



E.L. Smith Solar Farm
Public Hearing
October 2020

Agenda and Presenters

1. Project improvements since June 2019

Shawn Bradford, SVP, EPCOR Water Canada

2. The Smart Grid opportunity

Audrey Cudrak, Director, Edmonton WTP, EPCOR Water Canada

3. The opportunity, location and benefits

Craig Bonneville, Director, EL Smith Solar Project, EPCOR Water Canada

4. Environmental reviews and protections

Ward Prystay, SVP, Environmental Services, Stantec

5. Creating enduring partnerships

Martin Kennedy, Director, Public & Government Affairs, EPCOR

6. What successful operation will look like

Trina Manning, Senior Manager, Capital Projects, EPCOR Water Canada

Resources for Council

Experts Registered for Questions



An expert team leading the environmental reviews, land use planning, and archaeology.

Kurtis Fouquette

Environmental Project Lead

Derek Ebner

Senior Wildlife Biologist

Scott Cole

Planning and Direct Control Land Use

Kate Peach

Senior Archaeologist



Team leads for project development and management, and regulatory/financial processes:

Nathaniel Papay

Project Manager

Carmen Piercey

Regulatory and Finance

Jed Johns

Indigenous Relations

Project improvements since June 2019

Shawn Bradford, Senior Vice President, EPCOR Water Canada

EPCOR has made comprehensive improvements to the proposed project since June 2019

SMALLER PROJECT FOOTPRINT

NEW PARTNERSHIPS

NEW HABITAT PROTECTIONS

PROCESS MILESTONES

The project has a new, smaller footprint

SMALLER PROJECT FOOTPRINT

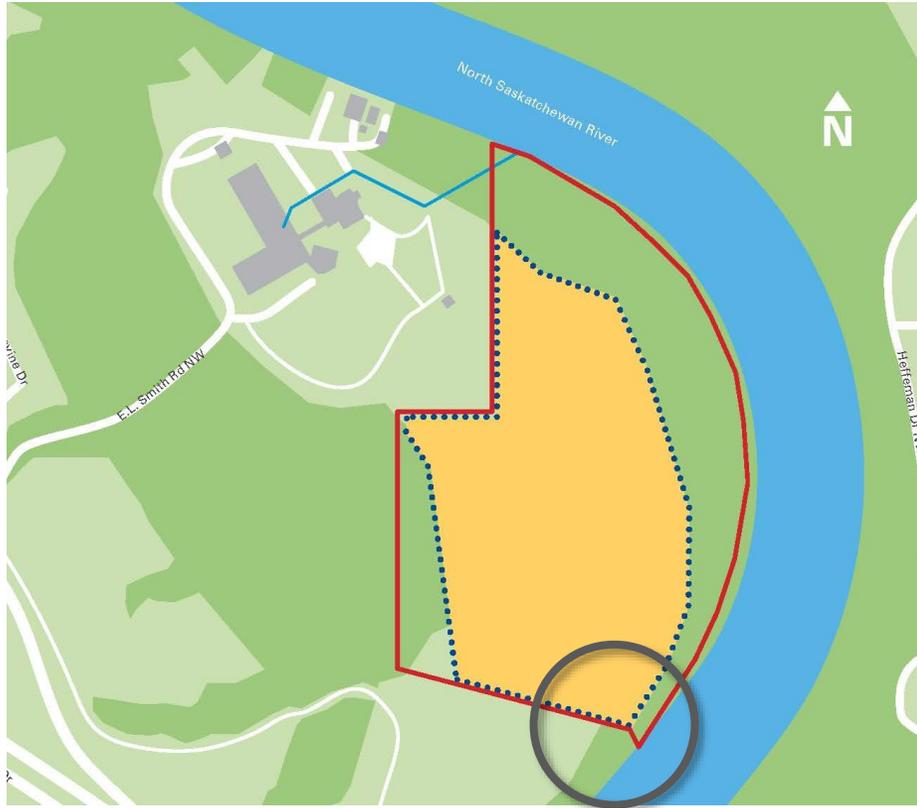
49% of the rezoned area is reserved for habitat and natural areas



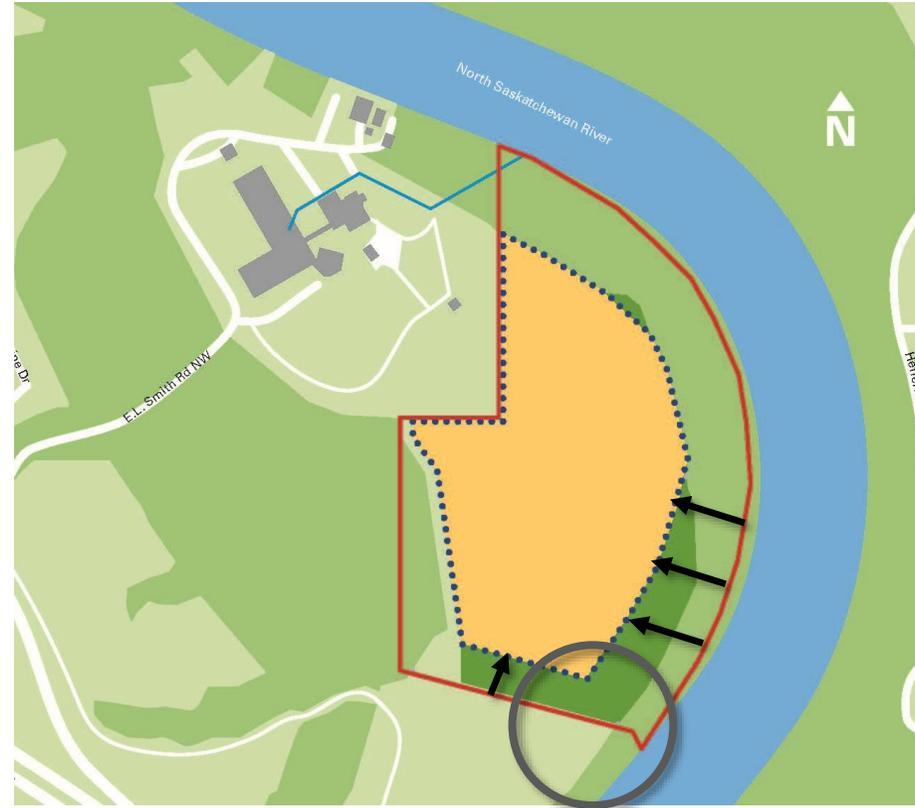
- **Enlarged wildlife corridor** along the river (a 25% increase from 100-m wide to 125-m wide)
- **18% reduction** in solar panel footprint from the initial design (51 acres from 62 acres)
- Site layout **aligned to archaeology**, and **footprint lightened**, reducing the number of ground supports 48% from original plans through redesign of solar panel racks
- **South edge pulled in** to avoid spillover into the Provincial Key Wildlife Biodiversity Zone

