

HALIFAX

P.O. Box 1749
Halifax, Nova Scotia
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Item No. 11.4.3
Halifax Regional Council
June 2, 2015

TO: Mayor Savage and Members of Halifax Regional Council

Original Signed

SUBMITTED BY: Councillor Bill Karsten, Chair, Audit & Finance Standing Committee

DATE: May 22, 2015

SUBJECT: RFP 14-340 Design, Supply and Install LED Streetlights

ORIGIN

May 20, 2015 meeting of the Audit & Finance Standing Committee, Item No. 9.1.5

LEGISLATIVE AUTHORITY

Audit & Finance Standing Committee Terms of Reference section 3.8, which states "to review and make recommendations on proposals coming to Halifax Regional Council outside of the annual budget or tender process including but not limited to:

- New Programs or services not yet approved
- Programs or services that are being substantially altered
- Proposed changes in operating or budget items
- Committing of funds where there is insufficient approved budget, or,
- New or increased capital projects not included in the approved budget
- Increases in project budget due to cost sharing
- Creation or modification of reserves and withdrawals not approved in the approved budget

RECOMMENDATION

It is recommended by Audit & Finance Standing Committee that Halifax Regional Council:

1. Award RFP #14-340 Design, Supply and Install LED Streetlights to the highest scoring proponent, GJ Cahill and Company Ltd, for a total price of \$37,230,102 (net HST included) and a 24 month implementation, with funding from CT000005 – LED Conversion of HRM Streetlights, as outlined in the financial implications section of the staff report dated May 12, 2015.
2. Approve the total capital project cost in the amount of \$47,645,179 for Project CT000005 – LED Conversion of HRM Streetlights, which includes \$468,000 required for project management, design review, and inspection resources to help ensure successful implementation of the project. This amount will be funded and repaid in full from operating savings generated and placed into Q327 LED Streetlight Reserve.

BACKGROUND

A staff report dated May 12, 2015 pertaining to Request for Proposal (RFP) 14-340 Design, Supply and Install LED Streetlights was before the Audit & Finance Standing Committee for consideration at its meeting held on May 20, 2015.

For further information please refer to the attached staff report dated May 12, 2015

DISCUSSION

Staff responded to questions from the Committee pertaining to the proposed operational savings associated with the conversion to LED streetlights, the proposed implementation schedule for the project, contingency funding associated for pole and bracket replacement (if required), as well as risk management work conducted by staff as part of the total capital project costs for the project. The Audit & Finance Standing Committee, having reviewed this matter, forwarded the recommendation to Regional Council as outlined in this report.

FINANCIAL IMPLICATIONS

As outlined in the attached staff report dated May 12, 2015.

COMMUNITY ENGAGEMENT

All meetings of the Audit & Finance Standing Committee are open to the public. The agenda and reports are provided online in advance of the meeting.

ENVIRONMENTAL IMPLICATIONS

As outlined in the attached staff report dated May 12, 2015.

ALTERNATIVES

The Audit & Finance Standing Committee did not discuss alternatives.

ATTACHMENTS

1. Staff report dated May 12, 2015

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.php> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: Liam MacSween, Legislative Assistant, 902.490.6521.



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Attachment 1
Audit & Finance Standing Committee
May 20, 2015

TO: Chair and Members of Audit & Finance Standing Committee

Original Signed

SUBMITTED BY:

Richard Butts, Chief Administrative Officer

Original Signed

Mike Labrecque, Deputy Chief Administrative Officer

DATE: May 12, 2015

SUBJECT: RFP 14-340 Design, Supply and Install LED Streetlights

ORIGIN

At the May 28, 2013 Regional Council meeting, a motion was passed to:

1. Purchase all Nova Scotia Power owned outdoor lights within the Municipal right of way directly servicing the Municipality;
2. Direct staff to communicate to the NS Department of Energy an implementation plan to convert all streetlighting to LED luminaires; and
3. Direct staff to initiate the procurement process and solicitation strategy required to assess and award a contract for the optimal service delivery model.

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Council approved, December 11, 2012, that all budget increases are to be presented to the Audit and Finance Standing Committee, prior to submission to Council.

Halifax Charter, section 93(1) - The Council shall make estimates of the sums that are required by the Municipality for the fiscal year; Halifax Charter, section 79(1) - Specifies areas that the Council may expend money required by the Municipality; Halifax Charter, section 35(2)(d)(i) - The CAO can only authorize budgeted expenditures or within the amount determined by Council by policy; Halifax Charter, section 120(6) - The Municipality may maintain other reserve funds for such purposes as the Council may determine; Halifax Regional Municipality policy on Changes to Cost Sharing for Capital Projects - Changes requiring Council approval; and the Halifax Regional Municipality Reserve Policy - No reserve funds will be expended without the CAO's recommendation and Council approval.

