

THE CORPORATION OF THE
CITY OF WHITE ROCK
CORPORATE REPORT



DATE: September 23, 2024

TO: Mayor and Council

FROM: Corrine Haer, P.Eng., Manager, Engineering

SUBJECT: Contract Award – Electrical Work required for BC Hydro Transformer Replacement at 1444 Oxford Street

RECOMMENDATIONS

THAT Council receive the corporate report dated September 23, 2024, from the Manager of Engineering, titled “Contract Award – Electrical Work required for the BC Hydro Transformer Replacement at 1444 Oxford Street;” and

1. Approve a \$160,000 transfer from water capital contingency to support the Electrical Work required for BC Hydro Transformer Replacement at 1444 Oxford Street project;
 2. Approve the award of the Electrical Work required for the BC Hydro Transformer Replacement at 1444 Oxford Street to Sasco Contractors Ltd. in the amount of \$507,650 (excluding GST);
 3. Approve the award of engineering inspection and construction support for the work to MCW Consultants Ltd. in the amount of \$8,500 (excluding GST);
 4. Authorize the pre-approved contingency in the amount of \$102,850 (approximately 20%) to support the project; and
 5. Authorize the Director of Engineering and Municipal Operations to execute all contract documentation required for the project.
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EXECUTIVE SUMMARY

The BC Hydro transformer located at 1444 Oxford Street is at the end of its service life. This transformer currently services three of the City’s water wells that supply a total of 43% of the City’s supply. On July 24, 2023, Council directed staff to work with BC Hydro and the City’s consultant to install a 600 volt transformer, together with an indoor step down unit for each water well (three steps down units in total) to service each water well independently to better facilitate well upgrades in the future.

The purpose of this corporate report is to obtain Council approval to award the Electrical Work required to support the BC Hydro Transformer Replacement at 1444 Oxford Street to Sasco Contractors Ltd. in the amount of \$507,650 (excluding GST). All work has been coordinated with BC Hydro.

PREVIOUS COUNCIL DIRECTION

Motion # & Meeting Date	Motion Details
2023-316 July 24, 2023	<p>THAT Council receive the report dated July 24, 2023, from the Director of Engineering & Municipal Operations, titled “BC Hydro Transformer Replacement at 1444 Oxford Street” for consideration; and</p> <ol style="list-style-type: none"> 1. Authorize a budget reallocation from the Water Capital Contingency in the amount of \$358,000 to a new capital project titled “BC Hydro Transformer Replacement” to facilitate Option #4 as detailed in this corporate report; 2. Authorize the Director, Engineering & Municipal Operations to enter into a funding agreement with BC Hydro to facilitate Option #4 as described in this corporate report; 3. Direct staff to award the project to perform electrical design work prior to construction in the amount of \$38,300 (excluding GST) to MCW Consultants Ltd with preauthorized contingency approval in the amount of \$9,575 (25% of electrical design fees) to support the project. <p style="text-align: right;">CARRIED</p>

INTRODUCTION/BACKGROUND

BC Hydro currently operates a 480 volt transformer that supplies power to three of the City’s water wells located at 1444 Oxford Street. BC Hydro’s transformer is nearing the end of its service life and does not meet current requirements for safe operation. The likelihood of the existing transformer failing increases when it reaches its current age.

BC Hydro approached staff to determine the best method to replace the transformer and minimize the impact on the City and its community. As the industry standard has moved away from 480 volts, BC Hydro will be replacing the BC Hydro owned transformer with a 600 volt version that provides additional worker and equipment safety.

On July 24, 2023, Council directed staff to work with BC Hydro and the City’s consultant to install a 600 volt transformer, together with an indoor step down unit for each water well (three steps down units in total) to service each water well independently to better facilitate well upgrades in the future.

Based on conversations with BC Hydro in early 2023, it was determined that BC Hydro would cover their cost plus up to an additional \$69,000 of the City’s cost. As estimates and conversations progressed over the last year, the City was able confirm a total contribution of \$227,690 from BC Hydro towards the City’s portion of the project as indicated in Table 2 that follows.

Although this work is a result of BC Hydro replacing aging infrastructure, causing an unexpected capital expense for the City, staff agree that the work is necessary to keep up with industry standards. Industry standard has moved away from 480 volts as it can overload equipment when out of phase. The City experienced this in 2021 when BC Hydro shut off the power for maintenance work and the variable frequency drive pump for Well #2 was burnt out. Switching over to a 600 volt circuit, with an indoor step down unit for each water well reduces the risk of this occurring again in the future. This set up also better supports future well upgrades, provides

the opportunity for additional load capacity for EV chargers, and provides opportunity for other expansions. BC Hydro is providing the 600V transformer upgrade at no cost to the City of White Rock.

Scope of work for this project includes:

- New 600V switchboard.
- 480V step-down transformer for existing 3 pumps.
- 208V stepdown transformers for existing pump house.
- 600V auto-transfer switch installation for existing modified emergency generator and future outdoor generator.
- Convert existing 480V diesel emergency generator to 600V.
- Switch existing pump house lighting & power load to new distribution system.
- Provide portable backup generator and fuel rental to maintain existing pumps operation during construction.
- Restoration .

ANALYSIS

MCW Consultants Ltd. was retained to design the project and to provide tendering support. A construction tender (WR24-010 Well 2 Building Electrical Upgrade) was issued to the market on BC Bid with a tender submission closing date of August 23, 2024.

The City received three bids and the results are summarized in the table below.