Visualizing the new, smaller footprint

ORIGINAL SITE LAYOUT



OCTOBER 2020 SITE LAYOUT



The **125-metre setback expands the wildlife corridor** on the river side.

The **solar farm footprint has been cut to 51 acres** (yellow) within the 99 acres of Water Treatment Plant property being rezoned (red outline).

The **increases to the setbacks** are largest along the river and at the southern portion of the site (circled).

New partnerships add innovative social and environmental benefits

NEW PARTNERSHIPS

The EPCOR-Enoch MOU provides for the solar farm bearing an Indigenous name



- **EPCOR-Enoch Cree Nation partnership** reconnects Enoch to their former reserve lands, affirms the mutual benefit from the water treatment plants and solar farm, and establishes protocols for all future land disturbances as the water plant expands
- **EPCOR-City of Edmonton Adaptive Management Framework** finalized and included in the DC1 – the first of its kind for a renewable energy project in Western Canada, creating unique environmental benefits and controls

Site plan changes reduce habitat impact, and increase public parkland

HABITAT IMPROVEMENTS

Previously disturbed pasture land will be naturalized and improved with local plantings



- **Additional 3.4 acres of grassy meadow avoided** since the June 2019 design (land moved outside the fenceline, allowing use by large mammals)
- Scientific reviews found most of the site was low-quality habitat. The **updated site plan** will **restore 7.4 acres of open pasture into tree and shrub habitat**
- EPCOR-COE MOU finalizes the land transfer proposed in June 2019. **Edmonton's ribbon of green will gain 31.5 acres of land**, which will be transferred to the City, and the site design **incorporates trail easements** and **net new plantings** in the river valley

Visualizing habitat and trail improvements



Orange 31.5 acres of mostly sloped and treed land that will be transferred to the City for conservation and Ribbon of Green trails

Yellow Naturalization of solar farm site will improve habitat quality



Dark Green Restoration of 7.4 acres for tree and shrub habitat, including an **additional avoidance of 3.4 acres** of grassy meadow for foraging animals

Environmental monitoring strengthens confidence in the plan

PROCESS MILESTONES

Additional wildlife monitoring confirmed the scientific analysis that wildlife will continue to move effectively through the river valley, around the site



- Stantec's expert will share the results of **additional environmental monitoring** that began after June 2019, including wildlife cameras and snow tracking surveys
- Alberta Utility Commission granted **regulatory approval for the battery installation**, finding it in the public interest with no significant adverse environmental impact
- A new **Wildlife Monitoring and Mitigation Plan** is part of the DC1 zoning, extending monitoring for 3 years after construction

Design changes improve environmental and social performance

SMALLER PROJECT FOOTPRINT

- ✓ 18% reduction from original project footprint
- ✓ Enlarged wildlife corridor along the river 25%
- ✓ Site layout aligned to archaeology and provincial land use overlays
- ✓ New rack design lightens the footprint 48%

NEW PARTNERSHIPS

- ✓ EPCOR-Enoch Cree Nation partnership
- ✓ EPCOR-City Adaptive Management Framework

NEW HABITAT PROTECTIONS

- ✓ Finalized plan to restore low-quality habitat and guarantee net new plantings in the river valley
- ✓ EPCOR-City MOU finalizes land transfers and trail easements that will expand public parkland

PROCESS MILESTONES

- ✓ Additional environmental monitoring completed
- ✓ Regulatory approval for battery installation
- ✓ Finalized Wildlife Monitoring and Mitigation Plan

