



Connected Corridors Face-to-Face Meeting

Tuesday, August 28th, 2018

1:30 – 3:30 pm

LA County

Aug 28th, 2018



Agenda

2

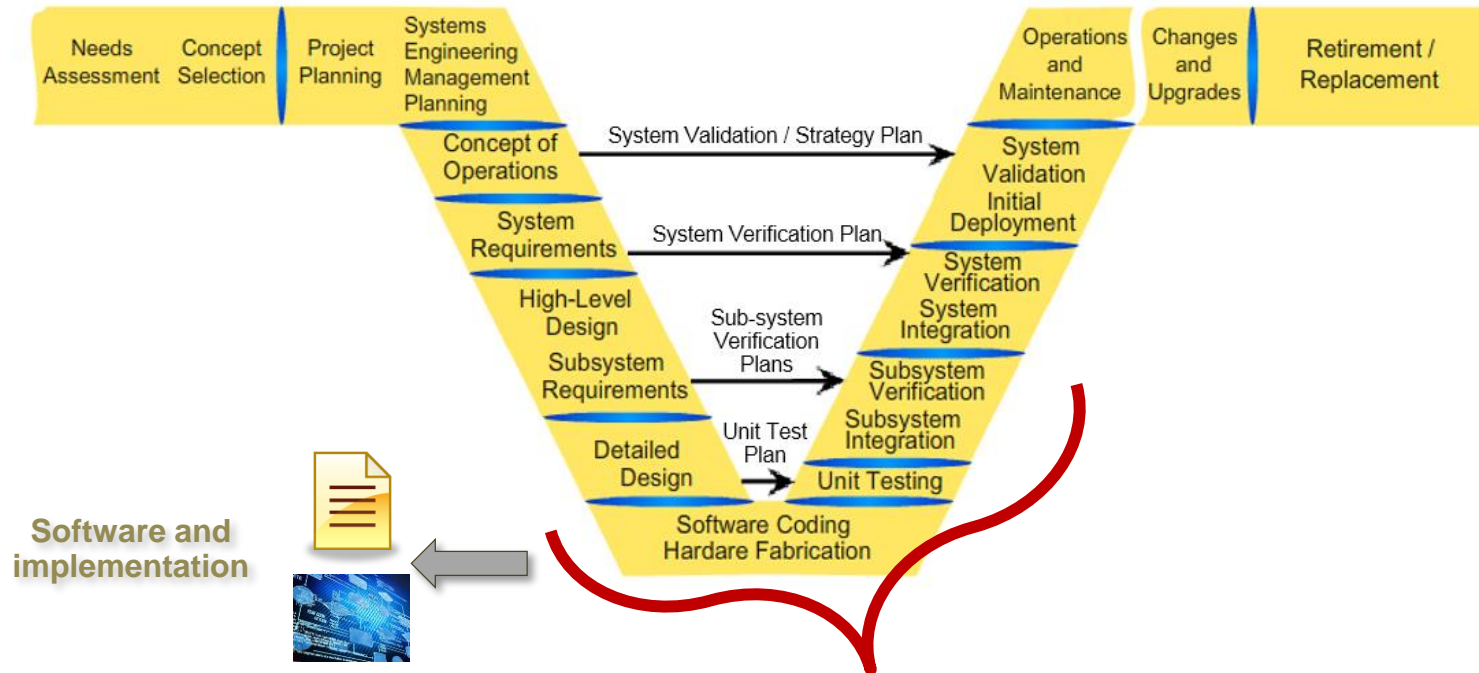
- **1:30-2:00 - Summary of program - Joe**
- **2:00-2:30 – MOU - Mort**
- **2:30-2:45 – Call for Projects update – Parsons**
- **2:45-3:25 – Before and After Study – Tom/SMG**
- **3:25-3:30 – Closing**
 - Next Meeting at Duarte – Tuesday October 9th
 - (County, Arcadia, Caltrans, Pasadena, Monrovia, Duarte)



Systems Engineering Next Steps

3

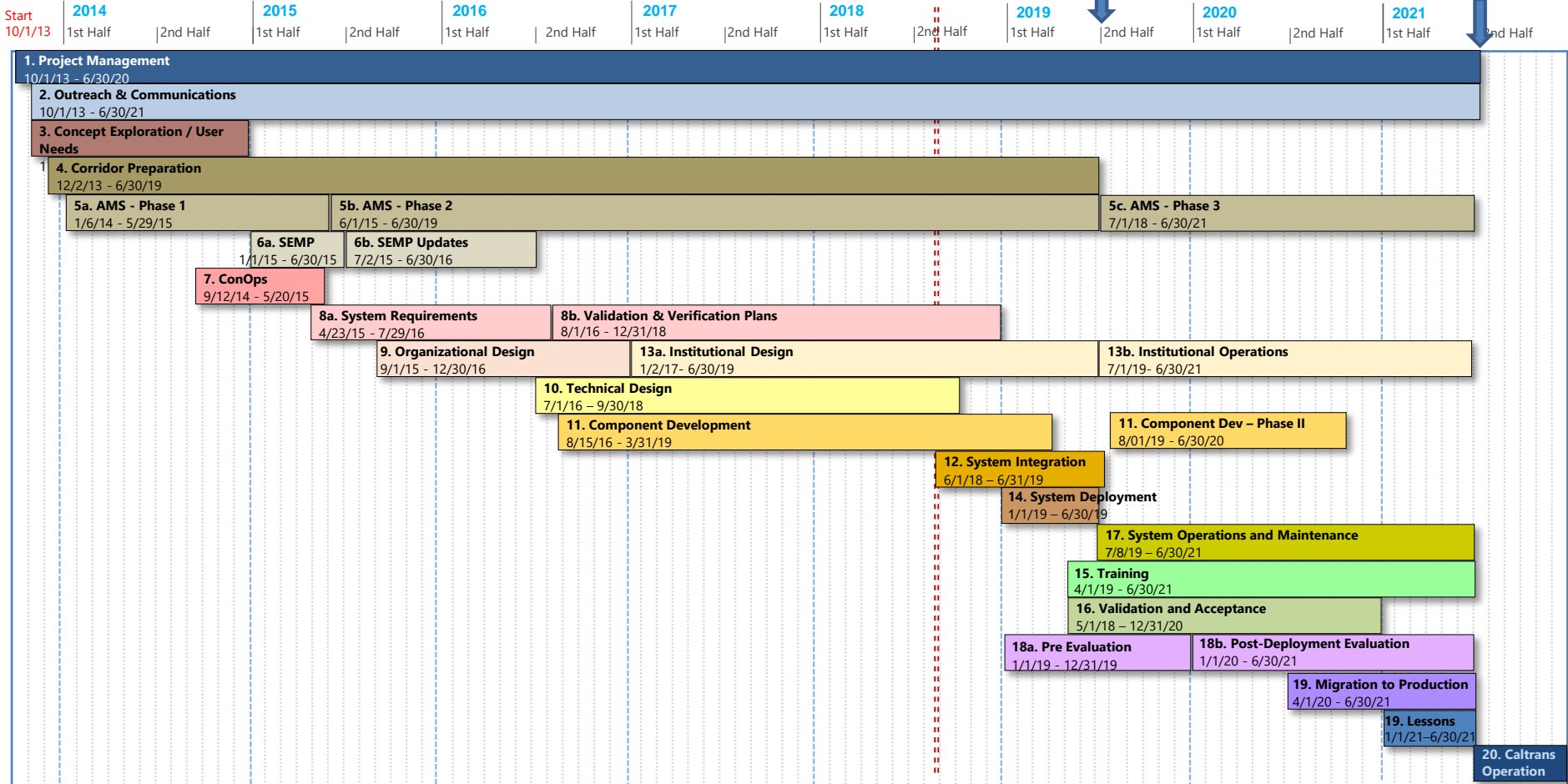
- Design Documents – Details of interfaces and implementations
- Hardware/Software – Building the system
- Integration – Subsystems will come on line this year



