
Report To: Board of Directors

Subject: NPCA Campground Electrical Upgrades

Report No: FA-60-25

Date: December 19, 2025

Recommendation:

THAT Report No. FA-60-25 regarding NPCA Campground Electrical Upgrades **BE RECEIVED**;

AND THAT staff **BE DIRECTED** to proceed with engineered drawings for 500kW electrical capacity upgrades at Chippawa Creek Conservation Area and Long Beach Conservation Area;

AND THAT staff **BE DIRECTED** to proceed with engineering drawings to upgrade campsites to 30-amp services at Chippawa Creek Conservation Area and Long Beach Conservation Area;

AND THAT staff **BE DIRECTED** to proceed with generating detailed business cases, phasing plans, and financial models to undertake the proposed works required to increase Hydro One servicing capacity upgrades at Chippawa Creek Conservation Area and Long Beach Conservation Area;

AND THAT staff **BE DIRECTED** to proceed with generating detailed business cases, phasing plans, and financial models to undertake the proposed works required to upgrade campsites to 30-amp services at Chippawa Creek Conservation Area and Long Beach Conservation Area;

AND THAT staff **BE DIRECTED** to identify and pursue funding opportunities to implement the recommended renewable energy systems;

AND THAT staff **REPORT BACK** on proposed works, phasing plans, and financial models for Board consideration on or before July 24, 2026.

Purpose:

The purpose of this report is to update the Board of Directors on the NPCA's Campground Electrical Upgrades study completed by Pretium Engineering Inc. and to seek direction on recommended actions related to enhancing electrical capacity to 500kW and 30-amp

service provision at Chippawa Creek Conservation Area and Long Beach Conservation Area.

It is also recommended that Pretium Engineering Inc. proceed with preparing **engineered drawings** to upgrade the two conservation areas with 30-amp services in order to inform business cases, and funding strategies that will be included in the NPCA's Asset Management Plan project in 2026.

Background

NPCA owns and operates two campgrounds that provide a variety of recreational services, including seasonal and transient camping. Long Beach Conservation Area, located in Wainfleet, features 187 serviced and 19 non-serviced sites for a total of 206 campsites. Chippawa Creek Conservation Area, also situated in Wainfleet, offers 111 serviced and 45 non-serviced sites, for a total of 156 campsites.

On November 21, 2025, the NPCA Board endorsed Board Report No. FA-53-25 regarding the NPCA Campground Analysis and Operating Strategy. Based on campsite utilization rates, the report included a recommendation to prioritize a plan for providing electrical services to non-serviced campsites at both Long Beach and Chippawa Creek to improve site utilization and revenue generation.

Discussion:

To address the growing demand for electrical service camping at Long Beach and Chippawa Creek, and in parallel with the 'Campground Analysis and Operating Strategy' project, the NPCA engaged Pretium Engineering Inc. (Pretium) to conduct a proactive analysis of the electrical systems at both parks. Pretium is a consulting engineering firm headquartered in Etobicoke, specialising in building science and the mechanical, electrical, and structural engineering disciplines. The electrical systems analysis project was structured into three phases noted in Table 1 below.

Table 1: Electrical Systems Analysis Phases and Associated Works.

<i>Electrical Systems Analysis Phase</i>	<i>Work Undertaken</i>
<i>Phase 1: Electrical Audit</i>	On-site review of existing electrical distribution system including panels, transformers, and wiring.
<i>Phase 2: Future Servicing Options</i>	Grid capacity analysis, servicing concept development, and assessing feasibility of electrical expansion.
<i>Phase 3: Detailed Engineering Design</i>	Electrical servicing designs for each CA that includes proposed infrastructure sizing and layout.

As a value-added service, Pretium also included a high-level review of the feasibility of integrating renewable energy systems into both campgrounds to reduce operational costs, improve resiliency by limiting disruption due to any power outages, and align with NPCA's sustainability objectives.

Electrical Audit

The Electrical Audit of Chippawa Creek and Long Beach Conservation Areas identified that the existing infrastructure is operating near capacity, leaving minimal ability to upgrade current sites, or develop new sites. Furthermore, there is very limited potential to add new amenities such as washrooms, pavilions, or other facilities that require hydro services.

