Connected Corridors
Face-to-Face Meeting

Tuesday, March 12th , 2019
1:30 – 3:30 pm
Caltrans TMC

Agenda

- **1:30 - 2:00 – Program Review – Joe**

- **2:00 - 2:30 – Call for projects update - Ning**

- **2:30 - 2:50 – Kapsch update - Tim**

- **2:50 - 3:00 – Closing**
  - Next Meeting at LA County – Tuesday April 23rd
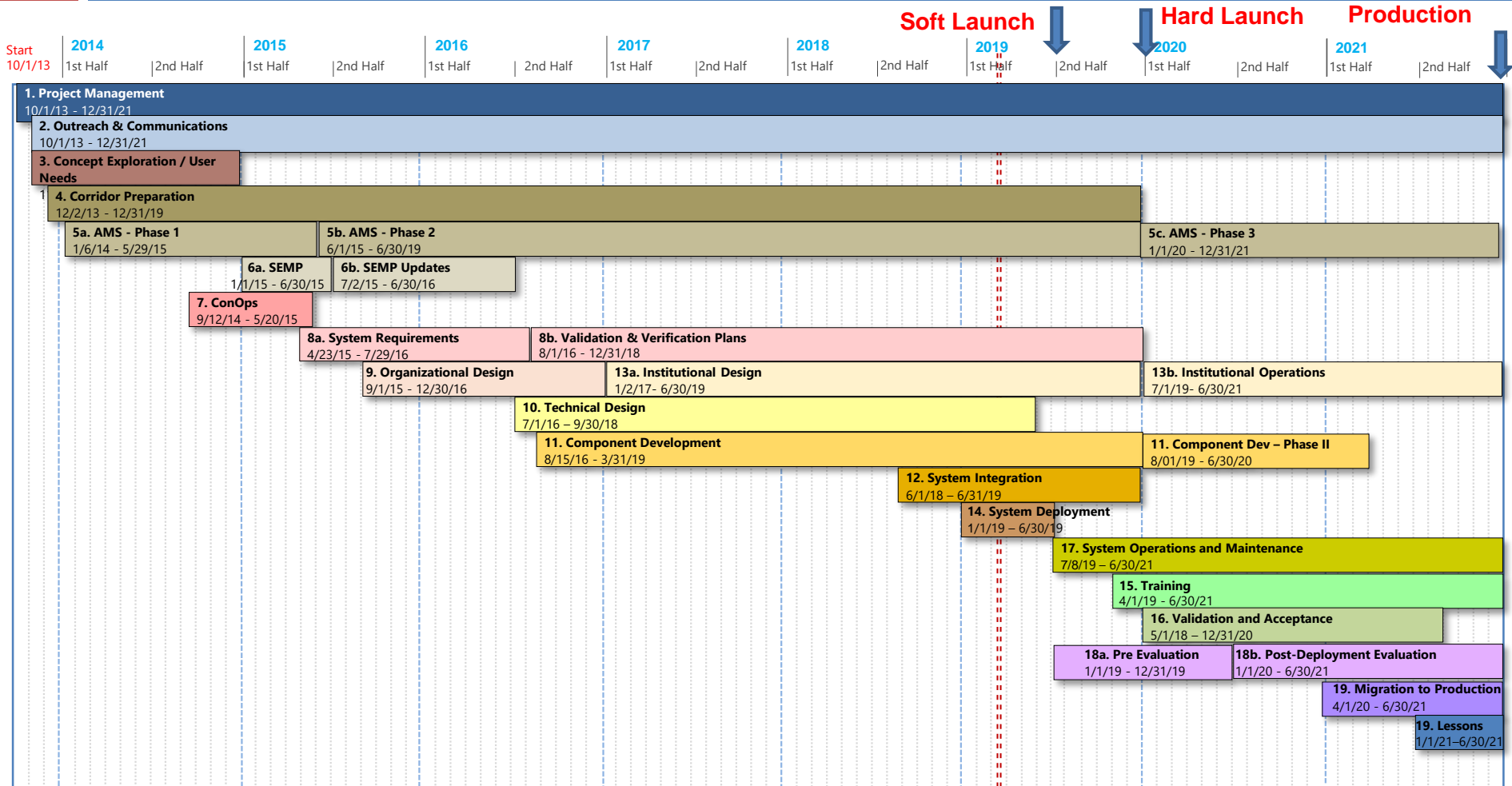 - (County, Arcadia, Caltrans, Pasadena, Monrovia, Duarte)