RECOMMENDATION

It is recommended that the Audit & Finance Standing Committee recommend that Halifax Regional Council:

1. Award **RFP #14-340 Design, Supply and Install LED Streetlights** to the highest scoring proponent, GJ Cahill and Company Ltd, for a total price of \$37,230,102 (net HST included) and a 24 month implementation, with funding from CT000005 – LED Conversion of HRM Streetlights,

RECOMMENDATION CONTINUED ON PAGE 2

as outlined in the Financial Implications section of the report.

2. Approve the total capital project cost in the amount of \$47,645,179 for Project CT000005 – LED Conversion of HRM Streetlights, which includes \$468,000 required for project management, design review, and inspection resources to help ensure successful implementation of the project. This amount will be funded and repaid in full from operating savings generated and placed into Q327 LED Streetlight Reserve.

BACKGROUND

Regional Council gave the following direction on May 28, 2013:

LED Streetlight Conversion Reserve Q327

1. Approve the establishment of the LED Streetlight Conversion Reserve (Q327), as per the Reserve Business Case attachment, dated April 1, 2013 to the attached staff report dated May 9, 2013;
2. Approve the strategy to reallocate operational savings realized from energy and maintenance efficiencies due to LED street light technology conversion into the LED Street Light Conversion Reserve (Q327) including issuing debt outside the HRM debt targets; and
3. Approve the recovery of accumulated LED Street Light Conversion Reserve (Q327) savings to fund the capital investment required to purchase NSPI stranded assets within HRM and convert all HRM street lights to LED technology.

HRM LED Streetlight Conversion Project

1. Purchase all Nova Scotia Power owned outdoor lights directly servicing the Municipality, using a stranded asset valuation approved by the Nova Scotia Utility and Review Board;
2. Direct staff to communicate to the Nova Scotia Department of Energy the implementation plan and solicitation strategy before June 30, 2013; and
3. Direct staff to initiate the procurement process and solicitation strategy required to assess and award contracts for the optimal service delivery model.

Converting streetlights to LED technology will provide the Municipality with significant operational savings due to their energy efficiency and reduced required maintenance. The fundamentals of the business case are built on the annual operating savings. It was determined that this conversion could be funded through these future savings from the more energy efficient streetlights, which would be banked over time as it was realized. The 2015/16 annual budget for energy and maintenance costs associated with street lighting is \$6.5M and estimated to grow by 3% annually using existing technology. Reserve Q327 was established in May 2013 in order to allow for energy and maintenance savings to be redirected to fund this project.

The 24 month conversion implementation schedule of the streetlights from high pressure sodium streetlights to LED luminaires concludes in 2017/18. The projected cost for energy and maintenance is \$2,007,701/year. This can be compared to the projected costs of \$6,942,035/year in 2017/18 for energy and maintenance if the project did not happen and old technology (HPS fixtures) continued to be used. This is demonstrated in the Project Financing section of the report in the table titled, "Projected Energy and Maintenance Cost Savings" as well as in Attachment B (see line item "annual savings").

As streetlights are converted to LED, the cost of maintenance reduces significantly due to the increased life of the new fixtures. It is anticipated that LED maintenance will cost approximately 10% of existing maintenance on a per light basis and savings are realized as soon as the nonLED luminaires are converted.

In November 2013, HRM contracted the services of OPUS International Consultants to review an in-house ownership and operation model and compare its long term cost against alternate service model options. OPUS concluded that the cost of shifting risk to an alternate service provider far exceeded any

benefits which could be realized by the Municipality. It was therefore decided that the Municipality would not proceed with an Alternate Service Provider model for streetlight conversion and long term management, and to assume the more traditional in-house model which requires the ownership of all municipal streetlight assets as well as responsibility for maintaining and providing an acceptable streetlight service standard.

In July 2014, HRM completed a detailed inventory of all streetlights within the HRM owned right-of-way, excluding streetlights on private roadways and lands. This inventory included streetlight wattage and location, and determined necessary attributes needed to facilitate detailed street lighting design, including pole location, design, and setback from the curb. Quantities of luminaires documented exceeded the quantities used for stranded asset calculation. This resulted in HRM having to plan for the conversion of an additional 1,500 non-LED luminaires to LED that were not originally accounted for.

On July 22, 2014, HRM awarded a maintenance contract to Black and McDonald to maintain all non-LED municipal streetlights as well as approximately 7,000 LED streetlights installed prior to award. The cost of this contract is approximately \$1.2 million annually and will reduce as more lights are converted to LED technology.

On August 1, 2014, HRM concluded an Agreement with NSPI to take over responsibility for roadway lighting service for all areas of the Municipality and to purchase all streetlight luminaires.

