

Equipment

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Project Title:  
Integrating Zero Emission Vehicles  
(ZEVs) into the Caltrans Fleet

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Task Manager:  
Azzeddine Benouar  
Transportation Engineer (Electrical)  
Azzeddine.Benouar@dot.ca.gov

## Zero Emission Vehicle (ZEV) Tool Enhancement

Enhancing the ZEV Tool will allow Caltrans to easily use the tool and save time in determining locations that can successfully deploy Zero Emission Vehicles.

### WHAT IS THE NEED?

Caltrans is and will be subject to mandates that require the purchase of ZEVs when replacing fleet vehicles. ZEVs will have varying ranges and refueling characteristics and will require a different fueling infrastructure when compared to the conventionally fueled vehicles being replaced. Caltrans needs to place the ZEVs in locations where they can be used successfully. There is currently no commercially available products or tools available for comparing and selecting optimum ZEV replacement based on usage, charging infrastructure, and vehicle type. Under a project funded by the Division of Research, Innovation and System Information, the research team developed a software tool that is able to analyze historical telematic trip data, ZEV performance characteristics, refueling infrastructure type and location to determine which historical conventionally fueled vehicle trips could be successfully completed with the new ZEV.

### WHAT ARE WE DOING?

The research team will perform architecture changes supporting compatibility with Caltrans Information Technology (IT) standards, protocols, and preferences. These enhancements will not necessarily change the functionality of the tool from the user perspective but will ensure the ZEV Tool operates according to Caltrans IT policies and procedures. The team will collaborate directly with Caltrans staff to clarify the needs and implement the changes in the ZEV Tool architecture. The ZEV Tool architecture will shift to a browser-based or similar architecture to meet Caltrans IT requirements. The programming language, architecture, structure of the ZEV Tool will be modified to meet the approval of Caltrans IT policies, standards, and requirements.



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## WHAT IS OUR GOAL?

The main goal is to update the architecture of the experimental ZEV Tool to meet the requirements of Caltrans IT. This effort includes the researchers continued hosting and development of the tool as well as architecture upgrades specified by Caltrans IT.

## WHAT IS THE BENEFIT?

The ZEV Tool will save time in determining locations that can successfully use the zero emission vehicles. The tool will accelerate the deployment of ZEVs in the Caltrans fleet and help Caltrans reduce carbon emissions from transportation, which accounts for a significant percent of the state's greenhouse gas emissions and smog-forming pollutants.

## WHAT IS THE PROGRESS TO DATE?

We are in the process of getting approvals to proceed with this study