Contract Challenges

- ☐ **Caltrans to discuss**

Schedule

Soft Launch **Hard Launch** **Production**

| Start 10/1/13 | 2014 1st Half | 2nd Half | 2015 1st Half | 2nd Half | 2016 1st Half | 2nd Half | 2017 1st Half | 2nd Half | 2018 1st Half | 2nd Half | 2019 1st Half | 2nd Half | 2020 1st Half | 2nd Half | 2021 1st Half | 2nd Half |

1. Project Management
10/1/13 - 12/31/21

2. Outreach & Communications
10/1/13 - 12/31/21

3. Concept Exploration / User Needs

4. Corridor Preparation
12/2/13 - 12/31/19

5a. AMS - Phase 1
1/6/14 - 5/29/15

5b. AMS - Phase 2
6/1/15 - 6/30/19

5c. AMS - Phase 3
1/1/20 - 12/31/21

6a. SEMP
1/1/15 - 6/30/15

6b. SEMP Updates
7/2/15 - 6/30/16

7. ConOps
9/12/14 - 5/20/15

8a. System Requirements
4/23/15 - 7/29/16

8b. Validation & Verification Plans
8/1/16 - 12/31/18

9. Organizational Design
9/1/15 - 12/30/16

13a. Institutional Design
1/2/17- 6/30/19

13b. Institutional Operations
7/1/19- 6/30/21

10. Technical Design
7/1/16 – 9/30/18

11. Component Development
8/15/16 - 3/31/19

11. Component Dev – Phase II
8/01/19 - 6/30/20

12. System Integration
6/1/18 – 6/31/19

14. System Deployment
1/1/19 – 6/30/19

17. System Operations and Maintenance
7/8/19 – 6/30/21

15. Training
4/1/19 - 6/30/21

16. Validation and Acceptance
5/1/18 – 12/31/20

18a. Pre Evaluation
1/1/19 - 12/31/19

18b. Post-Deployment Evaluation
1/1/20 - 6/30/21

19. Migration to Production
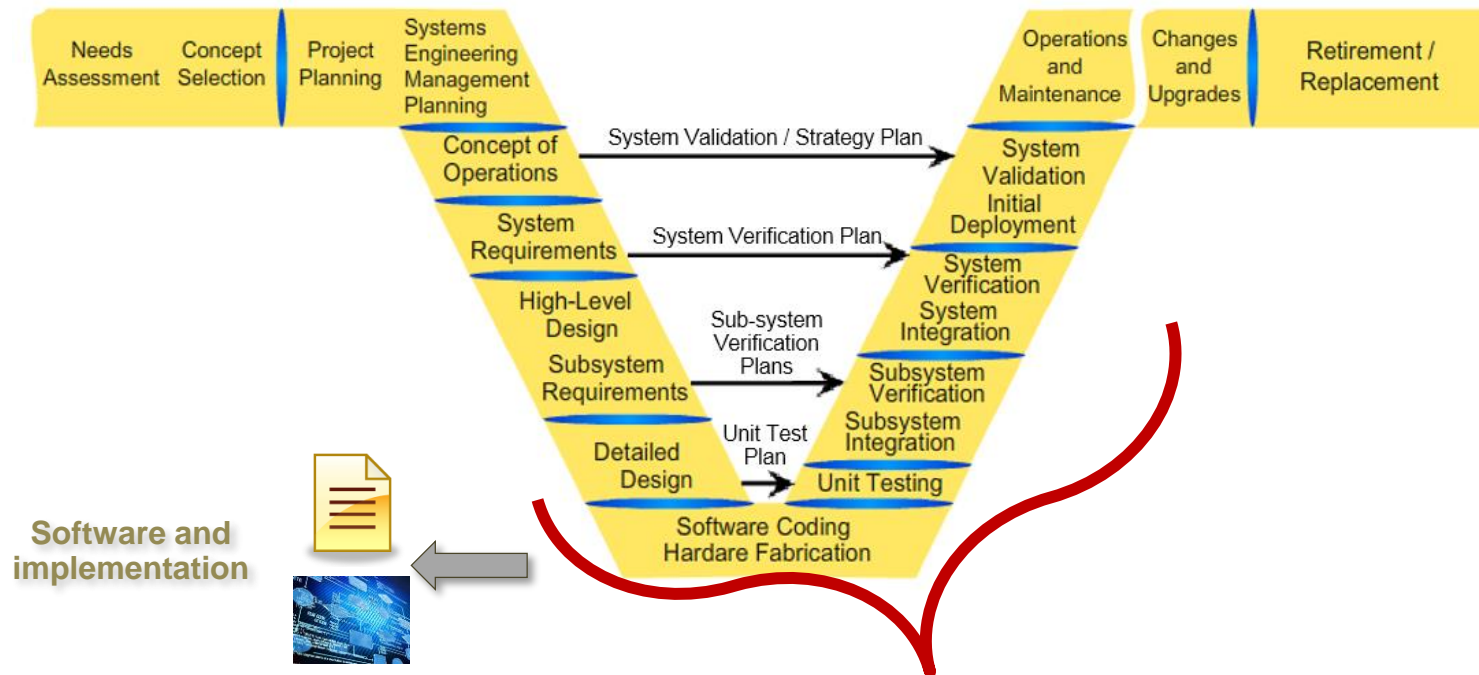4/1/20 - 6/30/21

19. Lessons
1/1/21–6/30/21

Systems Engineering Next Steps

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

Software and implementation

6 Summary

Freeway Data Quality

☐ **Core I-210 sensor availability goals fluctuating near target**

☐ **List of long-term degraded sensors provided to maintenance for action**

Freeway Section	Direction	Sensor Availability Percentage	Past Target Accomplishment