HRM proceeded with the development and issuance of a Request for Proposals for the Design, Supply, and Installation of LED streetlight luminaires throughout the Municipality on December 15, 2014. The RFP closed March 24, 2015. The scope of work being proposed included:

- Design, supply and install streetlighting in accordance with ANSI RP-8 standard;
- Pricing for 24 and 48 month implementation schedules;
- Supplying only prequalified streetlight luminaires;
- Adaptive technology to monitor streetlight status and provide dimming capability, allowing for improved service standards to residents and additional energy savings;
- Provide full service (parts and labor) warranty for the first full year of system operation and a ten year product (parts only) warranty for luminaires and Adaptive Technology components; and
- Pricing based on the design of 11 potential street and sidewalk configuration scenarios to assess the vendors' capability to address the various designs found throughout the Municipality.

The anticipated implementation schedule will require geographical Districts to be designed, installed, and commissioned, complete with Adaptive Technology capability and fully operational, when turned over to HRM. Districts most remote from the urban core will be converted first. This enables the Municipality to monitor the most remote streetlights in the most efficient manner without the need for reporting of outages through the Call Centre.

This project includes only those streetlights that reside within HRMs right-of-way and does not include streetlights on private roadways or lands.

DISCUSSION

RFP Evaluation

RFP #14-340, Design, Supply and Install LED Streetlights was publicly advertised on the Nova Scotia Public Tenders portal on December 15, 2014 and closed on March 24, 2015. HRM's objective was to seek proposals from qualified Proponents for a complete turnkey project for the scope identified above.

Five (5) proposals were received from the following proponents:

- Black and McDonald (2);
- Emera Utility Services;
- GJ Cahill and Company; and
- RealTerm Energy.

The proposals were evaluated by a team of staff from Transportation and Public Works and Finance and Information, Communication, and Technology and facilitated by Procurement per the evaluation criteria listed in Appendix A of the RFP (attached).

The proposals were scored using a two-envelope process. Envelope One was the technical component and Envelope Two consisted of the financial elements of the proposal. Cost Proposals were evaluated based on a 20-year lifecycle (net present value calculation), including the firm fixed project cost and the energy savings over the 20-year period.

The two Black and McDonald proposals, one which included American Electric luminaires and Roam Adaptive Technology and one which included LED Roadway Lighting luminaires and Silver Springs Network Adaptive Technology, were non-compliant for not meeting the submission requirements.

The remaining three (3) proposals met all HRM's mandatory requirements which included:

- Complete documentation requirements;
- Compliance with both 24 and 48 month implementation schedules;
- Supply of preapproved luminaires;
- Supply of Adaptive Technology System that complied with mandatory technical requirements;
- 10 year Luminaire/Adaptive Technology system product warranty; and
- 1 year comprehensive operational warranty.

Each was scored based on the four (4) Technical Evaluation Criteria, using the weightings identified in the RFP Appendix "E" (Attachment A). All three met the minimum technical score of 75%, or 48.75 of 65 points. As a result, all three proposals proceeded to the lifecycle cost portion of the evaluation and ranking based on the formula included in Clause 21 – Cost Proposal Evaluation, of Instructions to Proponents.

The successful proposals includes GJ Cahill as the Prime, LED Roadway Lighting (LRL), and Silver Springs Network. GJ Cahill provides project management and installation experience. LED Roadway Lighting is a local luminaire supplier which was deemed to have technically acceptable equipment and experience with municipalities such as the City of Sudbury and HRM. Silver Springs Network provides one of the most widely deployed Adaptive Technology systems in the world and has partnered with LRL for a "Smart City" project in Glasgow, Scotland.

Project Budget

An initial project estimate of approximately \$40,000,000 for the LED streetlight conversion Project (CT000005) was presented to Regional Council May 28, 2013. It was anticipated that this amount would cover the purchase of streetlights from NSPI and the additional capital and project costs. The \$40 million estimate was based on:

- The estimated number of streetlights provided by NSPI (before the inventory was completed) and the cost to supply and install the new streetlights; and
- The addition of Adaptive Technology to these streetlights.

Based on the proposals received for the project and additional information (i.e., a complete inventory of the streetlight assets) identified following the acquisition of the streetlights from NSPI, it was determined that the project requirement is greater than the original \$40 million. As stated earlier, this increased

funding requirement can be fully offset by the cost savings realized through energy efficiency gains. The cost details are outlined below.

Item	2013 Estimate	2015 Actual/ Estimate	Difference
Purchase cost of streetlights from NSPI	\$7,296,919	\$7,197,579	\$(99,340)
Award of RFP #14-340 to GJ Cahill	\$31,520,000	\$37,230,102	\$5,710,102
Project Contingency		\$1,861,505	\$1,861,505
Additional Project Resourcing (previously budgeted under operating costs)		\$468,000	\$468,000
Project Expenses	\$649,180	\$ 887,993	\$238,813
Total	\$39,466,099	\$47,645,179	\$8,179,080
Capital Budget #CT000005	\$40,000,000	\$47,645,179	\$7,645,179

At the time of the initial project estimate, it was anticipated that the funds remaining after the NSPI LED and non-LED streetlight purchase (approximately \$32 million) would fully support the capital expenditure and implementation. There have been a number of additional costs that could not have been anticipated at that time. It is estimated that an additional \$7,645,179 is required to complete the project, as described below.

