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Item No.14.1
Halifax Regional Council
October 19, 2021
October 26, 2021

TO: Mayor Savage and Members of Halifax Regional Council

SUBMITTED BY: Original Signed

Brad Anguish, Executive Director of Transportation and Public Works

Original Signed by

Jacques Dubé, Chief Administrative Officer

DATE: September 28, 2021

SUBJECT: Review of Street Lighting Procedures and Policies

INFORMATION REPORT

ORIGIN

Item 12.1 of the April 20, 2021 meeting of Halifax Regional Council:

> MOVED by Councillor Lovelace, seconded by Councillor Hendsbee THAT Halifax Regional Council request a staff report to review street lighting procedures and policies across HRM. The report should also include consideration to adopt a mechanism for street light removal and a policy on under or over illumination.

MOTION PUT AND PASSED

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter, Part XII, subsection 322(1) provides:

> 322 (1) The Council may design, lay out, open, expand, construct, maintain, improve, alter, repair, light, water, clean and clear streets in the Municipality.

BACKGROUND

In April 2011, the Nova Scotia Government amended the Energy Efficient Appliances Act. The resulting amendments deemed existing street light technologies to be inefficient and stated that they were to be replaced. Regulations related to the amendments made to the Energy Efficient Appliances Act were issued in September of 2012 which obligated Nova Scotia Power Inc. (NSPI) and all Nova Scotia Municipalities to install light-emitting diode (LED) luminaires whenever required to repair, maintain, install or replace an existing street light. The amended act and associated regulations required NSPI to be fully compliant with the new LED technologies by December 31, 2019 and all Municipalities to be fully compliant by December 31, 2022.

On May 28, 2013, a motion of Halifax Regional Council directed staff to initiate the procurement process and solicitation strategy for the LED conversion and long-term operation of public street lights within the Municipality. On August 1, 2014, Halifax Regional Council approved the purchase of NSPI's roadway luminaires throughout the entire Municipality. At that time the Municipality provided the Nova Scotia Department of Energy with a five-year LED street light implementation plan.

The LED Street Light Conversion Project, which began in 2014, resulted in HRM taking over the operation and maintenance responsibility of approximately 43,000 street lights. This includes all lights within the entire Municipality on public roadways, including Provincial roads, with the exception of 100 series highways. At the time this report was written, HRM does not provide operation or maintenance services for street lights on private roads, except for a small number of these roads that were grandfathered as a result of a Council motion in 1998.

The project included the one-for-one conversion of all existing high-pressure sodium street lights on public roads to LED and the implementation of an adaptive system that allows for centralized monitoring and control of the street light network. The project was completed in July of 2019.

DISCUSSION

The HRM Municipal Design Guidelines (Red Book) were developed to provide uniform standards for the construction of infrastructure within the municipality. Street Light guidelines are included in Section 9 of this document. These standards and design criteria have been developed to permit a level of illumination which will meet or exceed the minimum requirements as recommended by the Illumination Engineering Society of North America RP-8 Roadway Lighting Guide. This standard is widely used throughout North America and provides guidance on determining appropriate light levels for all roadway types, intersections, and pedestrian levels.

The intent of the LED conversion project was to achieve RP-8 recommended roadway lighting levels as much a possible through the "one for one" replacement of existing high-pressure sodium street lights with LED. Since completion of the LED conversion project, all new street light installations and replacements go through a review design to ensure the proper light fixture, with the proper wattage, is installed to achieve the required average illumination for the roadway / location, based on RP-8 guidelines. LED fixtures provide very directional lighting, so care must be taken to ensure the roadways meet the recommended illumination.

Requests for New Streetlights / Under-Illumination

HRM receives service requests for new street lights to be installed from several sources, including service requests submitted through the Customer Contact Centre, submissions from Councillors on behalf of residents and in some cases directly from resident contacts. For the period from January 1, 2020 to September 15, 2021 there were approximately 130 new street lights installed on public roadways in response to requests. Typical cost to install a new LED street light is approximately $1000 (labour and materials) for a location where there is an existing utility pole and Traffic Management typically budgets for 50 to 100 new LED street lights as part of the annual street lighting capital program.

Once a request is received, the location is reviewed to determine if it is on an HRM street and if there is existing infrastructure in place (utility poles, available 120 volt power, etc.) to support installation of the street light. If these conditions are met, a lighting design is undertaken to determine the appropriate number, and wattage of street lights required. For smaller requests (one or two lights) Traffic Management can typically accommodate installation of a new pole. The annual street lighting capital program includes a small amount for these situations, however larger projects requiring a significant number of new poles and wiring would need to be identified, designed and programmed as a stand alone capital project.

As indicated above, HRM follows the RP-8 Roadway Lighting Guide when determining streetlight requirements. When undertaking lighting designs staff consider various factors that would influence the number, type and wattage of fixtures required, including:

- Roadway type / classification (rural / urban, major / minor / local, etc.)
- Potential for pedestrian / cyclist activity
- Presence of sidewalks
- Roadway geometry (curves)
- Roadside hazards
- Intersections, crosswalks, community mailboxes or other features
- Existing lights already in place
- Residences at / near the location.

Requests to Dim Street Lights / Over-Illumination

In general, the conversion to LED street light fixtures has been well received in Nova Scotia but the change in technology did bring with it some criticism. The light is perceived as a much brighter white light than the previous technology which gave off a dull yellowish light. As a result, staff do receive requests to dim street lights due to their location, orientation or brightness. When these requests are received, staff review the fixture installation to ensure it is properly aligned and also review the existing lighting design to determine if the light levels may exceed the minimum required RP-8 illumination levels for the particular location and conditions. Staff make every effort to either adjust the alignment of the fixtures or dim the lights where possible.

If adjusting the fixture alignment does not address the issue and / or the light cannot be dimmed there may be other options to consider. Depending on the issue and location, adding a “back shield” to the fixture to help reduce the amount of light behind the fixture may be an option, however back shields can only be used (effectively) on specific fixture types and would not be appropriate at locations where a sidewalk exists behind the fixture. If there are existing utility poles nearby, there may be an opportunity to relocate a light to an adjacent pole or to a pole on the opposite side of the street to address location specific brightness concerns without impacting the recommended lighting level on the roadway. This approach, if possible, can be effective to help address brightness concerns. Also, as noted previously, LED street lights provide a very directional lighting pattern, as such, different lighting patterns can be achieved with different fixtures, so changing to a different fixture type may be an option to address brightness concerns. Changing a fixture is not a preferred option because changes in the lighting pattern can have impacts on the lighting design beyond the specific location.

Requests to Remove Street Lights

Provision of street lighting would be considered a safety feature for road users. Once it has been determined that a street light is required at a particular location, based on the road type and conditions, HRM would not permanently remove street lights for liability reasons as the removal of a light could lead to an incident.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

COMMUNITY ENGAGEMENT

Community engagement was not required as this report is a result of concerns regarding over / under illumination on HRM streets submitted by residents, through Councillors, and deals with internal policy and operations.

ATTACHMENTS

No attachments.

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

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