

Complex Freeway Detection — I-80, Caltrans



“Accurate detection is important for system management. 500+ Sensys Networks wireless vehicle detection stations will be deployed by Caltrans District 4 to meet corridor management detection needs.”

— John Wolf
Assistant Division Chief
Caltrans Traffic Operations

Simple Solution for Complex Freeway Detection

The freeway maze at the east end of the San Francisco Bay Bridge posed a major traffic detection challenge for Caltrans District 4. From the north, California I-80 merges with I-580 just after Powell Street, swelling to a massive 16 lanes. This behemoth bulge includes a split to eastbound I-580 at the approach making it one of most heavily trafficked roadways in California.

On average, 260,000 cars utilize this section of freeway daily to reach San Francisco and East Bay cities—with heavy usage during peak commute hours. Powell Street was considered a priority project for Caltrans’ program to improve vehicle detection systems throughout the state. Given the volume of traffic, installation had to be completed quickly—with minimal lane closure.

Inductive loop installation would require extensive cabling, closures, and expensive trenching to span one of the widest freeway sections in California. Conversely, video, radar and other overhead detection provided insufficient coverage, and posed accuracy issues due to limitations in range, weather dependency, and setback requirements.

Meeting all Caltrans’ requirements—including minimal lane closure, accuracy equivalent to inductive loops, and lowest total cost of ownership—the Sensys Networks VDS240 wireless vehicle detection system was selected for deployment at this vital approach, as well as for use on the Bay Bridge. 561 vehicle detection stations—with more planned—are now deployed throughout Caltrans District 4 as part of their commitment to improving performance measures and providing accurate, real-time traveler information, 24x7.



Dependable Technology

Our rugged in-pavement, wireless magnetic sensor—with a remarkable 10-year battery life—is the core of VDS240’s technology.

Flexible Installation

From one intersection—to an entire region, install detection precisely where needed in less than 15 minutes per unit. No trenching—and easily removed—sensors are reusable should a roadway undergo resurfacing.

Lowest Operating Cost

Virtually maintenance free, wireless sensors install in minutes—and begin transmitting accurate data almost immediately. Remotely managed diagnostics, software upgrades, and configuration streamlines operations, while significantly reducing long-term maintenance costs associated with less advanced technologies—a potential savings of millions of dollars a year.

Universal Platform

Simplifying operations with comprehensive data communications, archiving, and management requirements for performance measurement and analysis, Sensys Networks Universal Platform easily integrates with legacy systems, and supports all traffic detection applications—with one set of tools.



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