Although a project increase of \$7,645,179 is required, the number of years required to accumulate sufficient operational savings to fund the capital project costs has not changed from the original Q327 Reserve projected contributions timeline, ending in 2023/24. These additional costs will be fully recovered through savings. Further, a 24 month implementation will retire the debenture two years earlier than a four year implementation.

Award of RFP #14-340 - \$5,710,102

- 24 Month Implementation - **\$1,042,860**
 - The Project, as presented to Regional Council in May 2013 included a five year implementation schedule. In order to ensure best practice was used to develop the procurement strategy for the RFP significant analysis was undertaken. This resulted in a delay in issuing the RFP and a 48 month implementation period was specified to meet the conversion commitments made to the Province. In addition, bids were required to include a 24 month implementation schedule for consideration. A 24 month alternative was requested to determine whether savings generated from energy savings associated with energy efficient LEDs would offset the costs associated with a more condensed project schedule.

The cost of the 24 month implementation within the successful bidder's proposal is an additional \$1,042,860. While the capital cost may be higher, there will be immediate short term savings in streetlight maintenance and energy and improvements to service levels as follows:
 - Streetlight maintenance costs will be reduced by \$1.2million with a shorter conversion schedule. LED luminaires are warranted for 10 years and expected to be maintenance free for 20 years (the anticipated annual outage rate is in the 1-2% range). This compares to a 20-25% annual outage rate for nonLED luminaires.
 - Cost savings associated with energy efficiencies will be realized much quicker as the more energy efficient LEDs will be installed at a faster rate. It is anticipated that the Municipality will significantly reduce energy costs, over the life of the LED luminaires with a shortened implementation schedule. An additional \$ 1 million in energy savings will be realized if a 24 month implementation period is selected over the 48 month

implementation period.

- The 24 month implementation requires an additional 500 luminaires to be priced into the alternative. Due to the shorter implementation time, fewer spot replacements will result which means more luminaires to be replaced through the RFP Award than through the current maintenance contract.
- In addition, a number of service level improvements will be realized two years earlier due to a shorter implementation schedule. They include:
 - Monitoring technology included with the new luminaires will eliminate the need for a manual reporting process that includes contacting the Call Centre and allow for replacement of luminaires to be completed at an accelerated rate. Between August 1st, 2014 (HRM took over all streetlights from NSPI) and April 30th, 2015 the Call Centre received over 5700 calls from residents regarding streetlight concerns. The Adaptive Technology monitoring system associated with this conversion project will eliminate the requirement for a resident to call in streetlight outages;
 - An accelerated replacement of non-LED luminaires reduces the maintenance effort needed to maintain an acceptable service level with a more immediate access to status monitoring capability through the use of the adaptive technology system;
 - The implementation schedule focuses on those districts farthest away from the core, to allow for immediate monitoring capability for most rural areas of the municipality, which is a current area of difficulty for maintenance staff; and
 - There is limited contingency time in the project schedule if the Municipality was to proceed with the 48 month implementation schedule. The 24 month schedule provides more flexibility to ensure that the committed conversion timeline is met.

- Additional High Pressure Sodium Fixtures - **\$1,601,191**

The project estimated quantity of HRM fixtures was based on the billed quantity HRM was charged for by NSPI. Subsequent to and in preparation for the purchase of utility owned streetlights and the conversion project, HRM undertook a detailed inventory which was completed in March 2014. This work identified an additional 1,501 streetlights when compared to the project estimate that was based on information from NSPI. Using a unit rate based on the successful cost proposal, this amounts to an additional cost of \$1,601,191.

- Luminaire Bracket (arm that attaches fixture to pole) Replacement Contingency - **\$2,230,765**

During the negotiation period from September 2012 to July 2014 NSPI spot replaced over 4500 LED luminaires. Through NSPI's experience it was learned that roughly 50 % of the luminaire brackets (arm that attaches fixture to pole) required replacement. This increased the average unit cost for each luminaire from \$745 per installed fixture to \$890.65 per installed fixture.

In many instances the replacement of luminaire brackets was necessary to accommodate rural applications where poles were located such that short brackets made lighting of roadways ineffective. Most of these additional brackets will be in the rural areas and replacing these brackets will make the lighting safer and more effective. As a result, the RFP included a provision to accommodate the anticipated increase in new luminaire brackets which resulted in an additional cost.

Therefore, in order to have the ability to evaluate the proposals, all proponent bids used an assumed 50% bracket replacement. This \$2,230,765 is an allowance that will be drawn from and based on the actual design requirements which may be higher or lower.

