



To: General Purposes Committee

Date: February 16, 2015

From: John Irving, P.Eng. MPA
Director, Engineering

File: 10-6125-05-01/2015-
Vol 01

**Re: LED Street Light and Adaptive Controls Trial Program Agreement with BC
Hydro**

Staff Recommendation

1. That the staff report entitled “LED Street Light and Adaptive Controls Trial Program Agreement with BC Hydro” dated February 16, 2015 from the Director, Engineering, be endorsed.
2. That the Chief Administrative Officer and the General Manager, Engineering and Public Works be authorized to negotiate and execute an agreement with British Columbia Hydro and Power Authority (BC Hydro) for a street lighting pilot project.
3. That an amendment to the City’s Five Year Financial Plan (2015-2019) to include capital costs of \$17,000 in 2015 with funding from the Enterprise Fund provision be approved for this pilot project.

John Irving, P.Eng. MPA
Director, Engineering
(604-276-4140)

Att.2

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Roads & Construction	<input checked="" type="checkbox"/>	
Law	<input checked="" type="checkbox"/>	
Finance	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

The purpose of this report is to seek authorization for the Chief Administrative Officer and the General Manager, Engineering and Public Works to sign a program agreement (Agreement) with the British Columbia Hydro and Power Authority (BC Hydro) for a street lighting pilot project that includes an indemnity clause. This pilot project involves the installation of high efficiency light emitting diode (LED) lighting on BC Hydro owned poles along select City roadways (No.3 Road south of Steveston Hwy, Westminster Hwy east of No.6 Road, No. 6 Road south of Westminster Hwy, and along Regent Street in Steveston). This installed lighting will improve safety on two rural roads where minimal lighting currently exists, as well as improve the lighting at other replacement locations.

Analysis

There are two main types of street lighting used in the City of Richmond to illuminate roadways; street lighting fixtures that the City owns, operates, and maintains (called ornamental street lighting), and street lighting fixtures that are owned and maintained by BC Hydro on BC Hydro poles (called overhead street lighting). The City pays indirectly for electrical use and maintenance of the BC Hydro owned overhead street lighting fixtures.

There are currently over 11,000 street light fixtures in the City that are City owned, and approximately 2,300 that are owned by BC Hydro. None of the existing BC Hydro street lighting is LED. The City of Richmond is continually looking to expand its network of higher efficiency LED street lighting, to improve corporate energy efficiency as well as provide sufficient roadway lighting as needed. This pilot project will help improve corporate energy efficiency in the long term.

The City is currently working with BC Hydro to have 138 high efficiency LED street lights installed on BC Hydro poles along No.3 Road south of Steveston Hwy and along Westminster Hwy east of No.6 Road, to mitigate the public safety concerns along these rural arterial roads in the most efficient and cost effective way possible. These roads currently have minimal lighting, and are not required to have street lighting at all based on applicable lighting standards. Nonetheless, the City has identified these two locations as high priorities for public safety improvements, due to previous incidents. In addition to the new installations, there will be another 30 high efficiency LED street lights replacing less efficient lighting along No.6 Road south of Westminster Highway and along Regent Street in Steveston.

Staff have negotiated for BC Hydro to cover the majority of the costs of installing LED lights on Hydro poles along the select City roadways. BC Hydro will also cover the cost of the electricity for all these new LED lights for at least one year, while they evaluate the performance of the selected LED fixtures. The performance metrics of the LED lights will be shared with the City, so that the City will be able to conduct its own assessment. This LED street lighting pilot project on BC Hydro owned poles, if implemented, would be the first of its kind in BC.

In order for the pilot project to be implemented, BC Hydro requires that the City indemnify BC Hydro from any claims or losses related to the installation of LED lighting on the select City roadways for this pilot project.

Financial Impact

BC Hydro will cover the majority of the capital costs, including the LED fixture and installation costs and the associated electrical and operating costs for at least one year, for a total contribution of approximately \$100,000.

The City's contribution will be \$17,000 for additional capital "make ready" costs to upgrade electrical infrastructure as required, which is typical for a lighting installation request of this nature and size. The City's contribution will be funded from the Enterprise Fund and if approved this will be included as an amendment to the City's Five Year Financial Plan (2015-2019). The expected operational cost savings from the replacement LED lights used to repay the Fund.

After the trial period has been completed, the City can choose to pay for the typical indirect operating and maintenance costs for the newly installed lights (approximately \$18 per month per new light or a total of \$29,000 annually), or have them removed at no charge. The additional operating and maintenance costs will be brought forward as an additional level request to the 2016 operating budget for Council consideration, to allow for the potential to have these LED lights remain after the trial period has been completed.

