Connected Corridors
Face-to-Face Meeting

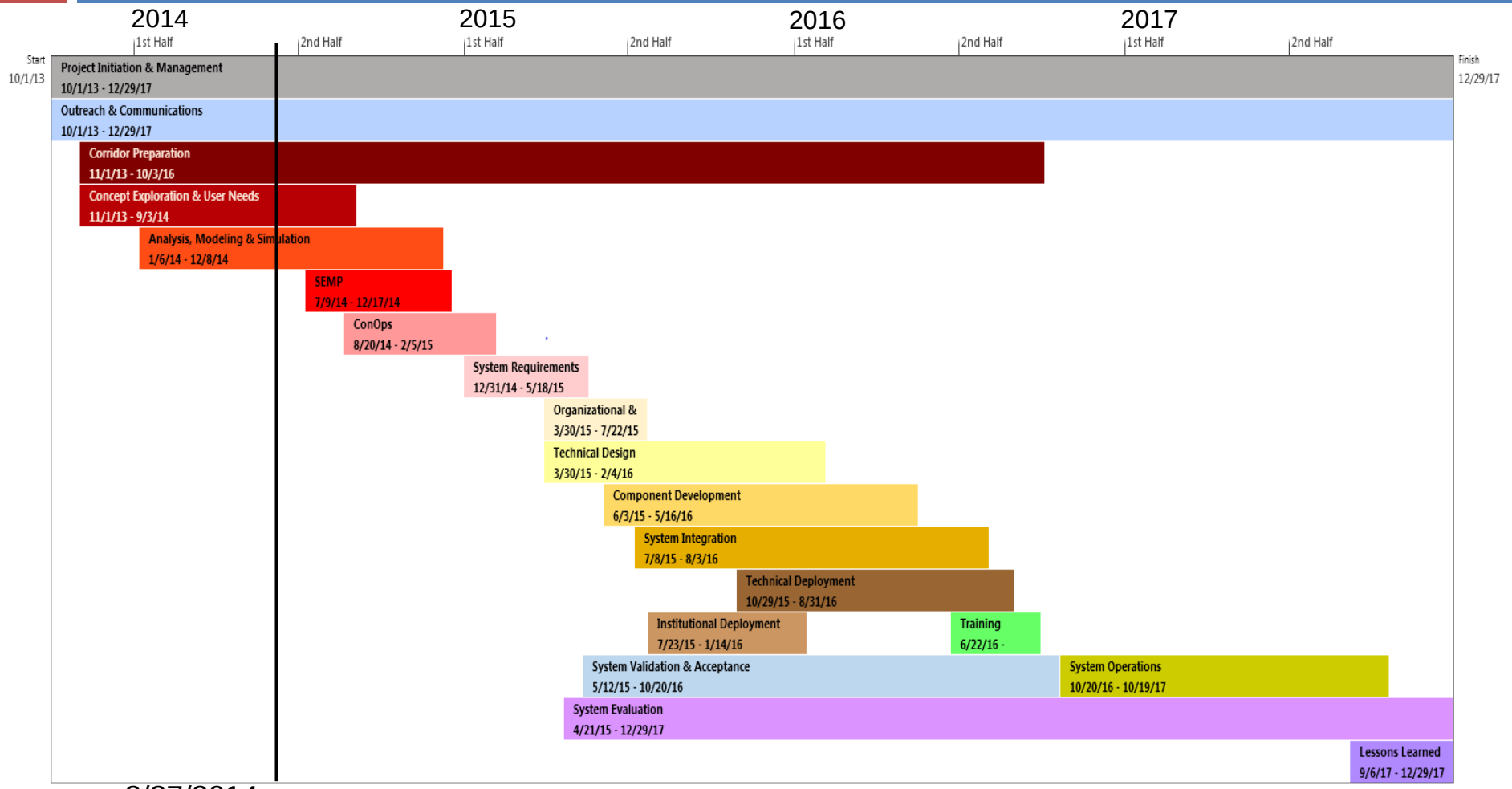
Tuesday, June 3 – 1:30 pm
CT District 7

June 3, 2014

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

I-210 Pilot Schedule and Status



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://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

