

Triple Bottom Line Review – Electric Vehicle Community Charging Pilot

Process and Methodology

The Administration used the City of Saskatoon’s Triple Bottom Line (TBL) Decision Making Tool in compliance with *Council Policy C08-001 - Triple Bottom Line*.

In conducting the analysis, the Administration relied on the expertise of the Project Team and Subject Matter Experts from the Sustainability Department, and considered the information found in Appendix 2 and 3 of this report, as well as other sources.

This review is meant to be a high-level way to identify the initiative’s environmental, social, economic, and governance outcomes, as well as to identify opportunities to achieve even greater sustainability benefits. The results are meant to support ongoing decision making, rather than be relied upon as a fixed sustainability evaluation.

Caveats and Limitations:

- The project being considered is a 2-year pilot; however, the team extrapolated to consider implications as if they would continue beyond the pilot phase where appropriate. However, due to the limited scale of the pilot, many of the actual impacts (positive or negative) are expected to be very small. However, the purpose of the pilot is to help understand and mitigate these and other impacts.

Results and Findings

Overall, the results of Administration’s TBL review indicate that the electric vehicle charging pilot will achieve multiple TBL benefits within the Environmental Health and Integrity, Economic Prosperity and Fiscal Responsibility, and Good Governance Principles. However, in Social Equity and Cultural Wellbeing, the team noted that Option 3 may achieve slightly greater TBL benefits than the other proposed options.

A summary of results for each TBL principle and indicator are included in the subsequent sections of this document.

Principle: Environmental Health and Integrity

Indicator	TBL Outcomes
Renewable Energy	<ul style="list-style-type: none"> • Electrification of vehicles is important for an overall shift toward renewable energy since electric vehicles (EVs) can be supported by renewable electricity where internal combustion engine (ICE) vehicles cannot.
Conservation of Resources	<ul style="list-style-type: none"> • EVs are more efficient than ICE vehicles to operate.
Climate Change Mitigation and Adaptation	<ul style="list-style-type: none"> • EVs, even considering SK’s fossil fuel sourced electricity, emit approximately 30% less greenhouse gases than ICE vehicles. • EVs are more resilient to energy/oil price fluctuations and not as likely to be affected by fuel shortages.
Green Buildings and Sustainable Land Use	<ul style="list-style-type: none"> • Providing EV charging is a component of green building. The pilot will help the City understand requirements for building EV charging into new buildings.

Sustainable Transportation	<ul style="list-style-type: none"> This pilot is the first public EV infrastructure project by the City and is expected to show leadership in Sustainable Transportation and encourage EV adoption.
Healthy Ecosystems	<ul style="list-style-type: none"> EVs produce less noise, smells, and oil.
Clean Air, Water, and Land	<ul style="list-style-type: none"> EV's improve air quality compared to ICE vehicles.
Waste Reduction and Diversion	<ul style="list-style-type: none"> EV's will require recycling similar to ICE. Special consideration for proper recycling of batteries is required.
Storm Water Management	<ul style="list-style-type: none"> NA
Sustainable Food System	<ul style="list-style-type: none"> NA

For Further / Future Consideration

- Recycling of batteries is important to ensuring the long-term sustainability of electric vehicles, and more consideration around this such as how and where battery recycling will occur, and the lifecycle of the batteries, is needed.

Principle: Social Equity and Cultural Wellbeing

TBL Outcomes - by Indicator:

Indicator	TBL Outcomes
Equity and Opportunity	<ul style="list-style-type: none"> Provision of public charging can improve equity for certain groups that cannot charge at home such as some multi-units. Fully or partially subsidizing the cost of charging may have negative impacts to those that cannot afford to drive an electric vehicle and are subsidizing the cost of electricity for those that can. Electric vehicles are already less expensive to operate than ICE vehicles so, over the long-term, charging for electricity at public chargers is likely fairer than providing free charging. Future reviews should look to achieve the optimal rate in a scaled-up program as EV adoption increases, including looking at charging per kwh instead of time.
Diversity and Inclusion	<ul style="list-style-type: none"> The EV charging pilot is unlikely to have any impact on barriers to owning an EV.
Heritage, Arts, and Culture	<ul style="list-style-type: none"> NA
Self Sufficiency and Living with Dignity	<ul style="list-style-type: none"> If the pilot is scaled up and charging is still free, income disparities may be amplified as those that can afford EV's are provided with a benefit which is subsidized by those that do not have or benefit from an EV.
Health and Wellbeing	<ul style="list-style-type: none"> EVs improve air quality.
Safety and Resiliency	<ul style="list-style-type: none"> Chargers will be located at leisure centers which are well lit and busy locations. A CPTED review was completed.
Civic Participation	<ul style="list-style-type: none"> NA
Recreation	<ul style="list-style-type: none"> May help get people to Civic Centres, good partnership and co-promotion of Civic recreational facilities.

