Connected Corridors
Face-to-Face Meeting

Tuesday, June 3 – 1:30 pm
CT District 7
Agenda

- Welcome and Introductions
- Schedule and Status
- System Engineering Documents Update
- Outreach Update
- Corridor Inventory Update
- Analysis, Modeling, and Simulation Update
- Modeling and D7 Discussion
- PATH Messaging
System Engineering Documents

- Project Management Plan (PMP) - Ready for review on Friday
- Corridor Description – Ready this summer
- Concept of Operations is underway and on schedule
- System Engineering Management Plan (SEMP) – Is underway

- Other documentation
  - Web site is documenting our progress and storing documents
  - Selection process, research papers, ongoing notes, monthly reports, etc
  - [http://connected-corridors.berkeley.edu](http://connected-corridors.berkeley.edu)
  - [http://ccdocs.berkeley.edu/](http://ccdocs.berkeley.edu/)
Outreach Update

- **May**
  - Pasadena City Council; Metro Bus

- **June/July**
  - June 3: CHP and Arcadia City Council
  - June 26: Pasadena TAC
  - July 1: Metro Rail

- **To be Confirmed:**
  - Foothill Transit, Duarte and Monrovia City Councils, SCAQMD
  - Follow up with SCAG
Data Collection – 210 Freeway

- Data Collection for Freeway is complete

- However Data Quality is Problematic
  - 30-40% of mainline/ramp detectors are not working
  - We do not need 100% working but we need 80-90% working
  - We need to ensure there are not groups of non working sensors

- Appears that communication to/from ramp meters is working

- Analyzing whether additional sensors are needed

- Update on PID?
# Data Collection Arterial – Status

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<th>Arcadia</th>
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<td>Approach Flows</td>
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<td>Detector Layouts</td>
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Data uses: Simulation modeling and calibration
Operational analyses
Traffic Signals – TCS Host

- McCain - QuickNet Pro
- Siemens - i2tms
- SCATS
- Transcore - Series 2000
- Transcore - TransSuite
- KITS - LA County
- KITS - Duarte
- KITS - San Marino
- No central control (Caltrans)
- No central control (cities)
- Not determined
- Stop Controlled

Need to verify information for Duarte signals.
## Data Collection – Intersection Flow Data

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</table>
| **Approach Flows**   | • No active data archiving from ATMS  
• Waiting for information on historical data availability | • No active data collection from KITS  
• Waiting for information on historical data availability | • Waiting to receive 1-week historical count sample from i2tms  
• No data archival from QNPro and Series 2000 systems | • Access to TransSuite historical 5-min count archive | • No current data archiving  
• No historical data available | • Pending inquiry |
| **Turning Counts**   | • No active data collection from ATMS  
• Waiting for information on historical data availability | • No active data collection from KITS  
• Waiting for information on historical data availability | • Data available to be assessed following receipt of historical data sample (likely limited data) | • Left-turn counts available for several intersections  
• Right-turn proportion generally unavailable | • No current data archiving  
• No historical data available | • Pending inquiry |
| **Detector Layouts** | • Obtained for all intersections | • Waiting to receive requested information | • Waiting to receive diagrams for all intersections | • Obtained for all intersections | • Information to be requested | • Information to be requested |
## Data Collection – Signal Control

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<tr>
<td><strong>Timing Sheets</strong></td>
<td>• Sheets obtained for all intersections</td>
<td>• Waiting to receive requested timing sheets</td>
<td>• Request pending development of city-wide Vissim Model</td>
<td>• Sheets obtained for all intersections</td>
<td>• Waiting to receive requested timing sheets</td>
<td>• Waiting to receive request timing sheets</td>
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<tr>
<td><strong>Controller Type</strong></td>
<td>• Information obtained for all intersections</td>
<td>• Waiting to receive requested information</td>
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<tr>
<td><strong>Controller Firmware</strong></td>
<td>• Information obtained for all intersections</td>
<td>• Waiting to receive requested information</td>
<td>• Information obtained for 1/3 of intersections</td>
<td>• Information obtained for all intersections</td>
<td>• Waiting to receive requested information</td>
<td>• Waiting to receive requested information</td>
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<tr>
<td><strong>Communication Type</strong></td>
<td>• Information to be requested</td>
<td>• Information to be requested</td>
<td>• Information obtained for all intersections</td>
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Knowledge Transfer between D7 and HQ

- Tomorrow Nick, Monica, and I will suggest dates to D7 for a meeting in Sacramento with Monica’s team
  - Ramp Metering personnel
  - Signal personnel
  - ATMS personnel
  - Overall Architecture personnel

- So that we can ensure
  - Clear understanding of strategic goals
  - Understanding of what is possible and planned
  - Priority funding and focus for 210 upgrades
AMS (Analysis, Modeling and Simulation)

- **Why do we do AMS**
  - Enhance common understanding among stakeholders
  - Test the applicability of various control strategies based on ramp meters, signal lights, and the managed routing of travelers (roads, transit, etc). Others are possible.
  - Justification for repairing and upgrading control elements.

- **Analysis** – Gather information to understand the transportation network, the field elements, the demand and the acceptable high level components of a coordinated response (possible arterials for example)

- **Modeling** – Initializing and calibrating a computer program that uses mathematical models to conduct experiments with traffic events on a transportation system

- **Simulation** – The running of a model using a defined set of demand and control strategies (ramp metering rates, signal rates, etc) in order to generate system metrics and just “see what happens”
AMS Approach

- Analyze the Corridor – Gather the data – As Francois has discussed
- Build and calibrate the models
  - Corridor wide macro models based on PATH Research
  - Site specific meso models using the TSS product Aimsun
  - Utilize existing models – VISSIM model of Pasadena for micro models
- Define the scenarios
  - Incidents on highways and arterials: For an incident in a certain location determine system metrics for:
    - Current conditions
    - Full utilization of integration use of current system elements
    - Better system management metrics with better system elements
- Run the simulations to determine the change in system metrics
  - First simulation we are running is analysis of an incident around Arcadia as we have calibration data
- Use this information to guide
  - Generation of strategies and response plans for use in the Concept of Operations
  - Prioritization and justification for funding requests
Preparing for AMS Outreach

- As we carry forward our AMS effort we have several goals
  - Educate D7 and other stakeholders in our modeling techniques
  - Work with D7 to help define and refine these modeling tools
  - Begin working with our cities and county to ensure our AMS efforts are providing the right type of information in the right formats for our stakeholders

- Identify Core Stakeholders who would like to participate
  - Caltrans D7
  - Metro
  - Others?
PATH Messaging

- Is PATH competing with industry?
- Pilot – Why was it a no-bid contract?
- What will PATH’s involvement be in work on future corridors?
- Will there be large pilot phase procurements?
- How will PATH’s research be carried forward to production?
- Will the SANDAG system be used in the pilot?
- How should we use the “Connected Corridors” name?
- Will any software be developed and integrated as part of the pilot?
Closing – Other Items
I-210 Pilot – Overall Schedule

2014

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

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

3. Corridor Preparation
   11/1/13 - 10/3/16

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

5. Analysis, Modeling and Simulation
   1/6/14 - 3/4/15

6. SEMP
   6/13/14 - 12/22/14

7. ConOps
   7/28/14 - 1/20/15

2015

8. System Reqs
   12/12/14 - 4/30/15

Start
10/1/13