

DATE OF MEETING DECEMBER 21, 2020

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SUBJECT BC HYDRO STREET LIGHT UPGRADES

OVERVIEW

Purpose of Report

To seek Council direction on how to proceed with the BC Hydro Street Light Replacement Project within the City of Nanaimo.

Recommendation

That Council direct Staff to:

- a) Work with BC Hydro to develop a Street Light Replacement Plan that replace the BC Hydro lease light fixtures with fixtures of equivalent wattage (brightness) and with a temperature (colour) that aligns with the City's selection criteria.
- b) Finalize the City Wide Lighting Study and present a prioritization and implementation strategy to Council for future capital planning considerations.

BACKGROUND

In an urban environment, street lighting supports safe and comfortable use at all hours of the day. In Nanaimo, there are two types of street lights; City-owned and BC Hydro owned (City leased). Street lighting has been a part of City Engineering standards for decades; however, it was not a part of the road standards for Improvement Districts, which made up large portions of the City prior to amalgamation. As a result, a significant portion of City roads are lit by BC Hydro (lease) lights. Lease lights were not installed based on design standards.

Between 2016 and 2017, Staff assessed converting City-owned street lights from High Pressure Sodium (HPS - the orange coloured lights) to Light Emitting Diode (LED). This included a technical review and public consultation. The work showed that benefits of converting to LED street lights far outweigh the drawbacks. The City began to convert lights to LED as time and resources permitted, between 2018 and 2020, with future phases also proceeding.

In 2020, BC Hydro announced they would converting all of their 4,276 HPS street lights in Nanaimo to LED in 2021. In collaboration, Hydro has offered to work with the City to determine which temperature (colour) and wattage (brightness) would be most appropriate for use within the City.

DISCUSSION

There are two primary elements of street lighting to consider: lighting levels (brightness) and uniformity (transitions from bright to dark). To be successful, these factors need to be

complimentary. A street with bright and dark spots is not only deficient in the dark areas, but difficult for a driver's eyes to adjust back and forth from bright to dark. This makes it both hard to see and distracting.

In Nanaimo, many streets were built to rural standards with little or no expectation of modern street light design. These neighbourhoods have grown and evolved into an urban environment, where lack of street lighting is concerning to residents. BC Hydro lease lights have been installed as a measure to partially address concerns. However, the lease-light system is still ad hoc and does not meet current standards. Appropriate street lighting has a positive impact on the community. Staff have commissioned a City Wide Lighting Study to quantify the current situation and provide guidance on future upgrades.

BC Hydro has offered the City an opportunity to provide input on the selection of fixtures that Hydro will use. This would allow Staff to provide direction on fixture temperature (colour) and brightness; however, it will not allow for the placement of additional fixtures. Ultimately, the changes will not bring the street light system into compliance with current standards.

When the City undertakes a project that will have safety implications, it is imperative that current standards be followed. A caveat to this is when Council makes the informed decision that meeting the current standards is not reasonable or practical. Under the circumstances, the probable cost to the City to ensure that the end product for roadway lighting meets the current standards would likely exceed \$30 million and would need to be completed concurrently with the BC Hydro Street Light Replacement Project in 2021.

In consideration of this, Staff feel that it is appropriate to provide direction to BC Hydro on the selection of fixture temperature, as this is not a design criterion; however, it is not advisable to provide input on the selection of brightness, as this is a design criterion. Instead, Staff will continue with the ongoing City Wide Lighting Study and will provide Council with an update on the findings at a future date.

The recommended approach optimizes resources for the City and BC Hydro and minimizes City exposure to liability relating to roadway lighting design. |

OPTIONS

1. That Council direct Staff to:
 - a) Work with BC Hydro to develop a Street Light Replacement Plan that replace the BC Hydro lease light fixtures with fixtures of equivalent wattage (brightness) and with a temperature (colour) that aligns with the City's selection criteria.
 - b) Finalize the City Wide Lighting Study and present a prioritization and implementation strategy to Council for future capital planning considerations.
 - The advantages of this option are that it ensures that BC Hydro uses fixtures that align with current City practices while reducing the risk of adversely affecting the existing roadway lighting conditions.
2. That Council provide Staff with alternate direction. |

SUMMARY POINTS

- The City has completed three out of four phases of its Street Light Replacement Plan. A City Wide Lighting Study has begun which will identify opportunities to improve the City owned street light system. This study will be complete in late 2021 and will inform an enhancement strategy.
- BC Hydro is converting all 4,276 BC Hydro owned Street lights in Nanaimo from HPS to LED in 2021.
- Street lighting is a foundational element of road design which supports safe and comfortable use at all hours of the day.

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