I-210 PM 25 - 43.25	East	89.3%	12/1/2018
	West	90.2%	3/2/2019
SR-134 PM 11.4 - 13.5	East	96.8%	1/22/2019
	West	96.6%	1/22/2019
I-605 PM 22.93 - 28	North	83.9%	11/3/2018
	South	85.7%	11/17/2018
I-210 PM 22.6 - 25	East	43.3%	na
	West	52.7%	na

Arterial Data Quality

- **Arcadia**
  - We continue to collect and process data from two data sources: Arcadia's TCS server and the IEN.
  - A weekly detector health report in Arcadia is sent to the CC modeling team.
  - Arcadia is steady at 80%

- **LA County**
  - Jason from Kimley Horn reminded us that the County KITS system requires a review of its configuration data before the data can be trusted

- **Pasadena**
  - We are not reviewing Pasadena data yet

- **Caltrans**
  - Awaiting the addition of detector configuration data to the Caltrans TSMSS system

Arterial Data Quality – C2C Messages

- **Our data quality framework is now able to process the following TMDD messages:** *DetectorInventory, DetectorData, DetectorStatus, IntersectionSignalInventory, IntersectionSignalControlSchedule, IntersectionSignalPhaseInventory, IntersectionSignalStatus.*

- **Currently Arcadia is sending all messages except** *IntersectionSignalControlSchedule*

- **County is sending test detector data.**

- **We are also working to resolve questions related to certain elements in the McCain data schema.**

Arterial Data Quality – C2C Messages

- **We have built software components to validate each data element in the above seven TMDD messages.**

- **We also have built software components to aggregate raw detector data into long time intervals, e.g., five minutes.**

- **We are now comparing the detector data from the C2C feed with the other two data sources for Arcadia.**

  - In the C2C feed: Errors were found in the calculation of flow and occupancy.

  - TransCore has fixed these errors and applied the changes to the Arcadia system on 3/6/2019.

