

NCHRP 20-68A  
U.S. Domestic Scan Program

Scan 12-02: Advances in Strategies  
for Implementing Integrated  
Corridor Management (ICM)

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## Implementing ICM: Scan Findings, Updates and Next Steps **California Connected Corridors**

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California Department of Transportation (Caltrans)

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# Why ICM?



1955



2013

# Caltrans Has Taken an Important Step!

- By applying what we have more effectively!

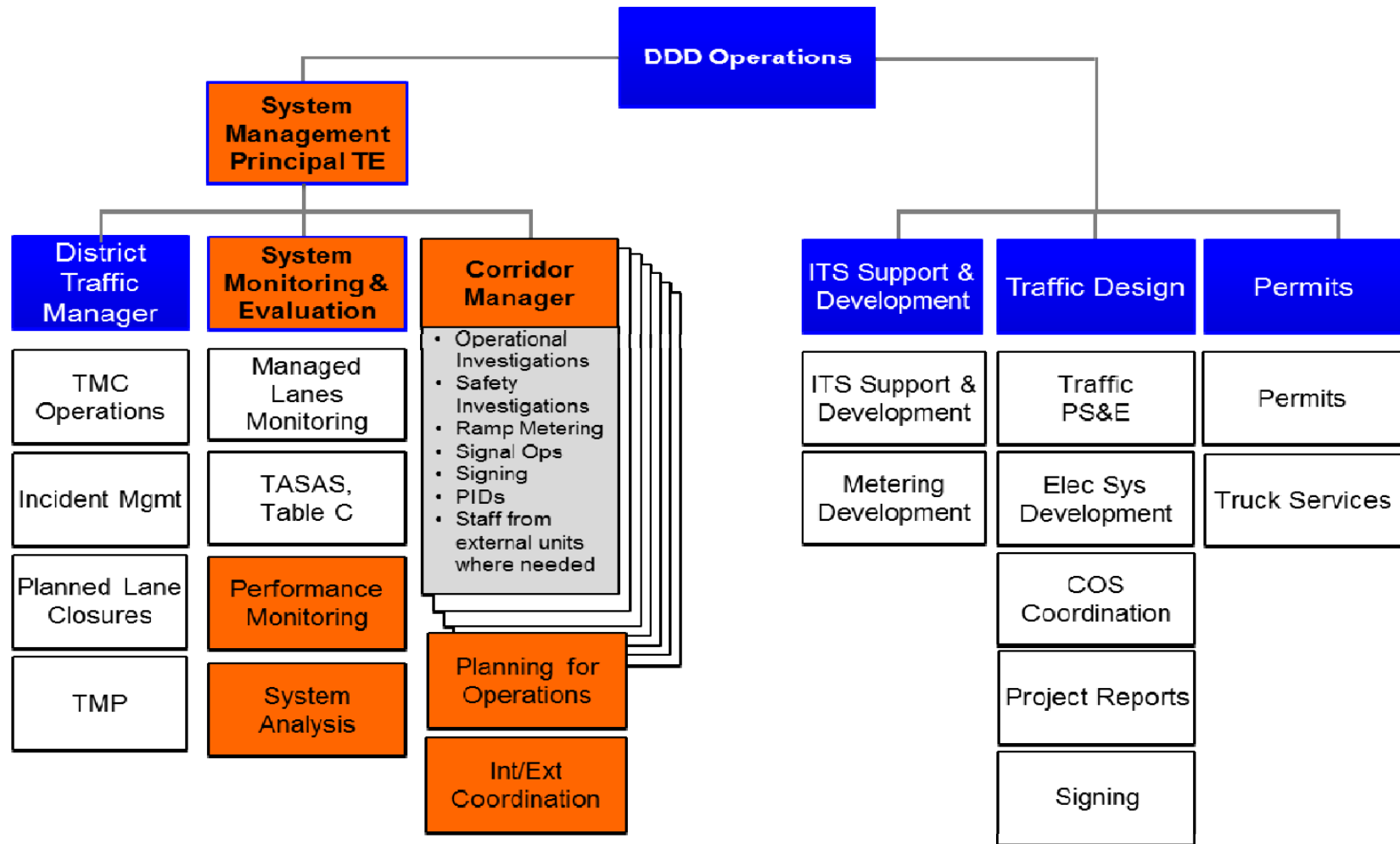
Caltrans Personnel



# Transportation Management System Pilot Corridors

- Traffic Operations - 20 positions to assist in improving the health of ITS equipment and system performance in two corridors:
  - I-210 - South
  - I-80 - North
- Maintenance - Positions to improve efforts to maintain Transportation Management System (TMS) elements statewide.

