

Los Angeles-Gateway Freight Advanced Traveler Information System (FRATIS)

presented to

Orange County Traffic Engineering Council (OCTEC)

presented by

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Transportation leadership you can trust.



Busiest port complex in North America


16 million

Container-equivalents
processed per year

40%

Of the nation's total import traffic





Dominant port of entry for Pacific Rim/U.S. trade

25%

Of the nation's total export traffic

14

Active Marine Terminals

YTI, SSA, TTI, APL etc.



Robust transportation network

1000

Trucking Companies

694 million

Sqft. of regional warehousing space



41 Million

14 Million

Today

2030 - 2035

 = 1 Million TEUs

Source: I-710 EIS/EIR

80,000 daily truck volumes on I-710




25,000 daily truck volumes on I-710



Today

Future

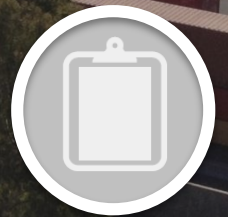
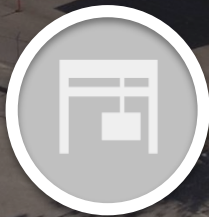
 = 1,000 daily truck trips

Source: I-710 EIS/EIR

Major Issues in Goods Movement Efficiency

Lack of information sharing between trucking and terminals significantly impedes intermodal freight system efficiency

Lack of freight-specific traveler information such as terminal wait times and dynamic routing options



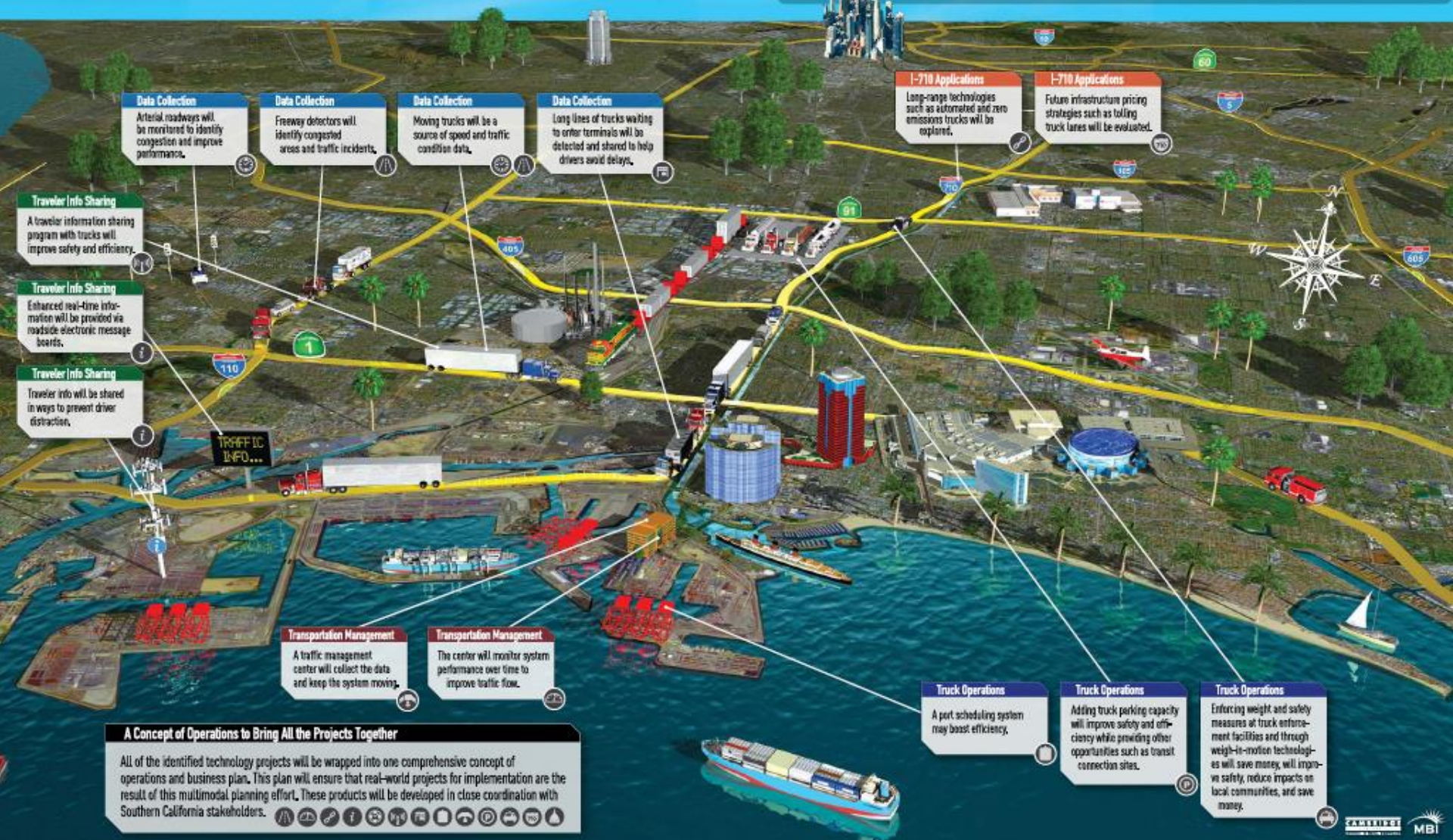
Congestion worsens at L.A.-Long Beach ports as holidays near *(24 October 2014)*