Updated Schedule

4

Launch July 8, 2019 **Production**



5

Summary

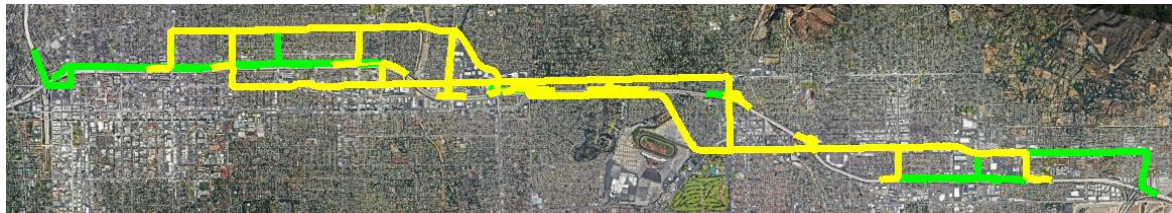
Signal Flush Plan Summary

6

- **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**



Signal Plan Review & Approval

7

- **Delivered preliminary set of eastbound signal plans**
 - ▣ Pasadena - EB Del Mar – 6 Plans
 - ▣ Arcadia - Santa Anita → EB Huntington – 12 Plans
 - ▣ LA County - EB Huntington → Mountain – 20 Plans
 - ▣ Caltrans - EB Evergreen – 24 Plans

- **QA process**
 - ▣ Simulation of plans in Aimsun
 - ▣ Inspection of queues, green wave progression, metrics

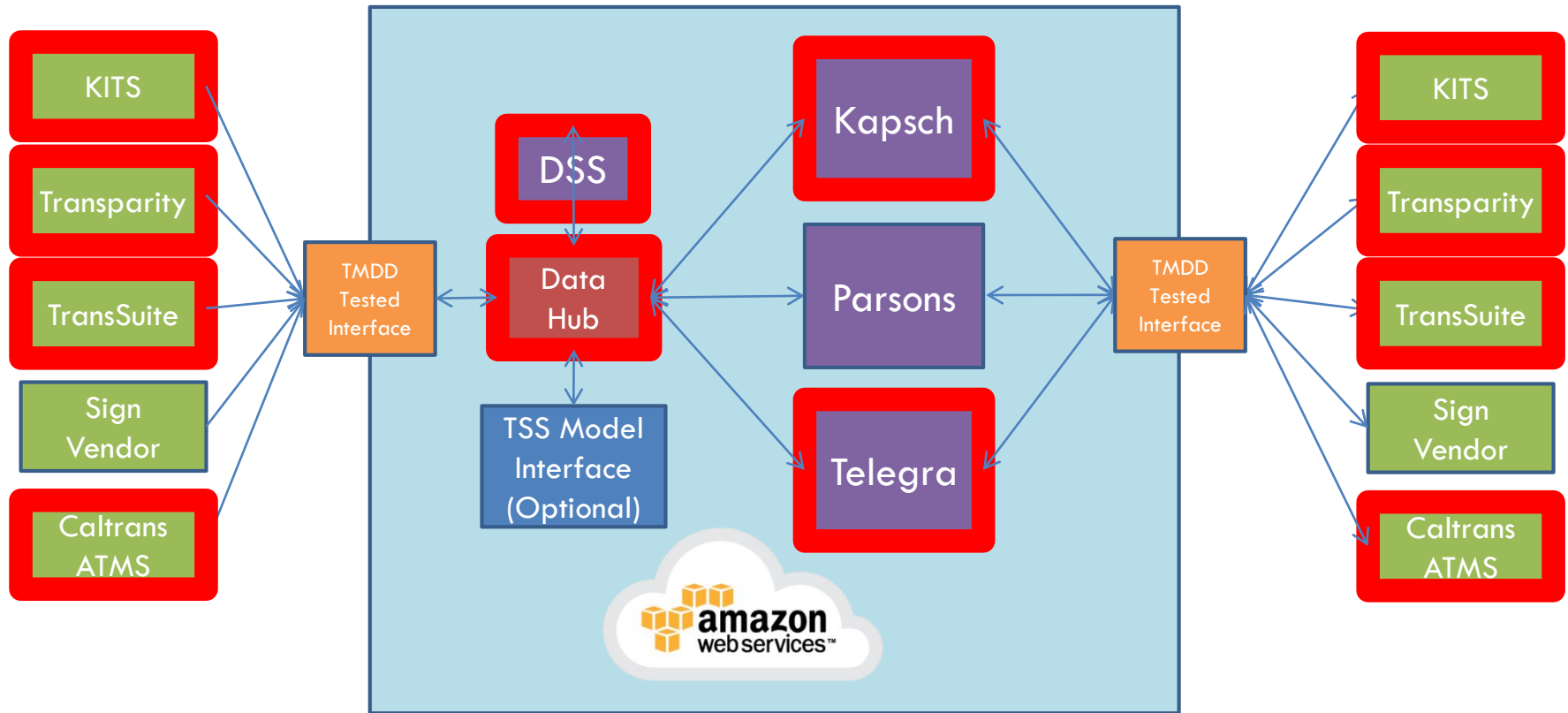


Communication – Kali to Comment

8

- **Work ongoing to setup connections between Caltrans, Pasadena and LA County**
- **Should be completed in September according to current schedule**

C2C Interface Implementations - Status



COTS (Purple Box) - ICMS

10

- **Telegra**
 - ▣ Getting VPN setup
- **Kapsch**
 - ▣ VPN Established
 - ▣ Development effort is underway
 - ▣ Network discussions nearing completion
- **Parsons**
 - ▣ Will start next June



TMDD Interfaces to Data Hub

11

□ Traffic Control Systems

- TransCore – Arcadia and Caltrans
 - Installation in Arcadia has occurred – Yes!
 - Will test with Data Hub in September
 - Installation at Caltrans in Sept/Oct
 - Small amount of additional work in process
- McCain - Pasadena
 - Working on finalizing the requirements
- Kimley Horn – LA County, Monrovia and Duarte
 - We are getting set to review their design

□ ATMS – Caltrans (CMS Signs, Ramps)

- Initial Release delivered in July
- We are testing out the interface and there will likely be updates needed



Systems Development and Integration

12

- **Release 1.1 of Data Interface Specification released for comment**
- **Working on system deployment automation**
 - ▣ Moving the system from the Berkeley Amazon cloud to the Caltrans Amazon cloud
 - ▣ Security issues are being addressed
 - ▣ Hired new cloud engineer
- **Data Hub**
 - ▣ Working on incident pipeline and workflows
 - ▣ Stabilized Apache Spark
- **DSS – Response plan generation initial version completed**
 - ▣ Simple workflow without error processing

