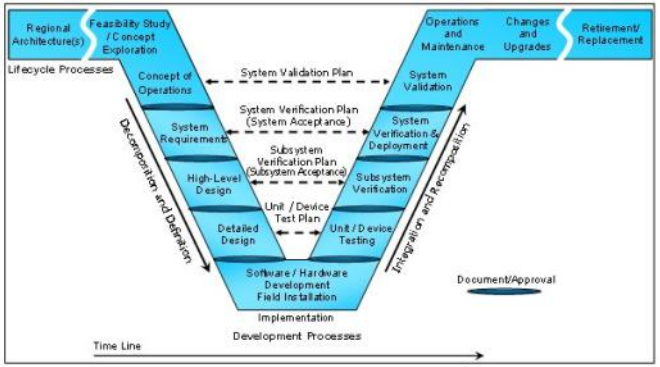
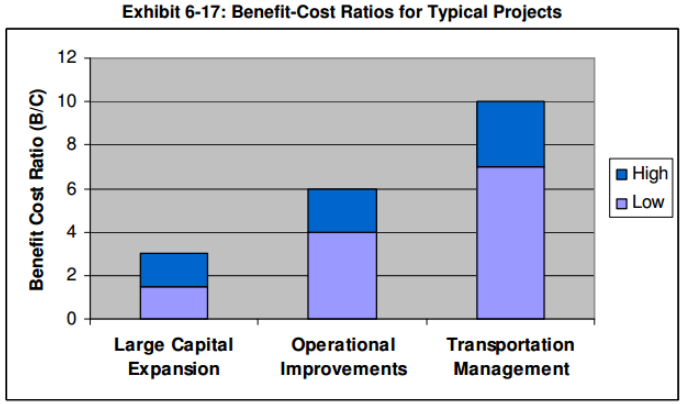
Connected Corridors Program

Collaborating to improve mobility and sustainability in California's transportation corridors

Mobility Management – A few variables

- ITS, ICM, ATM, ATDM…..
- Delay, Reliability, Safety, Air Quality, Cost, Equity…..
- Caltrans, Districts, CMA, AQB, Local Jurisdictions….
- Pedestrians, Bicycles, Autos, Trucks, Buses, Light Rail …
- Freeways, arterials, local roads, tracks……
- Multiple languages, cultures, driving habits, laws ….

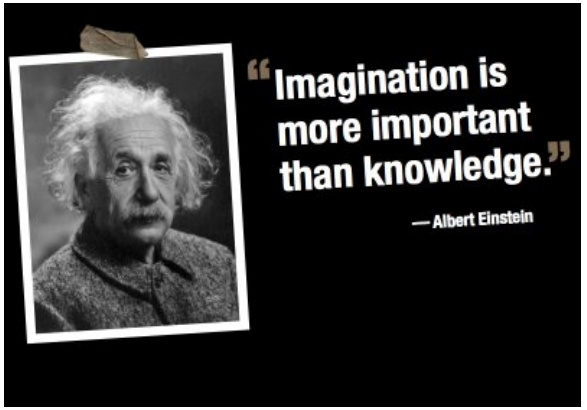




New Technologies, New Possibilities

- The intelligent Connected World
  - –The Social Internet: A connected world where travelers participate in real time demand management and crowd sourcing of information
  - –Big Data and Cloud Computing: New data sources, new sensors, new fusion methods. Measurement and real time management where never before possible
  - –Smart Devices: Automobiles and Infrastructure capable of making decisions, improving safety and reducing environmental impacts