For Further / Future Consideration

- Negative impacts from subsidizing rates will be negligible during the pilot but should be considered as charging infrastructure is scaled up. Future review is

required to determine the optimal rate, including looking at charging per kwh instead of time.

- EV's are currently more expensive than ICE vehicles, and the used market is very limited. While the long-term cost of owning an EV may be less than an ICE vehicle, reducing the up-front cost may be required to promote equitable access to EV's and their benefits.

Principle: Economic Benefits

Indicator	TBL Outcomes
Innovation	<ul style="list-style-type: none"> • EV charging infrastructure and use of smart chargers is new for the City and the goal of pilot is to test the technology and measure behaviours.
Sustainable Procurement	<ul style="list-style-type: none"> • City procurement policies for sustainable procurement are being followed.
Financial Planning and Resourcing	<ul style="list-style-type: none"> • Charging users will allow the City to recover some of the operating costs (not capital). • The pilot project includes smart chargers that will allow for monitoring and tracking of data on financial and non-financial data. Reporting at the end of the pilot will ensure transparency around successes and failures. Next steps will be determined using pilot data, including life-cycle costing, and other information.
Affordability for Users	<ul style="list-style-type: none"> • Improves affordability of EV if you do not have to pay for charging for those who already own an EV. Still need to consider any unfair impacts to non-EV users.
Support the Local Economy	<ul style="list-style-type: none"> • No impact during the pilot – however, impacts on tourism and the local economy may occur as the project scales up. Engagement with the business sector is required.
Asset Management	<ul style="list-style-type: none"> • Located at Civic Centres and review of sites indicates that the charger can be properly supported and connected to the existing infrastructure using reputable products (commercial grade devices) and contractors.
Skills and Training	<ul style="list-style-type: none"> • No new skills are required for EV charger installation.
Labour Rights and Employment	<ul style="list-style-type: none"> • Paying market price for equipment and contractors.

For Further / Future Consideration

- Paying to use the chargers may influence behaviour, and more study is needed to understand the impact, for example:
 - Will people use the charger if there are free chargers elsewhere?
 - Are convenient locations/visibility with nearby amenities a greater factor than the cost of the charge?
 - Are we competing with free charging stations?
 - How important is price or location for people?
 - Will the current demographic of EV enthusiasts skew results for understanding these preferences even if fees are charged?

Principle: Good Governance

Indicator	TBL Outcomes
Ethical and Democratic Governance	<p>Aligns with the Low Emissions Community Plan and the Strategic Plan. Helps to address the legacy of climate change and fossil fuel use. Supports decision-making.</p> <p>If scaled up, free charging may not support City's commitments around equity as charging user fees for private goods is more appropriate.</p>
Effective Service Delivery	<p>Offering a free service, while it may create equity challenges in the long run, reduces risk that the new service will not be used.</p>
Education, Communication, Engagement, Capacity Building	<p>Engagement with internal and external stakeholders has taken place through pilot planning with more engagement and interest expected once installed. The charging stations will be used as a communication tool around EVs.</p>
Monitoring, Reporting and Compliance	<p>The purpose of the pilot is to use smart chargers to track data to inform future initiatives. Best practise research and interviews with other municipalities has been initiated during pilot planning. More is expected.</p>
Agility and Adaptiveness	<p>Starting with a small and low-cost pilot to understand and adapt to community needs. Results of the pilot will be used to inform future charging initiatives. At the end of the pilot period, results will be reviewed (including any failures) with the intention of changing and improving.</p>
Roles, Responsibilities and Rewards	NA