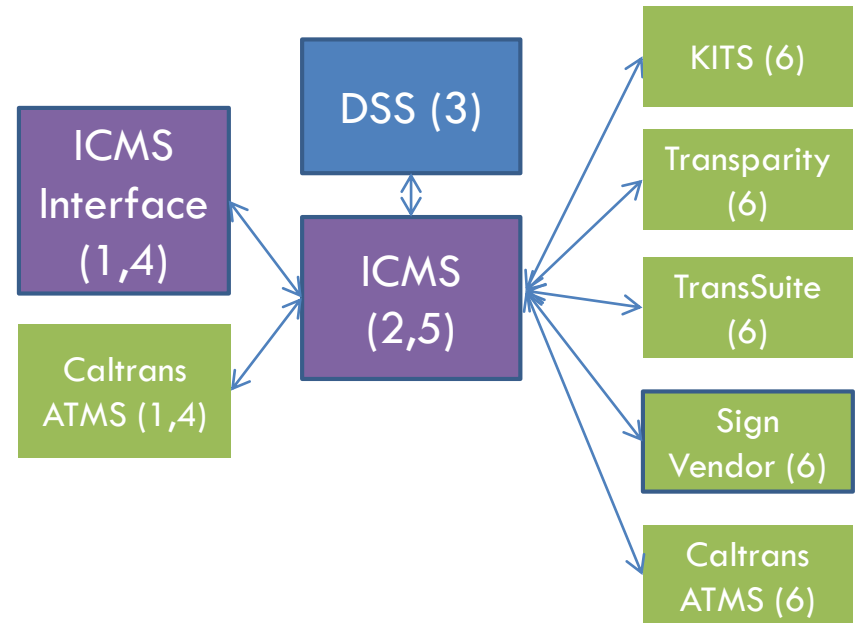


Incident and Response Plan Management

13

- 1) Incident is Created – ICMS (Purple Box) or ATMS
- 2) Incident Routed to DSS - ICMS
- 3) Response Plan is Generated – DSS
- 4) Response Plan is Approved – ICMS or ATMS
- 5) Response Plan is Executed – ICMS
- 6) Response Plan Components are Performed:

- 1) ATMS (Ramps and CMS signs)
- 2) Traffic Control Systems (Signals)
- 3) Sign Control System (Arterial Signs)



MOU

Mort



Call for Projects

Parsons



Agenda

16

- **I-210 CC Arterial Systems Improvement Project System Consulting Services – Scope**
- **Status of 9 procurement package**
- **Project Progress**
 - ▣ Current Status
 - ▣ 30-Day Look Ahead





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

SCOPE OF WORK

August 28th, 2018



Project Objective

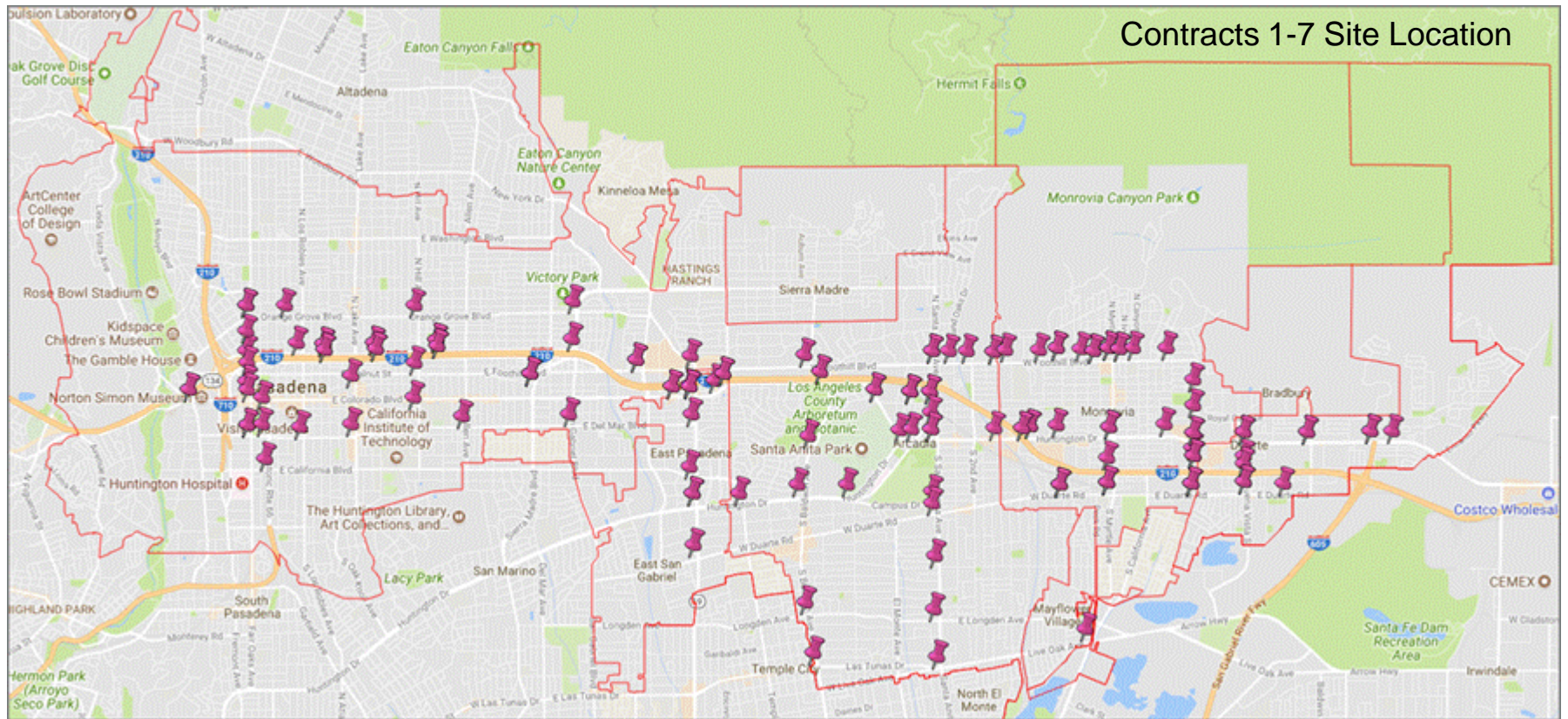
- Assist Caltrans D7 to manage and coordinate the execution of the 9 arterial ITS improvement projects

#	Package Description	Contract #	Contract Status
1	Bluetooth – Iteris Velocity	07A4470	Awarded
2	Bluetooth – BlueToad	07A4477	Awarded
3	New Controller Cabinets	07A4478	To be Re-advertised
4	Communication Upgrades	07A4479	Awarded.
5	Firmware/Timing Plan Updates/Controller Upgrades	07A4480	Awarded
6	Video Detection System	07A4481	Awarded
7	Data Communication Module and Video Detection Software Upgrade	07A4469	Being Re-advertised
8	Advanced Traveler Information Systems	N/A	To be advertised
9	Environmental Stations with Air Quality Sensors and Open Data Systems (ODS)	07A4388	Awarded

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	07A4478	√	√	√			
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	07A4469	√	√	√	√	√	√
8	Advanced Traveler Information Systems	N/A	√	√	√	√	√	√
9	Environmental Stations with Air Quality Sensors and Open Data Systems (ODS)	07A4388	√					

Project Area (cont.)