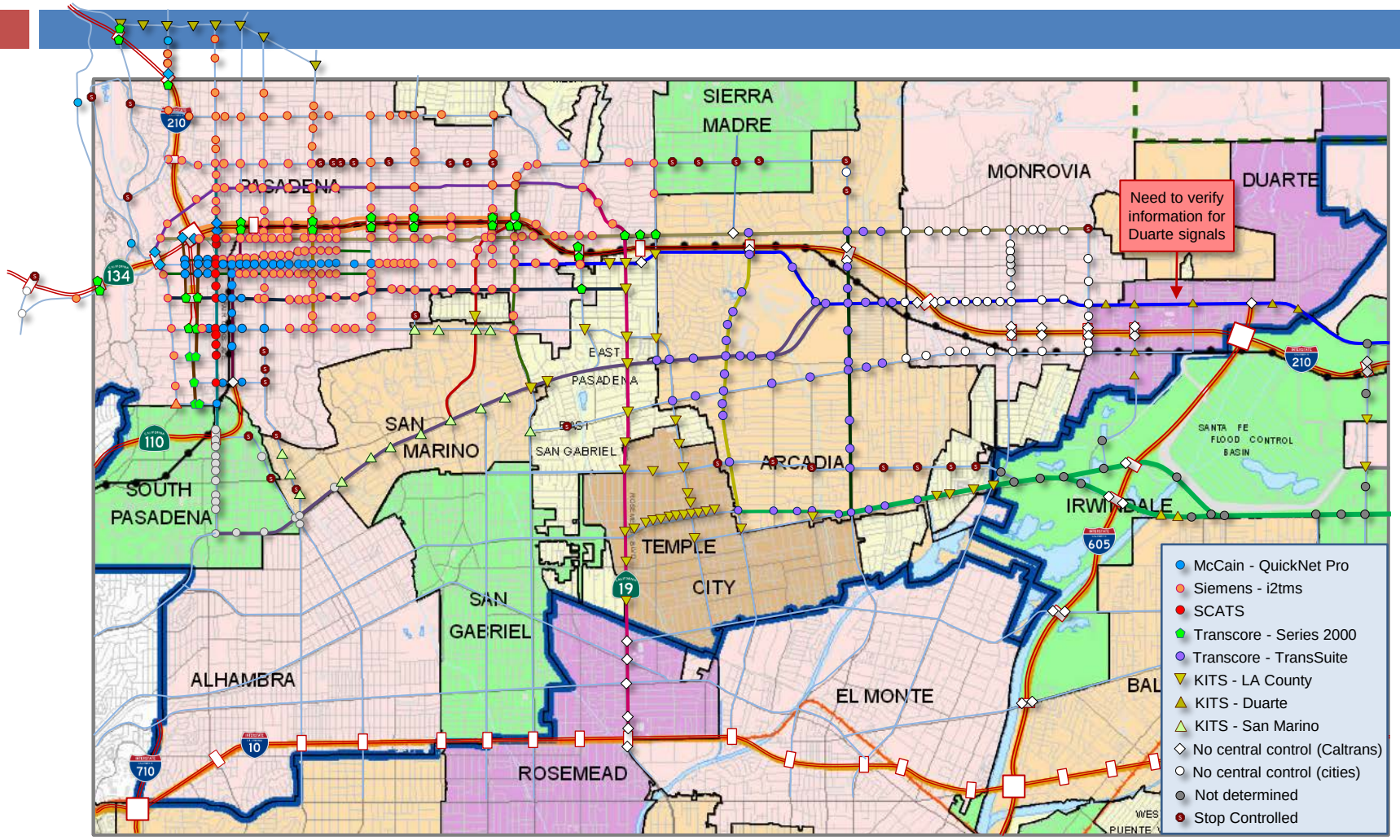
- **Data Collection for Freeway is complete**
- **However Data Quality is Problematic**
  - 30-40% of mainline/ramp detectors are not working
  - We do not need 100% working but we need 80-90% working
  - We need to ensure there are not groups of non working sensors
- **Appears that communication to/from ramp meters is working**
- **Analyzing whether additional sensors are needed**
- **Update on PID?**

Data Collection Arterial – Status

	Caltrans	LA County	Pasadena	Arcadia	Monrovia	Duarte
Approach Flows	⏳	⏳	✓	✓	✗	⏳
Turning Counts	⏳	⏳	✓	✓	✗	⏳
Detector Layouts	✓	⏳	✓	✓	⏳	⏳
Timing Sheets	✓	⏳		✓	⏳	⏳
Controller Type	✓	⏳	✓	✓	⏳	⏳
Controller Firmware	✓	⏳	✓	✓	⏳	⏳
Communication Type			✓			

Data uses: Simulation modeling and calibration
Operational analyses

Traffic Signals – TCS Host



Data Collection – Intersection Flow Data

	Caltrans	LA County	Pasadena	Arcadia	Monrovia	Duarte
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

	Caltrans	LA County	Pasadena	Arcadia	Monrovia	Duarte
Timing Sheets	• Sheets obtained for all intersections	• Waiting to receive requested timing sheets	• Request pending development of city-wide Vissim Model	• Sheets obtained for all intersections • Access to real-time TransSuite displays	• Waiting to receive requested timing sheets	• Waiting to receive request timing sheets
Controller Type	• Information obtained for all intersections	• Waiting to receive requested information	• Information obtained for all intersections	• Information obtained for all intersections	• Waiting to receive requested information	• Waiting to receive requested information
Controller Firmware	• Information obtained for all intersections	• Waiting to receive requested information	• Information obtained for 1/3 of intersections	• Information obtained for all intersections	• Waiting to receive requested information	• Waiting to receive requested information
Communication Type	• Information to be requested	• Information to be requested	• Information obtained for all intersections	• Information to be requested	• Information to be requested	• Information to be requested

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