TOWN OF Devon ALBERTA

Municipal Office
1 Columbia Avenue West
Devon, AB T9G 1A1

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www.devon.ca

Solar Pathway Lighting

To Whom It May Concern;

Community Background

The Town of Devon is located on the banks of the scenic North Saskatchewan River just 27 km southwest of the City of Edmonton. With a beautiful golf course and campground and a population of over 6,500, the Town of Devon is a community that prides itself in providing a high quality of life for all residents.

Devon provides utility services such as water, wastewater, natural gas, solid waste & recycling to approximately 2,300 customers.

Required Services

The Town of Devon is seeking quotations for the supply and installation of solar lighting for approximately 75 meters of 3m width asphalt pathway.

The lighting shall be Solar Powered Dark Sky Compliant, efficient LED lighting, with full cut-off optics to reduce up-light and glare. The goal is to provide lighting to the selected trails, in a manner that uses minimal energy and generates minimal greenhouse gas emissions. The Town is looking for the maximum degree of light efficiency, safety and security while minimizing light and energy waste and reducing health effects on people, energy costs, light pollution, glare, light trespass and environmental effects on flora and fauna.

Trail lighting levels shall be in accordance with the Recommended Practices for Pathways distant from roadways from the Illuminating Engineering Society (IES). Lighting levels shall be 5 lux average, 2 lux minimum with a 4:1 avg: min uniformity ratio.

The following requirements shall be met at a minimum as part of this quotation.

1.1. Self-Contained Solar Powered Luminaire

1.1.1. The self-contained luminaire shall contain the solar module, batteries, solar lighting controller (SLC), motion sensor and LED light engine is a single "shoe box" style form. The fixture shall be side of pole mounted using with minimal installation time and no field wiring. The luminaire must be capable of mounting to a square or round pole.

1.2. Solar Light Controller (SLC)

1.2.1. The Solar Lighting Controller (SLC) shall contain a temperature compensated MPPT 125(maximum power point tracker) charger. The charge controller, integrated buck-boost LED driver, and micro-controller shall be contained on a single PCBA (Printed Circuit Board Assembly) contained in an extruded, potted enclosure for maximum ingress protection. The SLC shall be capable of IP68 performance. All connectors shall be sealed and keyed for plug & play installation. The SLC shall have wireless communication capabilities and contain daily data logging capabilities for a minimum of 3 years.

1.3. Autonomy (days of operation without sun)

1.3.1. The SLC shall have predictive adaptive capabilities to ensure operation for a minimum of 14 nights operation without charging once the battery is fully charged. It is expected that this will be calculated with expected lighting levels met during the shortest daylight with no lighting profiles enabled.

1.4. Wireless Communications

1.4.1. Communications with and control of the luminaire shall be via a BLE wireless interface with smartphone app.

1.5. Smartphone App (Solar Light Control)

1.5.1. Through the wireless interface, the operation of the light can be optimized through the Solar Light Control App which shall be available on the iOS app store. This app shall enable changes to the lighting profile, motion sensor control, day/night transition thresholds, firmware updating and data log access.

1.6. Motion Sensor

1.6.1. The motion sensor shall be integrated into the luminaire. The unit shall be programmed through the Solar Light Control app. When enabled, the motion sensor will activate the light when motion is sensed nearby.

1.7. Solar Module

1.7.1. The solar module shall be a frameless, back-connected mono-crystalline module seamlessly integrated into the top of luminaire so that it will not build up dust, dirt, or any other fouling materials. The solar module shall not be visible from the ground once the luminaire has been installed. Solar module cell efficiencies shall be greater than 20%. Calculations are required to confirm PV array sizing meets requirements of section **1.3.**

1.8. Lithium Battery

1.8.1. The batteries shall be lithium iron phosphate with a cycle life exceeding 8 years. The batteries shall utilize sealed ABS cases and all connectors shall be sealed and keyed for plug & play installation. Battery replacement shall be accomplished using one tool with no field wiring. Provide calculations for Array to Load Ratio. If other batter other than specified are proposed include specifications with warranty information for consideration.