- Installing Adaptive Technology controllers on existing LED luminaires - **\$835,286**

The initial project provided for the retrofitting of 4,500 existing LED luminaires with adaptive technology controllers, enabling the system to monitor all municipal streetlight fixtures. As a result of the extended negotiations with NSPI, more LED luminaires were installed prior to the beginning of the project which has therefore created a need for additional LEDs to be retrofitted. The RFP requested pricing for 8,000 luminaire retrofits. The additional cost for the increased scope of work is \$835,286.

Project Contingency

\$1,861,505

The original project estimate assumed that the RFP would require submissions to include complete roadway luminance design and luminaires based on that design. Based on feedback from the industry, it was concluded that while this was a reasonable request, it may require additional time and cost for potential bidders and restrict bids because of the additional project complexity, and ultimately limit competitive prices. As a result, the RFP was issued using 11 typical applications which captured common lighting applications for various street types and traffic patterns. Although using this approach ultimately resulted in having a strong number of qualified bidders, it has created some project risk in that the final roadway lighting designs will take place after award, and on a district by district basis. Because the detailed street luminance will now be designed after award, any changes which differ from the typical designs will potentially impact the project cost. This will be expected to result in some cost reductions and some cost increases. As a result, it is considered prudent to include a project contingency adjustment. Because the project risk is relatively low, 5% is considered reasonable rather than the usual 10% for major construction projects.

Additional Project Resources

\$468,000

In order for the LED Conversion project implementation to be successful, HRM needs to put resources in place to ensure that:

- Roadways are illuminated to design standards;
- The successful proponent meets its schedule commitments;
- Luminaires/brackets/wiring are installed in accordance with the Canadian Electric Code;
- Adaptive Technology system is integrated with Luminaires and commissioned to HRM satisfaction;
- The successful proponent adheres to municipal and utility regulations and permit requirements;
- Recycling of materials is maximized and PCB and Asbestos handling procedures are in place and adhered to;
- Maintenance of the operating streetlight and Adaptive Technology monitoring systems are in accordance with the comprehensive site warranty.

The original project estimate provided for internal staff to assume the Project Manager role over the life of the project, with funding included in the operational savings calculation. Since that time, due to the magnitude of this project it was deemed necessary to establish a project office that will include a three (3) person project team which will be externally contract sourced, and therefore alternatively funded by the capital project costs. A project office will be set up to include the following team members:

- Full time/part time Project Manager – It is anticipated that a Project Manager will be required full time for the first six months (this requirement can be met internally), after which a 50% commitment will be required for 18 months from an external consultant;
- Full time Project Quality Assurance Supervisor/Contract Administrator – This position will be

required full time from September 2015 for 24 months to monitor the work and progress of the vendor;

- Design Review Engineer – The proponent design packages will need to be reviewed as they are submitted. This will require engineering consultant services to review 18 design packages submitted over the implementation period.