- "We have a meltdown on the harbor; every day it gets worse."
 - » Robert Curry, president of California Cartage (drayage company)
- "Vessels are taking a lot longer to work, and the shift to larger vessels happened much faster than some of these [terminals] initially planned."
 - » Gene Seroka, Port of Los Angeles Executive Director

Los
Angeles
Times

TECHNOLOGY PROJECTS FOR GATEWAY CITIES GOODS MOVEMENT

The Gateway Cities Technology Plan for Goods Movement is developing several technology applications and operations improvements to move goods safely and efficiently in and out of the region. These projects were identified as part of the ITS Integration Plan for Goods Movement with the support of a Southern California ITS Working Group. With solutions like these in place to address the growing demand for Southern California goods movements, the region will see less congested roadways, cleaner air, and more capacity for economic growth.



Data Collection
 Arterial roadways will be monitored to identify congestion and improve performance.

Data Collection
 Freeway detectors will identify congested areas and traffic incidents.

Data Collection
 Moving trucks will be a source of speed and traffic condition data.

Data Collection
 Long lines of trucks waiting to enter terminals will be detected and shared to help drivers avoid delays.

I-710 Applications
 Long-range technologies such as automated and zero emissions trucks will be explored.

I-710 Applications
 Future infrastructure pricing strategies such as tolling truck lanes will be evaluated.

Traveler Info Sharing
 A traveler information sharing program with trucks will improve safety and efficiency.

Traveler Info Sharing
 Enhanced real-time information will be provided via roadside electronic message boards.

Traveler Info Sharing
 Traveler info will be shared in ways to prevent driver distraction.

TRAFFIC INFO...

Transportation Management
 A traffic management center will collect the data and keep the system moving.

Transportation Management
 The center will monitor system performance over time to improve traffic flow.

Truck Operations
 A port scheduling system may boost efficiency.

Truck Operations
 Adding truck parking capacity will improve safety and efficiency while providing other opportunities such as transit connection sites.

Truck Operations
 Enforcing weight and safety measures at truck enforcement facilities and through weigh-in-motion technologies will save money, will improve safety, reduce impacts on local communities, and save money.


A Concept of Operations to Bring All the Projects Together

All of the identified technology projects will be wrapped into one comprehensive concept of operations and business plan. This plan will ensure that real-world projects for implementation are the result of this multimodal planning effort. These products will be developed in close coordination with Southern California stakeholders.

Gateway Cities Technology Plan – Conceptual Diagram



TECHNOLOGY PROJECTS

-  Freight TMH and Data Fusion
-  Freight Traveler Information Dissemination
-  Arterial Smart Corridors
-  Freeway Smart Corridors
-  Autonomous Commercial Vehicles
-  Container Moves Productivity Improvement
-  Truck Enforcement Network System

Testing Connected Vehicle Technologies in California – The FRATIS-LA Test

● The Freight Advanced Traveler Information System (FRATIS) Los Angeles Test is:

- » Funded by RITA as part of the USDOT’s Connected Vehicle Program – “Dynamic Mobility Applications” bundle
- » Enabled by a unique regional public-public partnership – the Gateway Cities ITS Working Group – that has develop and overall freight ITS and connected vehicle program plan for the region
 - Facilitated by LA METRO, the Gateway Cities COG and the Harbor Trucking Association
- » Designed based on extensive user feedback from dispatchers, drivers and marine terminal operators
- » Deployed and operated successfully since early 2014, with continuous system enhancements and expanded use over time.
- » An example to the national of how to successful plan, design, deploy and test advanced ITS and connected vehicle technologies



