



## Legislation Text

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TAMRMS#: B06

**8.2**

### **Solar Farm Update - TIME SPECIFIC 3:30 p.m.**

Presented by: Christian Benson, Manager Environment; Kate Polkovsky, Director Utilities & Environment

### **RECOMMENDED MOTIONS**

1. That Council receive the Solar Farm Update report dated June 21, 2021 as information
2. The Project Charter ENV-004 is approved for 26.1 million to be funded through borrowing bylaw 35-2021.

### **PURPOSE OF REPORT**

To provide an update to Council upon the completion of the detailed design of the Solar Farm, and to request approval and funding of a Project Charter

### **ALIGNMENT TO PRIORITIES IN COUNCIL'S STRATEGIC PLAN**

Strategic Priority #4: Infrastructure Investment: Identify and build needed capital assets.

Related Corporate Business Plan Initiative: Identify and recommend opportunities for investment in long-term revenue generating infrastructure.

### **ALIGNMENT TO LEVELS OF SERVICE DELIVERY**

N/A

### **ALIGNMENT TO COUNCIL DIRECTION OR MANDATORY STATUTORY PROVISION**

On August 17, 2020 Council passed the following motions:  
(CB-20-054)

1. That \$200K be funded from the stabilization reserve to support the preliminary and detailed design requirements of the full-scale Solar Farm.
2. That Administration provide an update to Council, upon the completion of the detailed design of the Solar Farm, by Q2 2021.

3. That a borrowing bylaw be brought forward to support the implementation of the presented Solar Farm Business Case in 2021.
4. That the back third of the Badger Lands to be allocated to support the long-term development of solar as a green industry within the City.
5. In 2021, Administration be directed to bring back a report to rescind all previous Council motions pertaining to the Badger Lands that are not consistent with dedication of those lands to development of a solar power industry in St. Albert.

## **BACKGROUND AND DISCUSSION**

### **Proposed Design**

The City of St. Albert retained ATCO Electric (called "ATCO" in this report) through a competitive procurement process, to provide engineering services for a potential solar photovoltaic (PV) energy project at the City owned Badger Lands site, which is located at Lot 43 on Villeneuve Road. ATCO's engineering, environmental and civil/survey teams have completed their reviews.

The Badger Lands site is a suitable candidate for a solar energy project based on a site suitability comparison with other sites that the City of St. Albert had identified. As a brownfield site (i.e., one previously used for commercial or industrial purposes), Badger Lands presents a unique opportunity to repurpose land that is contaminated due to previous City operations. In addition, there are no large open-body wetlands in the site's vicinity and no historical resource values. The proximity to a transmission point of delivery substation is also a major benefit that will reduce the overall cost of the project.

After examining the FortisAlberta interconnection process for distributed energy resources (DERs) and other approvals needed, ATCO recommends that the City proceed to build this solar energy project in one 15 MW phase. Splitting it into three separate 5 MW phases will involve added costs and time with approvals, project management fees, design time and operations and maintenance complexities. The FortisAlberta interconnection process is long, so beginning a Phase 1 DER interconnection application and high-level study early is recommended, as it is a critical path item.

ATCO has developed a preliminary site plan for a solar farm on Badger Lands. The solar farm is separated into three arrays, roughly 5 MW each; however, it is recommended that they be combined into one 15 MW interconnection. The proposed design has a total array size of 18.2 MWDC / 13.8 MWAC, consisting of 34,350 individual bi-facial modules, individually rated to 540W, 30 ft row spacing and 35-degree tilt angle. The array will be housed on a on a fixed racking system secured on helical screw piles, which are the typical solar racking foundation for ground mount solar. They are spiral-shaped steel pipes that have either plates or holes to which the solar panel brackets and railings are attached. The advantage of helical piles for foundations is that they can be installed in any soil condition and provide solid and robust footings for solar modules that may be subject to high wind and snow loads.

With the all approved regulatory studies and requirements completed, the solar PV farm has an estimated construction start date in July 2022 with commissioning occurring in April 2023. Please

note that this is a preliminary plan only and is subject to change upon equipment selection, costs, future infrastructure plans and City input, see Project Charter ENV-004 (attached).

## Financial Summary

As per BL-35-2021, Administration is recommending \$26.1 million to accommodate the proposed design of a 18.2 MWDC / 13.8 MWAC solar PV farm.

ATCO has also identified annual operation and maintenance costs (O&M) of approximately \$120,000.00 per year and a one-time equipment replacement costs of the invertors at year 15 of an estimated \$1,300,000.00. These costs can be offset as an expected cost through the annual revenue from the solar PV farm.

Through proprietary financial modeling, ATCO and their partner Boost Energy Ventures have identified revenue streams of an estimated annual average revenues shown in the attached table. A 20 year debenture has been incorporated into the financial summary, however the system would have a 12.8 year payback period if it was funded traditionally.

## STAKEHOLDER COMMUNICATIONS OR ENGAGEMENT

The attached Phase 1 Technical Memorandum identifies the legislative and regulatory requirements for stakeholder engagement through the application process. Stakeholder communications and engagement will start in Phase 2 of detailed design and continue through to Phase 3.

## IMPLICATIONS OF RECOMMENDATION(S)

### Financial:

A borrowing bylaw is required to accommodate the capital cost requirements for the proposed solar PV farm.

With the installation of a solar PV farm, the Badger Lands will be unavailable for re-purposing or sale for 25 - 30 years (possibly longer). There is a benefit to retaining these lands, as the potential land sale price will grow with the market over the useful life of the solar PV farm and provide an opportunity in the future for City revenue (though sale) or use for other purposes.

### Legal / Risk:

The former use of the Badger lands was a snow melt site and due to the chlorides from road salt exceeding the environmental guidelines for soil, the lands are a registered contaminated site with the Government of Alberta. The City is currently undertaking annual groundwater monitoring in accordance with the registration of this site. Any soil excavated from the site in preparation of the solar PV farm would require specialized testing and disposal, however it is not expected that the site will require soil removal.

### Program or Service:

This site formerly hosted the City and private snow hauling operations for snow disposal / melting.

This use was discontinued in 2020 and alternative sites have been are now in use.

The site currently hosts seasonal yard waste disposal, however it is anticipated that this service can continue during and post construction of the solar PV farm if required.

Organizational:

None at this time.

## **ALTERNATIVES AND IMPLICATIONS CONSIDERED**

Alternative 1. Provide recommendations to Administration to alter the proposed design of the site to be considered at a future date for Council.

Alternative 2. Cancel/Postpone the project.

Report Date: June 21, 2021

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Department: Financial Services

Deputy Chief Administrative Officer: Kerry Hilts

Chief Administrative Officer: Kevin Scoble