The Smart Grid Opportunity

An essential step for climate action and treatment plant resiliency

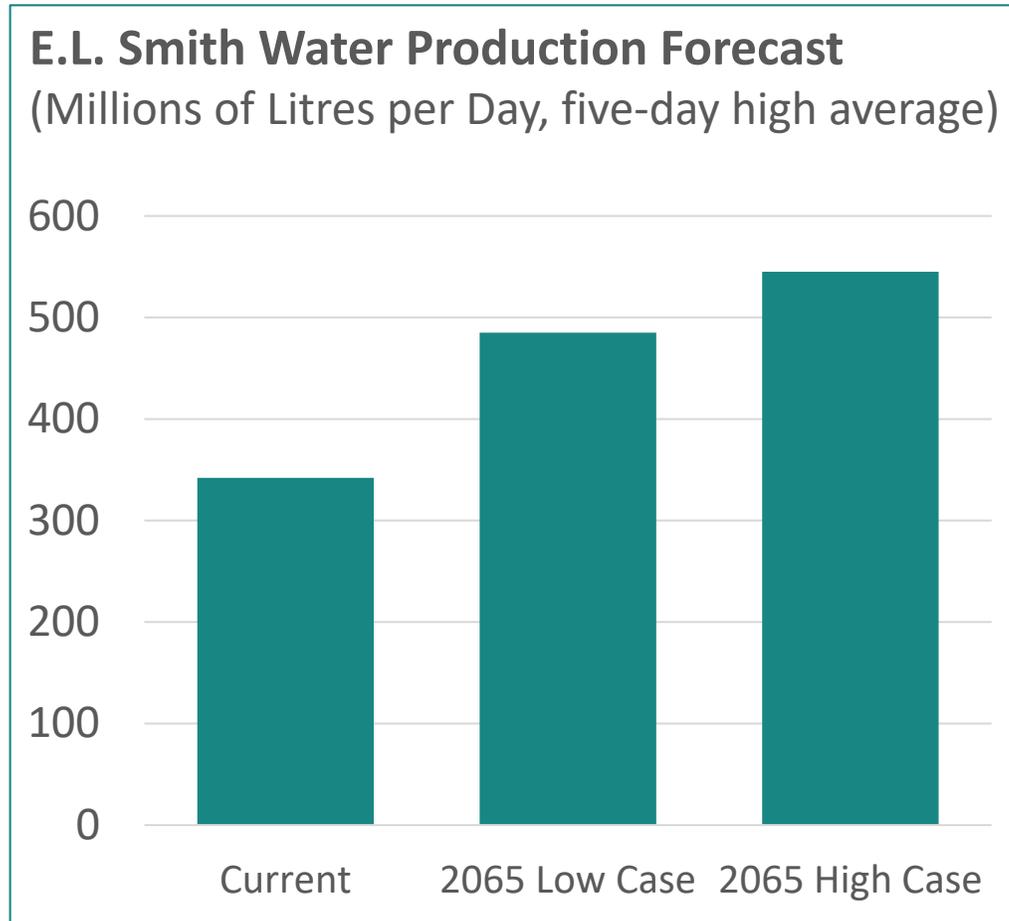
Audrey Cudrak, Director, Edmonton Water Treatment Plants, EPCOR Water Canada

The E.L. Smith Water Treatment Plant is essential to life in Edmonton and the metropolitan region

Constructed in 1976 and expanded in 1984 and 2008, the E.L. Smith WTP supplies 65% of the water used in the greater Edmonton region



The E.L. Smith Water Treatment Plant will continue to be essential to Edmonton's future growth and well-being



- As Edmonton grows to 2 million people and beyond, water demand will increase
- Because the Rossdale site is constrained, **water production from E.L. Smith is forecast to increase 59% to serve future growth**
- The solar farm within the E.L. Smith site is a temporary use of privately-owned, fenced land that is reserved for future water plant expansion

Action on climate change at E.L. Smith is essential

Core Goals of the Solar Project

- **Take urgent action on climate change** by reducing GHG emissions
- Implement Edmonton's strategic goal to **generate new renewable electricity locally**
- **Make E.L. Smith WTP more self-sufficient and resilient** by reducing power drawn from the grid, and gaining an on-site energy source

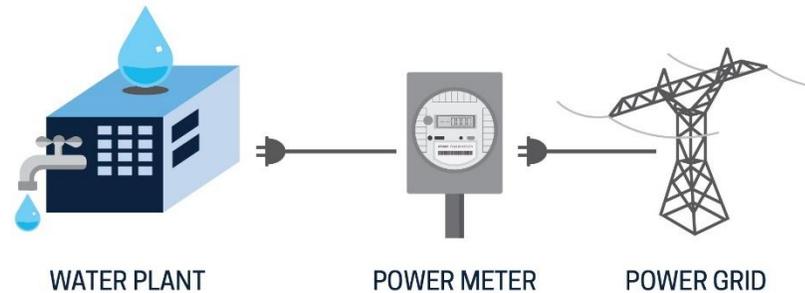
The Facts on GHG Emissions

- ❑ The E.L. Smith WTP is EPCOR's second largest source of greenhouse gas emissions.
- ❑ As the plant expands production to serve a growing population, electricity use and emissions will increase.
- ❑ Action to reduce grid electricity use at E.L. Smith is critical to meeting climate targets and gaining resiliency.

Today, E.L. Smith relies on a single source of electricity

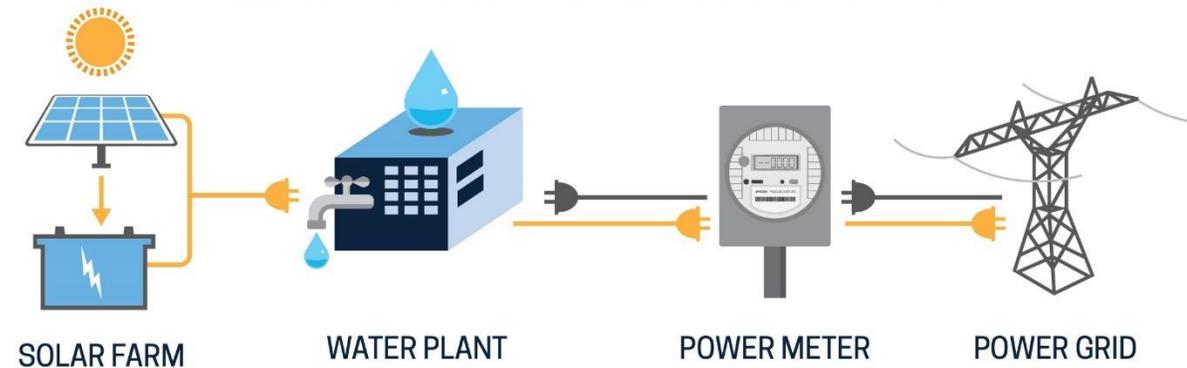
Combining solar and battery on-site creates three sources of power