Signal Plans – 80% Completed

- **County Plan Review & Approval**
  - Flush plans and documentation submitted for review and comment
    - Foothill plans between Rosemead and Baldwin
    - Colorado @ Michillinda
    - Huntington Drive plans through Monrovia and Duarte (13 intersections)
- **Caltrans Signal Plan Review & Approval**
  - Flush plans and space-time diagrams submitted for review (11 out of 15 intersections)
- **Pasadena Signal Plan Review & Approval**
  - Flush plans for all Corson, Maple, and Walnut-Foothill routes submitted for review
- **Arcadia Signal Plan Review & Approval**
  - Flush plans for part of Huntington route entered into D4 database format

Response Plan Generation (Planning Mode)

☐ **Front-end changes to the Response Plan Generation desktop app are bringing it more in line with ATMS incident location reporting**

☐ **Greg and Michelle continued to review response plan generation in detail, in support of upcoming documentation.**
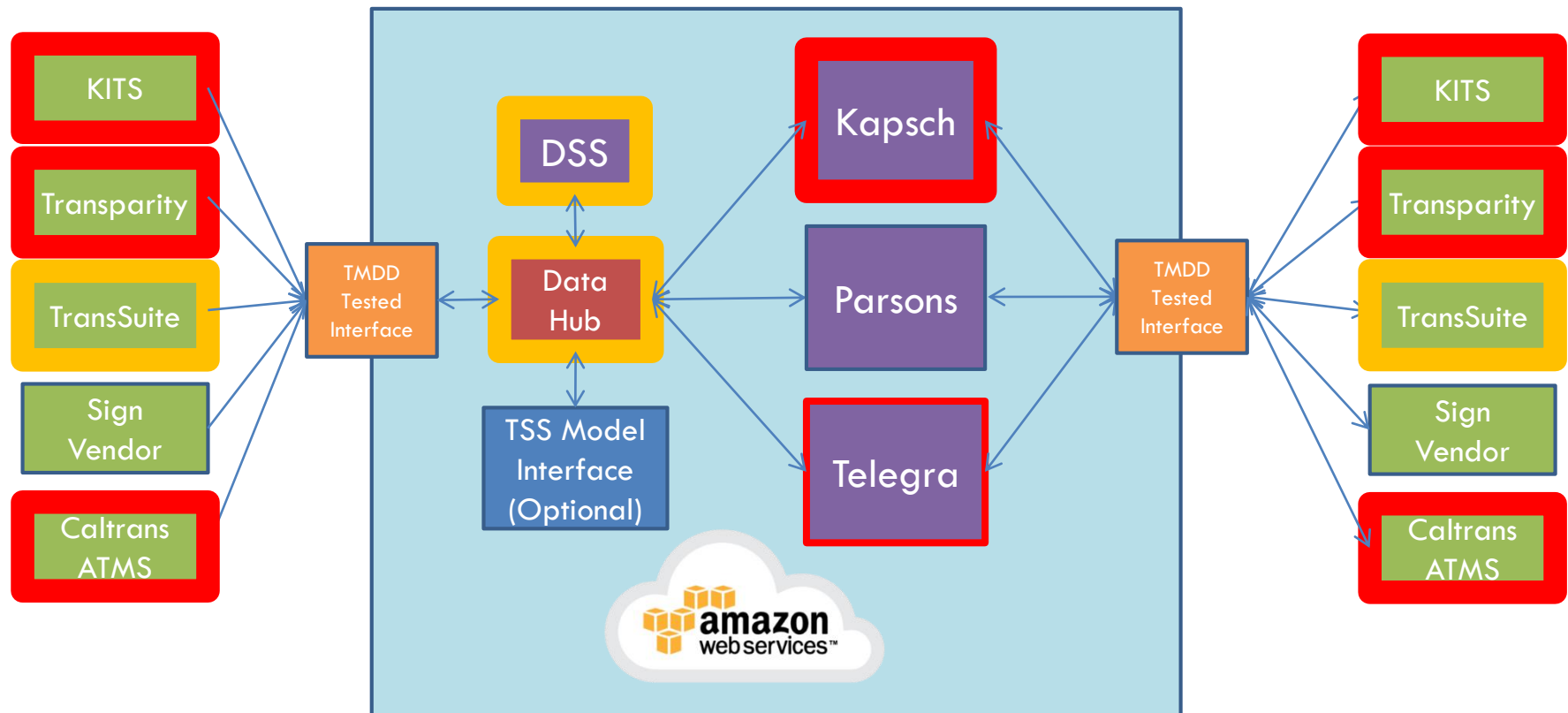
C2C Networking

