

December 12, 2018

To: Members  
Community & Protective Services Committee

Re: Pathway Lighting

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RECOMMENDATION

1. That this report be received and filed.
2. That item CM18-2 be removed from the list of outstanding items for the Community and Protective Services Committee.

CONCLUSION

Council directed Administration to research costs associated with lighting paved pathways within the City. The City's current policy states that lighting will be considered in spaces where evening use is encouraged, such as outdoor sports complexes, and in areas that are considered to serve as major connectors between high use facilities such as schools and recreation centres. A jurisdictional review revealed that this policy is consistent with policies adopted in other Canadian municipalities.

Research also shows that the capital costs to light one kilometer of pathway is approximately \$204,000 for standard lighting and approximately \$141,000 for solar lighting. Maintenance and operating costs range from \$1,360 for standard lighting to \$3,500 for solar lighting annually, per kilometer.

BACKGROUND

In 2006, Administration conducted research to develop the *Open Space Lighting Policy and Procedures* (Appendix A). Research included a stakeholder consultation process, as well as a jurisdictional review. Organizations consulted included community associations, zone boards, the Regina Police Service (RPS), the development community, Regina and Region Home Builders, engineering, architectural and landscape architectural companies and the public and separate school boards.

Jurisdictional research at that time revealed that other Canadian cities only installed lighting in open space where there was a demonstrable need. The research and consultation also revealed that some stakeholders believe that lighting should not be considered a solution to all problems and, in some instances, may provide a false sense of security to open space users when there is not a sufficient volume of pedestrian night traffic to warrant it, which is consistent with Crime Prevention Through Environmental Design (CPTED) principles.

The *Open Space Lighting Policy and Procedures* was created and approved by Council, in an effort to support Administration to consistently consider, and respond to requests for, lighting in open spaces throughout the City. This policy recommends that lighting be considered for the following:

- a) Major connectors (i.e., pathways connecting schools or recreation facilities)
- b) Outdoor sports complexes
- c) Outdoor boarded ice facilities
- d) Parking lots serving open space facilities
- e) Tennis courts
- f) Special features, such as toboggan hills or outdoor seating areas
- g) Other areas as may be deemed appropriate by the Director.

Since then, Administration has used this information to guide decisions related to lighting of open spaces.

On February 27, 2018 Council brought forth a motion for “Administration to consider the implications of maintaining, lighting and clearing an additional 32 kilometres of paved pathways, including the associated cost.” The topic of pathway maintenance and clearing was considered by Council in October 2018 (Report CPS 18-20). The purpose of this report is to provide Council with information on the costs and implications associated with lighting.

## DISCUSSION

In response to the motion, Administration has had further discussions with other jurisdictions and has also researched costs for solar lighting and for conventional lighting. The following is a summary of this research.

### Jurisdictional Research

Administration contacted several municipalities (including Saskatoon, Calgary, Ottawa, Lethbridge, Morinville and Toronto) to determine when and where they install lighting in parks and open spaces and to assess whether they have considered or installed solar lighting in any of these spaces.

Generally, other municipalities consider lighting on a case by case basis. Also, the public consider lighting to be an added safety measure and traditionally associate lighting with pathways that are cleared in the winter. Unfortunately, these assumptions without a thorough understanding of the environment, can put pathway users in a more dangerous situation than if they keep to roads and sidewalks which in some cases are less isolated. CPTED principles state that lighting is neither good nor bad, but needs to be considered in the context of the space, based on the site lines and whether there is natural surveillance by neighbours, vehicles and users.

Consistent with Regina’s policy, municipalities also recognize that lighting all parks and pathways is not financially feasible, so most install lights only where the design of the park permits evening use and where the security of pathway users can be reasonably ensured. These cities acknowledge that pathway lighting should not be used to replace safer alternative evening

routes such as local roads and sidewalks. Instead, they suggest that lighting should be used in pathway locations that are used extensively as major connectors to parks and recreation facilities, shopping, transit, etc.

Municipalities are also becoming more aware of potential light pollution. It has been reported that more than 80% of the world and more than 99% of the U.S. and European populations live under light-polluted skies<sup>1</sup>. In the case of the City of Calgary, they do not install park and pathway lighting. They use what they refer to as a minimal lighting plan and will only consider lighting in exceptional circumstances, such as an area of serious safety concern. In cases where lighting is considered, evaluations are conducted based on safety, use of park, commuter traffic and community support. They will also not approve lighting if it is within 50m of an environmental reserve, when other options can address concerns, when a request is solely for aesthetic purposes and when funding isn't available.

