DECISION/DIRECTION NOTE

Title:	Churchill Square Illumination Upgrades
Date Prepared:	August 15, 2019
Report To:	Committee of the Whole
Councillor/Theme:	Debbie Hanlon - Transportation
Ward:	Ward 4

Decision/Direction Required:

Decision is required to determine how the illumination in Churchill Square should be updated.

Discussion – Background and Current Status:

Illumination in Churchill Square is currently provided by a combination of high pressure sodium (HPS) fixtures mounted on four poles located on the corners of the general parking area. A total of 18 light fixtures are mounted on these poles; 14 flood light fixtures (3 on each of the northern poles and 4 on each of the southern poles) are mounted 54' above grade and 4 additional standard cobra head fixtures (two on each of the southern poles) are mounted 30' above grade.

These fixtures are ageing and are at the end of their useful life. The height at which the flood lights are mounted requires a boom truck to service these fixtures which adds significant cost and difficulty to any required maintenance. The illumination cast by these fixtures is not meeting desired lighting levels in the area. As such, a public purchasing process must be called to update the illumination in Churchill Square. The requirements and specifications outlined in the call may consider several factors including the aesthetic appearance of the replacement fixtures.

The City is also currently exploring options to upgrade the existing ornamental street lighting in the Downtown. A working group of the Joint Committee of Council & Downtown St. John's with representation from the Built Heritage Experts Panel and the Arts & Culture Advisory Committee will be formed to advise on possible aesthetic considerations. This working group has been tasked with recommending:

- Whether to proceed with LED bulb only replacement (minor illumination improvement only) or replace the fixtures entirely.

- If applicable, what the aesthetic design criteria would be when procuring new fixtures.
- Possible cost sharing opportunities among downtown interests.

For the lighting upgrades to Churchill Square, the following options are presented to Council for consideration:

Option 1 – Base Technical Requirements - Tender

Issue a tender that outlines base technical requirements to meet specifications for new lighting in the square without specific aesthetic requirements. This approach could include replacing fixtures on the existing poles but may also include the installation of new poles.

Advantages of this approach:

- Improved lighting levels in Churchill Square
- Reduced cost
- Opportunity to minimize additional poles required and resulting construction disruption and impact on existing infrastructure and maintenance/snow clearing operations
- Shortest timelines for purchasing and implementation

Disadvantages of this approach:

- No certainty on aesthetic results
- Difficulty of maintenance on high mast poles may remain, although to lesser extent than currently

Option 2 – Base Technical Requirements with Specified Aesthetic Design– Tender

Issue a tender that outlines base technical requirements to meet specifications for new lighting in the square that also includes specific decorative aesthetic requirements. This approach could specify the aesthetic design of the lighting fixtures as an additional requirement. To do this, a clear description regarding the acceptable design is required as a tender for this lighting must be prescriptive.

There may be an opportunity to consider Churchill Square as part of the City's upcoming review of the most suitable option for decorative lighting aesthetics for the Downtown. The working group exploring the decorative design could include representation from Churchill Square stakeholders and the criteria developed could be used for lighting upgrades in these areas. However, street lighting requirements in the Downtown differ from the parking lot lighting requirements of Churchill Square. This would need to be considered so that recommended design aesthetics could be applicable or adaptable to suit both a street and a parking lot setting.

This process would require coordination between area stakeholders and could also include an opportunity for Council review engagement on the selected design criteria before it is included in an issued tender.

Advantages of this approach:

- Improved lighting levels in Churchill Square
- Improved aesthetic appeal
- Opportunity to choose decorative lighting criteria that incorporates new poles to provide space for banners or other design elements
- Potential for consistency between decorative lighting aesthetic in areas of the City
- Opportunity to review and engage on the selected lighting aesthetic design criteria

Disadvantages of this approach:

- Significantly increased cost
- Longer timelines for planning, review, and implementation
- Greater construction impacts to existing infrastructure
- Potential impacts to maintenance/snow clearing operations
- Possible loss of a few parking spaces to accommodate new poles for light fixtures

Option 3 – Base Technical Requirements with Open Aesthetic Design – Request for Proposals

Issue a request for proposals (RFP) that outlines base technical requirements to meet specifications for new lighting in the square that is open to decorative fixture submissions. This approach could encourage proponents to submit a lighting solution that incorporates decorative elements without specifying exact design requirements. Rated criteria would be used to rank submissions on this element without being prescriptive on the design aesthetics of the ornamental solution.