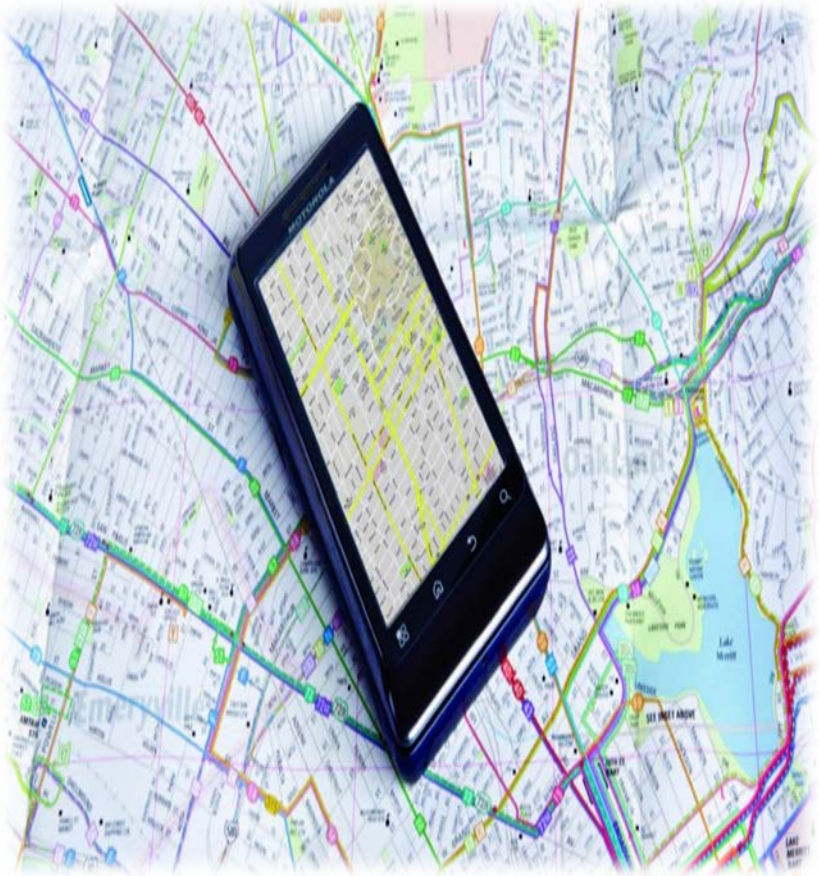
- Imagine:
  - –A mobility management center facilitating active cooperation between travelers, vehicles, infrastructure and organizations
  - –We could reach 30% of the users of a corridor , 50% of the vehicles, and most of the infrastructure management in real time.
  - –40% of the people and organizations who use a corridor helped plan out the commute each day in concert with the corridor managers



