# COUNCIL REQUEST FOR DECISION

**MEETING DATE: June 14, 2021**

**SUBMITTED BY: S. Olson, Director, Engineering**

**PREPARED BY: K. Chomlak, Manager, Environment**

**REPORT TITLE: Solar Carport and Electric Vehicle (EV) Charging Stations Downtown**

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## EXECUTIVE SUMMARY

Administration is seeking Council's approval of a 2021 project for a solar carport and electric vehicle chargers to take advantage of Federal and Provincial grants. The relevant grants operate on a first come first served basis and the Provincial grant is set to expire early in 2022.

## RECOMMENDATION

That Council direct Administration to install, subject to contingencies, a solar powered carport, a Level 3 electric vehicle charging station and a Level 2 charging station at the City owned parking lot at 4820 49 Ave at a cost of $217,450 to be added to the 2021 capital plan, with $68,225 in funding coming from grants and balance being funded through the Waste Minimization Reserve.

In the event the grant applications are unsuccessful, that Council direct Administration return to Council for further discussion on the solar carport and electric vehicle charging stations downtown.

## COUNCIL HISTORY

n/a

## BACKGROUND / RATIONALE

The proposed costs, grants available and budget requests are outlined in Table 1.

**Table 1: Total Costs, Grant Values, and Budget Request**

| | Cost | Grants | Budget Request | |
|---|---|---|---|---|
| Carport | $ 86,727 | $ 18,225 | $ 68,502 | |
| Level 3 | $ 114,723 | $ 50,000 | $ 64,723 | |
| Level 2 | $ 16,000 | $ - | $ 16,000 | |
| | | | | |
| Total | **$ 217,450** | **$ 68,225** | **$ 149,225** | Payback 15 years |

The City of Leduc's (City) Greenhouse Gas Action Plan calls for more solar-powered facilities and electric vehicle charging infrastructure as a way to reduce emissions from the building and transportation sectors. Solar carports are an efficient way to use space for solar power and an opportunity to generate future revenue by selling power back to the electricity grid.

The market for electric vehicles is increasing, with an estimated 54 percent of Albertans reporting that they will likely or very likely purchase an electric vehicle as their next vehicle, leading to an estimated 600,000 more electric vehicles in the province in the next five years.[1] In addition, General Motors Corporation (GMC) has committed to cease selling gasoline and diesel engine vehicles by 2035, Honda and Toyota by 2040, and Ford will be zero emissions in Europe by 2026.[2]

There are several Level 2 chargers available in and around the City located at Canadian Tire, Peavy Mart, Best Western Airport Hotel and Premium Outlet Mall. Most of them offer free charging, while others charge $2/hour. There is a gap in the Level 3 (fast) charging network between Edmonton and Red Deer (map attached). It is expected that a Level 3 charger installed in Leduc's downtown will intice EV drivers to stop in Leduc and this increased traffic will be beneficial for downtown businesses.

This three-part project is expected to have a pay back of 15 years due to the generation of power that can be sold to the grid. Note that this proposal requires a transfer of retailer from Enmax to Ridge Utilities and assumes 30% of the solar power is used for car charging and 70% is exported to the grid. Note that the price of the carport includes a $10,000 cash allowance for a potential Fortis service upgrade, which may not be required or may come in at lower cost. No revenue has been assumed from vehicle charging, as the intent would be to offer free "fill ups" to draw traffic downtown and firmly establish Leduc as a hub for owners of electric vehicles to visit. If that were to change in the future, initial charging revenue estimates are as high as $25,000 to $50,000 per year with a $10 to $20/hour fee, however this option can be reviewed at a later date.

The proposed Level 2 charger would be faster than a typical Level 2 charger and will allow two different types of EVs (e.g. one Tesla and one Nissan Leaf) to charge at same time in 35-40 minutes for 50 km of charge. There are no grants available for the Level 2 chargers currently, unless 20 chargers are purchased. Administration will monitor the availability of other grants for charging infrastructure.

The Level 3 charger proposed will also allow two EVs to charge simultaneously. Two types of EVs can charge at the same time and both will take 40-60 minutes to fully charge. If a single vehicle is connected, it will charge at full power and take 20-30 minutes for a complete charge.

Timelines:

The decision on the MCCAC's Alberta Municipal Solar grant for the carport is expected in June. The construction is a two-week duration so it is expected that the carport and Level 2 charger could be installed by the end of July. The NRCan Zero Emission Vehicle Infrastructure grant for the Level 3 should be confirmed in October, with installation following shortly after approval. It is important to move quickly on these grants, as they are available on a first come and first serve basis. Additionally, there is a gap in charging capabilities between Edmonton and Red Deer and moving ahead first gives Leduc the opportunity to train drivers to stop in Leduc to charge their vehicles, creating a habit that will benefit the business community. Once our intentions to build are clear, Administration will work with chargehub.com to get the "under-construction" logos added to show the intent.

It is also expected that the near-term installation of a solar powered Level 3 charger downtown will encourage further private investment of charging infrastructure in the area.

## STRATEGIC / RELEVANT PLANS ALIGNMENT

The City of Leduc Greenhouse Gas Reduction Action Plan (2019) is available at: https://www.leduc.ca/our-climate-solutions.

## ORGANIZATIONAL IMPLICATIONS

### ADMINISTRATION:

Engineering and Environment would manage the contract with support from JCOR Energy Consulting Inc. on the grant application.

### RISK ANALYSIS: FINANCIAL / LEGAL:

After a 15-year payback period, the carport is expected to generate revenue for the duration of its life e.g. a minimum 25 years. Vehicle charging could also be a potential source of revenue in the future.

### IMPLEMENTATION / COMMUNICATIONS:

The new infrastructure will be celebrated and promoted widely to draw visitors from across Canada.

### ALTERNATIVES:

1. That Council approve one or two components of the project only, as opposed to all three.

## ATTACHMENTS

1. Proposed solar carport location
2. Images of solar carports
3. Gap in high speed chargers between Edmonton and Red Deer

[1]KPMG. (2021, February 25). Electric vehicles to make up majority of new car purchases. Retrieved from https://home.kpmg/ca/en/home/media/press-releases/2021/02/electric-vehicles-to-make-up-majority-of-new-car-purchases.html

[2]Autoweek. (2021, April 30). Phasing out internal combustion engines? It's already happening. Retrieved from https://www.autoweek.com/news/a36292118/phasing-out-internal-combustion-engines/