CONVENTIONAL POWER CONSUMPTION (TODAY)



- **Single source of electricity:** grid connection
- Buy power from the grid at variable prices
- Use power for plant operations and water pumping

BEHIND-THE-METER SMART GRID (PROPOSED)



- **Three sources of electricity:** real-time solar, battery solar, or grid
- Solar panels generate 21,500 MWh of clean electricity on-site
- Two-way meter: option to send excess clean power to the grid

Locating the solar resource and the battery at the water plant increases operational resiliency

Issues with today's system

- Peak pumping demand overlaps with peak power prices (customers pay more for energy)
- No backup if grid supply interrupted (pumps stop)



Operational Benefits of the E.L. Smith Location

- **Greater energy self-sufficiency.** On-site power production reduces the power purchased from the grid
- **Resilience.** Battery storage makes backup power available if the grid supply is interrupted
- **Optimization.** Stored power can be used for pumping when grid power prices are high, or sold if not needed (benefitting Edmonton ratepayers)

The Site Location Study

Addressing all dimensions of the 'essential' test

Craig Bonneville, Director, E.L. Smith Solar Farm Project, EPCOR Water Canada

The Site Location Study addressed all elements of the 'essential' test, supported by an independent Sustainable Return on Investment analysis

SOCIAL

FINANCIAL

INSTITUTIONAL (POLICY)

ENVIRONMENTAL

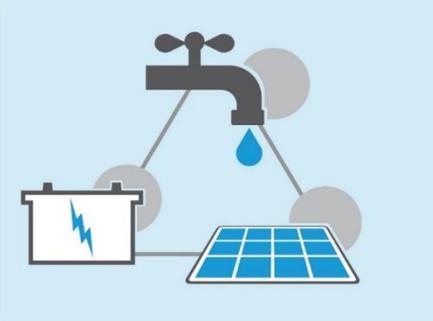
Social: The partnership benefits are site-specific to E.L. Smith, and cannot be achieved by an offsite project

- Research, technology and education partnerships all require a project that combines renewables, battery storage and energy consumption at a single location
- E.L. Smith is the highest accessibility location for community integration, designed to be integrated with trails, educational tours and site interpretation
- **The long-term partnership with Enoch Cree Nation is an important social benefit unique to the site, and is discussed later in the presentation**

Smart Grid Partnership Opportunities for the E.L. Smith Location



The University of Alberta logo features a green shield with a book and wheat stalks, with the text 'UNIVERSITY OF ALBERTA' in green. NAIT's logo is a blue shield with a white 'N' and 'AIT', with the text 'A LEADING POLYTECHNIC COMMITTED TO STUDENT SUCCESS' below it. The Natural Resources Canada logo includes the Canadian flag and the text 'Natural Resources Canada'.

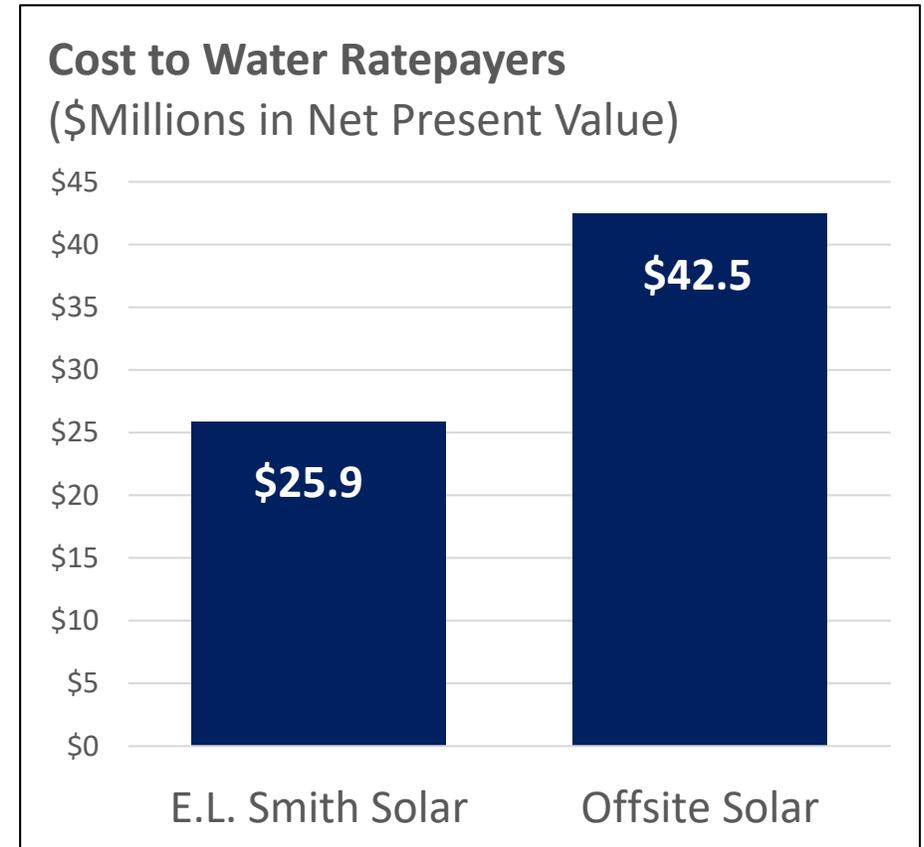


The diagram illustrates a smart grid system. It shows a water tap with a single drop of water falling into a battery. The battery is connected to a solar panel. This visualizes the concept of smart grid technology where energy is stored and used efficiently.



