



Caltrans Division of Research,  
Innovation and System Information

# Research



# Results



Transportation  
Safety and  
Mobility

## JANUARY 2016

**Project Title:**

San Diego Integrated Corridor Management (ICM), Phase 3 Demonstration and Evaluation

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## Integrated Traffic Management for the San Diego County I-15 Corridor

ICM strategies optimize the movement of people and goods

### WHAT IS THE NEED?

Traffic congestion is a serious and growing problem, particularly in major metropolitan areas. Much of the congestion is in critical metropolitan corridors that link activity centers and carry high volumes of people and goods. The current practice in corridor management is fragmented because different agencies are responsible for freeways, surface streets, and transit systems. Efforts to reduce congestion have generally focused on individual networks, with little or no operational or institutional coordination among them. The availability of intelligent transportation systems technologies and a commitment of transportation network partners to work together now make it possible to transform the way corridors are operated and managed. Integrated Corridor Management (ICM) strategies use cutting-edge technology to operate and manage individual transportation systems as a unified network, proactively managing congestion and improving mobility along major transportation corridors.

### WHAT WAS OUR GOAL?

The goal was to improve the movement of people and goods through corridors by developing a unified traffic management system that integrates the operations of the individual transportation networks and optimizes the corridor transportation system as a whole.

### WHAT DID WE DO?

Caltrans, in partnership with the University of California Partners for Advanced Transportation Technology program, worked with the San Diego Association of Governments (SANDAG) to provide technical management, software and systems development, and expertise on transportation technology innovations and applications to foster the successful design, development, implementation, and evaluation of



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the ICM system for the I-15 corridor. The project covers a 20-mile section of I-15 north of SR 52 in San Diego to SR 78 in Escondido, including major arterial routes a few miles east and west of I-15 and the transit agencies that operate within the corridor. This third stage of this multi-phased project sponsored by the federal Integrated Corridor Management Initiative involved demonstrating and evaluating the I-15 ICM system. The I-15 ICM system applies predictive algorithms and real-time modeling tools to forecast traffic across multiple networks and recommend response plans to manage anticipated congestion.

## WHAT WAS THE OUTCOME?

The I-15 ICM system can identify incidents and unusual congestion events to develop traffic management strategies that integrate freeway, arterial, and transit operational elements. For example, the ICM system coordinates the use of freeway ramp meters and arterial traffic signals to improve day-to-day conditions or to route traffic around major incidents. It can implement recommended strategies automatically or following approval by the relevant system operators. The system has also demonstrated the feasibility of using a microscopic traffic simulation model in a real-time operational environment to forecast corridor operations under alternative scenarios.

## WHAT IS THE BENEFIT?

With ICM, metropolitan areas can achieve more efficient movement of people and goods along transportation corridors by taking advantage of technological advances and promoting multi-agency and multimodal coordination. The deployment of the I-15 ICM system demonstrates that corridor performance can be improved using existing capacity by mitigating congestion using real-time response and control.

## LEARN MORE

To view the complete report:  
[www.dot.ca.gov/research/researchreports/reports/2015/CA15-2165\\_FinalReport.pdf](http://www.dot.ca.gov/research/researchreports/reports/2015/CA15-2165_FinalReport.pdf)

## IMAGES



Figure 1: ICM project area along a 20-mile stretch of the I-15 corridor