Contracts 1-7 Site Location



UPDATE ON PACKAGES 1-9

August 28th, 2018



Update on 9 Packages

Pkg. #	Package Name	Contract #	Project Status
1	Bluetooth – Iteris Velocity	07A4470	<ul style="list-style-type: none"> NTP: 7/10/2018 Kick-off Meeting: 7/30/2018 Submittal Approved
2	Bluetooth – BlueToad	07A4477	<ul style="list-style-type: none"> NTP: 7/10/2018 Kick-off Meeting: 7/30/2018 Server Specs (in Virtual Machine Environment) approved by LACPW; Preparing Submittal
3	New Controller Cabinets	07A4478	<ul style="list-style-type: none"> Disqualified: Bids came above the SB limit (314k). Procurement Package to be revised per Stakeholder comments on Pkg. 5 To be re-advertised
4	Communication Upgrades	07A4479	<ul style="list-style-type: none"> NTP: 7/13/2018 Kick-off Meeting: 7/30/2018 Submittal under Review (due 9/3/18)



Update on 9 Packages (cont.)

23

Pkg. #	Package Name	Contract #	Project Status
5	Firmware/Timing Plan Updates/Controller Upgrades	07A4480	<ul style="list-style-type: none"> NTP: 7/17/2018 Kick-off Meeting: 7/30/2018 Submittal Review Comments under Consolidation & Clarification
6	Video Detection System	07A4481	<ul style="list-style-type: none"> NTP: 7/10/2018 Kick-off Meeting: 7/30/2018 Submittal being revised per stakeholder comments and to be re-submitted
7	Data Communication Module and Video Detection Software Upgrade	07A4469	<ul style="list-style-type: none"> Disqualified: Bids came above the SB limit (314k). To be re-advertised
8	Advanced Traveler Information Systems	N/A	<ul style="list-style-type: none"> To be encumbered and advertised
9	Environmental Stations with Air Quality Sensors and Open Data Systems (ODS)	07A4388	<ul style="list-style-type: none"> NTP: 6/29/2018 Kick-off Meeting: 7/12/2018 Coordinating with LARTMC on the comm. access Coordinating with Caltrans, Parsons, & PATH to get real-time data in TMDD format to feed Open Data System



PROJECT PROGRESS

August 28th, 2018



Current Status

25

- **Stakeholder Outreach and Coordination**
 - ▣ Stakeholder Coordination Guide Document (draft completed)
 - Reviewed by Caltrans
 - Distributed to Stakeholders for Verification & Approval
 - To be distributed to Contractors
 - ▣ Continuously Support Coordination
 - Track Action Items
 - Coordination
 - ▣ Among multiple projects
 - ▣ Among Stakeholders
 - ▣ Between Stakeholders and Contractors



Current Status

26

- **Service Contract Management**
 - ▣ Collect project Baseline (Schedule, Risk)
 - ▣ Track Project Progress & Action Items
 - ▣ Manage Project Issues
 - Support Resolution
 - Status Tracking
 - ▣ Support Coordination
 - Among multiple projects
 - Between Stakeholders and Contractors



30-Day Look Ahead

27

- **Distribute Stakeholder Coordination Guide Document to Contractors**
- **Support contractors to schedule site investigation and get permit**
- **Submit August 2018 Project Progress Report**
- **Collect and Distribute master schedule when it is ready**
- **Next Project Monthly Status Meeting**
 - **Wednesday, September 19, 2018; 10:30 AM – 11:00 AM; via Webinar (invitation sent)**



Thank You and Questions?

August 28th, 2018

Before and After Study Tom/SMG



I-210 Connected Corridors

Before/After Evaluation

August 28, 2018

Framework

□ Assumptions

- ▣ Facilities to Evaluate
- ▣ State Conditions to Evaluate
- ▣ Key Strategies
- ▣ Available Data Sources

□ Performance Measures

- ▣ Recommended Measures

□ Data Collection

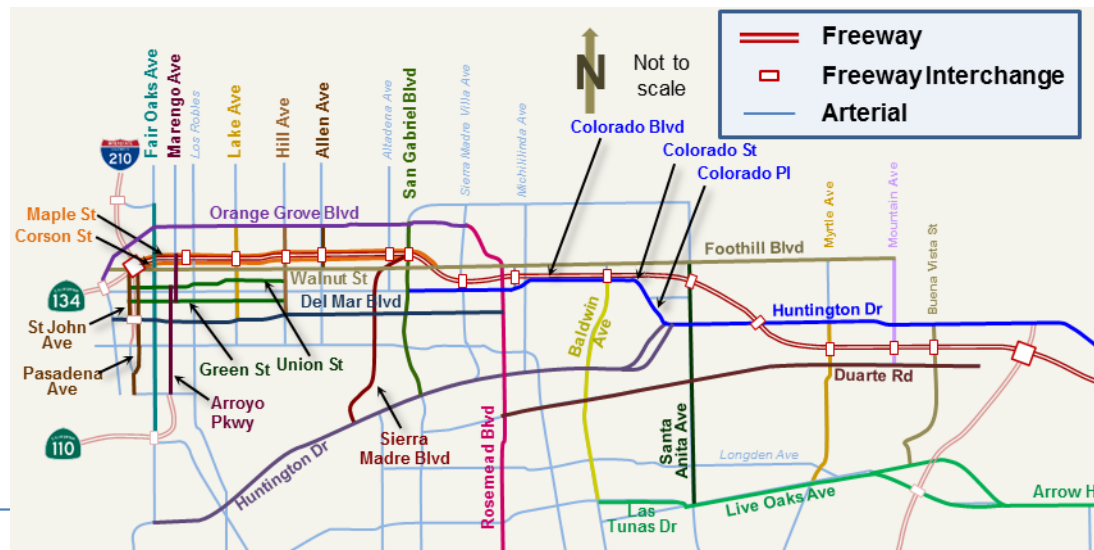
- ▣ Manual data collection (counts, travel time runs, field observations)



Facilities

► I-210 corridor integrated facilities to evaluate include:

- I-210 freeway and ramps (by city boundary segments)
- Key parallel arterials & connecting arterials (by city segments)
- Key intersections (by city boundary locations)



State Conditions

□ State conditions analysis

- Recurrent congestion analysis
- Non-recurrent congestion (collective) analysis
 - Non-planned events (incidents)
 - Planned events (from maintenance, construction)
- Specific incident analysis



Operational Scenarios

□ Possible Incident Scenarios (Types)

- Scenario 1: Major Incident on Freeway (All Lanes Blocked)
- Scenario 2: Moderate Incident on Freeway (Partial Lane Closure)
- Scenario 3: Major Incident on Arterial (All Lanes Blocked)
- Scenario 4: Moderate Incident on Arterial (Partial Lane Closure)
- Scenario 5: Major Incident on Arterial Intersection (I/S Blocked)
- Scenario 6: Moderate Incident on Arterial I/S (Partial I/S Closure)
- Scenario 7: Incident on Freeway On-Ramp
- Scenario 8: Incident on Freeway Off-Ramp



Strategies

□ Key strategies:

- **Recurrent Congestion** (excess demand caused)
 - Freeway Adaptive Ramp Metering
 - En-Route Messaging and Traveler Information (?)
 - Arterial Coordinated Signal Operations (?)
- **Non-Recurrent Congestion** (incident caused)
 - Incident Response Planning
 - Advisory Diversion Management and Rerouting
 - Construction/Maintenance Closure/Site Management (?)



