Connected Corridors
I-210 Pilot Project

California Highway Patrol
Agenda

- Introductions
- Project Overview
- Project Schedule
- Project Outreach
- CHP Involvement
- Next Steps
Caltrans and CHP

- Caltrans’ mission is to provide a safe, sustainable, integrated, and efficient transportation system to enhance California’s economy and livability.

- The CHP’s mission is to provide the highest level of safety, service, and security on state freeways and highways to the people of California.

- Caltrans and the CHP work closely together (LARTMC), incident management, traffic control, etc.

- CHP will be an important partner for the I-210 project.
Recent Incidents on the I-210

- LA Times, April 2\textsuperscript{nd}: “Big-rig crashes in rain close freeway in Pasadena two days in a row”

- LA Times, April 1\textsuperscript{st}: “Jackknifed big rig blocks access to 210 Freeway in Pasadena”

- LA Times, December 17, 2013: “Fiery crash involving 2 big rigs closes westbound 210 Freeway”
November 21, 2013 Incident on the I-210

E/210 to E/210
Tunnel Accident
Nov. 21, 2013
First Rain of the Season
November 21, 2013 Incident on the I-210

E/210 @ Madre
Nov. 21, 2013
First Rain of the Season
Major Incidents on I-210 Corridor 2009 thru 2012

- Total of 5,942 incidents just on I-210 freeway in 2013 (495 per month).
- Total of 1,684 collisions just on I-210 freeway in 2010 (140 per month).
Current Operations

- **Unused Capacity** - Transportation corridors often contain unused capacity in the non-peak direction on freeways and arterials; single-occupant vehicles and transit services could be leveraged to help reduce congestion.

- **Traveler Information** - Traffic information today is often fragmented, outdated, or not completely useful.

- **Networks are independently operated** - Efforts to date to "reduce congestion" have focused on optimization of individual networks.
Integrated Corridor Management (ICM)

- With ICM, partner agencies manage the transportation corridor as a system, rather than managing individual assets, in order to improve travel time reliability and predictability, help manage congestion, and empower travelers through better information and more choices through all facilities and modes.
## Existing ICM Efforts (United States)

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Corridor Type</th>
<th>Lead Agencies</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-15 Diego</td>
<td>Suburban</td>
<td>SANDAG</td>
<td>• ConOps and System Requirements developed in 2008</td>
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<td>• Simulation evaluation in 2009-2010</td>
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<td>• System launched <strong>October 2013</strong></td>
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<td>• Currently in evaluation phase</td>
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<tr>
<td>US-75 Dallas</td>
<td>Suburban &amp; urban</td>
<td>DART</td>
<td>• ConOps and System Requirements developed in 2008</td>
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<td>• Currently in evaluation phase</td>
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<tr>
<td>I-80 Bay Area</td>
<td>Suburban &amp; urban</td>
<td>MTC / Caltrans</td>
<td>• ConOps developed in 2010</td>
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<td></td>
<td></td>
<td></td>
<td>• Groundbreaking in October 2012</td>
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<td></td>
<td>• Expected to be completed <strong>Summer 2015</strong></td>
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<tr>
<td>I-95 / I-395Virginia</td>
<td>Rural, Suburban &amp; Urban</td>
<td>Virginia DOT</td>
<td>• ConOps development initiated in 2012</td>
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<td>• Currently developing deployment plan &amp; partnerships</td>
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The I-210 “Connected Corridors Pilot” is the first Caltrans-led ICM effort in California and the first corridor site in the “ICM California” plan.

Caltrans will, with equal buy in and cooperation of stakeholders, lead the planning, implementation and ongoing operational support for 50 corridor segments in California over the next ten years.

The Connected Corridors Program will mark the beginning of a paradigm shift away from building our way out of congestion, to managing and coordinating our way to improved transportation network performance.
I-210 Project Corridor

Phase 1 Area of Interest

Current Phase 1 Partners Identified (but are not limited to):

- Caltrans, Metro, LA County, Pasadena, Arcadia, Monrovia, Duarte, SGVCOG, UC Berkeley/PATH (Phase 2 – East to La Verne)
Freeway and Arterial Traffic Control
Light-Rail, Transitway & Commuter Rail

LA Metro Silver Line
LA Metro Gold Line
Gold Line Foothill Extension Phase 2A
Gold Line Foothill Extension Phase 2B
Metrolink San Bernardino
Transit Station