- **All major network connections have been established!**
  - Pasadena VPN connection established and tested
  - TSMSS connections permitted and tested
  - Telegra developer VPN established (first link, connection to RIITS)

  - LA County Connection working
  - Arcadia Connection working

- **RIITS, D7, and PATH discussed solutions to DNS and SSL challenges within our private networking environment**

C2C Interface Implementations - Status

Systems Development and Integration

- **Cloud Infrastructure**
  - Integration environment for Kapsch Corridor Management System is up and ready for Kapsch test deployment
  - However, we are still resolving some network issues preventing Kapsch from connecting to the integration environment

- **DSS**
  - On pause due to staffing/funding issues

- **Datahub**
  - Persistence Worker development completed (persist and replay).
  - Needs data flow integration with workflow and presentation management (purple box).

Systems Integration

- **Arcadia**
  - Reviewing data and identifying/correcting minor issues

- **Pasadena**
  - Working with McCain on design, awaiting first dialogs for integration

- **LA County**
  - Working with Kimley Horn. First dialogs delivered and working on integration/verification. Looking good.

- **TSMSS**
  - Software installed
  - Will begin testing C2C

Systems Integration

- **ATMS**
  - Working on contract for modifications. Integration between data hub and ATMS in progress.
  - Derek from Parsons indicated, today, that they will have the ATMS modifications update completed and ready for integration testing by the week of May 20th.

- **Kapsch (Corridor Management System)**
  - Environment ready for integration. Will begin deployment and integration work for Kapsch EcoTrafiX.

I-210 Connected Corridors
Face-to-Face Meeting

Room 106, LARTMC,
2901 West Broadway, Los Angeles, CA 90041,
Tuesday, March 12th, 2019
1:30 – 3:30 pm

Agenda

- **I-210 CC Arterial Systems Improvement Project System Consulting Services – Scope**

