

ENVIRONMENT COMMITTEE – DECEMBER 14, 2009

ENERGY EFFICIENT STREET LIGHTING PILOT PROJECT – STATUS UPDATE.

Recommendation

The Commissioner of Engineering and Public Works recommends that this report be received for information purposes.

Contribution to Sustainability

The energy efficient street light pilot project supports the goals and objectives of sustainability and the Green Directions Vaughan by examining new street light technologies with the purpose of establishing new street light standards in the City which are more environmentally friendly, sustainable and cost effective.

Economic Impact

There is no economic impact upon the adoption of this report.

Communication Plan

A communication plan will not be required as a result of adopting this report.

Purpose

The purpose of this report is to provide the Environmental Committee with an update on the Energy Efficient Street Lighting Pilot Project, which was approved by Council on June 15, 2009.

Background - Analysis and Options

Council, at its meeting on June 15, 2009, adopted Item 1, Report No. 5, of the Environmental Committee which recommended:

- 1. That the proposed energy efficient street lighting pilot projects be implemented as outlined in this report;*
- 2. That staff report back on the results of the pilot projects after one full year of testing; and*
- 3. That staff be authorized to test and evaluate additional energy efficient lighting systems subject to the lighting supplier providing the City with at least five luminaires at no cost for a period of one year.*

Installation of pilot lights

In response to Council's direction, staff established a program to test three different types of street lights including Induction Lighting (IL), High Efficiency Fluorescent Lighting (HEF) and Light Emitting Diode Lighting (LED). Each of these lights is reported to provide substantial energy savings while meeting the City's street light illumination standards. The three light types were installed on September 21, 2009 in groups of five lights on existing street light poles along Islington Avenue in Kleinburg next to the existing High Pressure Sodium (HPS) street lights as shown on Attachment No. 1. Each street light pole included a sign tab which identified the specific type of light on the pole.

Tests on the lights were conducted in September and October to determine the adequacy of each light in terms of intensity & distribution, light quality, and actual energy consumption. The light intensity and distribution of each light type was established in the field by using a light meter. In

addition, the energy consumption of each light type was bench tested and measured. The collected data on each light type is now being compared to the existing City standards and the manufacturer's specifications.

Further analysis and testing of each light type is being conducted with consideration for the following factors:

- Life span
- Adequacy of light (intensity & distribution)
- Quality of light and colour
- Energy consumption
- Capital and maintenance costs
- Retrofit compatibility
- Recyclability & environmentally sensitive by-products
- "Pay-back" timeline for capital investment

The results of the Pilot Project will inform the City on which energy efficient street light type/technology is preferred for use in the City.

Infrastructure Stimulus Funding Program

The City was successful in obtaining contribution funding through the Building Canada Fund, Infrastructure Stimulus Fund Program (ISF) for an energy efficient streetlight retrofit project. A total of \$1.5 million dollars was awarded to cover the project cost with one third contribution from each level of government (\$500,000 Federal, \$500,000 Provincial and \$500,000 City). According to the terms of the contractual agreement and ISF Program requirements, the construction start date must be within sixty days of the date noted in the application, which is October 1, 2009. Since the energy efficient street light pilot project was started in September the initial ISF milestone has been met. Staff has adjusted the original work plan and schedule for the pilot project in order to meet the mandatory completion date for the street light retrofit project of March 31, 2011.

Presentation to Kleinburg Public School

On October 19, 2009, staff provided a presentation on the energy efficient street light pilot project to grades 5 and 6 students at the Kleinburg Public School. This presentation outlined the motivation behind implementing the pilot project, the project work plan, and what the City is expecting to achieve at the conclusion of this project. The presentation was well received and generated some good discussion and feedback.

An evening walk with Kleinburg residents

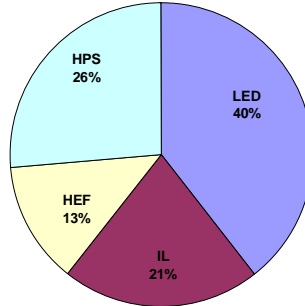
An evening walk with the local residents in Kleinburg was conducted by staff on October 21, 2009, in order to solicit direct feedback on the test street lights. In general, residents were supportive of the pilot project. Following the walk, the participants were encouraged to complete the on-line survey that is located on the City's web site.

Public survey

A survey was placed on the City's web page to solicit public feedback and comments on the pilot lights. To date, a total of 48 survey submissions have been received. Out of the 48 surveys, four respondents did not indicate a preference to any one light type. Two respondents indicated that cost was the most important factor when selecting a preferred street light. Unfortunately, four of the surveys were not considered because of the absence of a valid postal code. The results of the remaining 38 surveys are summarized and illustrated below:

SURVEY RESULTS – LIGHT TYPE PREFERENCE

Preferred Street Light Type	LED	IL	HEF	HPS
No. of Surveys	15 (39%)	8 (21%)	5 (13%)	10 (26%)



The majority of people (15 or 39%) preferred the LED lights. Interestingly, 10 or 26% of those surveyed expressed a preference for the existing HPS lights because it produces a softer and warmer light. Five of the survey respondents also noted that cost should be a major deciding factor in the selection process.

Continual Exploration

In an effort to keep current with the fast changing technology of energy efficient street lighting, staff continues to explore other technologies and products. Staff is currently considering adding six more LED street lights from a different manufacturer to the pilot project.

Data Evaluation

The City has retained an external consultant to assist in the testing and evaluation of the test street light types. It is expected that the initial analysis and results of the pilot project will be documented in January 2010, and staff will likely be in a position to report back to Council in February 2010.

Relationship to Vaughan Vision 2020/Green Directions Vaughan.

In consideration of the strategic priorities related to Vaughan Vision 2020, and the “Green Directions Vaughan” (which is the Community Sustainability and Environmental Master Plan”, this pilot project will complement/assist the following:

- Enhance and Ensure Community Safety, Health & Wellness;
- Lead and Promote Environmental Sustainability;
- Pursue Excellence in Service Delivery; and
- Actions planned under Objective 2.1.4. of the Community Sustainability and Environmental Master Plan:- “Examine Energy Conserving Streetlight Pilots”

Regional Implications

There is no immediate Regional implication resulting from the adoption of this report.

Conclusion

The Energy Efficient Street Lighting Pilot Project was initiated in early September. Staff has advanced the timing of the pilot project to meet the requirements of the Infrastructure Stimulus Funded Program. It is expected that the initial analysis and results of the pilot project will be documented in January 2010, and staff will be in a position to report back to Council in February 2010.

Attachments

1. Street Light Test Location Plan.

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ATTACHMENT No. 1