# Caltrans District Reorganization



# Additional Steps - Integration

## Institutional Integration

Coordination to collaboration between various agencies and jurisdictions that transcends institutional boundaries.

## Operational Integration

Multi-agency and cross-network operational strategies to manage the total capacity and demand of the corridor.

## Technical Integration

Sharing and distribution of information, and system operations and control functions to support the immediate analysis and response.

# Incident Management



# Using - All Available Capacity





# California Connected Corridors

## Statewide Program

- 5 Corridors
  - I-210 D7 Los Angeles
  - I-80 D4 SF Bay Area
  - SR-57 D12 Orange County
  - I-110 D7 Los Angeles
  - SR-91 D12 Orange County
- Funding
- Standardization
- HQ Traffic Ops Reorganization

## Pilot Projects

- D7 I-210
  - Decision Support System (DSS)
    - Forecasting & Modeling
    - Data Hub
    - Rules Engine
- D4 I-80
  - Overhead Gantries
  - Speed Advisories
- D12 SR-57/Anaheim Triangle
  - Data sharing
  - Special event management
- District Traffic Ops Reorganization

# Caltrans' New Mission, Vision and Goals

## **MISSION**

Provide a safe, sustainable, **integrated and efficient transportation system** to enhance California's economy and livability

## **VISION**

A performance-driven, transparent and accountable organization that values its people, resources and partners, and meets new challenges through **leadership, innovation and teamwork**

## **GOAL 4**

### **System Performance**

**Utilize leadership, collaboration and strategic partnerships to develop an integrated transportation system that provides reliable and accessible mobility for travelers**

# Caltrans Director's Policy DP-08

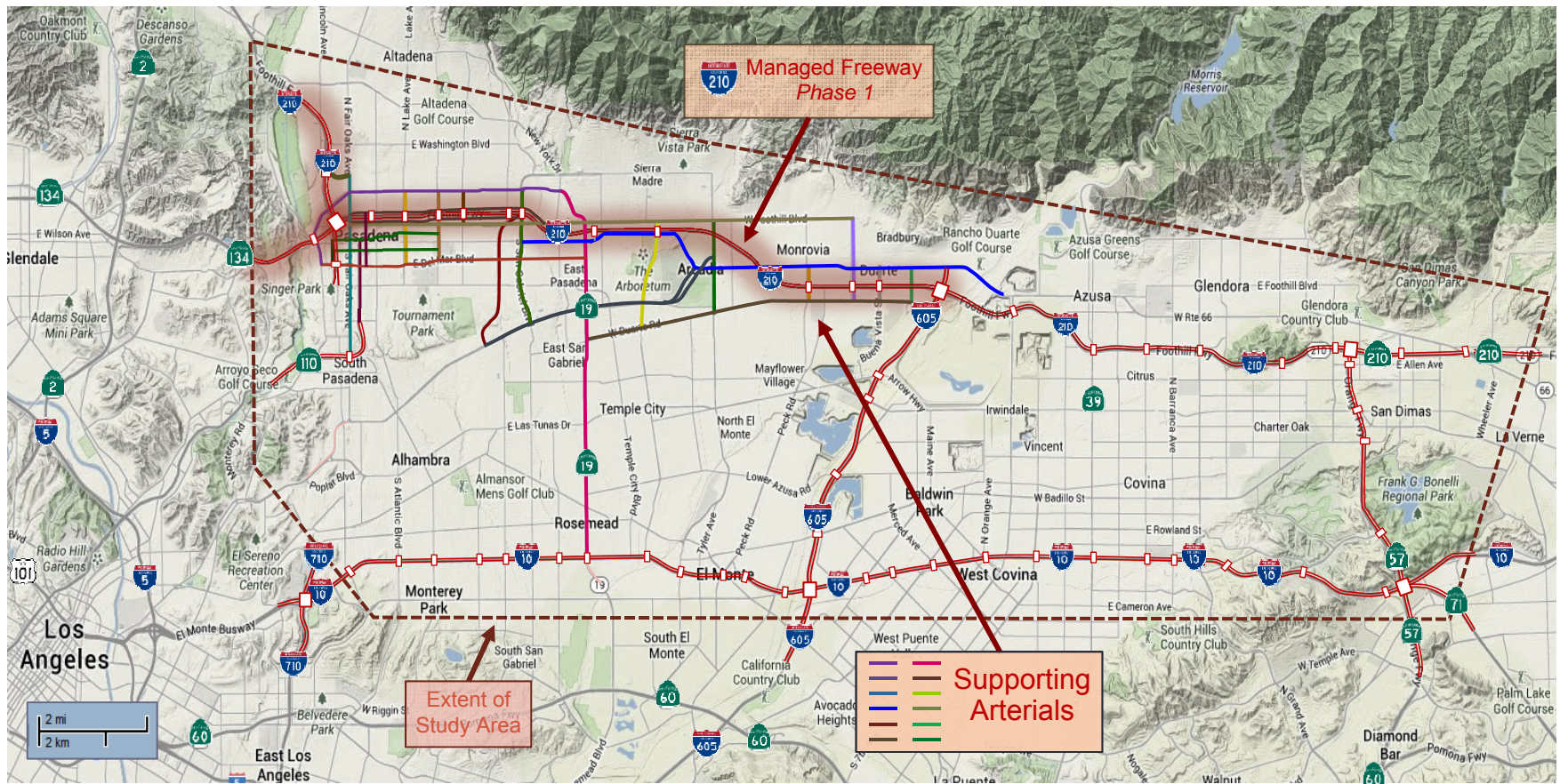
- Caltrans is committed to achieving full Transportation System Management and Operations (TSM&O).
- Strategies to optimize the performance of existing infrastructure.
- Coordinate business processes, systems and technology, performance measurement, culture, organization and workforce
- Collaboration and Partnership with transportation stakeholders to enhance mobility for people and goods on the State's transportation system.