- **Expected Timeline**

- **Status of 9 procurement package**

- **Next Steps**

I-210 CONNECTED CORRIDORS ARTERIAL SYSTEMS IMPROVEMENT PROJECT SYSTEM CONSULTING SERVICES

SCOPE OF WORK

March 12, 2019

Project Objective

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

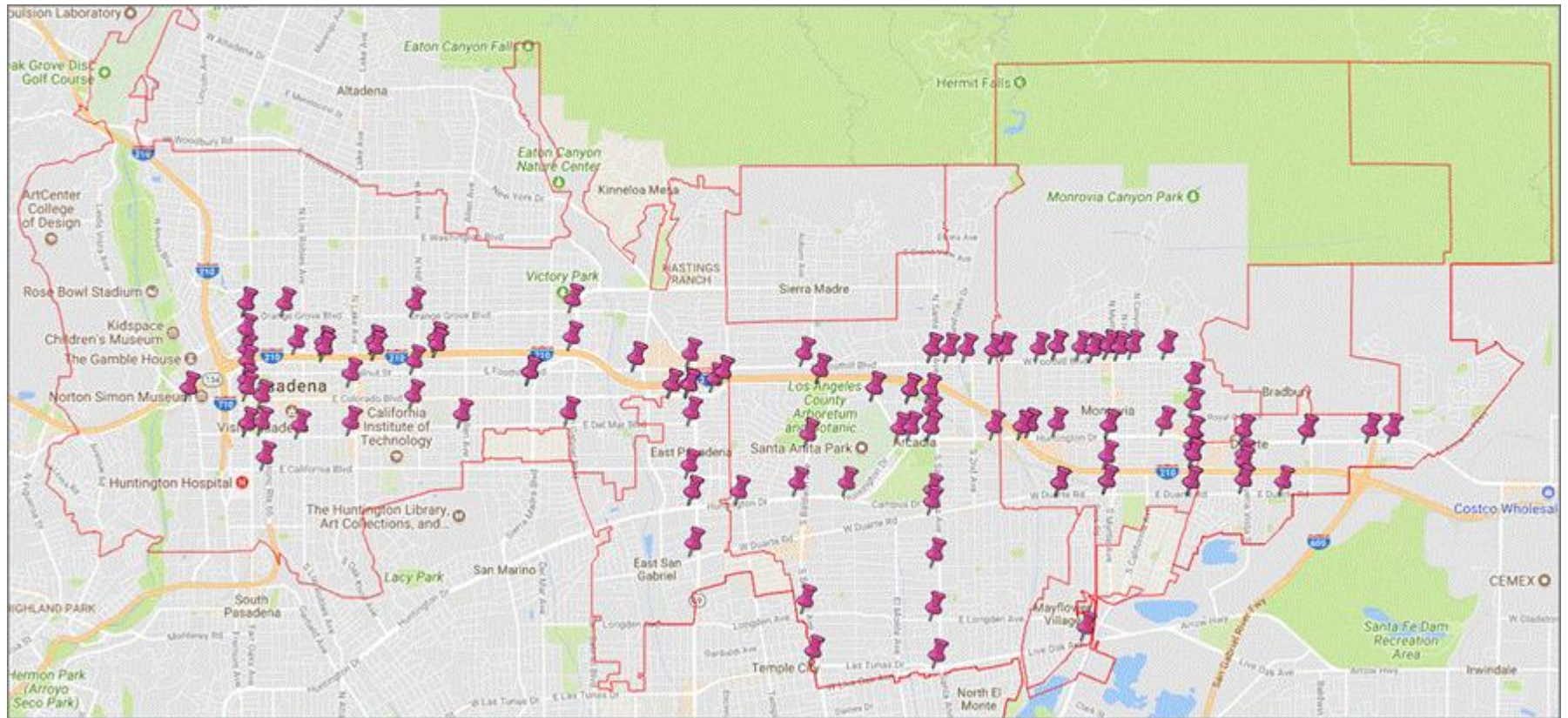| #	Package Description	Contract #	Contract Status
1	Bluetooth – Iteris Velocity	07A4470	Awarded, in Progress
2	Bluetooth – BlueToad	07A4477	Awarded, in Progress
3	New Controller Cabinets	07A4603	Addendum #9 posted Bids due 3/14/19
4	Communication Upgrades	07A4479	Awarded, in Progress
5	Firmware/Timing Plan Updates/Controller Upgrades	07A4480	Awarded, in Progress
6	Video Detection System	07A4481	Awarded, in Progress
7	Data Communication Module and Video Detection Software Upgrade	07A4601	Being reviewed by DPAC –did receive legal approval
8	Advanced Traveler Information Systems	N/A	Divided to 3 packages Being reviewed by DPAC
9	Environmental Stations with Air Quality Sensors and Open Data Systems	07A4388	Awarded, in Progress

