



Simplifying Facility Solutions: Planning for EV Charging Stations

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This paper is written to help businesses understand the components that drive the costs of an EV charging station installation project. GMR brings practical experience from an installer's perspective to help simplify a complex landscape.

The five categories below are factors that drive EV costs. Understanding these factors at your property will help shape the budget for your future EV charging installation.

CHARGING EQUIPMENT

The type of charging station selected for installation will have a high impact on costs. There are three levels of charging stations covering three different price points. Price points are driven by how quickly the equipment can charge an EV. Charging equipment levels are generally referred to as Level 1, Level 2, and Level 3 or DC Fast Chargers (DCFCs).



Level 1 chargers are inexpensive and not ideal for commercial use. They provide the slowest speed of charge.



Level 2 chargers provide a balance of cost per unit and speed of charge.



Level 3 / DCFCs will provide the fastest charge, but typically cost an order of magnitude more than a Level 2 station.

The number of stations desired will also affect the budget. These costs are multiplied for each station purchased and have a direct impact on the required electrical capacity and infrastructure. GMR can help you understand charging equipment tradeoffs and select the best hardware for your project.

Your installation and application of charging stations will dictate the need for stations to be networked. Networked charging stations offer several benefits over non-networked stations but are not right for every installation. If networked stations are chosen, network fees should be built into the installation as well as the maintenance budget. Network fees allow stations to be connected to the internet unlocking several benefits including displaying station location and availability, processing payments, and monitoring the stations for uptime. Networked stations facilitate over-the-air software updates as well as remote troubleshooting should a problem arise.

ELECTRICAL CAPACITY & INFRASTRUCTURE



To install EV charging equipment, there must be enough electrical capacity to support the new chargers. Each property is different, and capacity must be evaluated during a site walk, EV readiness assessment, or through a detailed load study. Access to utility bills and electrical as-builts helps the capacity review process. If capacity is available, new infrastructure may be added to support the desired charging stations. EV installations may require new transformers, disconnects, panels, and circuit breakers as well as conduit and wiring for the new EV circuit connections. If the capacity review process reveals there is not enough capacity to support the desired type and number of chargers, new capacity may be added.

Future EV needs should be accounted for in planning completed today. Future-proofing an installation may add a little cost to a current project. However, it will make future expansion much easier and affordable when you need the additional capacity.

SITE LAYOUT



The physical layout of a property impacts overall installation costs. EV charging equipment must be connected to electrical service. There must be a path to route the EV charging circuits to existing or new electrical service. The distance between the EV charging station installation and the electrical service directly impacts the costs of the project. Costs increase the longer the distance. The routing process may require trenching, directional boring, overhead runs, or a combination to construct the new circuits. The distance and complexity of the routing are important cost considerations for any project.

Another aspect of site layout that is often overlooked is EV station security. There are tradeoffs to be considered when placing stations, but not at the expense of the drivers who will use the stations. The shortest distance from the electrical service is not always the optimal place to install new stations. We can help sort through the tradeoffs of cost and security. GMR can deploy EV-specific security solutions to minimize site risks. This will benefit EV drivers, station owners, and operators in the long run.

PERMITTING & ENGINEERING



Permitting is a requirement for all construction projects and EV charging installations are no exception. The city or municipality with jurisdiction over the installation property will dictate the complexity and cost of the permitting process. The number and type of charging stations selected for the installation will also have an impact.

Installations requiring new electrical service or significant electrical infrastructure upgrades will need an electrical design. Many times, designs must be stamped by a Professional Engineer. It's a best practice to include dollars for engineering and permitting in a project budget. GMR's experts can help design your project and get it through permitting, even in cities having the most rigorous processes.

MAINTENANCE & INSPECTIONS



EV stations are an asset and must be maintained over time. The type of station selected for installation will directly impact ongoing maintenance costs. Maintenance should be performed annually. Installers may offer pre-paid maintenance plans to simplify the experience.

You may also consider budgeting for proactive inspections of your EV charging installation. These inspections may be scheduled on a desired frequency and will provide visibility into the condition of the site. Proactive inspections help maintain the overall site conditions and aesthetics. This contributes to a consistent customer experience and brand standard.

ABOUT GMR

GMR has become known as the "Industry Best Practice" for helping businesses document existing facility conditions, prepare for improvements, and minimize risk. GMR has over three decades of experience collecting and reporting site-specific data for measurement, analysis, design, and remediation. While our solutions are customized, our methodologies and project management create a turnkey experience for our customers. We are a diverse supplier, woman-owned and operated firm self-performing over 70,000 inspections and engineered solutions nationwide annually. With GMR, you can rely on unmatched quality and value.

To learn more on how GMR can help support your EV planning, please visit [GMR EV Solutions](#).