Data Sources

□ Data Sources

- **Detectors** (before & after)
 - Caltrans Freeway PeMS (or ATMS) – freeway & all ramps
 - Arterial intersection signal detection
 - Arterial segment speed/occupancy detection
 - Arterial Bluetooth readers (travel time)
- **Manual** (before & after)
 - Arterial link tube and I/S turning movement counts (before & after)
 - select locations where detection is not available
 - INRIX crowd sourcing data (before & after)



Performance Measures

□ Suggested Performance Measures:

- Traffic Flow (Volumes)
- Travel Times
- Ramp Queues
- Freeway Speeds
- Delay
- Vehicle Miles Traveled (VMT)
- Vehicle Hours Traveled (VHT)
- Travel Time Variability
- Congestion Period (Peak Period Hours)
- Level of Service (Intersections)
- Mainline Incident Congestion Queue Dissipation Rate



Evaluation

Recurrent Congestion Analysis

Recurrent Congestion Analysis

1. Demand Measures

- Total freeway Vehicle Miles Traveled (**VMT**)
 - *From mainline detectors*
 - *Need to agree to definition of peak periods (6am-10am and 3pm to 7pm suggested)*
- Traffic **volumes** on arterial segments
 - *At select locations where we have good detection data*



Recurrent Congestion Analysis

2. Mobility Measures

- Total freeway vehicle hours **delay**
 - *Need to agree on reference speed (60 mph or 35 mph, or both)*
- Average **travel time**
 - *Bluetooth and detection data*
 - *INRIX data*
 - *Sample probe vehicle runs/KITS mobile for validation*



Recurrent Congestion Analysis

2. Mobility Measures

– On-ramp **delays**

- *Requires visual data collection (possibly video at select locations)*
 - *Need to agree on locations*
- *Need ramp volumes (from detection) to document any changes*

3. Reliability Measure (need large data sample)

- **Freeway travel time variability**
- **Arterial travel time variability**
- INRIX data



Recurrent Congestion Analysis

4. Other Measures

- Extent and duration of queuing at freeway bottlenecks
 - *Need agreement on bottlenecks and bottleneck locations*
 - *Use detection if have agreement on locations*



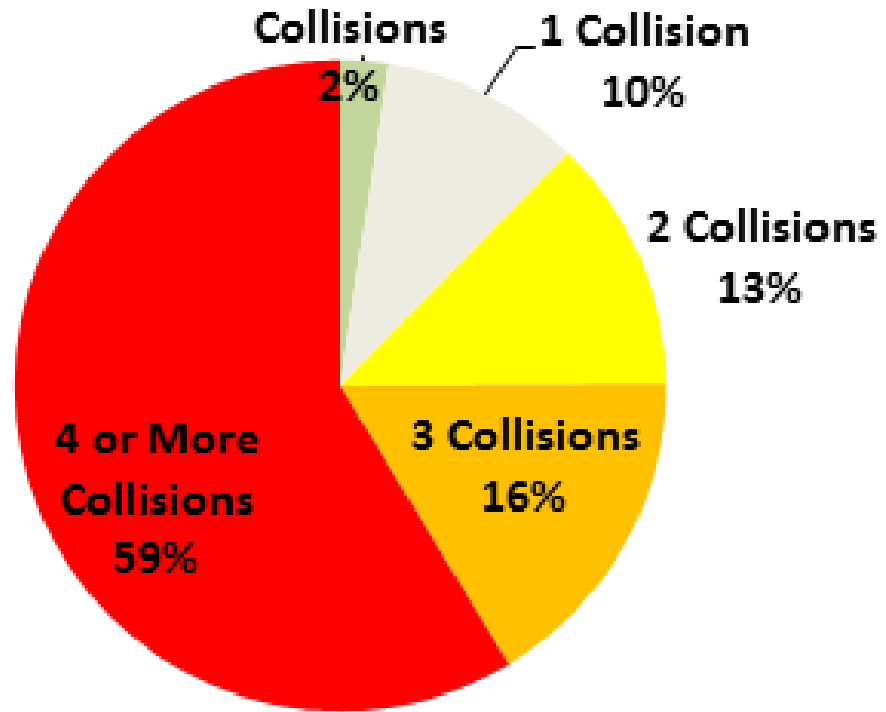
Evaluation

Non-recurrent Congestion Analysis



Why “significant” non-recurrent congestion is proposed

Number of Non-Holiday Midweek (Tu-Th) Days with...

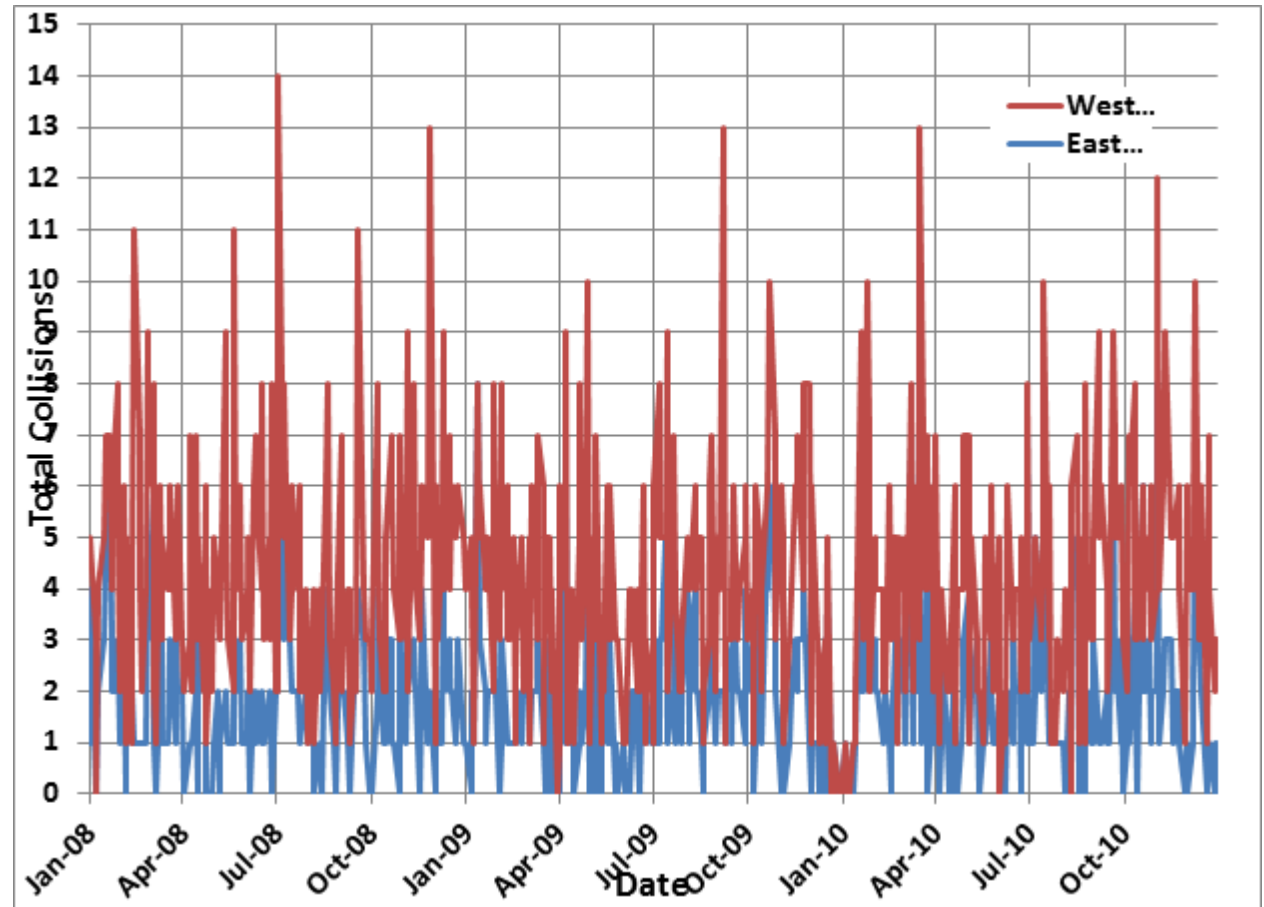


**Not many
collision-free
days**

Why “significant” non-recurrent congestion is proposed

**Not many
collision-free
days**

**No incident-free
days**



Non-recurrent Congestion Analysis

1. Mobility Measures

- Extent of congestion on freeway as a result of incident
 - *total delay and travel time and take total VMT into consideration (given that this measure is very difficult to compute as it has to be estimated and compared against “normal conditions”)*
- Changes in traffic conditions on arterials as a result of incident
 - *Volumes*
 - *Speeds*
 - *Travel times*