Several components of the electrical system were found to be old, weathered, and at the end of their service life. To comply with current Electrical Safety Authority (ESA) standards, these components must be replaced, as they no longer meet the required safety and performance standards.

Immediate actions were recommended, such as replacing corroded outdoor panels and addressing missing overcurrent protection and enclosure covers to mitigate safety risks. Short-term recommendations focused on replacing equipment in poor condition, removing unused components, updating worn-out labels, and replacing shallow or damaged cables to meet code requirements. Long-term recommendations advised the proactive replacement of obsolete panel boards and disconnect switches, as well as ageing equipment, to ensure reliability and compliance.

Total costs to address these issues over the next five years are projected to be approximately \$134,153 for Chippawa Creek, and \$263,985 for Long Beach. This necessary work will ensure that both sites can meet current operational needs while maintaining the safety of our visitors and staff.

Hydro One Servicing Capacity

Both Chippawa Creek and Long Beach are nearing the capacity of the current electrical service that Hydro One provides to the parks. A component of this study was to engage with Hydro One to understand how much electricity can be provided to the parks from Hydro One's grid.

Two scenarios were discussed with Hydro One. The first scenario indicated that a maximum of 500kW could be provided to both parks through the existing electrical grid. This amount of power is approximately double what both parks are presently using. This electrical upgrade will address immediate requirements, ensure that all existing campsites are equipped with reliable electrical service, and provide capacity for future growth, including the potential expansion of sites at both campgrounds.

The required electrical infrastructure to service Long Beach is already in place along Lakeshore Road; however, supplying Chippawa Creek would require extending infrastructure approximately 1.5km from Regional Road 45.

Should these projects proceed, Hydro One would provide the NPCA with a detailed engineering design. The total estimated costs to upgrade the Hydro One electrical service to each park to 500kW are \$425,509 for Long Beach and \$2,968,761 for Chippawa Creek.

The second scenario examined the requirements for exceeding the existing grid's 500 kW limit. Any demand beyond this threshold would necessitate a dedicated service originating from the nearest transformer station, which Hydro One has confirmed is located several kilometres away from both parks.

Under this option, an electrical service of 1,500 kW would be provided to both parks. This capacity would deliver virtually unlimited power and support long-term expansion at both sites. The estimated cost to upgrade Hydro One's service to 1,500 kW for both parks is \$6,366,192 for Long Beach and \$11,705,759 for Chippawa Creek.

Based on the high cost required to provide 1,500kW services to both parks and the Board-endorsed recommendations from the NPCA's Campground Operating Strategy (Report No. FA-53-25), the 500kW service option for both parks was determined to be the preferred alternative.

Campsite Electrical Upgrades

NPCA campgrounds currently offer three categories of sites: non-serviced (no water or hydro, primarily for tent camping), 15-amp (suitable for basic camping setups such as lights, phone chargers, and small appliances, but not recommended for medium to large sized RVs with air conditioning or medium to high electrical demand), and 30-amp (designed for mid-sized RVs, supporting one air conditioner, a microwave, and several appliances).

As part of the electrical upgrades in the parks themselves, options were reviewed which included the potential addition of 15, 30, and 50-amp serviced sites. The 50-amp serviced sites could cater to large RVs equipped with multiple air conditioners, electric water heaters, and other high power consumption amenities.

The advantages and disadvantages of the three electrical servicing options are summarized as follows:

Table 2: Campsite Electrical Servicing Considerations.

<i>Electrical Servicing</i>	<i>Advantages</i>	<i>Disadvantages</i>	<i>Potential Risks</i>
15-amp	Lowest comparable capital cost	Not suitable for medium and large-sized trailers requiring higher power loads	Declining market trends for small trailers indicates reduced demand for level of service

	Potential for greater increase in number of sites	Cannot support 'Glamping' units and associated modern amenities	Higher risk of operational issues (i.e. breaker trips)
30-amp	Moderate comparable capital costs. Capacity could provide moderate increase in number of sites. Suitable for modern amenities associated with 'Glamping'. Increased reliability of service levels.	Not suitable for luxury amenities found in large sized trailers.	May limit potential to attract campers seeking high-end, fully serviced sites.
50-amp	Suitable for servicing all trailers and modern amenities. Reduced operational issues compared to alternate servicing options.	Greater capital costs compared to other options. Limits number of new sites compared to other options Does not support NPCA Sustainability Initiative	Many existing sites require reconfiguration to fit large trailers. 'Conservation Area' experience vs. 'Resort Experience.'