Financial: The location is essential to achieving the lowest cost for Edmonton ratepayers

- Building a solar project at an **off-site location would cost Water ratepayers an extra \$16.6 million** due to higher land costs, the cost of extra equipment, the price to connect to the grid, and taxes
- Moving to an off-site location also means **ratepayers would lose the \$10 million federal grant** for the project

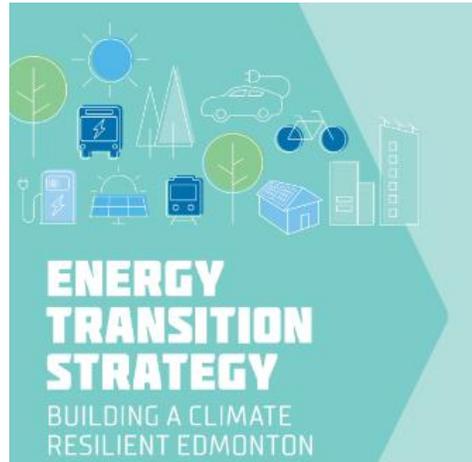


Institutional: The project siting delivers unique and immediate energy transition benefits, and is well aligned with City policy



Greener as we grow.

Reduce GHG emissions, increase publicly-accessible park land, and expand the active transportation network.



Distributed local renewable power.

Produce 10% of electricity locally from renewable sources, close to where it is used.



Climate resilience.

Transition to a low-carbon future and adapt to a changing climate.

Environmental: Locating the solar resource at E.L. Smith is essential to achieving climate and operational resilience

20%

**Reduction in EPCOR
Water GHG emissions**

48%

**E.L. Smith's electricity
needs will be generated
from a new local
renewable source**

2

**New on-site sources of
energy increase climate
and operational
resiliency**

Environmental: Constraints analysis finds negative consequences from locating the project at an off-site location

The environmental consequences of moving the solar project to an off-site location include:

- ❌ **Reduced ability to generate renewable energy locally.** Higher costs to build and operate offsite mean a smaller solar project with less energy production
- ❌ **Longer wait for climate benefits.** It will take years to acquire, develop and obtain approvals for an alternative site
- ❌ **No climate or operational resilience gains** at the water treatment plant
- ❌ **Any renewable energy project will have environmental effects.** For example, any solar farm will be fenced, with large mammals diverted around its footprint

Environmental: Independent science-based reviews conclude that the project design mitigates environmental effects



Science-based studies and decision-making support siting the project at E.L. Smith:

- **Stantec's** independent, science-based EIA concluded that the project will avoid, reduce or control adverse environmental effects
- **HDR's** expert, independent Triple Bottom Line review supported proceeding
- **Alberta Utility Commission** concluded that potential environmental effects were “not significant” and would be adequately mitigated

Siting the project at E.L. Smith is the only way to achieve these unique benefits for Edmontonians

SOCIAL

Research, education and community partnership benefits are specific to the site, and require a behind-the-meter project.

FINANCIAL

Edmonton ratepayers would pay \$16.6 million extra to build a solar farm at an off-site location, and lose the \$10 million federal grant.

INSTITUTIONAL (POLICY)

On-site action is the only option that delivers immediate results to support the Energy Transition. The project design increases public river valley parkland and integrates with trails.

ENVIRONMENTAL

Only an on-site project can make E.L. Smith more self-sufficient and climate resilient.

Environmental Review and Protections

Ward Prystay, Senior Vice President Environmental Services, Stantec

Stantec has conducted an independent, science-based review



- The environmental aspects of the project have been studied extensively by a team of environmental experts using recognized science-based methodologies.
- Three years of study documented in:
 - ✓ February 2019 Municipal Environmental Impact Assessment
 - ✓ December 2019 Wildlife Addendum

Context for understanding the environmental assessment: The current condition of the E.L. Smith site

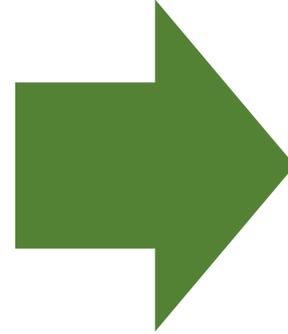
- **Low quality habitat.** A highly modified site that is 89% perennial pasture, with low plant diversity and comprised primarily of introduced species as well as numerous noxious weeds
- Solar site footprint has **avoided** key wildlife biodiversity zone
- **Wildlife currently moves around the Water Treatment Plant** along the valley slope, and through a 30-metre wide corridor between the Pump House and the River



The project area is currently fenced land. It contains no wetlands, no riparian habitat, and 5% trees.

Additional environmental monitoring since public hearing has validated the 2019 EIA

- Two breeding bird surveys to supplement 2017 data
- A migratory bird survey to supplement 2017 data
- Eleven remote cameras deployed to study medium and large mammals, collecting data for 24,600 hours
- Snow track survey to study winter mammal activity



- ✓ Confirmed species identified in the original MEIA
- ✓ Confirmed assessment of the site as low quality habitat
- ✓ Increased prediction confidence of the MEIA
- ✓ Confirmed recommended mix of mitigation activities (avoid, minimize, and restore)
- ✓ Identified that wildlife are successfully moving through the 30-metre wide opening between the pump house and the river

EIA Conclusion: Planned mitigations will avoid, reduce or control adverse effects. Monitoring will support future adaptations.

- The additional wildlife monitoring conducted since the June 2019 Public Hearing has confirmed the core conclusion of the EIA

“Overall, the findings of this addendum concur with the original MEIA in that potential adverse effects of the Project can be avoided, reduced or controlled using a combination of standard and Project-specific environmental mitigation measures.

The WMMP will be implemented prior to and during construction and operation to evaluate the effectiveness of mitigation measures.

Based on monitoring results, mitigation measures will be adapted as required in consultation with regulators.”