Non-recurrent Congestion Analysis

2. Traveler Behavior

- Extent of diversion of traffic from freeway as a result of incident
 - *Volumes at off-ramps, on-ramps, and arterials*
 - *Detection data*



Non-recurrent Congestion Analysis

3. Safety Measures

- Crash statistics (difficult due to delay in data availability)
 - *This measure will tell us if the various strategies reduced crashes*
 - *CHP CAD; Metro FSP records*
 - *SWTRS after 6-12 months*
 - *TASAS only for before conditions only;*
- Frequency, type, and severity of primary and secondary incidents
 - *CHP CAD; Metro FSP records*
 - *SWTRS – after 6 months;*
 - *TASAS only for before conditions only*



Evaluation

Specific Incident Analysis



Specific Incident Analysis

- Assessing impacts of the ICM on specific non-recurrent congestion
 - Few collisions are the same – a before and after for specific types of collisions may not be possible
 - Assess to extent possible based on data samples collected
 - Rate of queue dissipation evaluation:
 - *This measure would determine whether the I-210 Connected Corridors operations and its response plans (with integrated and coordinated arterial route signal timing modifications with traveler information) had an impact to the rate of reduction in the incident-caused congestion queuing and to the increase in the productivity flow rates through the affected diversion off-ramps and arterials.*



Specific Incident Analysis

- *This would indicate that the amount and the impact of congestion (e.g., queue length and length of time of the queue presence) on the freeway is reduced.*
- *This would also indicate that the increased productivity flow through the off-ramps and arterials would results in reduced impact (e.g., keeping more of the diverted traffic along the preferred arterials and reducing the total length of time diverted traffic is on the arterials) on the local facilities.*
- *Data collection approach:*
 - *Identify after condition ICM operations impacted incident(s)*
 - *Identify type, location, direction, season, day of week, time of day*
 - *Determine average rate of queue dissipation and hourly impacted off-ramp flow*
 - *Determine average hourly flow along ICM operated arterials*



Specific Incident Analysis

- *Data collection approach (cont.):*
 - *Identify most similar representative before condition incidents for comparison*
 - *Note – since we are measuring only the rate of change and the rate of flow (and not absolute quantity totals), incidents do not necessarily need to match exactly. Similar in type, in reasonably close proximity location (e.g, using the same bypass arterials), in same direction, in reasonably similar time-frame may be enough.*
 - *Identify type, location, direction, season, day of week, time of day*
 - *Determine average rate of queue dissipation and hourly flow of the same off-ramps as after condition*
 - *Determine average hourly flow along the same arterials as after condition*



Specific Incident Analysis

- *Data collection approach (cont.):*
 - *Use freeway PeMS data for incident-caused congestion queue dissipation (speed contour plots) and impacted off-ramps hourly flows*
 - *Use the I-210 Connected Corridors arterial detection data for the impacted arterials hourly flows*



Specific Incident Analysis

PeMS 18.0 Freeway I210-E in District 7

Current Location: Lancaster, Palmdale, Pinon Hills, Santa Clarita, Angeles National Forest, Thousand Oaks, Los Angeles, El Monte, Ontario, Santa Monica, Long Beach, Santa Ana, Rancho, Anaheim, Leaflet, HERE

Facilities & Devices | Performance | Data Quality | Configuration | Events

Events > CHP Incidents > Detail

From: 08/21/2018 10:00 To: 08/27/2018 12:59
 Max Range: 1 week

Severity: All

Type: Accident Hazard Other
 Breakdown Police
 Congestion Weather

Source: All

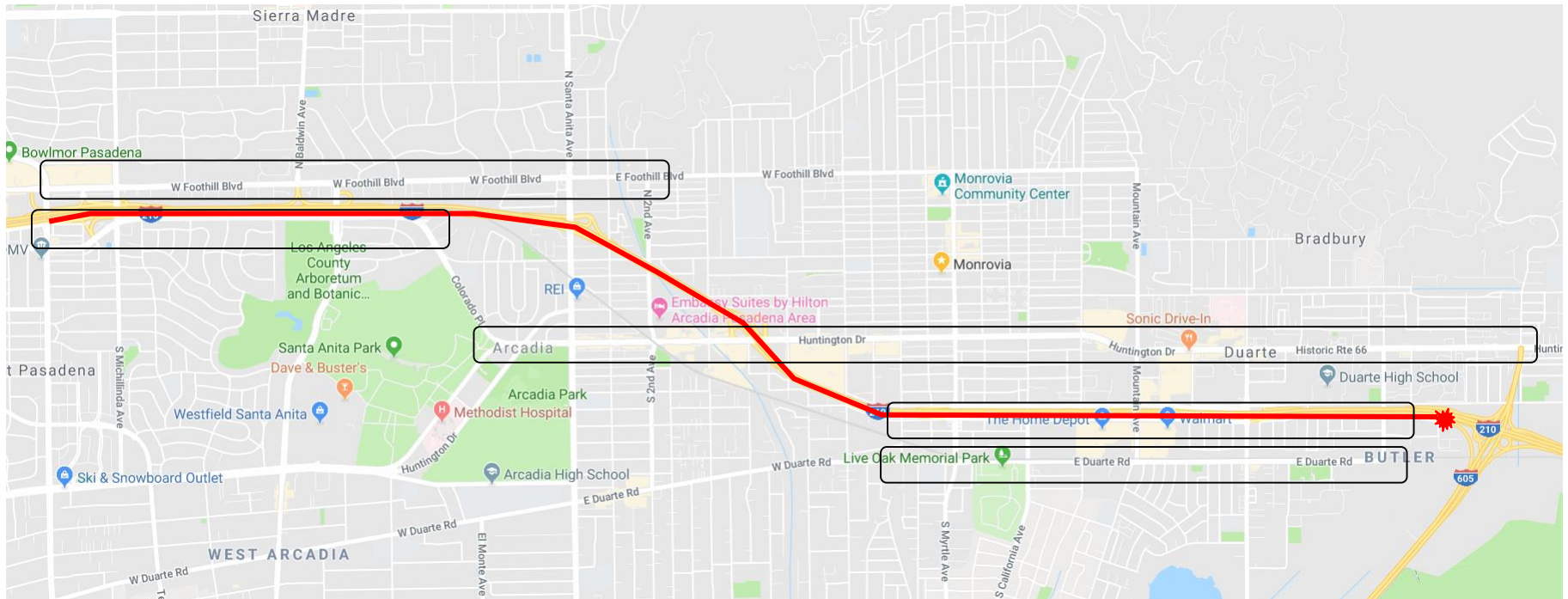
Postmile Range (0.00 - 52.50): 24 - 37
 View Crossings...

