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

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UTC-NCST- Integrating Zero Emission Vehicles (ZEVs) into the Caltrans Fleet

A study to determine how to maximize the use of ZEVs in Caltrans including both the procurement criteria of ZEVs and determining the new fueling station locations to obtain the maximum benefit to align with Caltrans' goals.

WHAT WAS 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 as well as require a different fueling infrastructure when compared to the conventionally fueled vehicles being replaced. The operational challenge will be for Caltrans to place 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.

WHAT WAS OUR GOAL?

The goal was to evaluate Caltrans resources and information suitable as serving as a foundation for a software tool to optimize placement of new ZEV equipment. Integrating resources and data within a software tool and geospatial user interface to evaluate and improve ZEV deployment options.

WHAT DID WE DO?

This project developed a software tool that is able to analyze historical telematic trip data, ZEV performance characteristics, refueling infrastructure type and location. The ZEV Tool determines the feasibility and compatibility of replacing conventionally fueled vehicles ZEV platforms.



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WHAT WAS THE OUTCOME?

Caltrans staff will be able to utilize the ZEV tool to strategically select vehicles as ZEV capable based on vehicle specifications, refueling infrastructure, and prior vehicle activity. The ZEV tool provides evaluation techniques by vehicle classification, region or refueling/charging capabilities. Utilization of the tool will assist the state in the transition to ZEV platforms that are either battery electric or hydrogen fuel cell.

WHAT IS THE BENEFIT?

Optimized ZEV deployment improves the effectiveness of Caltrans operations and improves air quality throughout the state. The ZEV Tool also can be utilized by other state agencies and fleets to expedite ZEV acquisition and deployment.

LEARN MORE

DOI: <https://doi.org/10.7922/G20V8B3F>

IMAGES

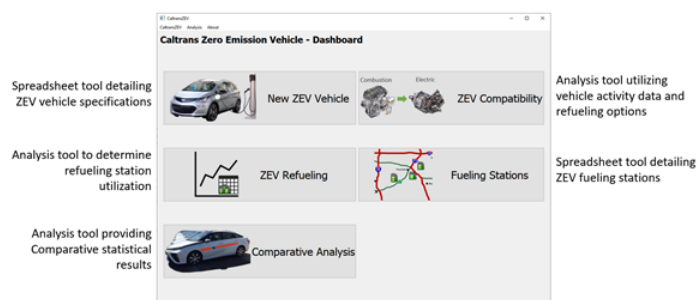


Image 1: Caltrans Zero Emission Vehicle - Dashboard

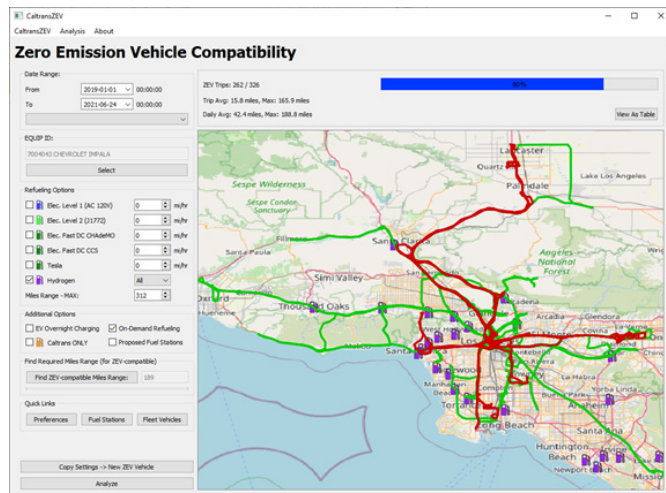


Image 2: Zero Emission Vehicle Compatibility

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