



CONNECTED CORRIDORS UPDATE

HAPPY NEW YEAR!

January 22, 2014

Agenda

- ❑ **Connected Corridors Overall**
- ❑ **Funding Discussion**
- ❑ **I-680 Discussion**
- ❑ **Work Plan Update**
- ❑ **Outreach Update**
- ❑ **System Engineering Update**
- ❑ **Decision Support Update**
- ❑ **Applied Research Update**
- ❑ **TRB Update**
- ❑ **Conclusions**

Funding

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- **We are short**

Connected Mobility - VIP

- **Connected People**
 - ▣ Travelers, Businesses, Government Agencies

- **Connected Infrastructure**
 - ▣ Sensors, Controllers, Vehicles, TMCs

- **Connected Vehicles**
 - ▣ Cars, Trucks, Buses, Trains, etc

Connected Corridors – Current Focus

- **Connected People**
 - ▣ *Travelers, Businesses, **Government Agencies***

- **Connected Infrastructure**
 - ▣ **Sensors, Controllers, Vehicles, TMCs**

- **Connected Vehicles**
 - ▣ **Cars, Trucks, Buses, Trains, etc**

Vision poster from TRB

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Connected and Automated Corridor

Connected and
Automated
Vehicles

Connected
Infrastructure

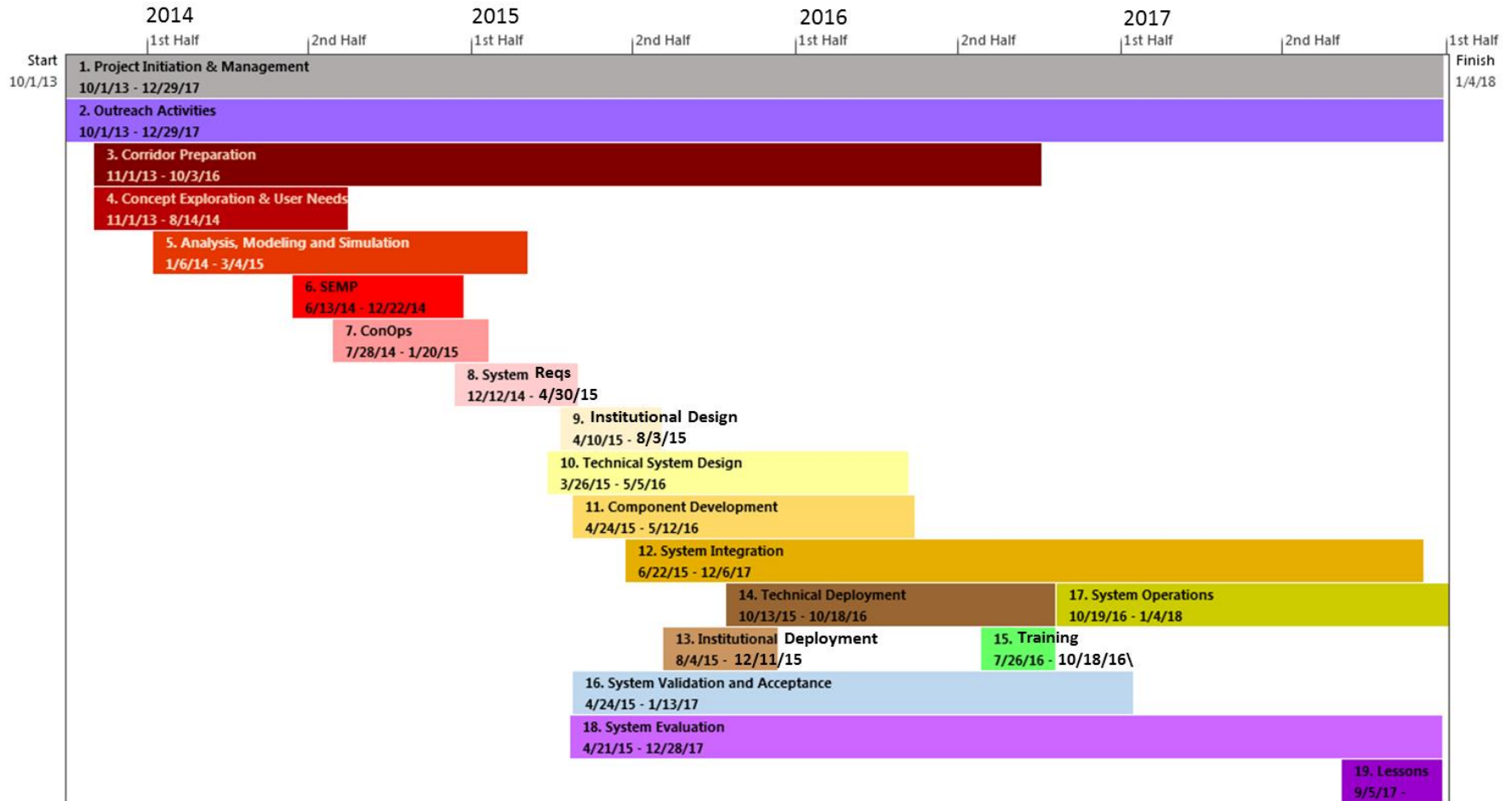
Integrated
Corridors

Connected
Travelers

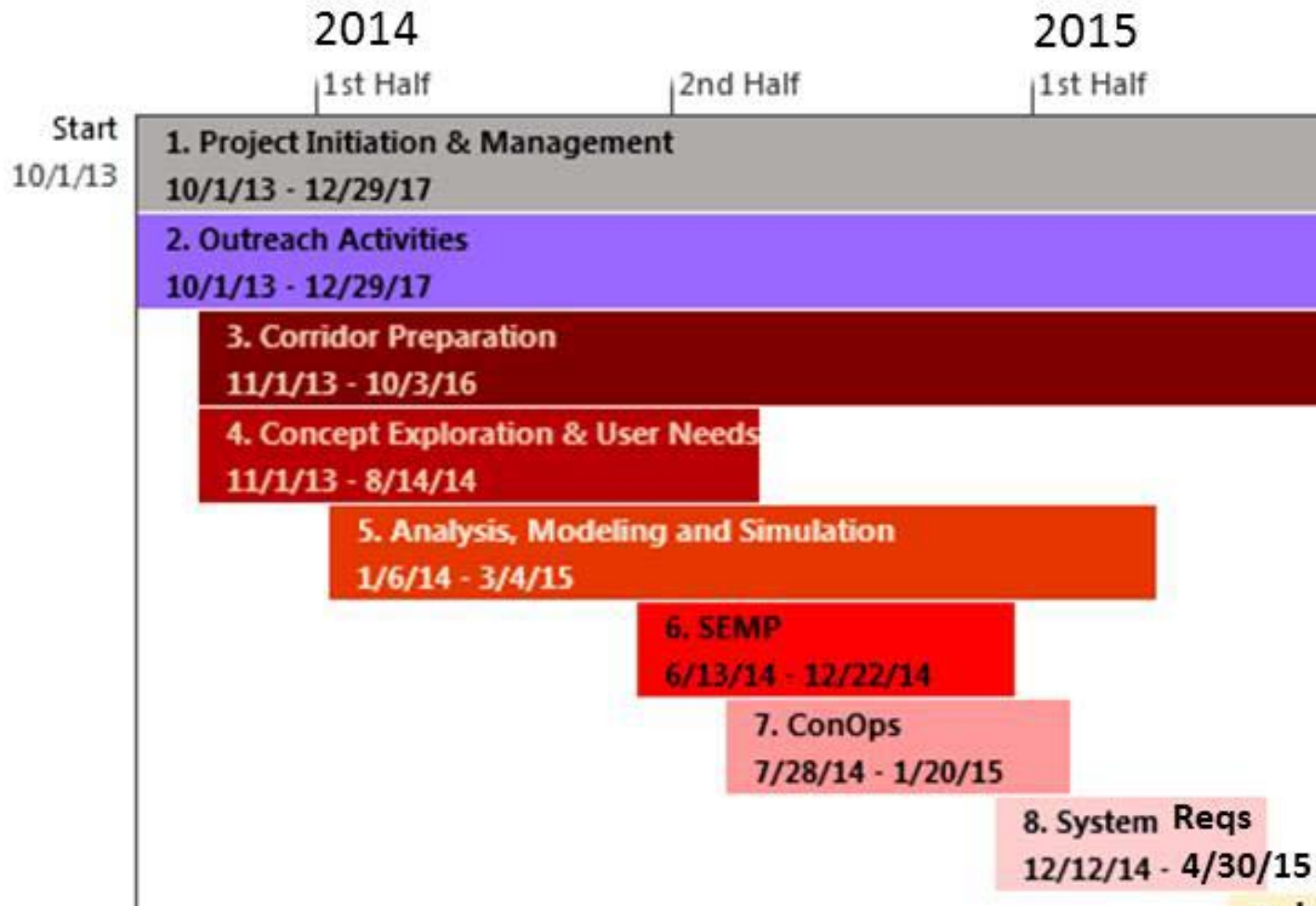
The Connected Corridors Program