Project Area

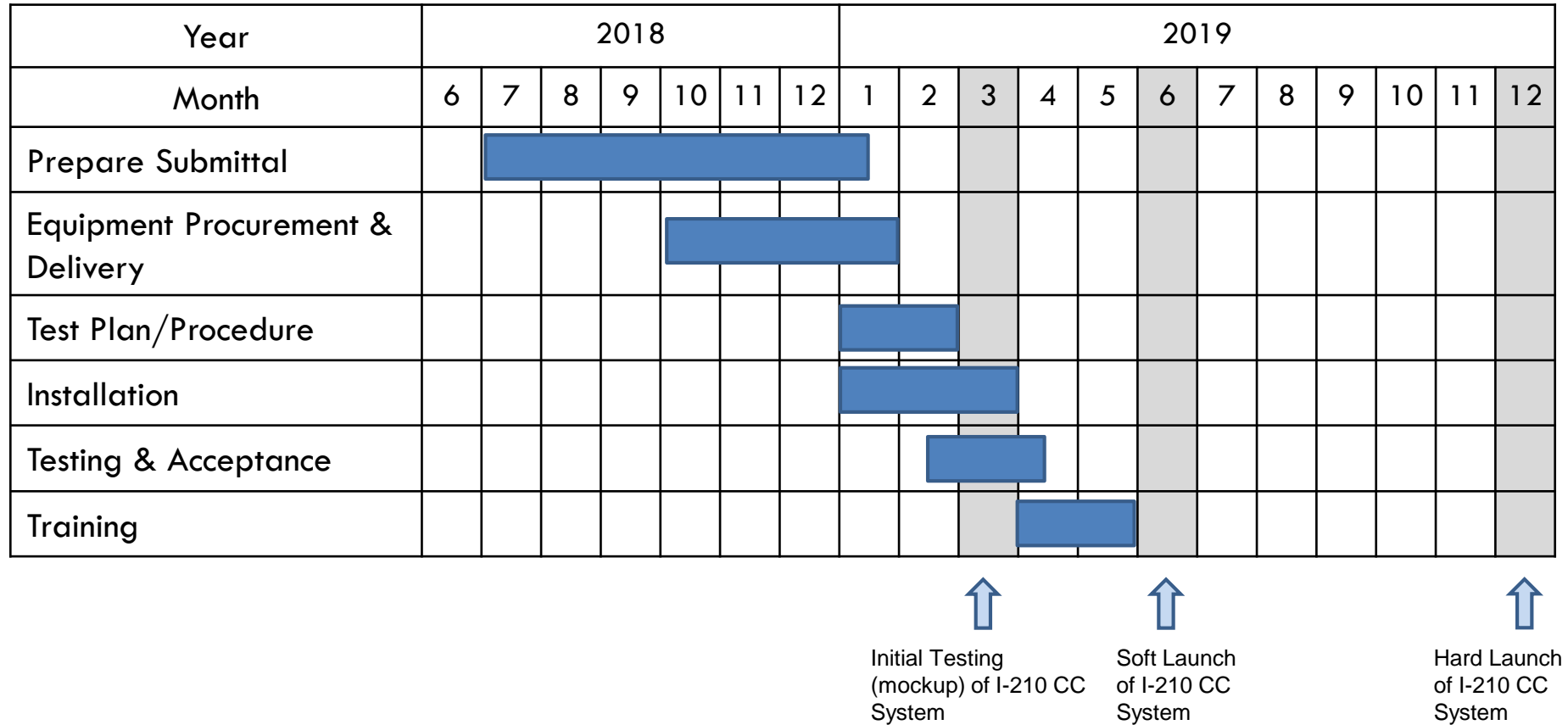| #	Package Description	Contract #	Metro & Caltrans	City of Pasadena	City of Arcadia	City of Monrovia	City of Duarte	LA County
1	Bluetooth – Iteris Velocity	07A4470	√		√			
2	Bluetooth – BlueToad	07A4477	√	√		√	√	√
3	New Controller Cabinets	07A4603	√	√	√			
4	Communication Upgrades	07A4479	√		√	√	√	√
5	Firmware/Timing Plan Updates/Controller Upgrades	07A4480	√	√	√	√		√
6	Video Detection System	07A4481	√	√	√	√	√	√
7	Data Communication Module and Video Detection Software Upgrade	07A4601	√	√	√	√	√	√
8	Advanced Traveler Information Systems	N/A	√	√	√	√	√	√
9	Environmental Stations with Air Quality Sensors and Open Data Systems (ODS)	07A4388	√					

Project Area (cont.)

UPDATE ON

PACKAGES 1-9

Target Timeline

Year	2018							2019											
Month	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Prepare Submittal																			
Equipment Procurement & Delivery																			
Test Plan/Procedure																			
Installation																			
Testing & Acceptance																			
Training																			

Initial Testing (mockup) of I-210 CC System

Soft Launch of I-210 CC System

Hard Launch of I-210 CC System

Update on 9 Packages

Pkg. #	Package Name	Contract #	Project Status
1	Bluetooth – Iteris Velocity	07A4470 PTM	• NTP: 7/10/2018 • Kick-off Meeting: 7/30/2018 • Submittal Approved: 8/16/2018 • Equipment ready, Permit Ready • Revising Testing Plan: Additional comments to Version 3 of test procedure returned to contractor • Expected to be completed: May 2019 (90%)

2	Bluetooth – BlueToad	07A4477 DBX	• NTP: 7/10/2018
			• Kick-off Meeting: 7/30/2018; Submittal Approved: 10/12/2018
			• Current Schedule (March-May, 2019)
			   • Configure VM Server for LA County
			   • Provide and Configure Physical Server for Pasadena
			   • Submit Acceptance Test Plan
			   • BlueTOAD Spectra Unit Installation
			   • Submit Acceptance Test Report
			• Expected to be completed: May 2019 (80%)

Update on 9 Packages (cont.)