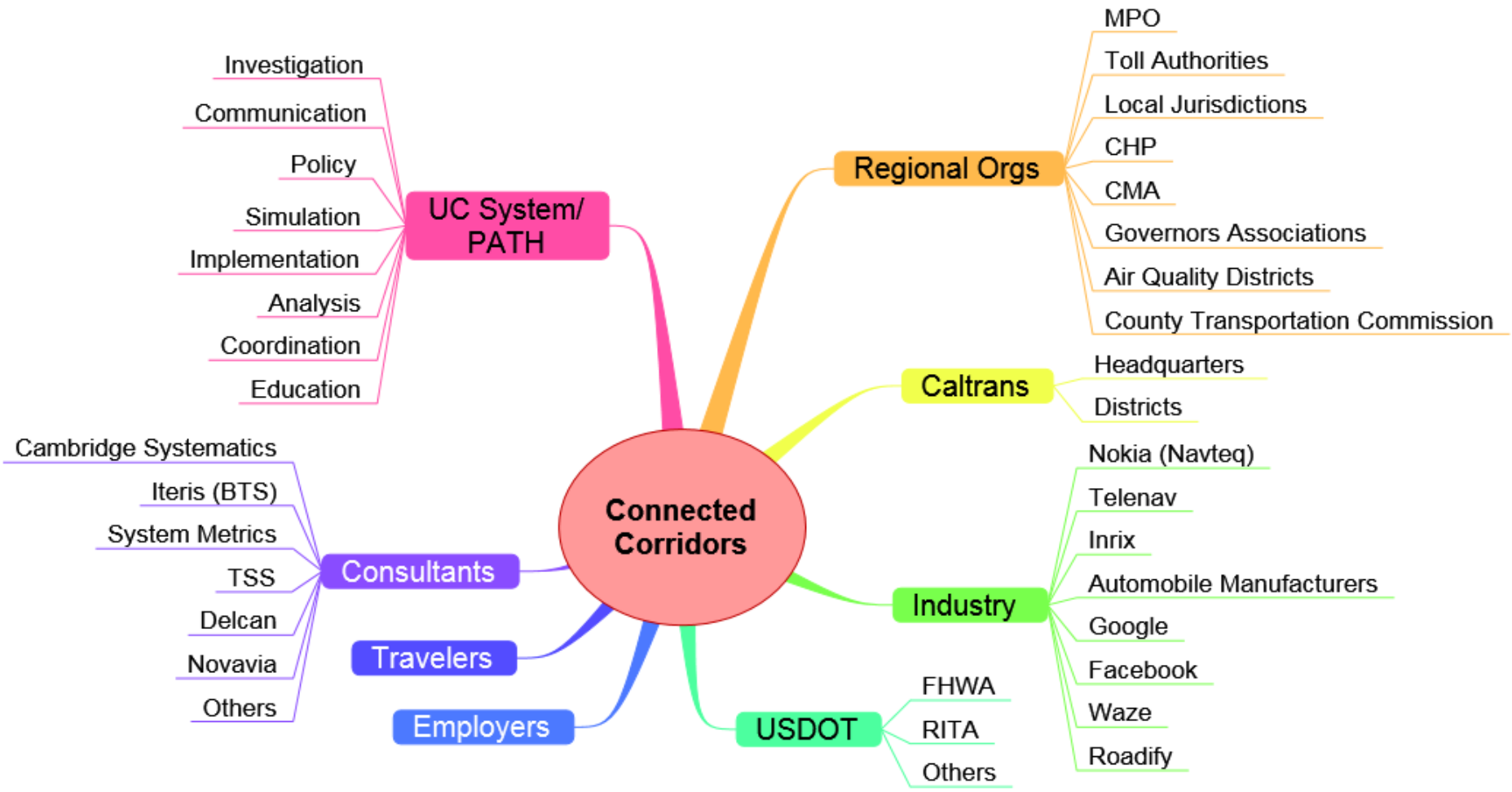
California Connected Corridors

Vehicles, Information & People (CC-VIP) Pilot

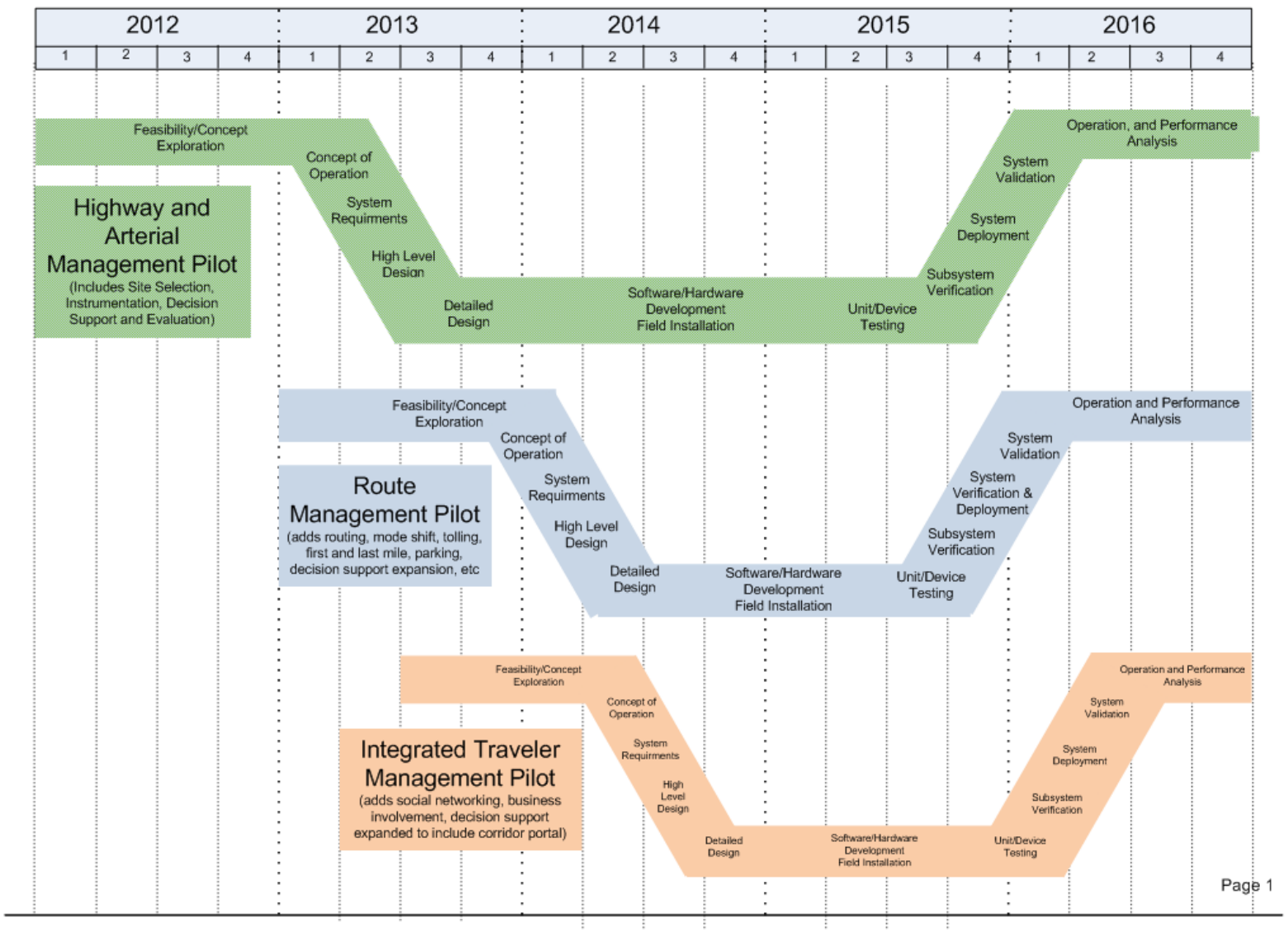
- Enable existing transportation infrastructure and vehicles to work together in a highly coordinated manner
- Deliver improved corridor performance (safety and mobility)
- Improve accountability
- Evolve Caltrans to Real-Time operations and management
- Enhance regional , local and private sector partnerships



