

CASE STUDY

Taking Charge of Growing Demand for EV Infrastructure

When a utility client launched a pilot program to install and maintain electric vehicle charging stations for a variety of nonresidential customers, interest was high. Processing dozens of applications and a quickly growing backlog required a streamlined approach.



Challenge

A pilot program sought to deploy level 2 electric vehicle (EV) charger stations throughout an electric utility's service territory. The program to build EV infrastructure across a state is open to businesses, government agencies, nonprofits and multifamily dwellings.

For approved applicants, the utility will install and maintain charging stations on the customer's property for five years, with four charging plugs at each site. Applicants must have sufficient space for the charging station and the vehicles that each would service. Those selected also must complete periodic surveys over the course of the program to measure usage and satisfaction levels.

Program participants also have a choice between networked and nonnetworked charger solutions. The latter is free to the customer. The networked option includes an annual maintenance fee for the customer because of additional hardware costs,

Project Stats

Client

Confidential utility

Location

Southwestern U.S.

Anticipated Completion

July 2022

UP TO
600
CHARGING PLUGS
TO BE INSTALLED

5
YEARS OF MAINTENANCE
PROVIDED FOR
NEW INSTALLATIONS

but it gives the customer greater visibility into the customer's data. It also gives the customer the capability to set prices for vehicles to charge, which is often required at government buildings since free electricity would represent cost discrimination in favor of EVs.

The utility aims to expand EV infrastructure, learn from the usage and continue to meet growing demand. Through the program, the utility intends to install up to 600 charging plugs by summer 2022.

Solution

Moving applications for the program to implementation at over 150 sites requires a lot of customized work. In recognition of a rapidly growing backlog of projects once the program launched, the utility selected Burns & McDonnell to assist. Working in collaboration with another firm, we assess each site and create cost-efficient designs.

In the early stages, we focused on working through the process, understanding and organizing the phases that applications go through. With clear insight into the big picture, we could begin to find efficiencies and help the utility dig into its backlog.

The process begins with a desktop review. As soon as an application is received, we take a high-level look at transformer loading on the customer site. The utility enabled us to integrate into its systems to facilitate fast reviews and go/no-go decisions in about two days. Most sites are workable, and a quick introductory call is placed to the customer expressing thanks for the interest.

A site walk is next: The engineering team visits the site to look at the parking stalls and electrical infrastructure and gather any other information needed before moving into the design phase. Notes are compiled and a preliminary design is developed. We run the plan by the customer on another call to agree on the details. If everyone is in agreement, the utility sends the customer a full acceptance package consisting of charger selection and location details and a contract.

Each site then enters the final engineering phase, pulling together design documents and all information needed for permitting with the authorities having jurisdiction. Our knowledge of slightly differing requirements for varying jurisdictions helps us tailor the drawings to accommodate that. A couple of weeks after the permit is approved, a construction contractor is on-site. Two to three weeks later, the work is finalized. The charging station is energized and the site is closed out.



Results

The time spent on the front end, developing stage gates and phasing, made several valuable contributions to the program. Early engagement with the applicants helps the utility weed out those who do not meet program requirements or who aren't comfortable proceeding. This minimizes the utility's costs by eliminating projects with a lower probability of success.

As we began digging into the individual projects, we were also able to develop some standardized design templates at different phases. While each installation site is unique, having a selection of drawing templates means we don't have to reinvent the wheel on every project. The necessary worker hours are reduced, which also saves the utility money.

Thanks to the efficiencies we developed and unlocked, the utility was able to process its backlog rapidly. We completed transformer assessments and site walks on nearly 40 sites in four months. By the last quarter of 2021, the pilot program had nearly 50 sites in design or construction, with about 100 sites already fully energized and fully turned over.

About Burns & McDonnell



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