- **Organizational and cultural changes**
- **Funding and strategic planning**
- **System Engineering**
- **Relationship management with gov agencies, industry, legislature**
- **Decision Support Tools**
- **Applied research**
- **210 Pilot**
- **Evaluations**
- **50 corridors in Ca**

I-210 Pilot – Overall Schedule



I-210 Pilot – Overall Schedule



Next Steps

- ❑ **User Needs Meeting – ID potential strategies and metrics**
- ❑ **Improve day-to-day communication between participants**
- ❑ **Complete corridor characterization with data and models**
- ❑ **Install temporary sensing**
- ❑ **Move various funding processes forward**
- ❑ **Implement organizational arrangements**
- ❑ **Provide initial simulation analysis of corridor strategies**
- ❑ **Complete Concept of Operations**

I-210 Outreach Update

- **Arcadia, Monrovia and Duarte – December and January**
- **Every city has agreed to share data and attend user needs workshop**
- **User needs workshop end of February in Duarte**
- **SGVCOG transportation committee must be contacted before workshop. Side conversation with Mark.**
- **Possible interactions with DCCM, DCCRM and ATM projects**
- **Consider public announcement – Video, etc as per other projects**
- **Should begin to consider possible 511 interactions**
- **ICM DART workshop in Dallas in Feb – Sam and Joe should go**

User Needs Meeting Agenda

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- **Acknowledge the potential of everyone in the room**
- **What are the relevant challenges of this corridor**
- **How would we measure improvement**
- **What strategies are we suggesting**
- **How might we implement these strategies for an incident**
- **What user constraints will we place on the implementation**

- **Must prepare well for this meeting with small premeetings**

Funding Update

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- **PIDS – HQ/D7 preparing for fund allocation**
- **HQ working on obtaining additional person hours**
- **LA-Metro preparing for possible fund allocation**
- **ICM USDOT funding – Proposal submitted, strong competition**

System Engineering Update

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- **Continuing to characterize the corridor**
- **Have begun asking for data – Who should do this?**
- **Have begun identifying missing sensors and controllers**
- **Need to install temporary sensing in corridor**
- **Began working on System Engineering Management Plan (SEMP)**

