

Traffic Operations

May 2026

Project Title: High Speed Data Distribution and Collection Prototype

Task Number: 4276

Start Date: October 1, 2025

Completion Date: September 30, 2027

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DRISI provides solutions and knowledge that improves California's transportation system.

High Speed Data Distribution and Collection Prototype

California's transportation data systems operate in isolated silos, limiting real time information sharing and coordinated operations. Modern research is needed to develop standards and technologies that enable seamless, statewide data exchange.

WHAT IS THE NEED?

The California Department of Transportation (Caltrans) needs research that can guide the development of modern standards, technologies, and vendor solutions for statewide data exchange. Some of California's digital transportation systems operate as isolated platforms. These systems include the Caltrans Lane Closure System, the Performance Management System, and the Los Angeles County Metropolitan Transportation Authority (LACMTA) Regional Integration of Intelligent Transportation Systems. These have limited connectivity within jurisdictions and almost no connectivity between them. This fragmentation limits real-time information exchange, coordinated operations, and effective Transportation System Management and Operations (TSMO).

WHAT ARE WE DOING?

This project supports the broader effort to build a unified Digital Transportation Infrastructure (DTI) for the State. The work focuses on two major thrusts:

Stakeholder Engagement – Establishing inclusive partnerships with regional and local agencies, public and private data providers, and key organizations such as the Bay Area Metropolitan Transportation Commission and LACMTA. Engagement activities aim to understand stakeholder needs, promote compatible data standards, and strengthen collaboration around data exchange.

Strategic Guidance Development – Creating strategic guidance for DTI by examining a select set of data sources, exploring architecture and design options, identifying potential use cases, and illustrating technologies needed for a full-scale statewide system. The guidance will serve as a

foundation for future conversations and investment decisions.

WHAT IS OUR GOAL?

The goal is to generate clear, actionable guidance for a modern, statewide transportation data ecosystem. This includes identifying feasible design alternatives, demonstrating what is technologically possible, and preparing Caltrans engineers and decision-makers to evaluate future DTI investments. The project also aims to support ongoing coordination with stakeholders to ensure that the recommended architecture meets real operational needs across jurisdictions.

WHAT IS THE BENEFIT?

This research provides immediate value by informing and educating Caltrans staff on data standards, modern digital technologies, and best practices for data exchange. It helps advance a shared statewide understanding of the tools and systems needed for proactive communication of actionable information. Ultimately, it fosters better coordination across jurisdictions, supports the practical implementation of TSMO strategies, and encourages broader investment in a unified transportation data platform.

WHAT IS THE PROGRESS TO DATE?

The kickoff meeting was held on February 5, 2026. An advisory committee was established.

The research team prepared and submitted a formal response to the United States Department of Transportation Request for Information (RFI) on Digital Infrastructure, titled "Request for Information-Research to Support Establishing a National Strategy for Transportation Digital Infrastructure." The RFI received 64 comments from a broad range of stakeholders, including Michigan, Texas, California, and firms Google, Trihydro, and WSP.

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