FRATIS-Los Angeles Components

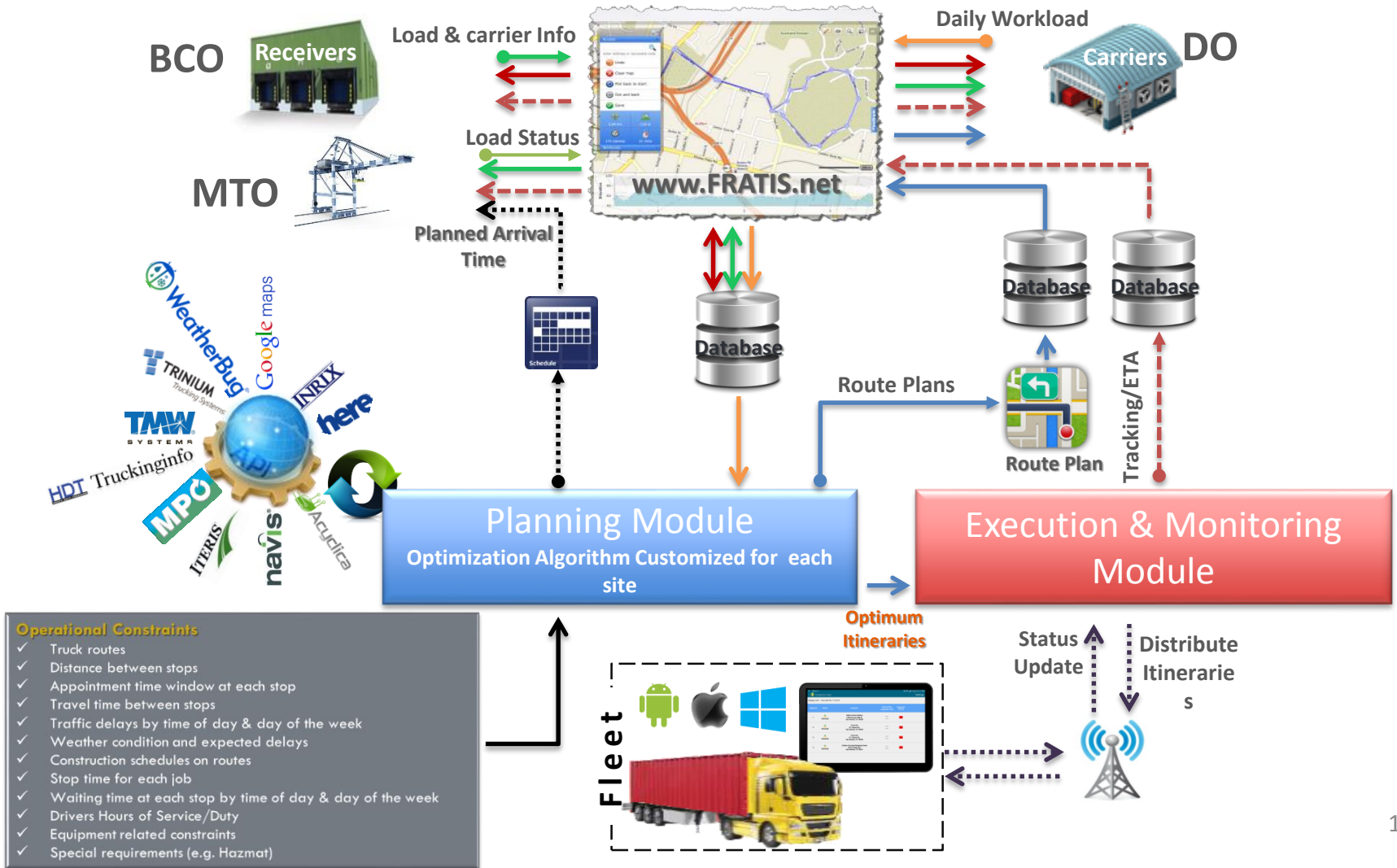
● Drayage-Marine Terminal Operator Information Exchange

- » Two-way messaging between terminal and drayage firm with ETA for dray approaches and MTO-dispatcher messaging and alerts

