Connected Corridors
Face-to-Face Meeting

Tuesday, October 16th, 2018
1:30 – 3:30 pm
Pasadena
Agenda

- 1:30-1:50 - Summary of program - Joe
- 1:50-2:00 – MOU – Mort
- 2:00-2:10 – Parsons update on Call projects
- 2:10-2:30 – Before and After Study - Tom
- 2:30-3:25 – Parsons presentation of I-NET
- 3:25-3:30 – Closing
  - Next Meeting at Duarte – November 27th
  - (County, Arcadia, Caltrans, Pasadena, Monrovia, Duarte)
Systems Engineering Next Steps

- Design Documents
  - Details of interfaces and implementations
- Hardware/Software
  - Building the system
- Integration
  - Subsystems will come on line this year
Signal Flush Plan Summary

- All 670 Recommended Signal Flush Plans Designed, in QA and starting stakeholder review
- All major 34 EB routes coded
- All major 37 WB routes coded
Response Plan QA and Test

- **Signal Plan QA Process**
  - Simulation of plans in Aimsun – Roughly a quarter of the way through

- **Signal Plan Review & Approval**
  - Generation of materials to communicate proposed signal flush plans to stakeholders

- **Formats for providing signal timing plan changes mostly worked out**
  - Ongoing work with Pasadena, some discussions with Caltrans

- **System Integration**
  - Exporting signal timing plans, ramp meter plans grouped for use on routes from Aimsun
Response Plan Generation (Planning Mode)

- Creation of Response Plan generation input spreadsheets that contain our production proposed traffic solutions for incidents

- Modification of the desktop app to more closely align with ATMS incident data specification (in progress)

- Will begin working with David Lau on exact CMS messages
Communication – Kali to Comment

- Pasadena VPN connection will be in place by the end of October
- LA County connection will be in place beginning of November
- RIITS and PATH working together on strategies:
  - DNS – Domain Name Servers
  - Hostnames
  - SSL certificates
Workflow Discussion – Meeting on Oct 24th

- 9:00 - 10:30 - Workflow
- 10:30 - 11:30 – ATMS discussion
- 11:30 - 12:00 - Brian’s Design Document Schedule
- 12:00-1:00 - Working lunch provided by PATH
- 12:15-1:00 - IGC discussion
- 1:00-2:00 - Rules Engine
- 2:00-3:00 - Modeling of Response Plans
C2C Interface Implementations - Status

- KITS
- Transparity
- TransSuite
- Sign Vendor
- Caltrans ATMS

Diagram:
- TMDD Tested Interface
- DSS
- Data Hub
- TSS Model Interface (Optional)
- Kapsch
- Parsons
- Telegra
- TMDD Tested Interface

Vendor:
- Sign
- Caltrans ATMS

Status:
- Tested
COTS (Purple Box) - ICMS

- **Kapsch**
  - Development is underway
  - Will begin to move their system into the cloud
  - Will likely present at November face to face

- **Telegra**
  - Getting ready to test ATMS interface

- **Parsons**
  - Will begin working with us in June
Traffic Control Systems

- TransCore – Arcadia and Caltrans
  - Installed in Arcadia, planned for install in Caltrans in November
  - Plan to read data from Arcadia this month

- McCain - Pasadena
  - In design

- Kimley Horn – LA County, Monrovia and Duarte
  - In design
  - Additional SPAT (Signal Phase and Timing) work in discussion

ATMS – Caltrans (CMS Signs, Ramps)

- Initial release delivered in July
- We are testing out the interface and there will likely be updates needed as we work out workflow details and perform detailed testing
Systems Development and Integration

- **Cloud Infrastructure - Automating deployment for AWS**
  - Significant effort to both automate and to deploy within a private network.
  - Significant cooperation from AWS to help make this work.
  - Issues remaining with Continuous Integration setup in Dev environment, deployment of code to EMR (Spark)

- **DSS**
  - Response Plan workflow orchestration between DSS, Datahub, and Corridor Management System “Happy Path” basics in place
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MOU/Signs Mort
Call for Projects
Parsons
Agenda

- I-210 CC Arterial Systems Improvement Project
  System Consulting Services – Scope
- Status of 9 procurement package
- 30-Day Look Ahead
I-210 CONNECTED CORRIDORS ARTERIAL SYSTEMS IMPROVEMENT PROJECT SYSTEM CONSULTING SERVICES

SCOPE OF WORK
Project Objective

- Assist Caltrans D7 to manage and coordinate the execution of the 9 arterial ITS improvement projects

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<thead>
<tr>
<th>#</th>
<th>Package Description</th>
<th>Contract #</th>
<th>Contract Status</th>
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<tbody>
<tr>
<td>1</td>
<td>Bluetooth – Iteris Velocity</td>
<td>07A4470</td>
<td>Awarded</td>
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<td>2</td>
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<td>3</td>
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<td>To be Re-advertised</td>
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<td>Data Communication Module and Video Detection Software Upgrade</td>
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<td>To be advertised in 3 Parts</td>
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## Project Area

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Project Area (cont.)

Contracts 1-7 Site Location
UPDATE ON

PACKAGES 1-9
## Update on 9 Packages

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|        |                               |            | • Equipment Procurement Phase                      |
| 2      | Bluetooth – BlueToad          | 07A4477    | • Submittal Approved  
|        |                               |            | • Equipment Procurement Phase                      |
| 3      | New Controller Cabinets       | 07A4478    | • Disqualified: Bids came above the SB limit (314k).  
|        |                               |            | • Procurement Package revised per Stakeholder comments on Pkg. 5  
|        |                               |            | • To be re-advertised                              |
| 4      | Communication Upgrades        | 07A4479    | • Responded to Contractor’s RFI  
|        |                               |            | • Submittal being Revised                         |
## Update on 9 Packages (cont.)