Based on an analysis of the three options, a provision of 30Amp electrical service to campsites in both parks was determined to be the preferred option.

On-site Park Upgrades and Associated Costs

Upgrades to each conservation area's hydro service to the park, which includes the main electrical infrastructure such as the incoming hydro supply, primary distribution panels, and feeder lines, cannot be phased. This is because the electrical service provided by Hydro One must be designed and installed as a complete unit and cannot be phased.

Should Hydro One services be upgraded to feed into Chippawa Creek and Long Beach, NPCA can further plan for utilization of the expanded 500kW Hydro One service. Works associated with upgrading campsites at each conservation area can be completed in phases based on identified priorities, demand, and budget pressures.

Utilizing a 500kW Hydro One service to both parks and upgrading all campsites in each park to a 30-amp electrical service would result in 179 30-amp serviced campsites at Chippawa Creek and 208 30-amp campsites at Long Beach. Upgrading both parks' campsites to 30amp electrical service aligns with the NPCA's Campground Analysis and Operating Strategy, which identified that 30amp sites consistently achieve significantly higher utilization rates Table 3 provides a breakdown of the current state and upgrades proposed for campsites at each conservation area.

Table 3: Current and Projected Number of Campsites and Electrical Servicing.

CA	# Existing Serviced Sites	# Existing 30-amp Sites	# 15-amp sites to be upgraded	# Non-serviced sites to be upgraded	# New 30-amp sites	# Future Total 30-amp Sites
Chippawa Creek	111	41	70	45	23	179
Long Beach	187	148	39	19	2	208

The total cost of upgrades to complete all campsite upgrade works proposed is estimated to be \$4,758,569 at Chippawa Creek and \$2,224,079 at Long Beach.

Developing a phased approach to complete the proposed works allows NPCA to spread capital costs across multiple years, prioritise high-demand areas, and maintain operational continuity while improvements are made. This will provide flexibility to adapt to visitor trends and incorporate sustainability measures incrementally without impacting the entire park's electrical system.

Approved upgrades will be included in NPCA's Asset Management Plan (AMP) and that is currently in development. The AMP will outline financial strategies and phased approaches to support decision-making.

Total Costs for Proposed Electrical Service Upgrades

Chippawa Creek

Hydro One 500 kW upgrade to the park:	\$2,968,761
Providing 179 30Amp sites in the park:	<u>\$4,758,569 (to be phased)</u>
Total:	\$7,727,330

Long Beach

Hydro One 500 kW upgrade to the park:	\$425,509
Providing 208 30Amp sites in the park:	<u>\$2,224,079 (to be phased)</u>
Total:	\$2,649,588

Phase 3 Detailed Engineering Design

The final phase of the project involves preparing detailed engineering design drawings for upgrades to both the park's electrical service and internal infrastructure at Long Beach and Chippawa Creek. These engineered drawings will enable NPCA staff to bring the project to a shovel-ready state, based on recommendations endorsed by the Full Authority Board.

Renewable Energy

The integration of renewable energy systems at both campgrounds was evaluated to explore opportunities that would reduce operational costs, improve resiliency, and align with sustainability objectives. The systems considered were:

- Solar Photovoltaic (PV), i.e. solar panels;
- Wind Power, i.e. wind turbines;
- Battery Energy Storage Systems; and
- Microgrid Integrations, including a combination of renewable energy, batteries, and load management systems.

The Solar PV system emerged as the most practical option, offering scalable deployment, predictable energy generation, a lower degree of complexity, and reduced capital, operating, and maintenance costs compared to the other options considered.