Connected Corridors Ecosystem



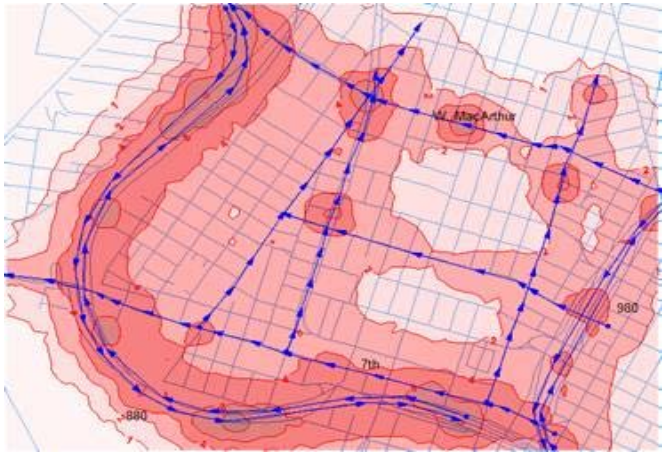
Connected Corridors Schedule

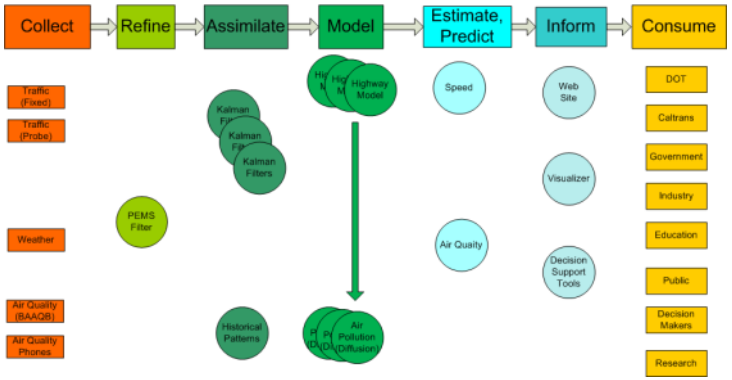


Connected Corridors – Synergy and Integration

- Intelligent Infrastructure
  - –Management Mechanisms (Freeway and Arterial Coordination)
  - –Highway Estimation – Fusion of loop and probe data
  - –Arterial Estimation – Flow and Machine learning algorithms
- Intelligent Vehicles
  - –Probe Data from moving vehicles
  - –Vehicle to server to vehicle
  - –Automated Vehicle Control
- Intelligent Travelers
  - –Collaborative Commuting
  - –Transit Work in LA
  - –Sentiment Analysis of text messages
  - –Incentivization Studies
  - –First and last mile mode shift studies
- Intelligent Systems
  - –Decision Support for whole corridors over multiple metrics
  - –Real Time Play Books
  - –Corridor level management strategies (supply and demand)
- Corridor Management Implementation
  - –Support for numerous CSMP initiatives
  - –680 Planning Studies
  - –Simulation support and quality assurance
- Safety
  - –Decision Support to provide safety metrics
- Data
  - –Quality Metrics for Probe Data
  - –Business Case for State Data Purchase
- Education, Outreach, Regulations and Policy Issues
  - –Monthly newsletter on Corridor Mgmt in Ca
  - –Sponsoring visiting practioners

Air Quality Decision Support Map (880/980)





Agenda

- 9:30 Welcome
  - Introductions (Tom) 10 Minutes
  - PATH Overview (Tom and Roberto) - 15 mins
  - LAMTA Overview (Frank Quon) - 30 mins
- 10:30 Connected Corridors – Integrated Corridor Management (ICM)
  - Vision, Components, & Timeline – 15 mins (Joe Butler)
  - **Planning, Decision Support, Prediction and control (TOPL) – 15 mins (Gabriel Gomes)**
  - Real-time decision support, Travel Info: Mobile Millennium.– 15 mins (Alex Bayen)
  - Break - 10 Minutes
  - Traffic Management Strategies – 15 mins (Roberto Horowitz)
  - Data fusion – Anthony Patire (15 mins)
  - Transit – 15 mins (Wei-Bin Zhang)
  - Collaborative commuting – 15 mins (Alex Bayen/Joan Walker)
- 12:30 Working lunch
  - Corridor Management in LA - Policy and Organizational Items
- 1:10 Other PATH Research Projects
  - Safety – 15 mins (Ching-Yao)
  - EAR - 15 mins (Alex Skabardonis)
  - Truck platooning/Cooperative adaptive cruise control – 15 mins (Steve, Xiao-Yun)
  - Demo overviews (VAA, others) - 5 Minutes (Wei-Bin)
- 2:00 Discussion
  - Opportunities for Collaboration
  - Next Steps
- 2:30 Relocate to RFS
- 3:00 Demonstrations/Show and Tell
  - Transit VAA
  - PATH Intelligent intersection
  - Traffic lab