● Drayage Optimization and Freight-Tailored Traveler Information

- » Daily optimized schedules per driver based on average stop times, predicted travel times, expected terminal wait times, and other constraints
- » Real time terminal queue info, driver messaging, and traffic; dynamic routing for trucks through in-cab navigation TomTom devices

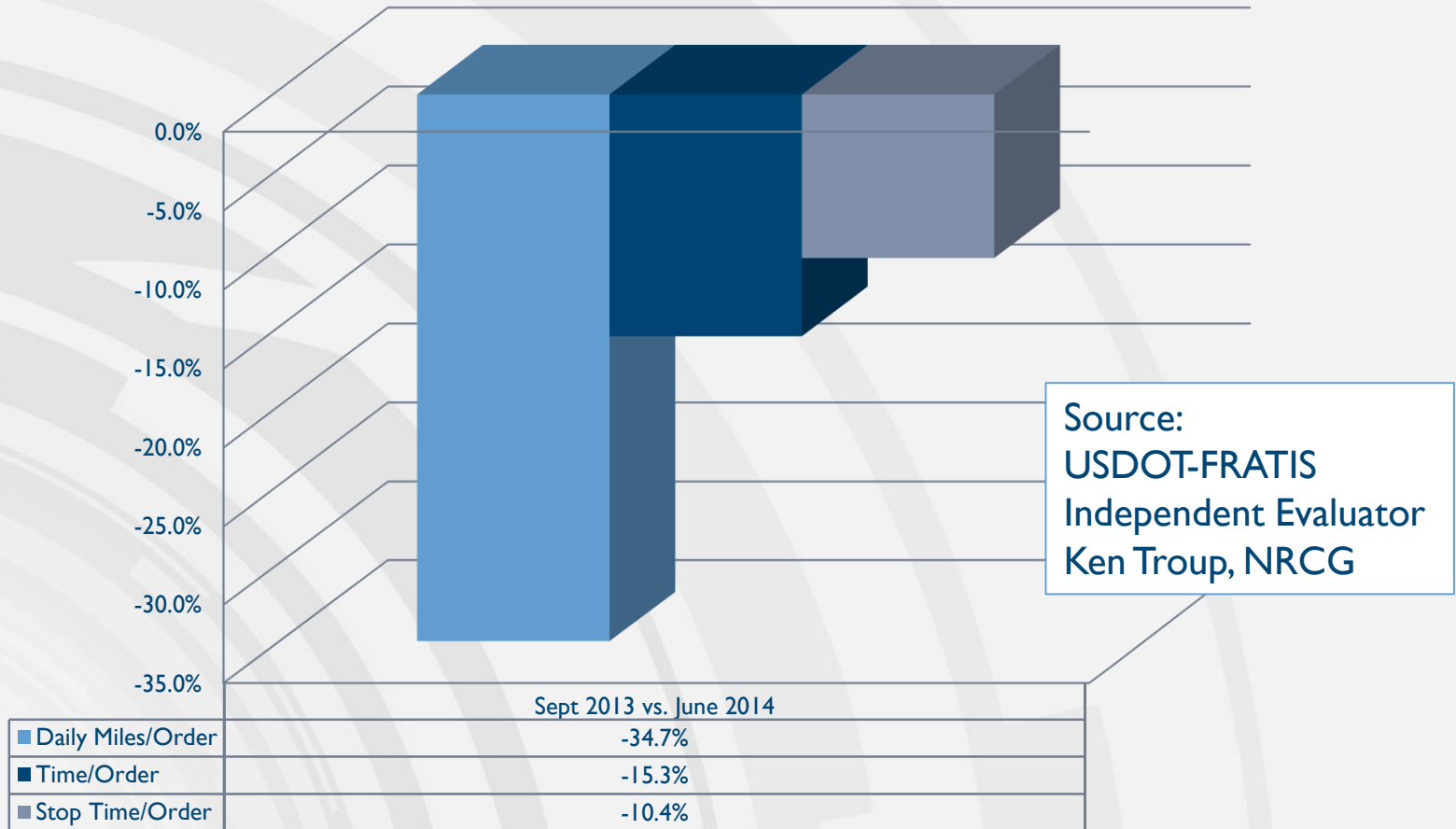
LA FRATIS Overview



FRATIS Optimization Preliminary Results

Two-month Comparison - Metrics Per Order

FRATIS LA Data Comparison: Sept 2013 vs. June 2014



Benefits of FRATIS Trucking-MTO Communications System Testing

- If deployed on a large scale, and supported by all parties (including shippers), has the potential to radically improved port terminal and trucking efficiencies
 - » Through “dynamic appointments”
- Has successfully brought together the trucking and terminal operations communities in the ports region
 - » A major positive development

