

DATE OF MEETING APRIL 4, 2022

AUTHORED BY MIKE SQUIRE, MANAGER, WATER RESOURCES

SUBJECT MID-TOWN WATER SUPPLY PROJECT – PHASING OPTION

OVERVIEW

Purpose of Report

To seek Council's authorization to adjust the phasing of the Mid-Town Water Supply Project to accommodate permitting and costing while improving resilience.

Recommendation

That Council approve:

- Amending the phasing of the water utility portion of the Mid-Town Water Supply Project and increase the budget from \$30,311,239 in 2022 and 2023 to \$44,585,500 in 2022 through 2025 in the 2022-2026 Financial Plan funded from Water Reserves.
- Adding a culvert upgrade project in the amount of \$55,183 that is associated with the Mid-Town Water Supply Project funded from the General Capital Reserve to the 2022-2026 Financial Plan.
- Amending the water projects in the 2022-2026 Financial Plan, as outlined in Attachment A.

BACKGROUND

A break in a large water supply main on Bowen Road in April 2020 caused significant damage and loss of water to residents, businesses, and to the Nanaimo Regional General Hospital (NRGH). The loss of water also jeopardized the City's water supply and firefighting capabilities. This premature failure refocused the water supply capital plan to address the risks and provide resiliency for the water supply system.

The 2021-2025 Financial Plan accelerated the planned Bowen Road watermain replacement. The current highest priority risk is the Bowen Road water supply main; a secondary risk is the single water supply main under Buttertubs Marsh and the Nanaimo Parkway. The update to the 2022-2026 Financial Plan added the secondary risk mitigation components into the project to provide additional water supply redundancy and resilience for central and north Nanaimo.

The Mid-Town Water Supply Project consists of two large water supply pipelines to replace the aging and undersized current infrastructure (see Attachment B). The limits of the project span a third of the community from College Drive to Labieux Road and provide a dedicated waterline to the NRGH. This will ensure resilience of supply to the centre and north end of the City, and support future growth as envisioned by City Plan – Nanaimo ReImagined. Indirect benefits support future opportunities for a multi-purpose trail over the watermain for pedestrians and

cyclists between the E&N and Nanaimo Parkway trails. This supports City Plan objectives for Park and Trailway Master Plans and Active Transportation goals.

To address short timelines and mitigate risks, a two-part Negotiated Requests for Proposals (NRFP) procurement process will deliver the project effectively and efficiently. The first stage of the NRFP process created a project team by incorporating contractor expertise to cooperatively work with the Engineer and the City to advance the draft design to construction-ready drawings. Early contractor involvement will enhance draft designs by providing an overall constructability review, materials selection, and providing value-added services through to Issued For Construction drawings. The second stage is based on satisfactory performance by the contractor, sufficient budget availability, willingness to proceed from both parties, and to construct the works based on updated pricing following the successful completion of the first stage.

Proposals from qualified contractors were received and evaluated based on experience, qualifications, project plan, risk mitigation, innovation, sustainability and estimated cost. Knappett Industries (2006) Ltd. of Nanaimo was the highest rated proponent, is currently engaged in the first stage, and has signed a Pre-Construction Agreement with the City. |

DISCUSSION

|Increased materials cost, labour shortages, and recent global events have created a volatile construction market and cost uncertainty. Recent civil construction costs on similar projects have escalated over 30% since the inception of this project, and annual budget updates are lagging escalating market pricing. Early contractor engagement help mitigate increased costs and value engineering occurs at an earlier stage. It also helps identify any cost savings and efficiencies in construction.

The price estimate from Knappett Industries (2006) Ltd.'s proposal determined an overall budget shortfall and additional funding is required to complete the entire project. The project team worked collaboratively to combine design and constructability measures to create a cost-effective project. Recommendations to-date have included sustainable materials selection and productive installation measures. These measures resulted in significant cost savings.

To mitigate the increased costs and impact on reserves, Staff extended the phasing of the Project and deferred other water projects to reduce the impact on reserves. The first phase to address the highest risk by replacing the Bowen Road water supply main is proposed for 2022/2023. The second phase to duplicate the single water supply main under Buttertubs Marsh and the Nanaimo Parkway will be deferred to 2024/2025 to help balance Water Reserves and provide additional time for communications and permitting in the section between East Wellington and College Drive.

Pipe material costs and delivery times are increasing due to global market conditions and demands. Early stage cost certainty, now in hand and proceeding with the first phase of the project in a timely manner ensures the project remains on schedule, the current risks are addressed, and risk of further cost escalation is mitigated.