By requesting proposals rather than issuing a tender, the top proposal would be selected based on criteria outlined in the RFP document in addition to price. This process allows for more comprehensive submissions that detail the proposed lighting solution for the specified area. This approach does not allow for public review of proposals submitted or engagement on potential designs as per the regulations of the public purchasing process.

Advantages of this approach:

- Improved lighting levels in Churchill Square
- Improved aesthetic appeal

- Opportunity to choose a decorative lighting design that could incorporate new poles to provide space for banners or other design elements
- Opportunity to review comprehensive lighting design solutions that are rated on specified criteria in addition to price.

Disadvantages of this approach:

- Significantly increased cost
- Longer timelines for purchasing and implementation
- Greater construction impacts to existing infrastructure
- Potential impacts to maintenance/snow clearing operations
- Possible loss of a few parking spaces to accommodate new poles for light fixtures

Key Considerations/Implications:

1. **Budget/Financial Implications**

   Funding to upgrade the lighting in Churchill Square has not been allocated. Council may consider this expense in a future budget decision.

   The cost of the lighting upgrades depends on many factors, including whether decorative lighting is to be considered. If the upgrade is to include decorative fixtures, project costs will significantly increase relative to a standard lighting design.

   As of this writhing there is approximately $575,000 in the Churchill Square Improvement Fund. This fund could contribute to lighting upgrades.

2. **Partners or Other Stakeholders**

   Businesses, employees, and residents of Churchill Square.

3. **Alignment with Strategic Directions/Adopted Plans**

   While this initiative is not currently an action item for 2019 from the Strategic Plan, depending on the direction of Council this could be explored as a future initiative.

4. **Legal or Policy Implications**

   n/a

5. **Privacy Implications**

   n/a

6. **Engagement and Communications Considerations**

   Depending on the approach taken, there may be an opportunity for engagement on the selected lighting aesthetic design criteria

7. **Human Resource Implications**

   n/a

8. **Procurement Implications**

   Any purchasing would adhere to Procurement legislation and policy.

9. **Information Technology Implications**

   n/a

10. **Other Implications**

    n/a

Recommendations:

All three options described above are viable to move forward on upgrading of illumination in Churchill Square. As the most cost-effective solution with the shortest timelines for implementation it is recommended that Option 1 be selected.

Prepared by/Date:

Anna Bauditz, Transportation Systems Engineer

Signature: _____

Approved by/Date:

Garrett Donaher, Manager - Transportation Engineering

Signature: _____

Attachments: Additional Details – Churchill Square Street Lighting Upgrades

Churchill Square Lighting Layout Plan

Draft technical specifications for illumination upgrades in Churchill Square are provided for reference.

LED Fixture Requirements

Mandatory

120 volt, 60 Hz supply

Programmable for dimming after hours (optional but preferred)

CCT of 3000k to 4000k

UL listed for wet locations

Driver shall have an expected service life of 50,000 to 100,000hrs at full load with 25 degree Celsius ambient temp, higher preferred.

Temperature rating of -20 - +40 degrees Celsius

Warranty minimum 5 years

Additional Criteria

Spectral output graph required to illustrate the output (mW) for visible wavelengths (nm)

Luminaire shall pass the 3G vibration test per ANSI C136.31

Minimum initial luminaire efficacy shall be 85 lm/W

Luminaire shall have a maximum total harmonic distortion of <20% at full input power (<10% preferred)

Coating for housings shall meet or exceed a rating of 6 per ATSM D1654 after 1000 hours of salt fog testing per ASTM B117

Note compatibility with a 2-3/8 outside diameter tenon for mounting

Note Effective Projected Area (EPA) rating per fixture and weight

Lighting Design Requirements

No light trespass above 10 feet from sidewalk grade of apartment building along east side and proposed apartment building along west side

Illuminance limited to 90 degrees

Transaction areas horizontal minimum 10 lux, dimmable to 2 lux

Transaction areas vertical minimum 5 lux, dimmable to 1 lux

Parking area horizontal minimum 5 lux, dimmable to 2 lux

Parking area vertical minimum 2.5 lux, dimmable to 1 lux

Uniformity ≤ 4 (avg/min)