Risk Management Mind Map



Risk Management Details

21	Implementation	Funding	Sufficient funding for PATH, Caltrans District 7, and Corridor partners to fully support project execution phase is not obtained in a timely manner.	Moderate	Very High
22	Implementation	Requirements / Scope	The scope of the project is significantly altered during the course of the project, thus impacting schedule and budget.	Moderate	High
23	Implementation	Resources	PATH's systems team has either insufficient resources assigned to it or is unable to scale up in a timely manner.	Moderate	High
24	Implementation	Resources	PATH's research team has either insufficient resources assigned to it or is unable to scale up in a timely manner.	Moderate	Very High
25	Implementation	Resources	PATH's management team, including the Communications Manager, is not adequately staffed to meet scheduled project activities or unplanned changes to the project.	Low	Moderate
26	Implementation	Resources	Caltrans has not assigned required personnel (per work breakdown) in a timely manner.	Low	Moderate
27	Implementation	Resources	Regional Transportations Partners have not assigned needed personnel to support the pilot project.	Low	Moderate
28	Implementation	Data requirements	The existing freeway traffic data gathering infrastructure does not provide sufficient or accurate traffic data to support the development of efficient traffic management strategies	Moderate	Very High
29	Implementation	Data requirements	The existing arterial traffic data gathering infrastructure does not provide sufficient or accurate traffic data to support the development of efficient traffic management strategies	High	Very High
30	Implementation	Data Requirements	Planned enhancements to the freeway traffic data gathering infrastructure may not become operational in time for the pilot project.	Low	Moderate

