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Item No. 3

Halifax Regional Council
July 8, 2008

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY: 
Mike Labrecque, P.Eng., Director, Transportation and Public Works

DATE: June 17, 2008

SUBJECT: Streetlight Service Level Improvements Options

INFORMATION REPORT

ORIGIN

On April 17, 2008, Council requested a staff report on the challenges and benefits of taking over NSPI owned streetlights in HRM. This report was to examine options available to the Municipality, as well as provide available outage statistics.

BACKGROUND

Prior to amalgamation, the City of Halifax took over ownership of all its streetlights. In doing so, it also agreed to take responsibility for maintaining these lights and paying NSPI for power and energy charges based on a calculated usage for each streetlight type and size. Generally, all other streetlights in HRM are owned by NSPI, or the Nova Scotia Department of Infrastructure Renewal (100 series highways). The NSPI owned lights, which amount to approximately 27,000 fixtures, are maintained by the utility on a breakdown basis. As a result, it relies on the general public to report burned out streetlights, and provides a service level of seven working days to repair, from the time of notification. Otherwise, lights are not repaired. This is of concern to HRM Council for several reasons.

- First, there is a concern that the present reporting process is not user-friendly, and discourages residents from reporting outages.
- Second, the reduced light levels will result in neighborhoods being less secure for residents.
- Third, because street lights are covered by the Unmetered Rate Class, HRM's power bill for this load is based on a flat rate. The Municipality pays for the anticipated energy consumption not the actual consumption.

Because there is a perception that the standard of service is poor in HRM districts being maintained by NSPI, Council has asked whether there would be an advantage for the residents of HRM if the Municipality took over ownership and responsibility for all streetlights including those owned by NSPI. As a result, Council requested a staff report on April 17, 2008, that would examine the feasibility of consolidating all of HRM's streetlights under a single owner. The report should include:

- challenge relating to taking over streetlights;
- cost/benefit analysis of purchasing NSPI streetlights;
- other options that would provide improved service levels;
- the Unmetered rate energy charges for nonoperating fixtures;
- potential for taking over new subdivision streetlights.

DISCUSSION

In the Fall of 2007, NSPI and HRM undertook a process to better understand the extent of streetlight outages in a sample of districts in the Municipality, and have compiled a database of streetlight performance levels in six of the Municipality's 23 polling districts. There was an attempt to collect data from two separate focuses.

- HRM owned/maintained districts and NSPI owned/maintained districts
- Districts that were representative of the urban, suburban and rural make-up

A detailed inventory of each of the districts was undertaken by the Utility, and a survey of streetlight performance was carried out by HRM. The results are summarized in the table below. The streetlight outage levels range from a high of 11.82% to a low of 1.60%.

District	Owner	Location	Classification	Total Streetlights	Total Outages	Percent Outages
3	NSPI	Preston/Lawrencetown	Rural	2475	264	10.7
6	NSPI	Dartmouth East	Urban	1130	99	8.8
11	HRM	Halifax Northend	Urban	1764	31	1.8
15	HRM	Fairview/Clayton Park	Urban	1815	29	1.6
20	NSPI	Lower Sackville	Suburban	1549	99	6.4
22	NSPI	Timberlea/Prospect	Suburban/Rural	1328	157	11.8

Streetlight Service Level Improvements Options

These statistics represent a total number of streetlights not working in the districts surveyed. Based on the randomness of the selected districts, and the extent of the survey, it could be concluded that these districts are representative of the service level for the type of district, whether that be urban, suburban, or rural. HRM urban districts average an unreported outage rate of 1.67%, whereas the urban district maintained by NSPI is 8.76%.

Alternatives

NSPI Modify Maintenance Practices

NSPI agrees that improvements can be made in reducing the number of lights not working within HRM. NSPI is committed to working with HRM staff to reduce the number of burnt out NSPI owned and maintained streetlights. NSPI commits to implementing the following measures to improve service levels:

- completing a detailed inventory of its streetlight fixtures in HRM;
- Initiating a survey (at their cost) of all NSPI owned lights in HRM to identify all burned out streetlights and implement immediate repair.
- commit to a 5% burn out target for all NSPI owned fixtures in HRM by the end of 2008. This will require follow-up outage surveys which will be implemented by the utility. This service level will be reevaluated for 2009 based on industry best practice.
- Initiate a cost/benefit analysis for a relamping program. If determined appropriate, NSPI will commence implementation in 2009 subject to NSUARB approval;
- investigate technology and energy efficiency initiatives as these relate to street lighting in HRM.