VIEW TABLE | EXPORT TEXT | EXPORT to XLS | EXPORT to PDF

Incident Id	Start Time	Duration (mins)	Freeway	CA PM	Abs PM	Source	AREA	LOCATION	DESCRIPTION
18171192	08/21/18 10:50	27	I210-E	R24.82	24.8	CHP	LAFSP	I210 E SR134 W CON / I710 W SR134 W CON	1183-Trfc Collision-Unkn Inj
18171342	08/21/18 12:16	24	I210-E	R25.92	25.9	CHP	Altadena	I210 E / Lake Ave Ofr	1125-Traffic Hazard
18172061	08/21/18 17:45	33	I210-E	R32.911	33.2	CHP	Baldwin Park	I210 E / W Huntington Dr	1179-Trfc Collision-1141 Enrt
18172648	08/22/18 03:28	455	I210-E	R25.42	25.4	CHP	Altadena	La210254 I210 E / Wo Fair Oaks Av	20002-Hit and Run No Injuries
18173704	08/22/18 14:06	38	I210-E	R35.911	36.2	CHP	Baldwin Park	I210 E / I210 E I605 Con	20002-Hit and Run No Injuries
18173924	08/22/18 15:43	296	I210-E	R31.911	32.2	CHP	LAFSP	I210 E / N Santa Anita Ave	1125-Traffic Hazard
18173945	08/22/18 15:48	20	I210-E	R33.711	34	CHP	Baldwin Park	I210 E / Myrtle Ave Ofr	1182-Trfc Collision-No Inj
18174209	08/22/18 17:35	0	I210-E	R27.42	27.4	CHP	LAFSP	I210 E / N ALLEN AVE	1125-Traffic Hazard
18174210	08/22/18 17:34	14	I210-E	R27.42	27.4	CHP	Altadena	I210 E / N Allen Ave	1125-Traffic Hazard
18174387	08/22/18 18:54	25	I210-E	R26.92	26.9	CHP	Altadena	I210 E / N Hill Ave	1183-Trfc Collision-Unkn Inj
18175327	08/23/18 08:38	69	I210-E	R36.611	36.9	CHP	LAFSP	I210 E / I605 S I210 E Con	1179-Trfc Collision-1141Enrt
18175330	08/23/18 08:35	204	I210-E	R36.611	36.9	CHP	Baldwin Park	I210 E / I605 S I210 E Con	1179-Trfc Collision-1141 Enrt
18175451	08/23/18 09:21	131	I210-E	R36.411	36.7	CHP	Baldwin Park	La210364 I210 E / Wo I605 N	1182-Trfc Collision-No Inj
18175475	08/23/18 09:43	70	I210-E	R35.211	35.5	CHP	Baldwin Park	I210 E / Buena Vista St	1182-Trfc Collision-No Inj
18175489	08/23/18 09:46	23	I210-E	R30.811	31.1	CHP	Altadena	I210 E / N Baldwin Ave	1125-Traffic Hazard
18175501	08/23/18 09:51	3	I210-E	R30.811	31.1	CHP	LAFSP	I210 E / N Baldwin Ave	1125-Traffic Hazard
18175614	08/23/18 10:55	3	I210-E	R32.211	32.5	CHP	Altadena	I210 E / E Colorado Blvd	1125-Traffic Hazard
18175737	08/23/18 12:03	2	I210-E	R25.92	25.9	CHP	Altadena	I210 E / Lake Ave Ofr	1125-Traffic Hazard
18175992	08/23/18 14:06	34	I210-E	R24.62	24.6	CHP	LAFSP	La210246 I210 E / Sr134 W Con	1182-Trfc Collision-No Inj
18175993	08/23/18 14:05	12	I210-E	R24.62	24.6	CHP	Altadena	La210246 I210 E / Sr134 W Con	1182-Trfc Collision-No Inj
18176309	08/23/18 16:15	21	I210-E	R32.111	32.4	CHP	Altadena	I210 E / Santa Anita Ave Onr	1182-Trfc Collision-No Inj
18176440	08/23/18 16:59	29	I210-E	R31.911	32.2	CHP	Altadena	I210 E / N Santa Anita Ave	20002-Hit and Run No Injuries
18178056	08/24/18 12:46	48	I210-E	R35.911	36.2	CHP	LAFSP	I210 E / I210 E I605 Con	1182-Trfc Collision-No Inj
18178099	08/24/18 13:07	40	I210-E	R32.911	33.2	CHP	Baldwin Park	I210 E / W Huntington Dr	1125-Traffic Hazard
18178452	08/24/18 15:33	27	I210-E	R33.911	34.2	CHP	LAFSP	I210 E / S Myrtle Ave	1182-Trfc Collision-No Inj

