Appendix A: Common Problems with EVSE Projects at National Parks

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Contents

Common Problems with EVSE Projects at National Parks

NREL has put together a report on "Best Practices for Electric Vehicle Supply Equipment Installations in the National Parks" and has recorded what problems early EVSE development and deployment encountered (NREL, Best Practices for Electric Vehicle Supply Equipment Installations in the National Parks). Below is a summary of the challenges and lessons learned in the report.

Knowledge and Expertise

Early projects had difficulty accessing technical knowledge related to EV charging infrastructure, charging levels, siting, and how to prevent blocking of the charging infrastructure by traditional ICE vehicles. It is recommended in the report ot involve a technical expert, such as a Clean Cities Coordinator or outside consultant, and an electrical engineer in the project from the very beginning of the project.

Project Coordination

NPS staffs typically have many responsibilities and undertaking a project such as this is difficult to coordinate with the existing workload. External stakeholders were often willing to monitor and manage projects to keep things moving but were not necessarily familiar with NPS processes or were not in a position to direct NPS staff. It is recommended that each project have an assigned, dedicated project manager for the duration of the installation. It can be an NPS staff member or someone outside of the park with a dedicated point person contact with the NPS. A timeline

should be drafted at the beginning of the project and keep key parties accountable for key milestones and progress.

Siting and Installation

Parks regularly operate in remote or rural areas with electrical service that would need to be upgraded, poor cell phone service, or extra permitting needed due to being registered on the National Register of Historic Places. Early collaboration with the park's electric utility is highly recommended. When siting the location it is highly recommended to choose a site with easy access to existing electricity and ensure electricity can be added in the future for more installations. Ideally select a site with cellular network coverage to allow for networked charging infrastructure.

Fee Collection

The Fixing America's Surface Transportation Act requires the collection of fees for charging EVs in order to recover costs. Parks have been encouraged to work with existing concessioners but not all parks have convenient partners. In these cases, point of use credit card readers have been needed or other fee mechanisms. State regulations may further complicate how electricity may be sold. It is recommended that whenever possible, parks should partner with other organizations to help cover the cost of charging. For example, work with a park foundation, friends group, or local utility to cover the cost of electricity used and remove the need to charge visitors.

Park Conditions

Parks regularly are situated in areas with extreme weather. Frozen ground can delay installation and snow buildup can block access to charging infrastructure. Parks can be situated in areas with intense sun and heat. Additionally, maintenance in urban parks may be needed more frequently due to vandalism. Many parks do not have staff who know how to repair EVSE infrastructure. It is recommended to factor winter weather into project timelines and schedule installation during warmer months. Once installation is complete, ensure that there is a plan for snow removal and consider building a cover or enclosure for the installation. Purchasing a maintenance plan when possible is recommended. Parks should additionally have at least one electrician trained to service charging infrastructure to have on call for emergencies.

Equipment Procurement

Infrastructure through the General Services Administration (GSA) often favors the lowest cost option rather than the most suitable in certain circumstances. For example, one park that had existing charging infrastructure wen through a formal solicitation process for additional chargers even though they would have preferred to continue to go with the previous manufacturer. The park ultimately chose a different supplier and had non-cohesive infrastructure. GSA should be the first stop for any park unit looking to purchase EV charging stations. A decision tree is even provided to assist in research and product selection (GSA, EVSE BPA Decision Tree). If the GSA procurement pathway is not feasible and a formal solicitation is needed, design the request for proposals to account for the specifics of the park. For now, hardware that is not connected to a network or does not use a platform can be ordered (GSA, Electric Vehicle Charging Stations).

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