



EMPOWER | INNOVATION | CHAMPIONS 2014 INNOVATION FAIR

TRAFFIC OPERATIONS SYSTEM (TOS) REHABILITATION PROGRAM

* Responding to urgent TMC needs for Caltrans, CHP and MTC*

Transportation Management System (TMS)

A collective approach comprised of devices and systems to effectively and efficiently manage the state highway transportation system including the TOS field equipment serving the Traffic Management Center (TMC), CHP, Freeway Service Patrol, and 511.

Why do we have TMS in the Bay Area?

- Real-time Traffic Monitoring
- Incident Management and Response
- Traveler Information
- Corridor Management
- Performance Measurement

TOS field equipment

- Ramp Meters (RM)
- Changeable Message Signs (CMS)
- Closed Circuit TVs (CCTV)
- Vehicle Detection Stations (VDS)
- Highway Advisory Radio (HAR)



Challenges

- The current and planned operational strategies (Integrated Corridor Management, Express Lanes, Freeway Performance Initiative, Active Traffic Management, etc) required a significant expansion of TOS infrastructure over the last two decades and it will continue to grow in the coming years
- Traffic Operations and Maintenance have not been able to fully fund the resource needs of the system growth
- The District experiences a high system monthly degradation rate due to the age of the system devices, wire thefts, etc.
- Equipment degradation competes monthly with repairs at 2:1 requiring monthly investment for performance goal of above 90%

Innovative Solutions and Approaches To Address The Challenges

- Inventory assessment
- District TOS program/process review
- Resource redirection and reorganization
- Technical and coordination workshops
- Regular Caltrans/MTC/CHP focus workgroup meetings
- Emergency contracts in teamwork with industry for the immediate repairs
- Evaluation and implementation of the wire theft deterrent methods/measures
- Wire theft reporting procedure, information sharing and collaboration with CHP
- Bi-weekly progress briefings to District Executive Management team
- Inform stakeholders (Caltrans, MTC, CHP, CMAs, counties and cities, etc) involved in the investment, deployment, use, operation and maintenance of the system
- TOS progress briefings to MTC Operations Subcommittee
- Public updates quarterly at MTC Operations Committee

Results

- Streamlined District TOS troubleshooting and repair processes/procedures
- Involvement and teamwork from all appropriate District Divisions for TOS Rehab Program
- Improved communication and coordination with the stakeholders such as MTC, CHP, etc
- Caltrans/MTC pilot TMS service contract for I-880
- Roadmap to address the long-term TMS/TOS program needs working collaboratively with Caltrans HQ, MTC and local partners
- District TOS system performance improvements and above 90% Goals

TOS Element	#	Operational Performance		
		Jan 2013	Aug 2014	Δ
Ramp Meters	403	86%	94%	+8%
Changeable Message Signs	156	65%	93%	+28%
Closed Circuit TVs	412	44%	75%	+31%
Vehicle Detection Sensors	8539	51%	53%	+2

