California Department of Transportation

Session 1: Data

Integrating data; legal, institutional issues; probe data use; crowdsourcing data

What data sources are you integrating?

- Traffic Detection
  - Almost 43,000 lanes of detection statewide, covered by 6,800 controllers
  - Single loops, dual loops, magnetometers, and radar technologies
  - Bluetooth/Wifi readers to capture speed and travel time data in rural locations
- WAZE
  - Recent integration
  - Testing for use in incident detection
- Decision Support System
  - In use on I-15 in San Diego area
  - Includes decisions made on local (non-State) systems

What data sources are you integrating? (continued)

- Probe Data
  - Currently used by local partners to support 511 operations
  - Complete coverage in one district (District 8) for traveler information
  - Part of upcoming detection plan

- Future (with local agencies/partners):
  - Video
  - CMS Control
  - Traffic Signals Data
  - Vehicle to Infrastructure (V2I)

What type of data sharing agreements do you have?

- Connected Corridor Operations
  - Collect data from multiple local agencies to facilitate parallel corridor movement
    - DSS, Traffic Sensors, Rail, Bus, Police, Coroner
  - Share data to local partners (traffic, operational decisions, closures, emergencies)

- Caltrans Performance Management System (PeMS)
  - Live data sharing of all traffic data through portal

- WAZE
  - Negotiated sharing agreement

- Future
  - Currently working towards the development of a co-op to with Caltrans legal to include IT on data sharing (cybersecurity). This involves reimbursed work for labor/equipment from local agencies.

Probe Data

- Full real-time probe data integration in one district (D8)
  - Currently using for traveler information
  - Studying viability for statewide implementation
- Currently not using probe data for any operational purposes, but plan to use it for interregional trip info
  - Mature detection network only covers metro areas
- Data use agreements have been a huge problem
  - Restrictions on sharing, raw data and processed products
- Data resolution is an issue
  - No per-lane information
  - No volume information

Probe Data (continued)

- NPMRDS
  - Currently integrating into PeMS
  - Can help determine operational needs in areas without detection

Crowdsourcing

- No crowdsourcing efforts (other than WAZE)

Legal and Institutional Challenges

- Laws must be changed for some new operational strategies
  - Hard shoulder running
- Connected Corridor Operation is a large change from normal operation
  - Tight integration with local agencies
  - Bringing more parties to the table than before
- Probe data is a legal and organizational challenge
  - Long term goal to purchase statewide coverage for use by DOT and local agencies
- Difficulties in statewide standardization in ITS equipment and software
  - Operational software customized for different regions
  - Fast-moving technology and slow project delivery means a big variety of hardware and software
  - Centralized management can be difficult