1.9. LED Light Engine

1.9.1. The LED Light engine shall be integrated directly into the self contained solar light fixture. The LED light engine shall be modular for simple replacement and upgrading if required. The light engine shall have IES type 2 distribution with third party tested photometry. LED color temperature shall be between 3000 and 4500K. LED light engine connectors shall be sealed and keyed. The LED light engine shall be Dark-sky compliant. The LED light engine shall be capable of IP68 performance.

1.9.2.11 Lighting Profiles: The luminaire shall contain programmable lighting profiles that are field configurable via the solar light control mobile app. Examples of desired profiles:

Lighting Profile	**Description**
Dusk till dawn	On at dusk, off at dawn
Dark +6 hours then off	On at dusk, off after 6 hours
Dark +6 hours then 30%	On at dusk, dim to 30% after 6 hours till dawn
Dark +5 hours, off, Dawn -1 hour	On at dusk, off after 5 hours, on 1 hour before dawn
Dark +5 hours, 30%, Dawn -1 hour	On at dusk, dim to 30% after 5 hours, on 1 hour before dawn
Dark +3 hours then off	On at dusk, off after 3 hours
Dark +4 hours, off, Dawn -1 hour	On at dusk, of after 4 hours, on 1 hour before dawn
Off	Off (typically used with motion sensing)
Dark + 3 hours, 30%, Dawn -1 hour	On at dusk, dim to 30% after 3 hours, on 1 hour before dawn
Dusk till dawn, 30%	30% at dusk, off at dawn

1.10. Made in Canada

1.10.1. The self-contained solar luminaire must be designed and manufactured in Canada.

Schedule

It is expected that installation will be completed prior to ***June 28th, 2024.***

Site Visit

There will be no mandatory site visit, although it is strongly encouraged that interested proponents visit the site prior to bidding.

General

Please include with the quotation the long-term maintenance costs for the lights so it can be added to the Town's long-term capital plan. This should include all expected maintenance and replacement costs expected with timing indicated.

Substitutions

If alternative lighting designs are proposed for different lighting alternatives, i:e separate PV set at an angle vs a fully enclosed and contained unit, if it meets all other design and operation requirements, and have been installed regionally for reference please include for consideration as an approved alternate.

The following are requirements of the successful proponent.

- All electrical work shall meet the Canadian Electrical Code requirements
- All other work shall be carried out with best industry practice.
- All first calls and crossing agreements will be the responsibility of the contractor.

Warranty

Products will be free from defects in material and/or workmanship for a period of five years from the date of invoice. Battery warranty includes full replacement value within the warranty period.

Insurance & WCB

It is expected that insurance and current copy of WCB will be provided.

Service

All work is to be designed and completed by certified electrical installers as required.

Proposal Requirements

Please provide the following with quotation.

- **Lighting Layout with proposed fixture:** include pole location, mounting height, spacing and photometry results.
- **Specification Sheet**: Submit manufacturer's product specification showing technical features, dimensioned line drawings and photometrics
- **Installation sheet**: Submit manufacturer's installation sheet.
- **Warranty**: Manufacturer's standard warranty.

Poles & Installation

Poles are to be aluminum. Provide information on installation procedure, whether it be cast-in-place, pre-cast or ground screws. Poles and components shall exceed specified EPA ratings required for local wind loading locations.

The pole height should be suitable to a pathway application, and indicated with bid.

Bidding Requirements

The following bid table shall be utilized for bidding. ***The total must be inclusive of the complete cost to install including any costs related to crossing agreements, hydro-vac and installation.***

2024 Pathway Lighting			
	Cost per pole	**Total poles**	**Total Installed**
Medicine Park Pathway		5	
		Total	

Attachments

- ***Lighting Location Maps***
- ***Bid Table***

Quotation Submission

1. The RFQ closing time and date is **2:00:00pm Wednesday May 1st local time.**
2. Email submissions to sgoin@devon.ca
3. Late proposals will be returned unopened.
4. References of similar projects in Western Canada

Quotations will be opened immediately after closing. Prices may be presented to council and open to public.