Additional Conversion Project Expenditures to Date and Committed

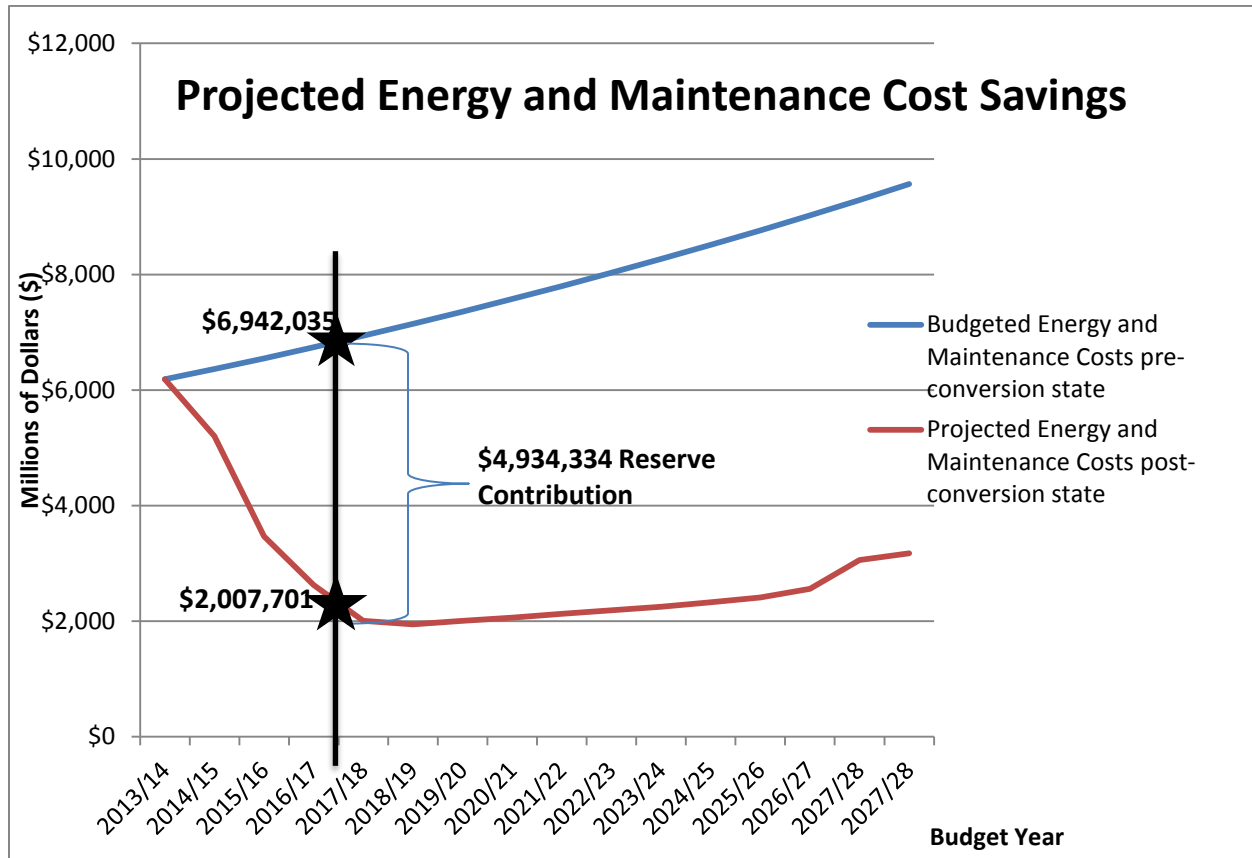
\$238,813

A number of project expenses were realized to allow the Municipality to take responsibility for the assets from NSPI and in preparation for the RFP process. The table below outlines these costs but the significant ones include the cost of obtaining a more accurate inventory of streetlight assets, additional maintenance costs caused by the protracted negotiation with NSPI, and the requirement to engage a procurement consultant to support the development of the RFP.

As of April 28, 2015	Actual \$	Committed \$	Total \$
Inventory Project	204,817	4,454	209,271
PCB/Asbestos Protocols	4,160	3,675	7,835
RFP Consultant	90,024		90,024
HRM Spot Replacement	570,074	1,910	571,984
NSPI (50 brackets)	8,879		8,879
TOTAL	\$ 877,954	\$ 10,039	\$ 887,993

Project Financing

Reserve Q327 was approved by Regional Council on May 28, 2013. It was established in anticipation of the purchase of streetlights from NSPI and the conversion of all non-LED streetlights to LED technology. Based on financial projections, the purchase of streetlights from NSPI and the subsequent conversion to LED technology will result in significant annual operational savings, including lease costs and maintenance and energy efficiencies. The savings from these improvements (budgeted energy and maintenance costs based on pre-conversion state minus projected energy and maintenance costs based on post-conversion state) are being directed to the LED Streetlighting Reserve and used to fund the conversion project, as shown in the following graph.



The Budgeted Energy and Maintenance Costs represent the costs that would have been incurred if the stranded assets had not been purchased and the LED conversion had not taken place.

The Projected Energy and Maintenance Costs represent the costs that have been incurred to date and will be incurred after the purchase of the stranded assets and the 24 month LED conversion.

Significant energy as well as operating and maintenance savings totaling \$1.158M have been realized at the end of 2014/15, as a result of the 6,597 luminaires which have already been converted to date.

It should be noted that 2023/24 will be the last year in which these savings need to be contributed to the LED Reserve in order to fund the project.

The table below outlines the differences in the LED Streetlighting Reserve contributions and withdrawals between the 24 month and 48 month implementation options, since the inception of the Reserve.

Reserve Q327 - since inception						
		2-year		4-year		
		conversion		conversion	Difference	
Opening Balance		-		-		
Initial Transfer from Operating Surplus	12/13	\$ 8,000,000	12/13	\$ 8,000,000	-	
Operating and Maintenance Budgeted	up to 23/24	78,959,000	up to 23/24	78,959,000	-	
Projected State Operating Costs	up to 23/24	(32,067,000)	up to 23/24	(34,917,000)	2,850,000	Reduced operating costs due to earlier conversion in 2-year conversion
Transferred to Reserve	up to 23/24	46,892,000	up to 23/24	44,042,000		Difference between budgeted O&M and projected O&M costs transferred to Reserve
2015/16 Contribution Hiatus	15/16	(500,000)	15/16	(500,000)	-	
Total Projected Contributions	23/24	54,392,000	23/24	51,542,000	2,850,000	Higher contribution to Reserve due to earlier conversion in 2 year conversion
Interest Earned	up to 27/28	1,126,000	up to 29/30	1,654,000	(528,000)	Less interest earned due to earlier funding of Capital Project in 2-year conversion
Stranded Asset Purchase	14/15	(7,175,000)	14/15	(7,175,000)	-	
Funding of CT000005	17/18	(12,811,000)	19/20	(21,005,000)	8,194,000	Lower amount transferred to Capital Project (savings only accumulated to 17/18 as opposed to 19/20) in 2-year conversion
Debt Repayment - principal	up to 27/28	(27,659,000)	up to 29/30	(18,854,000)	(8,805,000)	Higher amount of debt required as a result of lower amount transferred directly to Capital Project in 2-year conversion
Debt Repayment - interest	up to 27/28	(4,564,000)	up to 29/30	(3,111,000)	(1,453,000)	Higher interest amount as a result of higher debt required in 2-year conversion
Closing Balance	March 2028	\$ 3,309,000	March 2030	\$ 3,051,000	258,000	Debt paid off 2 years earlier in 2-year conversion
Based on a NPV calculation, the difference between the 4-year and 2-year conversion period shows that the 4-year scenario period results in a better value for money investment.						