Late 2015 Planned Opening

West Covina
San Dimas (Planned)
Covina
Baldwin Park
El Monte Bus Station
El Monte Metrolink
Monrovia
Duarte
Irwindale
Alameda
Citrus
Memorial Park
Del Mar
Fillmore
Mission
Cal State Los Angeles
Parking Facilities

- Metro Silver Line
- Metro Gold Line
- Gold Line Extension Phase 2A
- Gold Line Extension Phase 2B
- Metrolink San Bernardino
- Express Bus Lines

- Existing LA Metro Lots
- Future LA Metro Lots (late 2015)
- Metrolink Lots
- Caltrans Lots
- Los Angeles County Lots
- Other Park-and-Ride Lots

Parking Fee
Paid Reserved Parking

Caltrans
Metro
Express Bus Lines
Metrolink
Metrolink San Bernardino
Los Angeles County Lots
Other Park-and-Ride Lots

Los Angeles County

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Development and deployment of an ICM system to promote coordinated operations along the I-210

Initial primary focus on managing incidents/events, with gradual expansion to transit, parking and demand management.
Define Incidents and Strategies Approach

- Define incidents/events categories

  **Location(s):**
  - Arterial
  - Arterial I/S
  - Freeway ramp
  - Freeway mainline
  - HOV Lane

  **Event Type:**
  - Stall/Collision
  - Scheduled Closure
  - Police Activity
  - Emergency Event
  - Hazmat Spill
  - Other

  **Lanes Blocked:**
  - 1 Lane
  - 2 Lanes
  - 3 Lanes
  - ... or % Capacity

  **Impact:**
  - Minor
  - Major
  - Long

- Develop response strategies to defined incident categories
  - Develop multiple response options (play book of 3-5 options, from low impact to high impact) for each category or type of incident
  - Develop process for best option selection (modeling, analysis, testing, etc.)
  - Download selected response option to all integrated ATMS/TCS
Project Milestone Schedule

Start: 10/1/13
Finish: 12/29/17
2/27/2014

1. Project Initiation & Management
   10/1/13 - 12/29/17

2. Outreach Activities
   10/1/13 - 12/29/17

3. Corridor Preparation
   11/3/13 - 12/31/15

4. Concept Exploration & User
   11/1/13 - 8/8/14

5. SEMP
   6/30/14 - 12/16/14

6. ConOps
   7/28/14 -

7. System
   12/1/14 - 5/12/15

8. 1/1/15 -

9. Technical System Design
   1/12/15 - 1/11/16

10. Component Development
    4/1/15 - 5/1/16

11. System Integration
    7/1/15 - 8/1/16

12. 5/1/15 -

13. Technical Deployment
    11/4/15 - 10/28/16

14. System Validation and Acceptance
    5/1/15 - 10/28/16

15. User Training
    5/1/16 - 9/29/16

    11/1/16 - 10/31/17

17. 9/1/17 -

Lessons Learned

Institutional Deployment
Institutional Deployment
Communications & Outreach

- Initial and technical meetings with Pasadena, Arcadia, Monrovia, Duarte and LA County Department of Public Works
- User Needs Workshop held on February 27th
- Presentations to several LA Metro subcommittees in March
- Public Announcement/Launch meetings are just starting (first meeting was March 12); soft launch in summer 2014 via a Webinar Series
- Presentation to Supervisor Antonovich’s Transportation Committee on March 12th
- Meeting with San Gabriel Valley Council of Governments on March 18
- Meeting with CHP on April 22nd, meeting with SCAG on April 23rd
- City Council, Technical Advisory Committee, and/or City Manager meeting to be determined
- Meetings to be scheduled with Metro bus/rail, Foothill Transit, SCAG
I-210 Pilot Project Goals

- **Bring together corridor stakeholders** to create an environment for mutual cooperation, including sharing knowledge, developing working pilots, and researching and resolving key issues.

- **Formulate a roadmap** for the cost-effective implementation of future innovations.

- Develop and deploy an integrated, **advanced decision support system** for use by the stakeholders as they actively manage the corridor.

- Develop a **set of performance measures** to quantify the successes of the Connected Corridors pilot project.

- **Demonstrate project effectiveness** that can lead to additional phases and funding for more advanced tools and capabilities.

- Develop a pilot system that **can be replicated** on other corridors and be a model for other corridors in the state and country.
How can Connected Corridors and the CHP work together?

- Incorporate incident response (CHP, FSP, TMT) into planning for the pilot on I-210
- Keep the public informed
- Other

Additional Presentations to the CHP and other first responders

- CHP participation
- CHP resource needs