Financial Considerations

A balanced approach addresses the budget increase and lessens the impact on Water Reserves.

- Phase the construction of the project over four years instead of two years – Phase 1 and 2 of the Mid-Town Water Supply Project are currently included in the 2022-2026 Financial Plan with a budget of \$30,311,239 with construction in 2022/2023. This budget will be increased to \$44,585,500 and spread over 2022-2025.
- As per Attachment A, a number of water projects have been cancelled or re-budgeted in future years.

The updated project plan will be incorporated into the Water User Rate Review, to ensure self sufficiency of the Water Utility into the future.

The proposal received by Knappett Industries (2006) Ltd. provides cost certainty and includes cost effective construction solutions. To address the immediate primary risk to the Mid-Town Water Supply region, materials should be ordered at the earliest opportunity.

OPTIONS

1. That Council approve:

- Amending the phasing of the water utility portion of the Mid-Town Water Supply Project and increase the budget from \$30,311,239 in 2022 and 2023 to \$44,585,500 in 2022 through 2025 in the 2022-2026 Financial Plan funded from Water Reserves.
- Adding a culvert upgrade project in the amount of \$55,183 that is associated with the Mid-Town Water Supply Project funded from the General Capital Reserve to the 2022-2026 Financial Plan.
- Amending the water projects in the 2022-2026 Financial Plan, as outlined in Attachment A.
 - Advantages: Separating the project in two phases will allow for the primary risk to be addressed while allowing time for further permitting in the section between East Wellington and College Drive. Phasing the Mid-Town Water Supply Project will allow the first phase of the project to proceed with cost certainty.
 - Financial Implications: 2022-2026 Financial Plan will be amended.

2. That Council provide alternate direction. |

SUMMARY POINTS

- The Mid-Town Water Supply Project has been expedited to mitigate risk and provide a resilient water supply network.
- Increased materials cost, labour shortages, and recent global uncertainty have created a volatile market and cost uncertainty.
- Phasing the Mid-Town Water Supply Project, and reprioritizing the water funded Capital Plan will bolster resilience, support growth throughout Nanaimo, and ensure Nanaimo Regional General Hospital has a dedicated potable water and fire protection feed.
- The new pipe will be more resilient to failure and provide for secure water supply to more than two-thirds of the City. This is a major infrastructure upgrade and will serve the community for generations.

ATTACHMENTS:

Attachment A: Water Supply Capital Plan Reallocation

Attachment B: Mid-Town Water Supply Project Site Map |

Submitted by:

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Concurrence by:

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ATTACHMENT A

Water Supply Capital Plan Reallocation

Current Approved Budget

Project Name		2022	2023	2024	2025	2026	Total	Comments
P-9252	DCC WS36 (100% Growth) Vandernuek Reservoir - Land	1,200,000					1,200,000	
P-9281	Water Treatment Plant: Emergency Bypass		450,000				450,000	
90033	Duke Point Pump Station - Decommissioning			200,000			200,000	
P-9264	Duke Point Reservoir - Inlet Control			425,000			425,000	
P-9265	DCC WS42 Towers Reservoir			2,800,000			2,800,000	
P-7279	Dogwood PRV				35,000	350,000	385,000	
P-9294	Mid-Town Phase WS and PRV				420,000	2,480,000	2,900,000	
P-9284	Water Treatment Plant: Membranes					1,400,000	1,400,000	
P-9279	DCC WS37 Uplands Dr Supply Main				1,000,000	4,500,000	5,500,000	
Total:		1,200,000	450,000	3,425,000	1,455,000	8,730,000	15,260,000	

Proposed Budget for Final

Project Name		2022	2023	2024	2025	2026	Total	Comments
P-9252	DCC WS36 (100% Growth) Vandernuek Reservoir - Land						-	Remove from Project Plan
P-9281	Water Treatment Plant: Emergency Bypass						-	Remove from Project Plan
90033	Duke Point Pump Station - Decommissioning					200,000	200,000	Delay to 2026
P-9264	Duke Point Reservoir - Inlet Control					425,000	425,000	Delay to 2026
P-9265	DCC WS42 Towers Reservoir					3,100,000	3,100,000	Delay to 2026
P-7279	Dogwood PRV						-	Delay to 2030/2031
P-9294	Mid-Town Phase WS and PRV						-	Delay to 2030/2031
P-9284	Water Treatment Plant: Membranes						-	Delay to 2029
P-9279	DCC WS37 Uplands Dr Supply Main					1,500,000	1,500,000	Delay to 2026
Total:		0	0	0	0	5,225,000	5,225,000	

APPENDIX B

Mid-Town Water Supply Project Site Map