Municipal Environmental Impact Assessment – Wildlife Addendum
(Stantec, February 2020)

Expert regulatory authorities affirmed the conclusions of the EIA

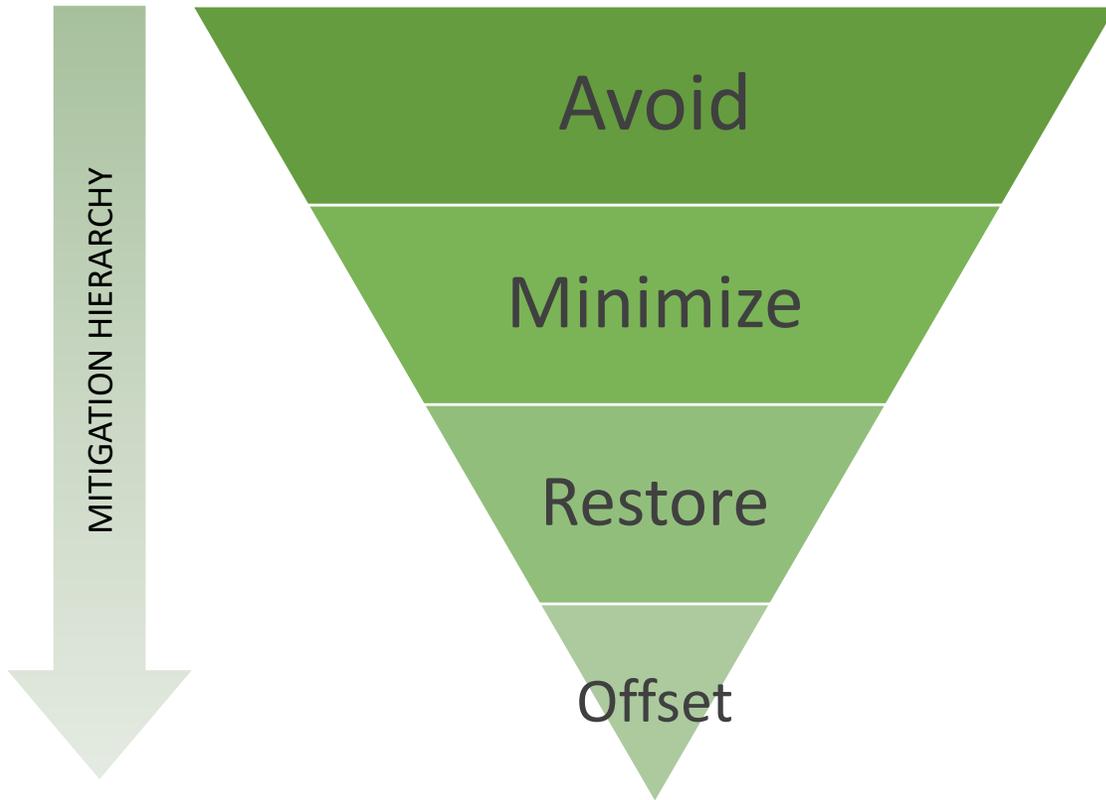
- The Alberta Utilities Commission considered intervenor submissions from the ERVCC and EALT
- The provincial regulator concluded “the power plant would not result in negative social or environmental impacts”

Additional Excerpts from the Alberta Utilities Commission Decision (February 20, 2019)

“The Commission accepts the environmental evaluation’s conclusion that the potential environmental effects of the project would be “not significant” and that the environmental impacts of the project can be adequately mitigated.”

“Approval of the project is in the public interest having regard to the social, economic, and other effects of the project, including its effect on the environment”

Environmental mitigation plans deploy the full hierarchy of mitigation approaches during construction and operations



The project includes tools that will allow for monitoring of potential impacts, and continuous improvement in the response.

- ✓ **Post Construction Monitoring Plan**
- ✓ **Wildlife Monitoring and Mitigation Plan**
- ✓ **Adaptive Management**
- ✓ **Reversal of temporary impacts in decommissioning**

Creating Enduring Partnerships:
*Engagement with Enoch Cree Nation and the Edmonton
community*

Martin Kennedy, Director, Public & Government Affairs

The application fully responds to Council's engagement motion

COUNCIL'S MOTION

“Work with EPCOR Water and Enoch Cree Nation to continue engagement activities and return to a future Public Hearing. Engagement activities should include:

- (a) Sharing archeological report and traditional knowledge to further interpret the findings and site history in consultation with Alberta Culture, Multiculturalism and Status of Women;*
- (b) Potential partnerships and collaborate on site interpretation, vegetation and harvesting, project naming and potential economic opportunities, and*
- (c) Offer to collaborate on the design and shared use of publicly accessible open space.*

Report topics

- Engagement process
- Archaeological interpretation
- Enoch Cree Nation's motion of support for the proposed solar farm
- Long-term partnership through the *Enoch Cree Nation – EPCOR Memorandum of Understanding*
- Additional Edmonton public consultation and AUC approval

EPCOR conducted a comprehensive public engagement program

- EPCOR ***met or exceeded*** the City's Public Engagement Policy and the Alberta Utilities Commission's Participant Involvement Program.