Conclusion

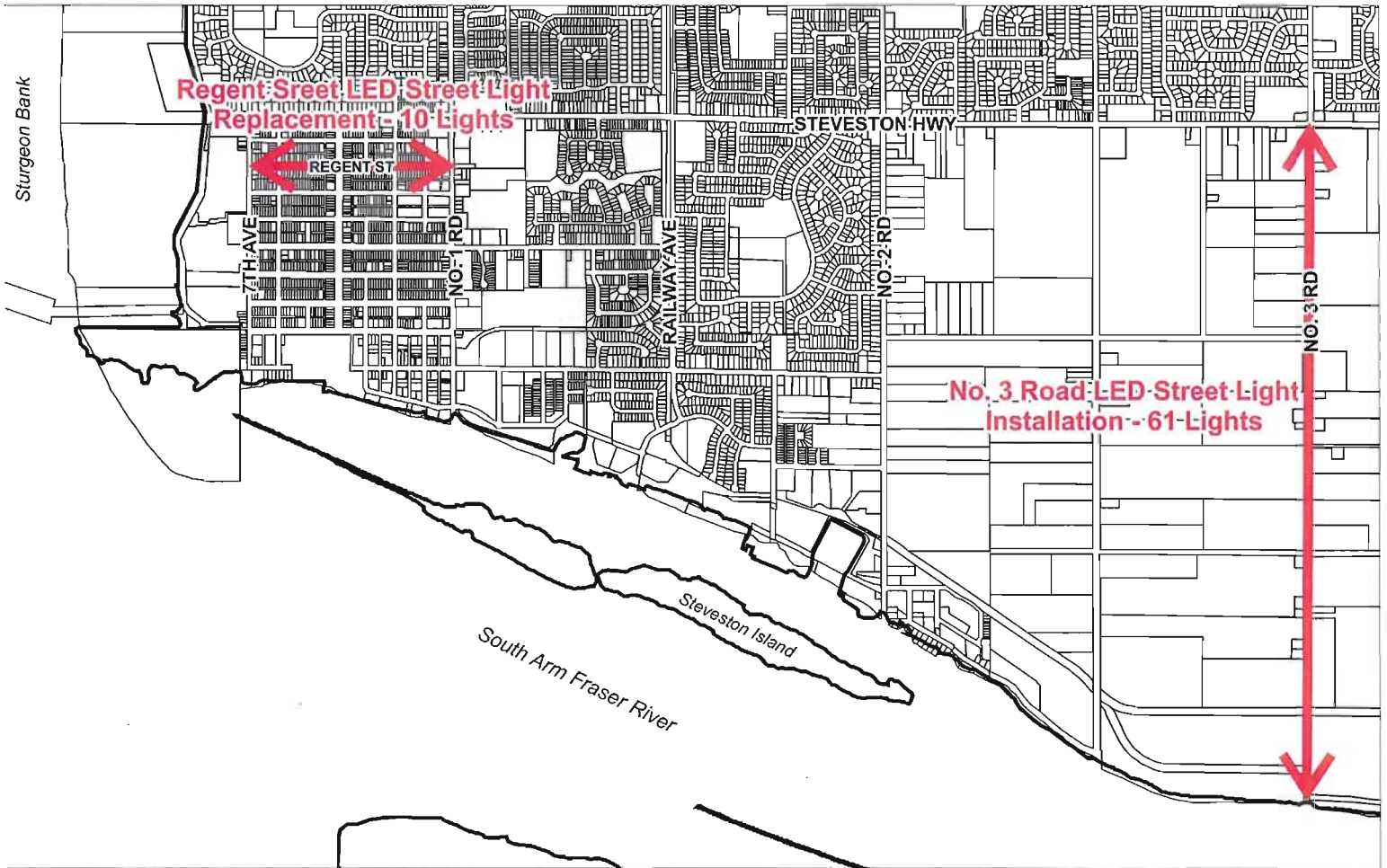
This pilot project is a cost effective way to address a public safety issue, and includes the use and assessment of innovated LED technology. New, higher efficiency LED street lighting provides a long term opportunity for the City to lower its electrical use and operating costs, while increasing the lighting levels provided for public safety. As this technology continues to mature, staff will continue to evaluate suitable locations for the use of LED street lights, and continue to work with stakeholders to ensure that the most efficient, effective, and economical technological solutions are being implemented.



Levi Higgs, B.Sc., EMIT
Corporate Energy Manager
(604-244-1239)

Att. 1: Steveston Area No.3 Rd and Regent Street LED Street Lighting Installation and Replacement Plan
Att. 2: East Richmond LED Street Lighting Installation and Replacement Plan

Attachment #1: Steveston Area No.3 Rd and Regent Street LED Street Lighting Installation and Replacement Plan



Attachment #2: East Richmond LED Street Lighting Installation and Replacement Plan