California Department of Transportation		California Department of Transportation
		<i>Serious drought. Help save water!</i>
<i>Director's Policy</i>	<i>Number:</i>	DP-08-R1
	<i>Effective Date:</i>	TBD by DBFS Administrator
	<i>Supersedes:</i>	DP-08 (12/30/1992), DP-26 (08/2006)
	<i>Responsible Program:</i>	Traffic Operations
<i>TITLE</i>	Transportation System Management and Operations	
<i>POLICY</i>	<p>In order to optimize California's transportation system's performance for all system users and modes, the California Department of Transportation (Caltrans) commits to effective Transportation System Management and Operations (TSM&amp;O). TSM&amp;O is the integration of projects, business processes, systems, technology, performance measurement, organization and workforce to actively and efficiently manage California's transportation system. In partnership with others, Caltrans uses TSM&amp;O to preserve system capacity, while improving safety, security, reliability, and sustainability.</p>	
<i>INTENDED RESULTS</i>	<p>The intent of this policy is to promote TSM&amp;O strategies as crucial tools in meeting Caltrans mission to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. TSM&amp;O strategies are essential to a performance-based decision making process Caltrans will use to improve the efficient and effective operation of the transportation network. Examples of TSM&amp;O strategies include:</p> <ul style="list-style-type: none"> <li>• Ramp metering</li> <li>• Traffic signal synchronization</li> <li>• Intelligent Transportation Systems (ITS)</li> <li>• Real time traveler information</li> <li>• Incident and special event management</li> <li>• Managed lanes</li> <li>• Traffic Management Plans (TMPs)</li> <li>• Dynamic lane management</li> </ul> <p>In partnership with regional and local agencies, and other stakeholders, operational strategies form the basis of Integrated Corridor Management (ICM). TSM&amp;O and ICM require proactive integration of the transportation systems to efficiently move people and goods along highly congested urban corridors. TSM&amp;O and ICM strategies improve operations of multimodal transportation infrastructure. Successful TSM&amp;O implementation requires Caltrans improve its capability in the following business elements:</p>	
	<p><small>*Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.*</small></p>	

# Transportation System Management and Operations (TSM&O)

- FHWA Lead Adopter Grant
- 3-day Sub-Regional/Corridor Ops/CMM Workshops
  - D12 Irvine - Anaheim Triangle
  - D4 Oakland - East Bay
  - Others to follow - statewide