### Current Policy and Procedures

The City's *Open Space Lighting Policy and Procedures* focuses on installing lights in areas that are expected to be used in the evening and areas of high traffic. This is not unlike other municipal policies studied and is based on a stakeholder consultation process. At this time, lighting is considered on a case by case basis by the Community Services and Parks & Open Space Departments in consultation with the RPS and other stakeholders, when needed.

In addition to City policy, Administration also considers provincial policy/regulations. Currently, approximately 17 kilometers of the City's pathway is constructed along natural and manmade waterways. When consulted about the Pilot Butte Creek Pathway, the Water Security Agency (WSA) indicated it will not approve any permanent fixtures within the 1:500 flood event area, which includes the floodway and the flood fringe along Wascana Creek, Pilot Butte Creek and the north and south storm channels.

CPTED is also a consideration when installing lights in parks and along pathways. CPTED is the science around the design and effective use of physical space to lead to a reduction in both the incidence and fear of crime. Legitimate users of a space are actively encouraged, opportunities for observation are increased, and potential offenders are made to feel uncomfortable. In terms of CPTED, the decision to light a space or not and by how much depends on many factors, such as:

- What the space is intended for?
- Are there safety issues in that space?
- What are the surrounding surfaces (ie. changes in elevations)?

Administration works closely with RPS when completing CPTED evaluations in parks, as lighting is not always the answer. For example, if pedestrian traffic levels are not sufficient lighting can cause a false sense of security for users.

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<sup>1</sup> The New World Atlas of Artificial Night Sky Brightness

Costs – LED light versus Solar

Administration has researched solar lighting options to provide cost comparisons for lighting, maintenance and utilities. The following chart compares standard and solar lighting costs. This research is based on discussions with lighting suppliers and current construction costs and does not include design costs.

**Capital Costs**

<b>Description</b>	<b>Approx. Number of Lights per km</b>	<b>Approx. Capital Costs/light</b>	<b>Cost per Kilometer of Pathway</b>
<b>Standard Lighting</b>	34	\$6,000	\$204,000
<b>Solar Lighting</b>	34	\$4,147	\$140,998

**Annual Maintenance Costs Per Light**

<b>Description</b>	<b>Approx. Number of Lights per km</b>	<b>Approx. Maintenance Cost/light</b>	<b>Annual Cost per Kilometer of Pathway</b>
<b>Standard Lighting</b>	34	\$40	\$1,360
<b>Solar Lighting</b>	34	\$102	\$3,468

**Annual Utility Cost**

<b>Description</b>	<b>Approx. Number of Lights per km</b>	<b>Approx. Utility Cost/light</b>	<b>Total Maintenance Cost</b>
<b>Standard Lighting</b>	34	\$18	\$612
<b>Solar Lighting</b>	34	\$0	\$0

These costs assume technology remains intact over a twenty-year period and replacement parts are readily available.

Administration sought to confirm these numbers through discussions with other municipalities. It was a challenge to find municipalities that have had solar lighting in place long enough to test its durability in Regina’s climate. Lethbridge was the only municipality surveyed who had tested solar lighting. Lethbridge Administration indicated that getting replacement parts for solar lighting beyond a ten-year period was challenging and when their solar lights reached ten years they were forced to replace the entire lighting unit rather than just the battery and solar panel. It is difficult to find information on lifecycle costs associated with solar lighting, as technology changes rapidly.

## RECOMMENDATION IMPLICATIONS

### Financial Implications

There are no financial implications associated with this report.

### Environmental Implications

There are no environmental implications associated with this report.

### Policy and/or Strategic Implications

Park lighting installation is considered through the *Open Space Lighting Policy and Procedures*. This document provides direction on when and where lighting should be installed. It also provides site evaluation tools when lighting is being considered. Administration will continue to use this policy to guide decisions on lighting installation, as well as CPTED principles and any other applicable provincial legislation.

### Other Implications

There are no other implications associated with this report.

### Accessibility Implications

There are no accessibility implications associated with this report.

## COMMUNICATIONS

This report is for information only.

## DELEGATED AUTHORITY

The recommendations contained within this report are within the delegated authority of Community & Protective Services Committee.

Respectfully submitted,



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Respectfully submitted,



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City Services

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