An annual breakdown of projected Reserve contributions and withdrawals can be found in Attachment D.

Further details of the capital project costs and Reserve contributions for the 24 month and the 48 month scenarios can be found in Attachment B and C, respectively.

FINANCIAL IMPLICATIONS

The updated total capital project cost for the Design, Supply and Install conversion of LED Streetlights is \$47,645,179.

The recommended RFP 14-340 award for \$37,230,102 (net HST included) is for a 24-month implementation of the remaining 83% of HRM's roadway lighting inventory. The financial analysis on the 48-month implementation option provided a slightly better net present value of approximately \$500,000, however, the benefits of realizing improved service for the public sooner and positive impacts to other areas of business result in a preferred decision to proceed with the 24-month implementation.

Although a project increase of \$7M is required, the number of years required to accumulate sufficient operational savings to fund the capital project costs has not changed from the original Q327 Reserve projected contributions timeline, ending in 2023/24.

Funding for the streetlighting conversion is available from Project No. CT000005 – LED Conversion of

HRM Streetlights. The current budget including the 2015/16 fiscal year is \$22,140,000 and has been confirmed by Finance.

Budget Summary: Project Account No. CT000005 – LED Conversion of HRM Streetlights

Estimated amount May 28, 2013	\$40,000,000
Add: Budget increase from Q327	<u>\$ 7,645,179</u>
Total Project Cost	\$47,645,179
Less: NSPI Purchase	\$ 7,197,579
Less: Project Spent/Committed <i>as of April 28, 2015</i>	\$ 887,993
Less: RFP 14-340 (net HST included)	\$ 37,230,102
Less: Project Contingency	\$ 1,861,505
Less: Additional Project Resources	<u>\$ 468,000</u>
Balance	\$ 0

Reserve Account No. Q327 - LED Streetlight Reserve

Balance at March 31, 2015	\$2,113,630
Projected Contributions to 23/24	45,233,800
Interest Earned to 27/28	973,000
Transfer to CT000005 in 17/18	(12,788,500)
Debt Repayments to 27/28	<u>(32,223,000)</u>
Balance at March 31, 2028	\$3,309,630

COMMUNITY ENGAGEMENT

As the conversion of streetlight luminaires to LED has been legislated by the Province, no community engagement was considered, other than the establishment of a webpage and information respecting the new technology.

ENVIRONMENTAL IMPLICATIONS

The LED streetlight luminaire conversion project was evaluated using a lifecycle analysis which factored in the energy consumption of each proposal over the anticipated life of the recommended luminaires. This enabled the operating cost impact of energy efficient devices to be reflective of the project evaluation. LED streetlights are anticipated to reduce energy consumption by approximately 50% due to the efficiency of the luminaires. In addition, an additional 25% reduction in energy consumption is achievable through the dimming technology included with project scope of supply.

The Streetlight Conversion project will contribute to the Municipality's commitment to reduce GHG emissions. It is anticipated that the lower wattage luminaires will allow for a reduction in CO2 emissions in the order of 7,600 metric tonne/year. This equates to the removal of approximately 26,000 cars permanently taken off the road.

A Streetlight Management Protocol has been initiated within HRM that outlines the safety procedures for handling the possibility of asbestos and PCBs within HRM streetlights. All procedures developed take into account the current regulatory requirements and are to be conducted in accordance to Federal and Provincial requirements in addition to internal HRM safe work procedures and policies.

ALTERNATIVES

HRM has committed to convert all of the Municipality's streetlights to LED by the end of fiscal year 2018/19. The Energy Efficient Appliance Act requires all nonLED luminaires to be replaced by the end of calendar year 2022. Therefore, the only alternative to the project, as defined, would be to delay or extend the implementation schedule for LED luminaires. This would require agreement from the Province.