PUBLIC INVOLVEMENT PROGRAM

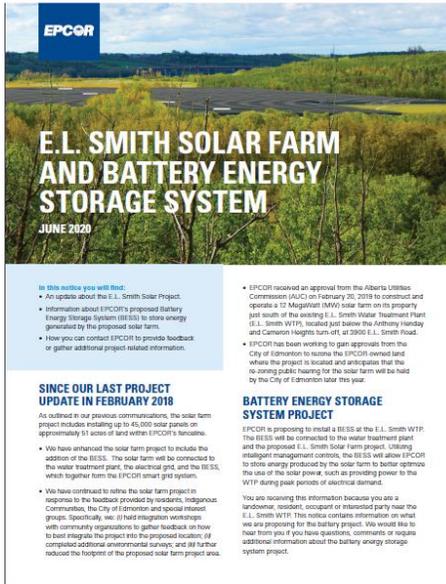
- Notified 17,400 people within 2,000 metres of E.L. Smith
- Included 800+ home visits for those within 800 metres of the project
- 7 events with the broader community
- Engagement was documented in a 100+ page report to the AUC
- Support exceeded opposition for this project 10:1



Summer 2020: Additional engagement on the battery installation

- The Alberta Utilities Commission issued an additional approval for the battery system, following additional public engagement in summer 2020

Activities included:



- ✓ Notified people within 2,000 metres of E.L. Smith and the battery installation
- ✓ Notices also solicited public input into the design of the external façade of the battery enclosure

AUC Decision, August 27, 2020

“Approval is in the public interest having regard to the social, economic, and other effects of the project, including its effect on the environment.

The proposed alteration is of a minor nature, no person is directly and adversely affected by the proposal, and no significant adverse environmental impact will be caused.”

EPCOR improved the project based on stakeholder feedback

- People told us what was important to them, and we reflected this as we modified the design of the solar farm.

Specific changes included:

- ✓ Plans for a unique **interpretive site**
- ✓ **Reduced the project footprint** to ensure we have **appropriate setbacks**
- ✓ **Added more trees** to facilitate wildlife movement
- ✓ Plans to **re-introduce local grasses** to the site
- ✓ Collaborated with the City to facilitate the extension of the **recreational trail network** around the site
- ✓ Made the solar farm site **highly accessible** for research, tours and sharing of history and cultural resources.

AUC DECISION

“The Commission finds EPCOR Water’s alterations to the project ...demonstrate EPCOR Water’s willingness to adapt its project in response to concerns raised by stakeholders.”

“EPCOR Water’s commitment to allow access to its property for the development of additional trails along the river valley will result in a benefit in terms of public access to green space in that portion of the river valley.”

A comprehensive engagement and relationship-building process

Actions

- **Joint Enoch-EPCOR Working Group** met 16 times over 8 months and continues to collaborate
- Facilitation of full access to archaeological data and resources
- Site visits for Enoch Consultation Office team, Elders, and Knowledge Holders
- Community meeting/open house hosted by Enoch Cree Nation



Enoch Cree Nation independently reviewed the archaeology

- Archaeological investigation focused on seven camp site occupations that ranged between roughly 3,500 and 9,000 years before present
- Enoch Consultation was provided independent access to review to all archaeological data, including artifacts and lab visit



Block 5B excavation in progress

The solar farm design protects underground historical resources

Enoch's Review of the Archaeology

- **The proposed solar farm has been designed to minimize further land disturbance**, and avoids the location of a fire pit found during excavations.
- Archaeological evidence suggests a small camp site, and does not support a conclusion that significant ceremony was practiced there
- Enoch Cree Nation and EPCOR will work together to plan future archaeological investigations, protect the integrity of historical resources, and re-establish Enoch Cree Nation's connection to the land including ceremony

Alberta Culture's Conclusions

- Provincial authorities concluded that "Subsurface impacts resulting from **localized construction activities** including helical pile installation...**may proceed as planned without further concerns for archaeological resources.**"
- Historical resources are managed under the *Alberta Historical Resources Act*.
- Based on archaeological results, Alberta Culture issued a project approval under the Act.

The dialogue process has resulted in enduring benefits

Outcomes

- **Joint report and recommendation** from the Enoch Consultation Office and EPCOR
- **Development of a permanent partnership** through an MOU that will reconnect Enoch and its people to their historic lands



Enoch Cree Nation supports proceeding with the solar farm

- **Motion of support for the solar farm passed by Enoch Cree Nation Council on February 10**
- Informed by the joint report and recommendation, based on formal engagement, community dialogue, traditional protocol, and independent archeological review (see Appendix D of the engagement report)
- Reasons for support summarized in February 18 letter (Appendix A)

ENOCH CREE NATION

LETTER OF FEBRUARY 18, 2020

“We wish EPCOR success in attaining all the additional approvals required to realize this important project. We wish to thank EPCOR for the commitment to meaningful consultation and leadership in this process.”

“We also look forward to naming the solar farm in a manner that honors the significance of the lands, our history and present relationships.”

“Green energy projects are critical to pathfinding a future for our young people that aligns with principles of stewardship, sustainability and climate leadership.”

Memorandum of Understanding: A principles based partnership



- **Declares mutual intent to pursue a lasting relationship based** upon mutual respect, honour and recognition, in the spirit of reconciliation
- **Establishes a path forward** on all work that causes ground disturbance at E.L. Smith and Rossdale
- Develops protocols to **reconnect Enoch Cree Nation to their former reserve lands** at E.L. Smith
- **Affirms mutual benefit** from the continued operation and potential expansion of the water treatment plants, and the imperative of immediate and urgent action on global warming

September 1 MOU Signing, Ceremony, and Celebration



“At the heart of the MOU is our shared attachment to the land we stand on, and our shared vision of the future. A future where Enoch Cree Nation and its people are re-connected with their historic lands by the river. And a future where the generations who come after us will continue to benefit from the clean, safe drinking water made here at E.L. Smith and at Rosssdale.”

– EPCOR President & CEO Stuart Lee

September 1 MOU Signing, Ceremony, and Celebration

“For me, EPCOR are truly stewards of the land – it truly is for as long as the grass grows, the rivers flow, and the sun shines.

EPCOR is building a solar farm, to harness that energy...it’s going to get us moving in a good direction as intended by the ancestors who sat here over a hundred years ago and signed Treaty just down the river.”

