the current mid-range construction estimates for these projects, plus estimated engineering, project management and administrative costs. Prior to awarding a Construction Contract, a separate recommendation will be provided to the RWS Commission that will reflect actual tender pricing received and a reassessment on the budget.

Service Delivery Implications

Currently, all the CRD's water supply to North Saanich and Town of Sidney passes through Supply Main No. 4 and has no redundancy south of Lowe Pump Station. This provides limited operational flexibility to be able to conduct maintenance or repairs on this main, including the ties that would be required to complete RWS Project No. 23-17. Completing the Bear Hill Trunk would greatly improve operational flexibility of the water supply to the Saanich Peninsula.

Environmental & Climate Action

Segments of Main No. 4 along the Saanich Peninsula include concrete cylinder pipe, which is considered less seismically resilient than steel or ductile iron watermains. Proceeding with the Bear Hill Trunk will improve the overall resiliency of the water supply to the Saanich Peninsula and better align CRD with the operational flexibility to also replace critical sections of Main No. 4, increasing resiliency further.

First Nations Reconciliation

RWS Capital Project No. 23-17 is to replace a concrete cylinder pipe segment of Main No. 4 that passes directly adjacent to Tsawout First Nation, which will increase resiliency of the supply main in this area. Proceeding with Bear Hill Trunk will give more operational flexibility to be able to complete the tie-ins for replacement of this segment of Main No. 4.

Intergovernmental Implications

CRD staff have been frequently coordinating with North Saanich and Central Saanich municipal staff and intend to co-deliver the installation of distribution watermains and surface improvements for both municipalities as part of a combined tender that includes the Bear Hill Trunk and RWS Capital Project No. 23-17. Both municipalities would be contributing funding to cover their own portions of the work. Not only will delaying the installation of the Bear Hill Trunk have implications in completing RWS Project No. 23-17, but it will also delay capital projects for both North Saanich and Central Saanich, which CRD has intended to facilitate as part of this larger program.

CONCLUSION

The Bear Hill Trunk project is of benefit to both the Regional Water Supply (RWS) and Saanich Peninsula Water (SPW) services and will improve overall resiliency to the water supply on the Saanich Peninsula. Proceeding with the Bear Hill Trunk extension project now, would meet the intent of a significant portion of the works identified within RWS Master Plan, Project M11. Cost sharing with SPW would be of mutual financial benefit to both services. Proceeding with this project will provide the operational flexibility for Capital Regional District (CRD) to proceed with replacement of a segment of Main No. 4, which has been identified as RWS Capital Project No. 23-17 and is already approved for partial grant funding. The CRD has also been working collaboratively with the District of North Saanich and District of Central Saanich and intend to co-deliver infrastructure upgrades for both municipalities as part of both above referenced CRD projects.

RECOMMENDATION

That the cost of the Bear Hill Trunk Watermain Extension capital project No. 21-05 be cost-shared between the Regional Water Supply and Saanich Peninsula Water services, with up to 50% of the total cost being included in the 2025 Regional Water Supply Capital Plan.

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ATTACHMENT(S)

Appendix A: SPW/RWS Transmission Main Project Coordination Schematic