ATTACHMENTS

Attachment A – Proposal Evaluation Criteria

Attachment B – Capital Project Costs and Reserve Contributions – 24 Month Implementation

Attachment C – Capital Project Costs and Reserve Contributions – 48 Month Implementation

Attachment D – LED Streetlight Conversion Reserve, Source and Application of Funds (000's)

A copy of this report can be obtained online at <http://www.halifax.ca/boardscom/SCfinance/index.php> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

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RFP 14-340 Attachment A Design, Supply and Install LED Street Lights Proposal Evaluation Criteria					
Criteria	Summary	Score	*Cahill	EUS	RealTerm Energy
Team composition and experience	Proponent experience shall include streetlight design, luminaire installation, and Adaptive Technology system installation, integration and operation Experience of individual team members with projects of similar scope and size Team members appropriate skills and education Balance of level of effort vs. team roles (project mgmt., technical, etc.)	15	13.68	12.52	11.10
Understanding of Halifax needs	Understanding of the requirements of the scope of work and Halifax organizational structure Acceptable proposed schedule and work plan for both 24 month and 48 month implementation, which details design, design approvals, procurement, luminaire and AT system installation and commissioning and turn-over. Value added propositions and recommendations Attention to relevant challenges that the committee has not considered	20	18.68	15.28	14.65
Operational/Technical Solution	Solution addresses all anticipated aspects of the project as identified in the RFP, including: Design Capability/Approach Luminaire Supply/Installation AT Design/Implementation Integration of AT/Luminaires to Urban/Suburban/Rural Applications Solution draws on proven technologies with demonstrated application history Solution is flexible and scalable Product and workmanship warranties demonstrate extended coverage capability	25	21.66	19.72	22.14
Project Management Methodology	Clarity and readability of written proposal Proposed communication methods between proponent team and Halifax Quality Assurance standards and practices	5	4.88	4.66	3.84
Subtotal (Technical Proposal) 75 % of 65pts = 48.75pts		65	58.90	52.18	51.73
Cost	*Actual Proposal Cost - 24 Month Implementation		*\$ 35,700,000	\$ 37,944,778	\$ 48,623,784
	Cost Including Net HST- 24 Month Implementation		37,230,102	39,571,091	50,707,799
	Actual Proposal Cost - 48 Month Implementation		\$ 34,700,000	\$ 38,991,002	\$ 50,770,265
	Including Net HST		36,187,242	40,662,156	52,946,278
Lifecycle Cost Evaluation	24 Month Implementation	35	35.0 \$59,998,137	33.72 \$62,242,915	25.59 \$76,192,716
	48 Month Implementation	35	34.97 \$60,049,142	32.5 \$64,340,143	23.83 \$79,215,539
RFP Total Score*	24 Month Implementation	100	93.90	85.9	77.32
RFP Total Score	48 Month Implementation	100	93.87	84.68	75.56

Attachment D – LED Streetlight Conversion Reserve, Source and Application of Funds (000's)

LED Street Light Conversion Reserve											
Source and Application of Funds ('000's)											
	Actual	Actual	Actual	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	
Opening Balance		8,009	7,881	2,114	4,732	8,927	1,204	2,815	4,677	6,805	
Contributions											
Initial transfer from operating surplus		8,000									
<u>Anticipated Savings:</u>											
Current state operating budget R825		6,184	6,362	6,549	6,743	6,942	7,147	7,358	7,576	7,800	
Hiatus of 15/16 Contribution				500							
Projected state operating costs		6,184	5,204	3,470	2,626	2,008	1,942	2,006	2,064	2,125	
Savings Sub-Total		-	-	1,158	2,579	4,117	4,934	5,205	5,512	5,675	
Withdrawals											
<u>Capital investment (Project Acct No. CT000005):</u>											
<u>Total Capital Project Cost 47,645,179</u>											
Stranded asset purchase			(7,175)								
Capital assets - LED Street lights + Adaptive control system						(12,788)					
Capital assets - Adaptive control system											
Transfer to Capital Project		(229)	207			-					
Debt repayment							(3,596)	(3,513)	(3,430)	(3,347)	
Interest Earned	9	102	43	39	78	131	2	23	46	72	
Closing Balance	8,009	7,881	2,114	4,732	8,927	1,204	2,815	4,677	6,805	9,205	
<i>continued...</i>				Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
				2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
Opening Balance			9,205	11,887	14,858	11,895	8,982	6,120	3,309	3,347	
Contributions											
Initial transfer from operating surplus											
<u>Anticipated Savings:</u>											
Current state operating budget R825			8,030	8,268							-
Projected state operating costs			2,187	2,251							-
Savings Sub-Total			5,843	6,017							-
Withdrawals											
<u>Capital investment (Project Acct No. CT000005):</u>											
<u>Total Capital Project Cost 47,645,179</u>											
Stranded asset purchase											
Capital assets - LED Street lights + Adaptive control system											
Debt repayment			(3,264)	(3,181)	(3,098)	(3,015)	(2,932)	(2,849)			
Interest Earned			102	135	135	102	70	38	38	38	
Closing Balance	-	-	11,887	14,858	11,895	8,982	6,120	3,309	3,347	3,385	