

Transportation  
Safety and  
Mobility (TS&M)

NOVEMBER 2024

**Project Title:**

Cost-Benefit Analysis for Installing  
EV Chargers Versus Using Public  
Infrastructure

**Task Number:** 4480

**Start Date:** May 1, 2025

**Completion Date:** January 31, 2027

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## Cost-Benefit Analysis for Installing EV Chargers Versus Using Public Infrastructure

An in-depth analysis to identify the most cost-effective strategy for charging the California Department of Transportation (Caltrans) electric vehicle fleet.

### WHAT IS THE NEED?

Caltrans has already begun integrating more electric vehicles (EVs) into its fleet, including electric heavy equipment and sweepers. However, a significant challenge persists: the lack of sufficient EV charging infrastructure at critical operational sites like maintenance yards, equipment depots, and construction locations. This shortage of chargers leads to operational delays and reduced fleet efficiency, disrupting daily operations. To tackle these issues, Caltrans seeks a comprehensive cost-benefit analysis to identify the most effective and efficient strategy for deploying EV charging infrastructure at these sites. This analysis will help balance the need for expanding charging capabilities with financial and operational constraints, ensuring Caltrans can support its growing EV fleet while advancing sustainability goals.

### WHAT ARE WE DOING?

This research project plans to evaluate the economic impact of installing dedicated EV chargers compared to using public infrastructure by conducting a comprehensive cost-benefit analysis. The analysis will be considering factors such as the type and number of EVs, site-specific charging needs, grid capacity, and projected future demand. Additionally, the analysis aims to compare the financial implications of installing EV chargers at Caltrans facilities with the option of relying on public charging networks, with a focus on highpower Direct Current (DC) fast chargers. This research project will evaluate the most effective and efficient approach for deploying EV chargers to support Caltrans' growing fleet of electric light-duty and heavy-duty vehicles. Caltrans can ensure its infrastructure is scalable and adaptable by anticipating



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long-term requirements, and optimizing investments to support a smooth transition to sustainable and efficient operations.

## WHAT IS OUR GOAL?

The goal of the study is to conduct a comprehensive cost-benefit analysis to guide Caltrans in expanding its EV charging infrastructure. The study aims to compare the economic impacts of installing EV chargers at Caltrans facilities versus relying on public charging networks.

## WHAT IS THE BENEFIT?

The results of this project will provide guidance on the most cost-effective strategy for charging Caltrans' fleet, helping optimize investment decisions while supporting California's transition to zero-emission vehicles by 2035.

## WHAT IS THE PROGRESS TO DATE?

Worked with customers and contractor to finalize the proposal for this research project. Plan to work with the Division of Procurement and Contracts (DPAC) on executing contract for this research project.