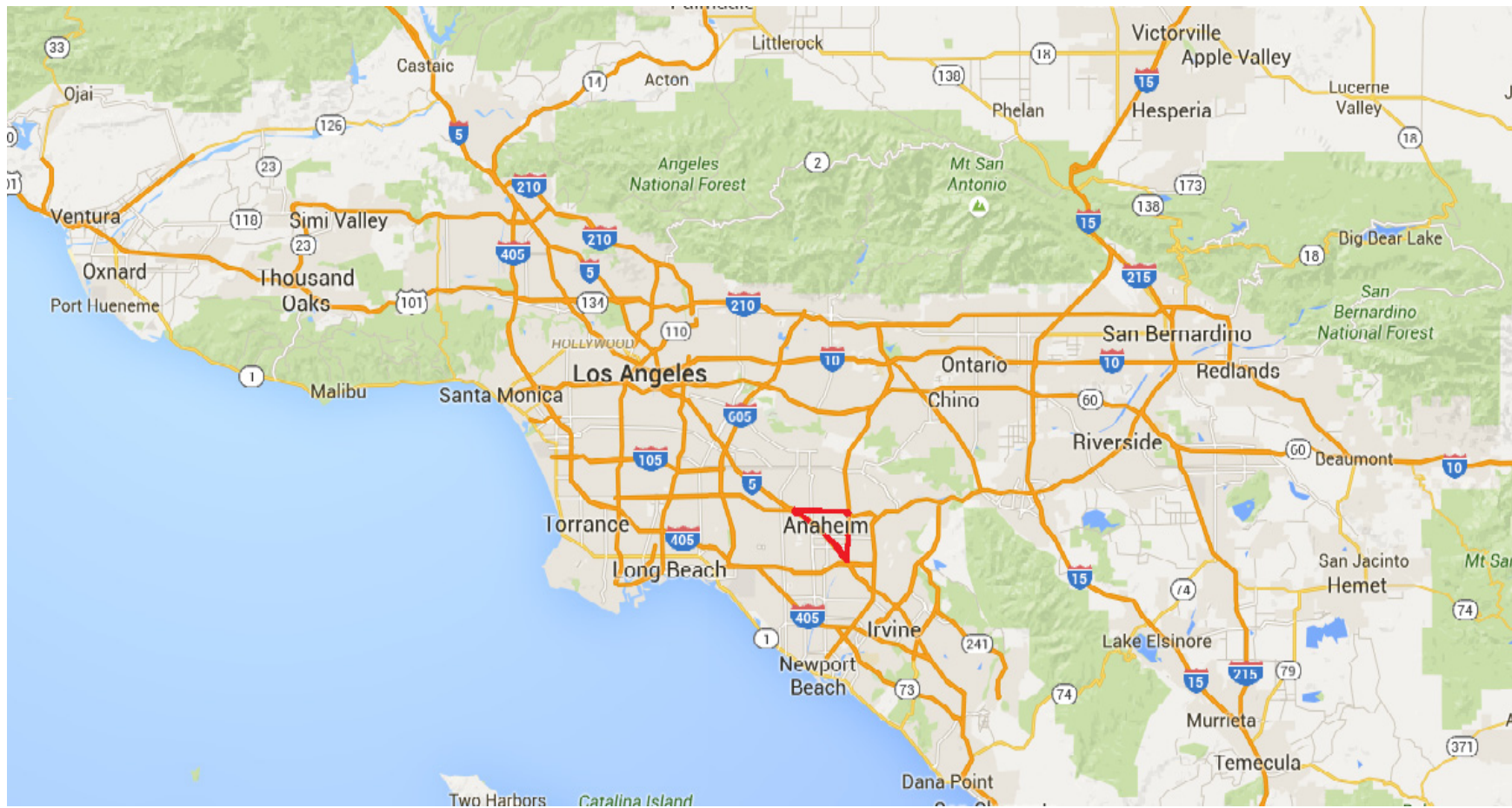
# I-210 Connected Corridor Pilot



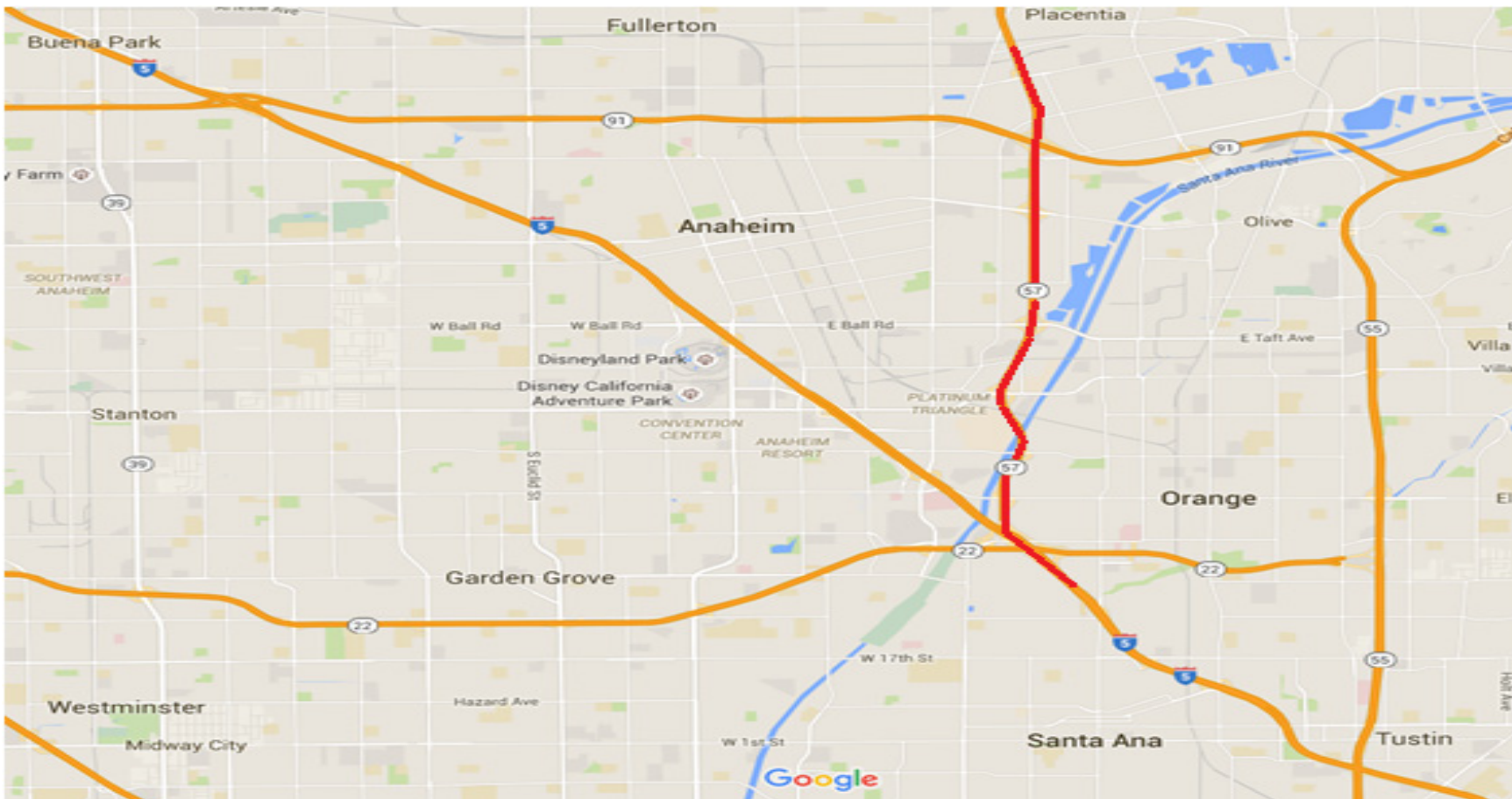
# 210 Update

- Metro Call for Projects - Funding for arterials
- SHOPP Funding - Funding for state highway
- Charter Signed by all Partners!
- ConOps Completed
- System Requirements and User Needs underway

# Anaheim Triangle



# SR-57 - The First Leg of the Triangle





# SR-57 Update

- All ITS Elements on the SR-57 (Signals, Ramp Meters, CCTV, CMS, Traffic Monitoring Stations) upgraded to IP (Internet Protocol) communications this year.
  - Allow for homogenous sharing of data between the Cities/County/Caltrans:
    - Transmission of HD video and traffic data to smartphones/smart cars.
    - Audio Streams of traffic data to smartphones/smart cars.,
    - Vehicle to Infrastructure (V2I) applications.
    - Monitoring of Lighting Systems over the network.

# CALIFORNIA CONNECTED CORRIDORS

<http://connected-corridors.berkeley.edu/>

The Wave of the Future is Here

Ride the Wave!



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