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Specific Incident Analysis



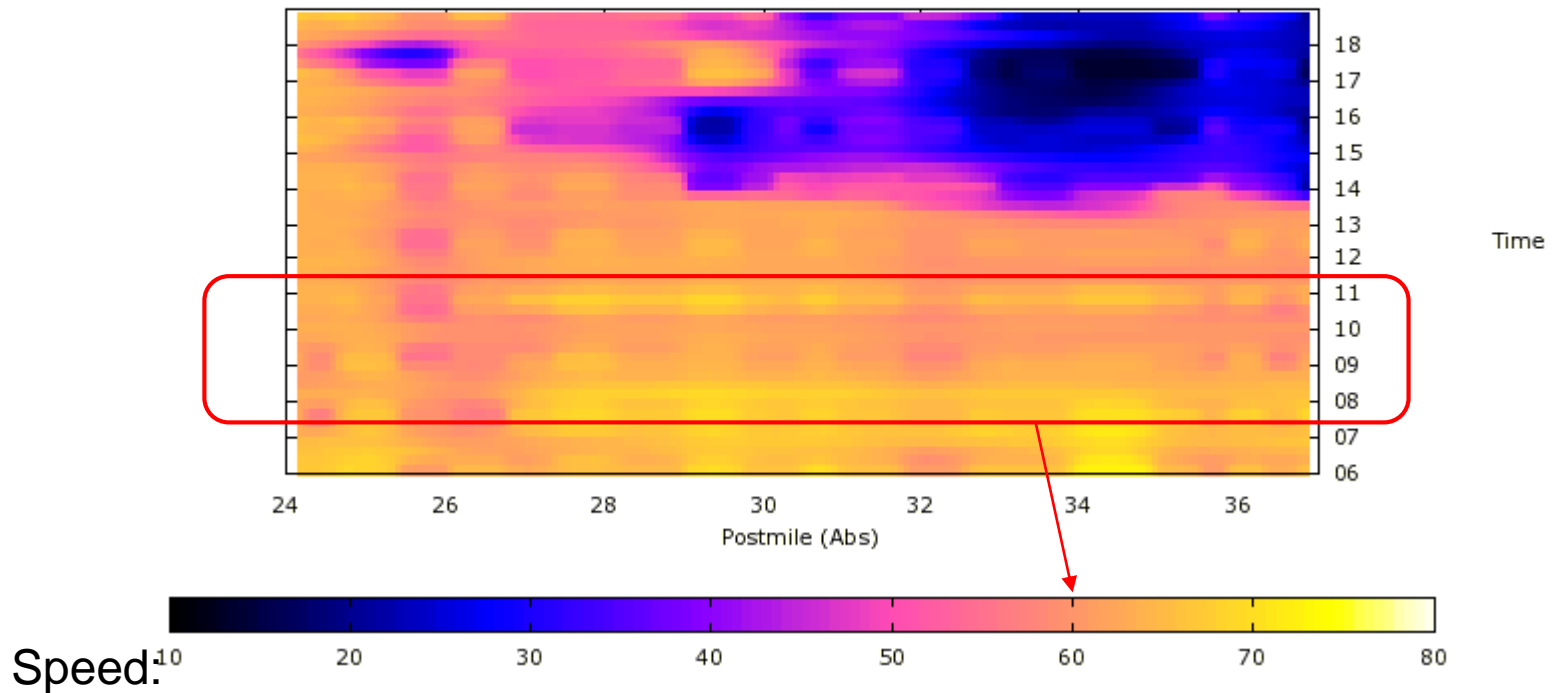
Specific Incident Analysis

Date	Description
8/23/2018 8:35	[2] #1LN , STALLED WHI PU
8/23/2018 8:36	[1] 4 VEH TC - BLOCKING #1 and #2 LNS
8/23/2018 8:36	[1] WHI CHEV CAMARO VS CD
8/23/2018 8:36	[4] [Appended, 08:37:40] [1] 2 VEH TC BLKING #1 LANE
8/23/2018 8:36	[31] [Appended, 08:58:16] [1] WHI CHEV CAMARO VS CD
8/23/2018 8:36	[30] [Appended, 08:58:16] [4] [Appended, 08:37:40] [1] 2 VEH TC BLKING #1 LANE
8/23/2018 8:37	[5] [Appended, 08:37:59] [2] 2ND TC - 2-3 VEHS BEHIND THIS TC
8/23/2018 8:37	[4] [Appended, 08:37:59] [1] PER RP - 2 SEP TC - 5-6 VEHS BLKG #2-3-4 LNS
8/23/2018 8:37	[8] [Notification] [CHP]-SV - PLT 70188F1 - WHI/BLK PK TRK - LEAVING THE SCENE - POSS INJURIES 0- 1179 [Shared]
8/23/2018 8:37	[35] [Appended, 08:58:16] [8] [Notification] [CHP]-SV - PLT 70188F1 - WHI/BLK PK TRK - LEAVING THE SCENE - POSS INJURIES 0- 1179 [Shared]
8/23/2018 8:38	[8] 1039 LACOFD OP # 84 - COPIES INFO [Shared]
8/23/2018 8:38	[10] PLT RTNS CLR 05 GMC VN O/O TUJUNGA - SV LS PULLING OVER EB 210 TO SB 605 PROB DISABLED FROM TC [Shared]
8/23/2018 8:38	[37] [Appended, 08:58:16] [10] PLT RTNS CLR 05 GMC VN O/O TUJUNGA - SV LS PULLING OVER EB 210 TO SB 605 PROB DISABLED FROM TC [Shared]
8/23/2018 9:56	[63] TASK .841 SILA/TMCLA/CTLA/LILA,SIGNALERT UPDATE - HOV AND #1 LN ARE NOW OPEN [Shared]
8/23/2018 9:56	[62] [FSP] has closed their incident [180823LAFSP00069]
8/23/2018 9:57	[64] ^TMC COPIES SIGNALERT UPDATE - 1039 MEDIA [Shared]
8/23/2018 10:01	[65] [Notification] [CHP]-PLS CONFIRM - #2 IS ONLY LN BLKD? THANKSN [Shared]
8/23/2018 10:08	[66] 81-201 RDWY CLR --- JUST CLR'D AT LNS [Shared]
8/23/2018 10:09	[67] ^THE COPIES ROADWAY CLEAR [Shared]



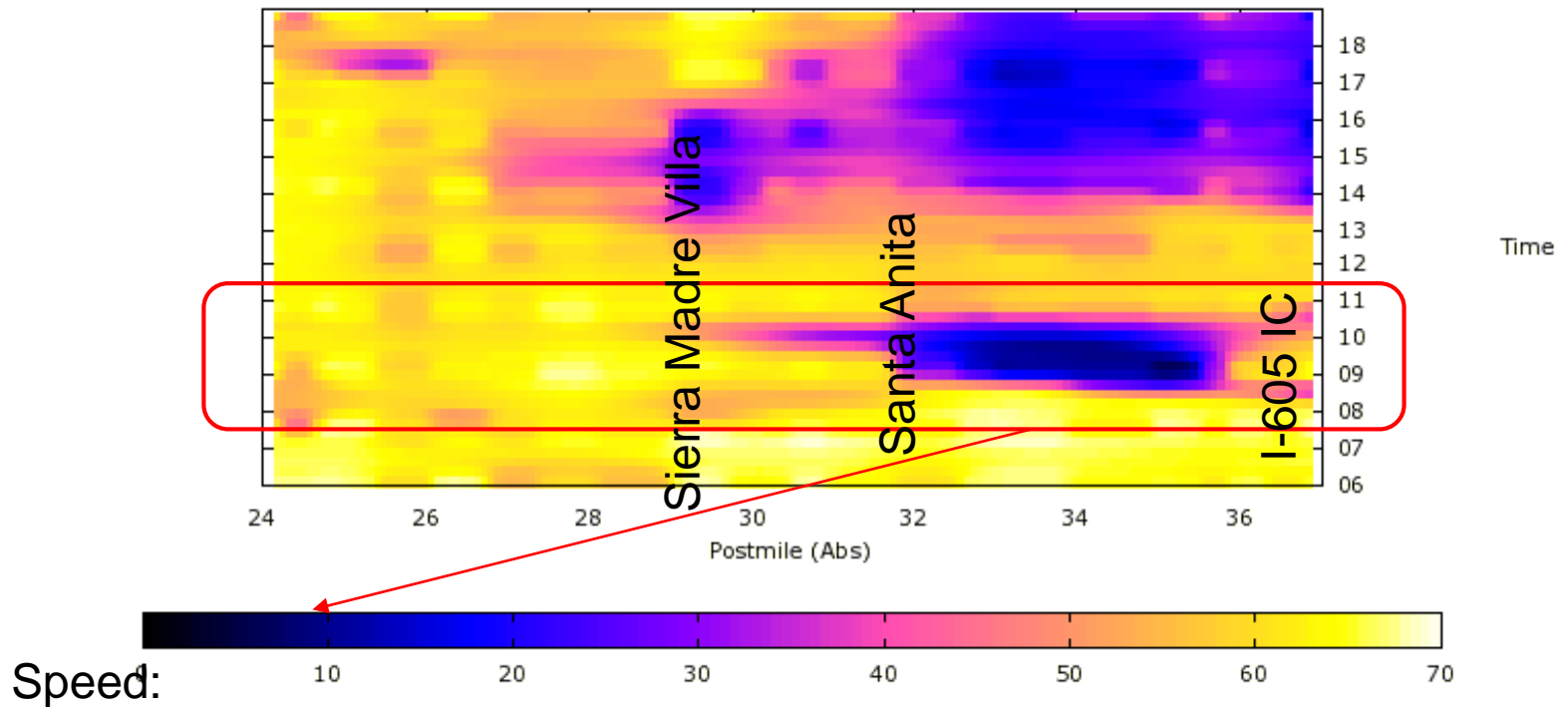
Specific Incident Analysis

Aggregated Speed (mph) for I210-E (46% Observed)
Tue 08/21/2018 06:00-18:59
Traffic Flows from Left to Right



Specific Incident Analysis

Aggregated Speed (mph) for I210-E (45% Observed)
Thu 08/23/2018 06:00-18:59
Traffic Flows from Left to Right



Framework

- **Before evaluation**
 - ▣ Spring 2019 (Feb to Mid-Mar or May)
- **After evaluation**
 - ▣ Spring 2020



Thank You
and
Next Meeting
(Suggest October 9th at
Duarte)