Pkg. #	Package Name	Contract #	Project Status
3	New Controller Cabinets	07A4603	• Disqualified: Bids came above the SB limit (314k). • Procurement Package revised per Stakeholder comments on Pkg. 5 • Has been re-advertised • Addendum #9 posted • Bid Due Date: Mar 14, 2019 • Expected to be awarded: Late March 2019 • Expected to be completed: Jun-Jul, 2019
4	Communication Upgrades	07A4479 Kanaan Construction	• NTP: 7/13/2018 • Kick-off Meeting: 7/30/2018 • Revised Submittal reviewed by Stakeholders; concerns being investigated • Expected to be completed: May 2019 (80%)

Update on 9 Packages (cont.)

Pkg. #	Package Name	Contract #	Project Status
5	Firmware/Timing Plan Updates/Controller Upgrades	07A4480 CPE, Inc	• NTP: 7/17/2018 • Kick-off Meeting: 7/30/2018 • Submittal Reviewed and Required Equipment changed per Stakeholder Comment • Contractor has been given revised requirements on the controller configuration from all 3 jurisdictions • Contractor is coordinating with supplier (McCain) to estimate price change • Expected to be completed: Jun 2019 (80%)

Update on 9 Packages (cont.)

Pkg. #	Package Name	Contract #	Project Status

6	Video Detection System	07A4481 Traffic Loops Crackfilling, Inc	• NTP: 7/10/2018
			• Kick-off Meeting: 7/30/2018
			• 10/9/2018: Conducted Site Survey
			• 10/18/18: Submittal approved
			• Working to complete the permits
			  • Vendor to provide site plans
			  • LA County to provide a sample VDS plan
			  • LA County/Pasadena to confirm permit fee
			• Installation expected in Mar 2019
			• Expected to be completed: Mar 2019 (80%), May 2019 (90%)

7	Data Communication Module and Video Detection Software Upgrade	07A4601	• Disqualified: Bids came above the SB limit (314k).
			• Resubmittal was legal-approved, but still being reviewed by DPAC
			  • Project timeline has been sent to DPAC
			  • Caltrans and PATH working on moving the review forward
			• Expected to be awarded: Mar, 2019
			• Expected to be completed: Aug, 2019

Update on 9 Packages (cont.)

Pkg. #	Package Name	Contract #	Project Status

8	Advanced Traveler Information Systems	N/A	• Divided to 3 packages:
			  • DMS Procurement – being reviewed by DPAC
			  • Static Sign Procurement - to be handled by Caltrans Maintenance Group
			  • Integration -– being reviewed by DPAC
			• Expected to be awarded: Mar 2019
			• Expected to be completed: Aug 2019

9	Environmental Stations with Air Quality Sensors and Open Data Systems (ODS)	07A4388 Cal Poly Pomona	• NTP: 6/29/18 • Kick-off Meeting: 7/12/18 • CPP coordinated with Caltrans & Parsons to get test data in TMDD format from D7 ATMS Test Server to feed Open Data System; • 11/30/18: Coordination among CPP, PATH, Caltrans. PATH provided architecture diagrams, sample data set; Working with Caltrans on network connection • 2/12/19: Face-to-face meeting in Berkeley conducted; PATH to provide specification documents • Expected to be completed: Jun 2019 (80%), Aug 2019 (90%)

Next Steps

- Package 1: Vendor to revise testing plan v3; Testing plan to be distributed to stakeholders for review and approval; schedule installation and testing

- Package 2: Testing plan to be distributed to stakeholders for review and approval; Schedule installation and testing

- Package 3: Prepare for kick-off meeting after award

- Package 4: Support Contractor to understand stakeholder comments on revised submittal

- Package 5: Follow up on potential price change and revised submittal

- Package 6: Support vendor to get all permits; Testing plan to be distributed to stakeholders for review and approval; schedule installation and testing

- Package 7: Prepare for kick-off meeting after award;

- Package 8: Follow up on the advertisement status

- Package 9: Support coordination

Thank You and Questions?

Thank You
and
Next Meeting
(Suggest Tuesday April 23rd at LA County)