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| 5      | Firmware/Timing Plan Updates/Controller Upgrades | 07A4480    | • Submittal Reviewed and Required Equipment changed per Stakeholder Comment  
                                                   • Scheduling meeting with Contractor to discuss the change |
| 6      | Video Detection System                           | 07A4481    | • Submittal v3 being revised per stakeholder comments on v2 and to be re-submitted  
                                                   • Conducted Site Survey on 10/9/2018 |
| 7      | Data Communication Module and Video Detection Software Upgrade | 07A4469    | • Disqualified: Bids came above the SB limit (314k).  
                                                   • To be re-advertised |
| 8      | Advanced Traveler Information Systems             | N/A        | • To be divided into 3 Parts (DMS Procurement, Static Sign Procurement, Integration)  
                                                   • Finalizing 3 Procurement Packages |
| 9      | Environmental Stations with Air Quality Sensors and Open Data Systems (ODS) | 07A4388    | • Coordinating with Caltrans & Parsons to get test data in TMDD format from D7 ATMS Test Server to feed Open Data System |
30-Day Look Ahead

- Support Caltrans to revise Procurement Packages 3 & 8
- Support Contractors to understand & address the submittal review comments
- Support contractors to schedule site investigation and get permit
- Collect and distribute master schedule when it is ready
Thank You and Questions?
Before and After Study
Tom/SMG
Before Condition Evaluation Plan

- **Before Condition evaluation period**
  - Spring 2019 (March to end of May)

- **Analyses**
  - **Recurrent congestion (select days with no major incidents)**
    - Average daily AM and PM Peak Period only
    - Vehicle Miles Traveled (freeway mainline and arterials)
    - Hourly Traffic Volumes (freeway mainline, ramps, and arterials)
    - Vehicle Hours Delay (60 mph threshold freeway, free-flow speed on arterials)
    - Average Hourly Travel Times (freeway mainline and arterials)
    - Hourly Travel Time Variability – Planning Time Index (freeway mainline and arterials)
    - Daily Congestion and Queueing (freeway mainline)
Before Condition Evaluation Plan

- **Analyses**
  - **Non-recurrent congestion**
    - Vehicle Miles Traveled (freeway mainline and arterials)
      - Off-peak totals and daily totals
      - One month totals
    - Hourly Traffic Volumes (freeway mainline, ramps, and arterials)
      - Off-peak hours
    - Vehicle Hours Delay (60 mph threshold freeway, free-flow speed on arterials)
      - Off-peak total and daily totals
      - One month totals
    - Average Hourly Travel Times and Variability (freeway mainline and arterials)
      - Off-peak hours
    - Crash and Incidents Statistics
Before Condition Evaluation Plan

- **Analyses**
  - **Specific Incident Analysis**
    - Sample specific major incidents (period of incident impact congestion)
    - Diversion Flow (off-ramps, on-ramps, and arterial volumes)
    - Rate of Queue Dissipation (freeway mainline)
    - Intersection LOS (impacted intersections) – if detection TMC data available
Before Condition Evaluation Plan

- **Data Needs and Sources**
  - **VMT, Flow, Freeway Congestion and Queuing, Freeway Queue Dissipation**
    - Caltrans PeMS (mainline and ramp detector stations)
    - Local agency detection system (arterial detection)
  - **VHD, Travel Times, and TT Variability**
    - Caltrans PeMS (mainline detector stations)
    - Local agency Bluetooth detection system (arterial readers)
    - INRIX data, if available
  - **Crash and Incident Statistics**
    - Caltrans TASAS (freeway collisions) and CHP CAD (freeway incidents)
    - Other (local law enforcement database and Metro FSP assist records)
  - **Intersection LOS during Incidents**
    - Local agency TMC detectors
Before Condition Evaluation Plan

- **Data Sources Assumptions**
  - Caltrans PeMS (mainline and ramp detector station) working at over 80% health between March and end of May, 2019
    - If not, may need to schedule manual ramp tube counts for multiple weeks
  - Local agency detection system (arterials and intersection) fully installed and working at over 80% health between March and end of May, 2019
    - If not, may need to schedule manual tube counts at same location as the detectors (need to know the locations), else move schedule to Fall of 2019
  - Local agency Bluetooth detection system fully installed and working at over 80% health between March and end of May, 2019
    - If not, many need to have INRIX data
  - Caltrans TASAS, CHP CAD, local law enforcement data made available during that time period, the following year when After conditions evaluated
Before Condition Evaluation Plan

- **Evaluation Plan**
  1. Make preparation – conduct preliminary analysis ahead of evaluation
  2. Gather and compile data from 3/1/2019 to 5/31/2019 period; conduct field observation and video recordings of conditions
  3. Process data and prepare input summary tables
  4. Calculate, compute, and estimate performance measures
  5. Conduct analysis of the performance measurements
  6. Conduct additional analysis as needed (e.g. other time periods, other data, etc.)
  7. Assess and evaluate results (prepare graphs, charts, diagrams, and tables)
  8. Summarize findings
  9. Draw conclusions
  10. Prepare draft and final Study Report; prepare presentation
Before Condition Evaluation Plan

- **What we need to do now**
  1. Report on the current state of the existing data sources
  2. Start compiling and testing some of the data for data quality
  3. Review some of the data for meaningful conclusive evaluation
  4. Get a feel for what additional data (different locations) may be needed
  5. Prepare data (compilation and collection) plan
Parsons Demonstration of INET
Thank You
and
Next Meeting
(Suggest November 27th at Duarte)