– Enoch Cree Nation Chief Billy Morin



View the celebration at:

<https://youtu.be/CVAGuUnVqJw>

What Successful Operation Will Look Like

Trina Manning, EPCOR Water Canada

Taking Action. Inspiring Change

- Making clean water with clean energy
- Inspiring Edmontonians to take their own actions
- An open mind and optimism for our future



The Climate Crisis – A Race We Can Win

Climate change is the defining crisis of our time and it is happening even more quickly than we feared. But we are far from powerless in the face of this global threat. As [Secretary-General António Guterres pointed out](#) in September, “the climate emergency is a race we are losing, but it is a race we can win”.

No corner of the globe is immune from the devastating consequences of climate change. Rising temperatures are fueling environmental degradation, natural disasters, weather extremes, food and water insecurity, economic disruption, conflict, and terrorism. Sea levels are rising, the Arctic is melting, coral reefs are dying, oceans are acidifying, and forests are burning. It is clear that business as usual is not good enough. As the infinite cost of climate change reaches irreversible highs, now is the time for bold collective action.

 **GLOBAL TEMPERATURES ARE RISING**

Billions of tons of CO₂ are released into the atmosphere every year as a result of coal, oil, and gas production. Human activity is producing greenhouse gas emissions at [a record high](#), with no signs of slowing down. According to a ten-year summary of UNEP Emission Gap reports, we are on track to maintain a “business as usual” trajectory.

The last four years were the four hottest on record. According to a September 2019 World Meteorological Organization (WMO) report, we are at least [one degree Celsius](#) above preindustrial levels and close to what

FOR MORE INFORMATION

[The Sustainable Development Goals](#)

[Climate Action Summit 2019](#)

[UNFCCC | The Paris Agreement](#)

[WMO | Global Climate in 2015-2019](#)

Thanking the community

Four years of community workshops, meetings, and conversations have made the project better.



Walking together

Side by side with Enoch Cree Nation, and with the many Indigenous Nations, communities and Métis whose traditional lands we share.



Green energy and a green environment



- **Designing the project to respect and sustain the natural habitat in the river valley**
- **Expanding the publicly owned ribbon of green that's accessible to Edmontonians**

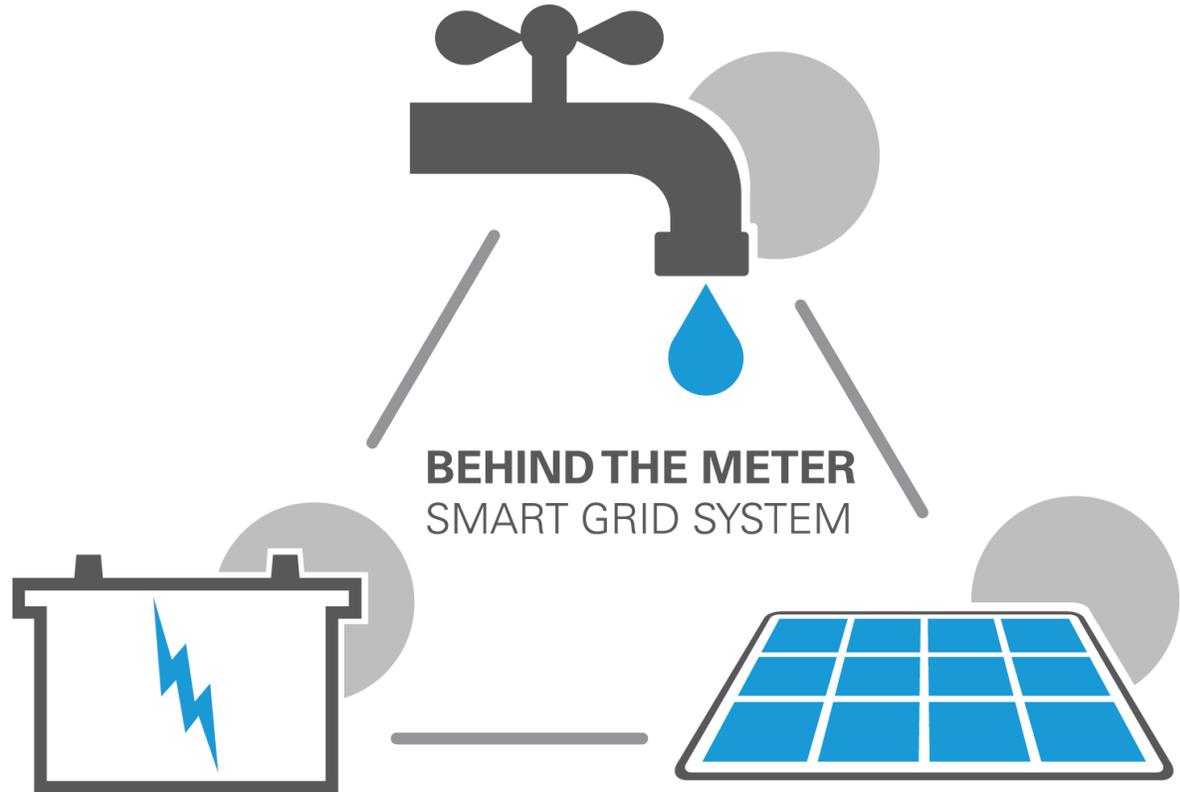
Learning and inspiration



- Interact with landscape
- Place for education and sharing for trail users, students, researchers and Indigenous communities

Smart grid leadership

- Smart grid will make Edmonton a leader in clean energy generation
- Smart grid projects and distributed generation are an essential part of successful climate action



A project Edmonton can be proud of

- A transformative project
- Immediate reductions in GHGs
- Substantial community benefits





E.L. Smith Solar Farm Public Hearing October 2020

Photograph: Guy Parker