Through a joint effort between HRM and NSPI, the extent of the service level problem in the municipality has been clearly articulated. NSPI's response is positive and encouraging. However, the final configuration for long term maintenance of streetlights in HRM still requires continued cooperation, and focus on how to optimize a service level that is manageable within the utility's mandate. There is interest in exploring technology options such as GPS assisted reporting, and continuous monitoring technologies that also offer energy efficiency benefits through dimming capability. It is hoped that the UNSM commissioned Effective Streetlight Efficiency Strategies Study will assist with providing some direction for both utility and municipality.

HRM Purchase NSPI Light Fixtures

Due to concerns about streetlight maintenance service level being provided by NSPI, it would not be unreasonable for the Municipality to examine the costs and benefits of taking ownership of HRM streetlights presently owned by NSPI, as an alternative to the present arrangement. Obviously, this could be easily implemented if both parties were amenable to a purchase option. At this time, however, NSPI has not confirmed that they are interested in selling their streetlighting assets to HRM.

For the purpose of understanding a range of costs that HRM might face if a purchasing option was available for consideration, an examination of the inventory value and its earning power was carried out. NSPI owns approximately 27,000 light fixtures in HRM. These include Mercury Vapour, Fluorescent, Low Pressure Sodium, High Pressure Sodium and Metal Additive. The undepreciated book value for these fixtures is approximately \$5,000,000 in 2008. The NSPI 2005 Rate Hearing indicated that the streetlighting account was 44% depreciated. Assuming this is representative of the HRM lighting assets, the book value would be in the \$2.8 million range. Since this valuation is based on 2008, the actual book value would be something less than \$2.8 million. Over a remaining life of approximately 12 years, an additional NPV of \$2 million could be realized from the allowed return on this investment.

It is difficult to factor in the maintenance cost advantage/disadvantage associated with the NSPI owned HRM lights. HRM maintained lights are situated in an urban environment. System maintenance costs reflect high density application of light fixtures. Extrapolating these costs to suburban and rural applications would require a dedicated study. Potential savings associated with economies of scale could be offset by reduced efficiencies associated with maintaining streetlights that are spread out over much larger territories. In addition, if this option is to be considered, it is essential to examine the costs that are included in the maintenance portion of the unmetered tariff, in order to compare that cost with HRM's overall streetlight budget, to ensure that a comparison is on an equal basis. Based on NSPI's present maintenance charge, HRM would need to be able to reduce that amount by 50% to experience a ten year payback on a \$5.0 million investment in a streetlight purchase. If the remaining book value of the NSPI streetlight inventory is in the twelve year range, this would not make economic sense.

HRM Take Ownership of New Residential Subdivision Streetlights

An option that is available to HRM would be to take ownership of new light fixtures that are being installed in HRM by developers, or by the utility on behalf of developers. These fixtures would be incorporated into the streetlight inventory, and would be maintained by the Municipality. It would fix NSPI's involvement in streetlight maintenance to its present inventory. It would also allow the HRM Streetlighting Department to adjust to an increased scope of work for its crew, and contractor. A gradual expansion would also help better understand the incremental costs associated with expansion of service territory outside the core. The timing for this initiative could coincide with the implementation of HRM's common trench design which would require decorative streetlights in new subdivisions due to the removal of power poles from the streetscape. It would also provide a single utility connection for a subdivision, rather than individual fixture connections to an overhead system, which would be much more acceptable to the utility.

CONCLUSION

Streetlight service level improvement has been a concern of HRM Council and staff for some time. Over the past nine months the extent of the problem has been documented through a joint effort of NSPI and HRM, and a remediation plan has been recommended and is in process. The utility has

committed to measurable service level improvements on a go forward basis, and a reexamination of that service level from an industry best practice perspective. This initiative, in combination with communication improvements that have occurred over the past six months, and a commitment from NSPI to examine alternate maintenance practices, as well as emerging technologies, is encouraging, and represents real progress. Considering the timeline for measured improvements is six months, the utility should be provided the opportunity to demonstrate its commitment to real and measurable improvement to streetlight service level, and be encouraged to proceed with it's recommended plan. A follow up report in early 2009 can provide Council with a progress update, and, if necessary, focus more closely on other alternatives such as the purchase option.

BUDGET IMPLICATIONS


The service level improvement option will not have any budget implications. The utility has agreed to absorb costs associated with improvement to their existing service standard. In addition, they will implement the changes to their maintenance procedures if it is economic to do so. The purchase options would result in additional costs to HRM.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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