Table 1 - Bid Summary

Contractor	Price (excluding GST)
Sasco Contractors Ltd.	\$507,650
Drake Excavating (2016) Ltd.	\$823,000
Mata Electric Ltd.	\$999,999

Staff and MCW reviewed the proposals and determined that SASCO Contractors Ltd. will provide best overall value to the City. Aside from being the lowest overall price, SASCO Contractors Ltd. has received a good reference from BC Hydro.

Staff recommend awarding this project to SASCO Contractors Ltd. for a total of \$507,650 (excluding GST). If approved, staff will provide notification to the nearby residents and will aim to begin construction this Fall.

The City's water wells are expected to operate throughout the project duration and therefore impacts on residents is expected to be minimal.

FINANCIAL IMPLICATIONS

This project is included in the 2024 Financial Plan in the amount of \$485,000 split between the City funding and contribution funding from BC Hydro.

Staff recommend Council approve an additional \$160,000 transfer from water capital contingency (the remaining amount available in water contingency provided the Watermain Upgrade Cypress – Pacific Lane to Royal Avenue going forward the same day as this report is endorsed by Council) to support this project.

A summary of the project budget is as follows:

Table 2 – Project Budget

	Total
Total approved 2024 funding (water funds)	\$257,000
Total approved 2024 funding (contribution)	\$228,000
Total approved funding (30056)	\$485,000
Additional funding request (water capital contingency)	\$160,000
Total funding required to support the project	\$645,000
Committed/spent to date to support the project (2024)	\$26,000
Construction support (MCW Consultants Ltd.)	\$8,500
Construction (SASCO Contractors Ltd)	\$507,650
Subtotal	\$542,150
Contingency (approx. 20% of construction costs)	\$102,850
Total project cost	\$645,000
BC Hydro Contribution	(\$227,690)
Total cost to the City	\$417,310

LEGAL IMPLICATIONS

No legal implications are anticipated. Staff request authorization for the Director, Engineering and Municipal Operations to execute all contract documentation required for the project.

COMMUNICATION AND COMMUNITY ENGAGEMENT IMPLICATIONS

Engineering staff will work with Communications staff to deliver letters to the adjacent community regarding this project prior to construction. \

CLIMATE CHANGE IMPLICATIONS

This transformer currently services three of the City's water wells that supply a total of 43% of the City's supply and currently operates on 480 volt variable frequency drive pumps. As climate change is realized, there will be continued reliance on these wells, highlighting the need for redundancy, scalability and reliability.

IMPLICATIONS FOR TREE PRESERVATION AND TREE CANOPY ENHANCEMENT

To preserve the trees fronting 1444 Oxford Street, the underground electrical duct trench will be carefully routed to avoid their roots. An arborist will collaborate with BC Hydro construction crews during the trenching process to mitigate any potential root damage. This proactive approach ensures the trees remain healthy after the work is completed.

ALIGNMENT WITH STRATEGIC PRIORITIES

This project is in alignment with the Infrastructure Strategic Priority that identifies that the City plan, build, and maintain infrastructure to enhance quality of life and civic service delivery while mitigating and adapting to environmental impacts. Specifically, this project ensures future infrastructure resiliency by making decisions through a long-term lens and providing reliable power for the City's wells into the future.

OPTIONS / RISKS / ALTERNATIVES

The following option is available for Council's consideration:

1. Not approve the recommendation to award the work. BC Hydro has proposed an alternative which is a proposal to install a new 480V transformer on a pole, directly connecting to the City's existing main switch. This solution keeps the City's current service size but limits future upgrades. BC Hydro does not stock 480V transformers, so if there's damage or an outage, it could take a long time to replace them resulting in a total loss of power to three of the City's water wells that supply a total of 43% of the City's water supply. In addition, the City would have to own and maintain the 480V transformer and would lose the cost sharing of \$227,690 to upgrade the electrical system of this building. Should the City choose to upgrade to a 600V at a later date, BC Hydro would charge us for the upgrade in addition to any of the City's costs to support the project. The fuel storage and existing generator in the garage would also continue to be at greater risk for fire should the 480V route be chosen.

CONCLUSION

Staff recommend that the Contract Award – Electrical Work required for BC Hydro Transformer Replacement at 1444 Oxford Street be awarded to SASCO Contractors Ltd. in the amount of \$507,650 (excluding GST) and that MCW Consultants Ltd. be awarded construction management and contract administration in the amount of \$8,500 (excluding GST).

Staff also request a preauthorized contingency in the amount of \$102,850 (approximately 20% of remaining costs to complete this project) to support the project. Additionally, staff recommend that the Director, Engineering & Municipal Operations be authorized to execute all contract documentation required for the project to proceed.

To move forward with this, Staff recommend Council approve a transfer of \$160,000 from Water Capital Contingency to the project.

Respectfully submitted,

Approved by,



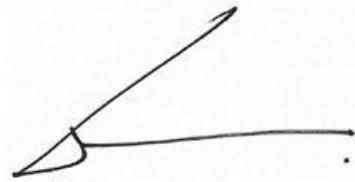
Corrine Haer, P.Eng
Manager, Engineering



Jim Gordon, P.Eng.
Director, Engineering & Municipal Operations

Comments from the Chief Administrative Officer

I concur with the recommendations of this corporate report.

A handwritten signature in black ink, consisting of a stylized 'G' followed by a horizontal line and a small dot at the end.

Guillermo Ferrero
Chief Administrative Officer