Next Phases

- ④ Expansion of the LA FRATIS deployment
- ④ Expanding into Connected Vehicle Pilot

USDOT Connected Vehicle Efforts

- Fall 2012 – USDOT Connected Vehicle Safety Pilot
- March 2014 – USDOT Released Request for Information for the Connected Vehicle Pilot Deployment Program
- January 30, 2015 – FHWA Solicitation for Wave 1 Pilot Deployment Concepts
- September 2015 – Wave 1 Pilot Deployment Awards
- Early 2017 – Solicitation for Wave 2 Pilot Deployment Concepts
- September 2017 – Wave 2 Pilot Deployment Awards
- September 2020 – Pilot Deployments Complete

USDOT Connected Vehicle Pilot Deployment

- ③ Each Wave of the Connected Vehicle Pilot Deployment Program will have 3 Phases of Work
 - » Phase 1 – Concept Development (12 Months)
 - » Phase 2 – Design, Build, Test (Up to 20 months)
 - » Phase 3 – Maintain/Operate Pilot (Minimum of 18 months)
- ③ Approximately \$100 million in the Connected Vehicle Pilot Deployment Program
- ③ USDOT, ITS-JPO Website for Connected Vehicle Research
 - » www.its.dot.gov

California's Response

- Formed Statewide Collaborative called “One California”



- » Supported by County of Los Angeles Department of Public Works, California PATH, UC Riverside CE-CERT, and Iteris, Inc.
- LA, SF, and SD populations are 2nd, 5th, and 9th among Top 10 US Cities
- Leaders in Technology and Research
- Home to innovative technology companies

One California Proposal

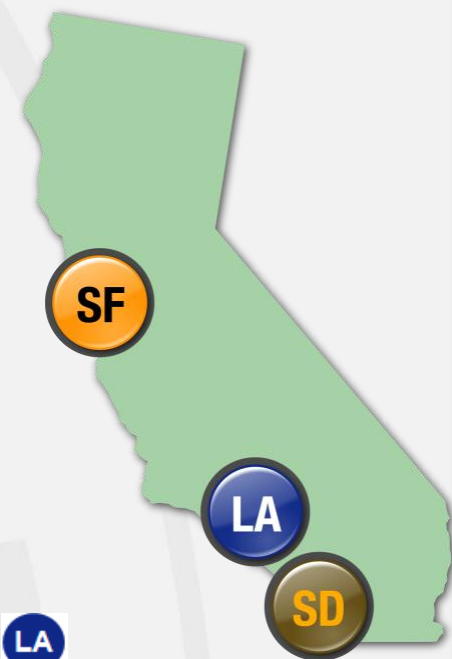
- Broad Agency Announcement was seeking proposals for Phase 1 work (Concept of Operations). Phase 2 and 3 to follow after review.
- 16 applications in total
 - » Mobility, Environmental, and Safety
 - » Freight, Transit, Pedestrian
- Seven in each region (LA, SF, SD)
- Nine of 16 apps utilize DSRC communications, with the remaining using cellular

One California Proposal

- Caltrans released an Request for Interest to the private industry
 - » 55 Industry Responses
- Seeking maximum Federal funding (\$20 million)
- Phase I Contractor – Iteris, Inc.
- September 2015 – FHWA to announce Award for Wave I

One California Stakeholders

- Caltrans Headquarters and District 4, 7, and 11 **SF** **LA** **SD**
- City/County Association of Governments of San Mateo County (C/CAG) **SF**
- Cities of Carson, Compton, Long Beach, LA, San Diego, San Jose, Santa Clara **SF** **LA** **SD**
- Gateway Cities Council of Governments (GCCOG) **LA**
- Harbor Trucking Association (HTA) **LA**
- Long Beach Transit (LBT) **LA**
- County of Los Angeles Department of Public Works (LADPW) **LA**
- Metropolitan Transit System (MTS) **SD**
- Ports of Long Beach and Los Angeles (POLB, POLA) **LA**
- Prospect Silicon Valley (ProspectSV) **SF**
- San Mateo County Transit District (SamTrans) **SF**
- Santa Clara Valley Transportation Authority (VTA) **SF**
- South Coast Air Quality Management District (AQMD) **LA**
- Southern California Association of Governments (SCAG) **LA**





Questions?