***Below is a rating breakdown on how proposals will be evaluated*.**

RATING OF QUOTATIONS

The Town of Devon will evaluate the proposals received by the deadline given and rate the proposals on the following basis:

Proposal Element	Maximum
Ability to meet proposal requirements……..	40 points
Previous Experience with similar project in Western Canada	30 points
Cost……..	30 points

Any costs incurred by proponents in preparing the quotation are the sole responsibility of the proponent. The Town reserves the right to not accept the lowest price or any quotation.

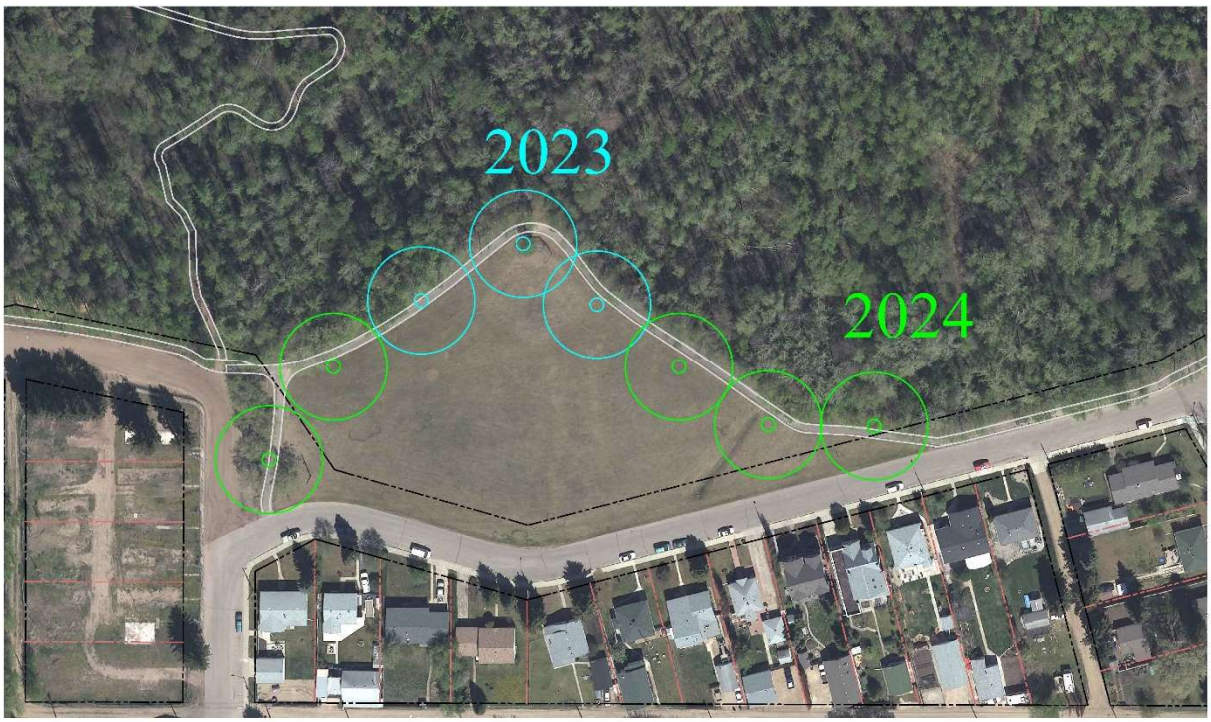
All requests for clarification must be received at least two (2) days prior to closing date.

All written and verbal communication shall be with:

Sean Goin, P.Tech. (Eng.)
Manager of Infrastructure

Town of Devon
#1 Columbia Ave West
Devon Alberta
T9G 1A1
Phone (780) 987-8314
E-mail sgoin@devon.ca

Site Location



Bid Table

2024 Pathway Lighting			
	Cost per pole	**Total poles**	**Total Installed**
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