In the existing regulatory regime, any excess electricity generated by renewable energy systems can be provided back to the electrical grid whereby a credit is received which serves to reduce the associated electrical utility bill. Once enough credits are obtained to reduce the electrical bill to \$0 (per calendar year), no additional credits or cash are provided by Hydro One. In addition, it is not possible to exceed the 500kW capacity of the local power grid when providing electricity back to the grid. For example, if NPCA were to install a 1500kW solar farm, only 500kW could be supplied back to the grid due to the grid's capacity. Any additional power generated would be unused.

The estimated costs to provide a large enough solar photovoltaic system to generate enough credits to bring the completely upgraded Chippawa Creek and Long Beach annual hydro bills down to approximately \$0 are \$3,122,368 and \$3,029,242 respectively. As part of the Renewable Energy Approval (REA) process required under regulation for such a project, a Natural Heritage Assessment (NHA) is required for solar photovoltaic systems. The NHA follows a staged approach that includes a records review, on-site investigations within 50-120 metres of the project area, and an evaluation of the significance of nearby natural features. The NHA work will be undertaken to ensure regulatory compliance.

Further to discussions with Pretium, staff are researching the potential for power purchase agreements. Power Purchase Agreements (PPAs) are long-term contracts between energy producers and buyers that lock in electricity prices for 10–25 years. They provide financial

certainty for renewable energy projects and help buyers secure predictable costs while meeting sustainability goals.

Next Steps

To ensure the successful execution of the recommendations arising from this project, NPCA staff will immediately provide direction to Pretium Engineering to proceed with the preparation of finalized engineered drawings for both the upgrades to the park and in the park improvements. The completed engineered drawings will position the project at both parks to a shovel ready state.

In 2026, and as part of the Asset Management Plan project, NPCA staff will initiate the development of a detailed business cases to support future implementation of the project. Business cases will include a comprehensive financial analysis and funding strategies that explore all available options, including grants. It will also incorporate comprehensive risk assessments to identify potential challenges and mitigation strategies, along with a phased implementation plan that outlines timelines, resource allocation, and prioritisation of key activities to ensure smooth execution and minimise operational disruptions. Upon completion of a fulsome analysis and financial strategies supported by the Asset Management Plan, staff will bring recommendations forward relative to these business cases for the Board's consideration.

NPCA will also continue to explore funding mechanisms including grant opportunities to implement the Pretium's recommended renewable energy systems, which will come forward for the Board's consideration as required.

Financial Implications:

The Electrical Servicing Masterplans for Chippawa Creek and Long Beach undertaken by Pretium is an approved 2025 capital project. Finalising the engineered drawings is included within the scope of this capital project and will not result in any additional financial impact.

To address the findings of the electrical audit, which identified several components of the campground electrical system as old, weathered, and at the end of their service life, the NPCA has approved a 2026 Capital Project titled Campgrounds Electrical. This project has an allocated budget of \$150,000.

The implementation of the recommended longer-term electrical upgrades will require a future investment estimated at \$10,376,918, broken down as follows.

Chippawa Creek	
Hydro One 500 kW upgrade to the park:	\$2,968,761
Providing 179 30Amp sites in the park:	<u>\$4,758,569 (to be phased)</u>
Total:	\$7,727,330

Long Beach	
Hydro One 500 kW upgrade to the park:	\$425,509
Providing 208 30Amp sites in the park:	<u>\$2,224,079 (to be phased)</u>
Total:	\$2,649,588
Total Cost:	\$10,376,918

The longer-term electrical upgrades will be included in NPCA's Asset Management Plan (AMP) that is currently in development. The AMP will outline financial strategies and phased approaches to support decision-making. Further capital project requests to support the electrical upgrades will be presented to the Full Authority Board through the annual budgeting process.

Links to Policy/Strategic Plan:

Goal 3.1 – Create equitable access to greenspace for the health and well-being of people
Goal 6.1 – Ensure responsible, sustainable, and sound fiscal practices
Goal 6.2 – Optimize self-generating revenue using innovative approaches

Related Reports and Appendices:

Appendix 1: [Chippawa Creek Electrical Servicing Masterplan](#)

Appendix 2: [Long Beach Electrical Servicing Masterplan](#)

Report No. FA-53-25 RE: NPCA Campground Analysis and Operating Strategy

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