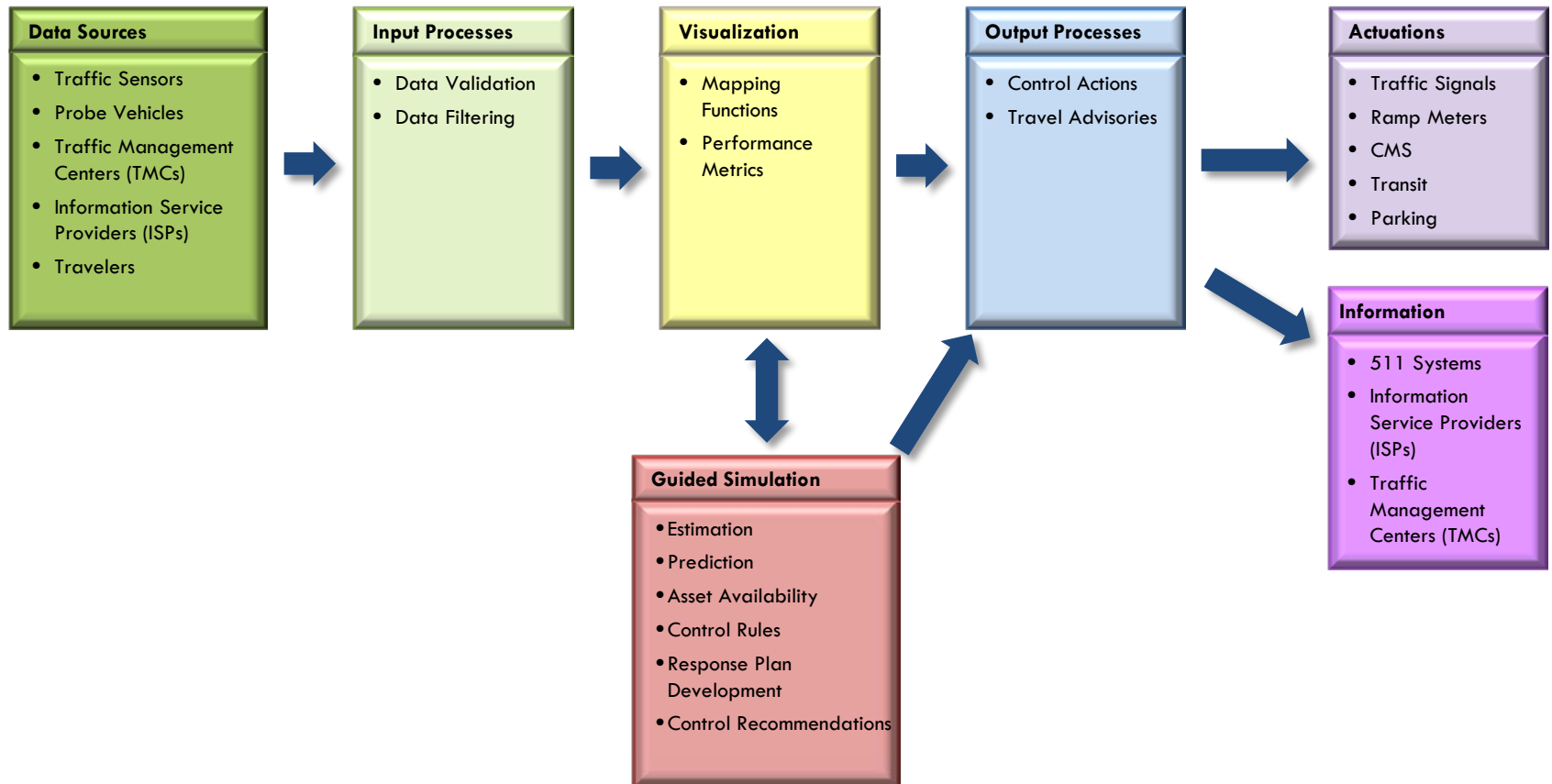
Decision Support Update

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- **We are setting up a workshop to help architect the overall decision support system**
- **Numerous vendors are involved and we must facilitate their working together**
- **Sandag has agreed to share their rules engine if we provide them with any updates that we make and ensure their system and the California system do not diverge overmuch**
- **We have begun modeling the 210 Corridor**
- **Modeling approach – Analysis → Static Scenarios → Dynamic Scenarios → Dynamic Control**

Decision Support Components

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Vendors Interactions

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Caltrans D7

System Integrator



Statewide Signal Control



Simulation



LA County

Traffic Signal Control



Traveler Information



Pasadena

ITS Solutions



Traffic Signal Control



Simulation



Arcadia

Traffic Signal Control



Video Traffic Detection



CCTV Cameras



Vendors Interactions

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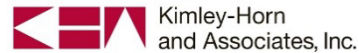
Monrovia

Traffic Signal Control



Duarte

Traffic Signal Control



Irwindale

Traffic Signal Control



LA Metro

Bus Tracking / Traveler Information



Common Equipment Vendors



Vendors Interactions

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Simulation/Analytical Tool Providers



Aimsun



Vissim



TransModeler
TransCAD



Synchro
SimTraffic



Paramics

Potential Engineering Consultants



Applied Research

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- ❑ **Real Time Origin Destinations from Cell Tower Data (AT&T)**
- ❑ **Full integration of probes as data source (Here/Nokia and Inrix)**
- ❑ **Macro modeling capabilities based on measured traffic data and not driver behavior estimates**
- ❑ **Highway, arterial and transit coordination in real time**
- ❑ **Improvements in reroute response and estimation**
- ❑ **Determination of modeling accuracy**
- ❑ **Human Factors – outward looking**
- ❑ **Institutional issues**

TRB Update

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- **Quite a few people attended**
 - ▣ Caltrans – Marco from D7, Coco (DRI Director), others
 - ▣ RITA – JPO – Bob Sheehan, others
 - ▣ LA-Metro – Frank, others
 - ▣ Pasadena – Fred Dock
 - ▣ SANDAG – Peter Thompson
 - ▣ DART - Koorosh Olyai
 - ▣ Various consultants and vendors
 - ▣ PATH – Tom, Joe, others

- **Lots of discussion on the evolution of ICM towards Connected Corridors - VIP (Vehicles, Infrastructure and People)**

Conclusions

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- **We are moving along well. Better than we anticipated**
- **Must manage our risks**
- **Begin more active involvement of the transportation community**
- **Utilize larger VIP vision where appropriate**
- **Other items?**