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Deployment of ITS Projects in Pasadena – A Local Agency Perspective

ITS California Annual Meeting

October 2, 2013

Norman Baculinao, PE

Pasadena and the Region

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Introduction

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- Pasadena ITS Brief Timeline
- Funding Streams
- Master Plans
- Leveraging Existing Policies, Environment
- Ongoing issues and Lessons Learned

1991 – Pasadena TMC Created

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- TWP network/Series 2000 Central TCS and

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1994 – CCTV, CMS and HAR

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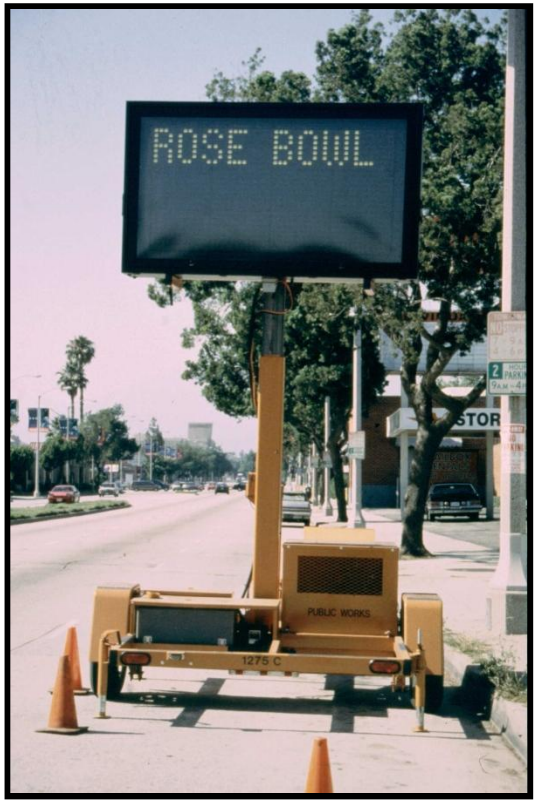
- 10 CCTV
- 6 Fixed CMS
- 2 Portable CMS
- Highway Advisory Radio (HAR)



2003 – Fiber Optic Deployment

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- Fair Oaks Ave and Arroyo Parkway
- Metro Gold Line – QuicNet TCS
- IEN (for Series 2000 TCS)

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2007 – I-710 Rogan Bill

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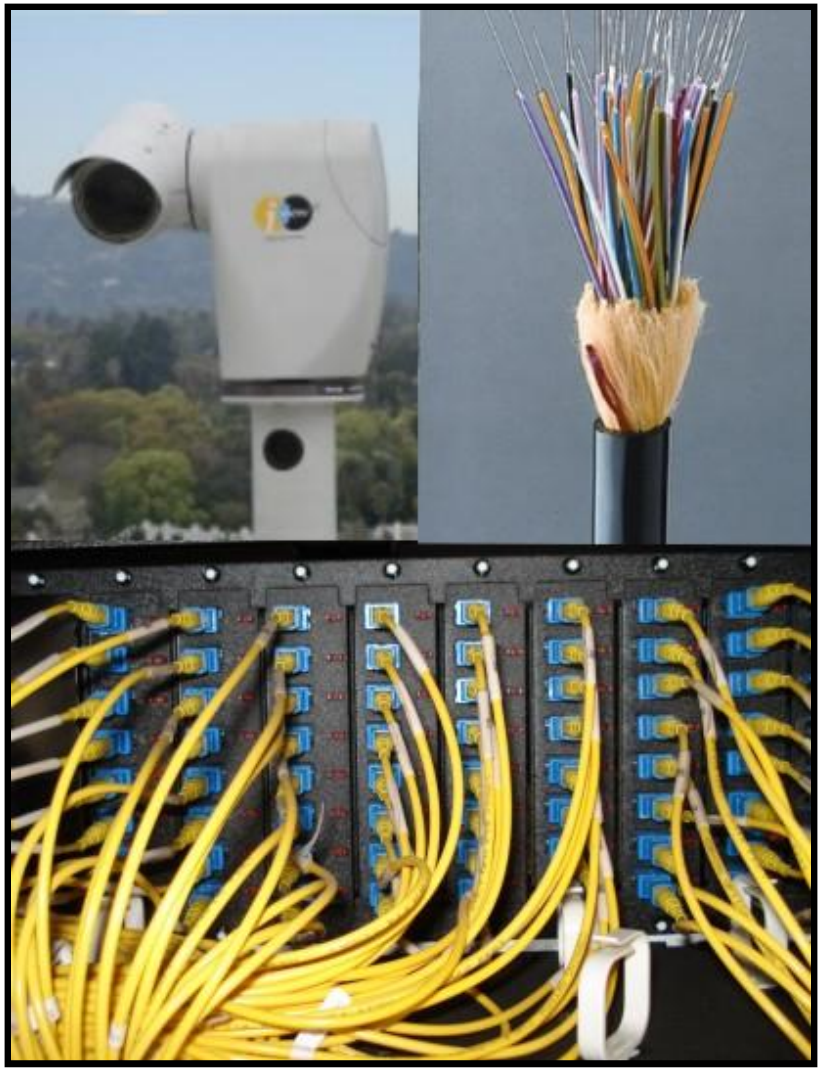
- i2 Central System
- Additional Fiber Deployment



Current TMC Console

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Current ITS Deployment

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- Over 25 miles of fiber
- 4 Central Traffic Control Systems (all on the IEN)
- 31 CCTV Cameras
- 5 Fixed CMS (6 legacy CMS no longer operational)
- SMART Signal Pilot
- Transit Vehicle Arrival Information System
- Bluetooth Pilot
- SCATS Adaptive System on Fair Oaks Ave
- Video Detection (65 intersections)
- System Detection (80 intersections)

SMART Signal Pilot

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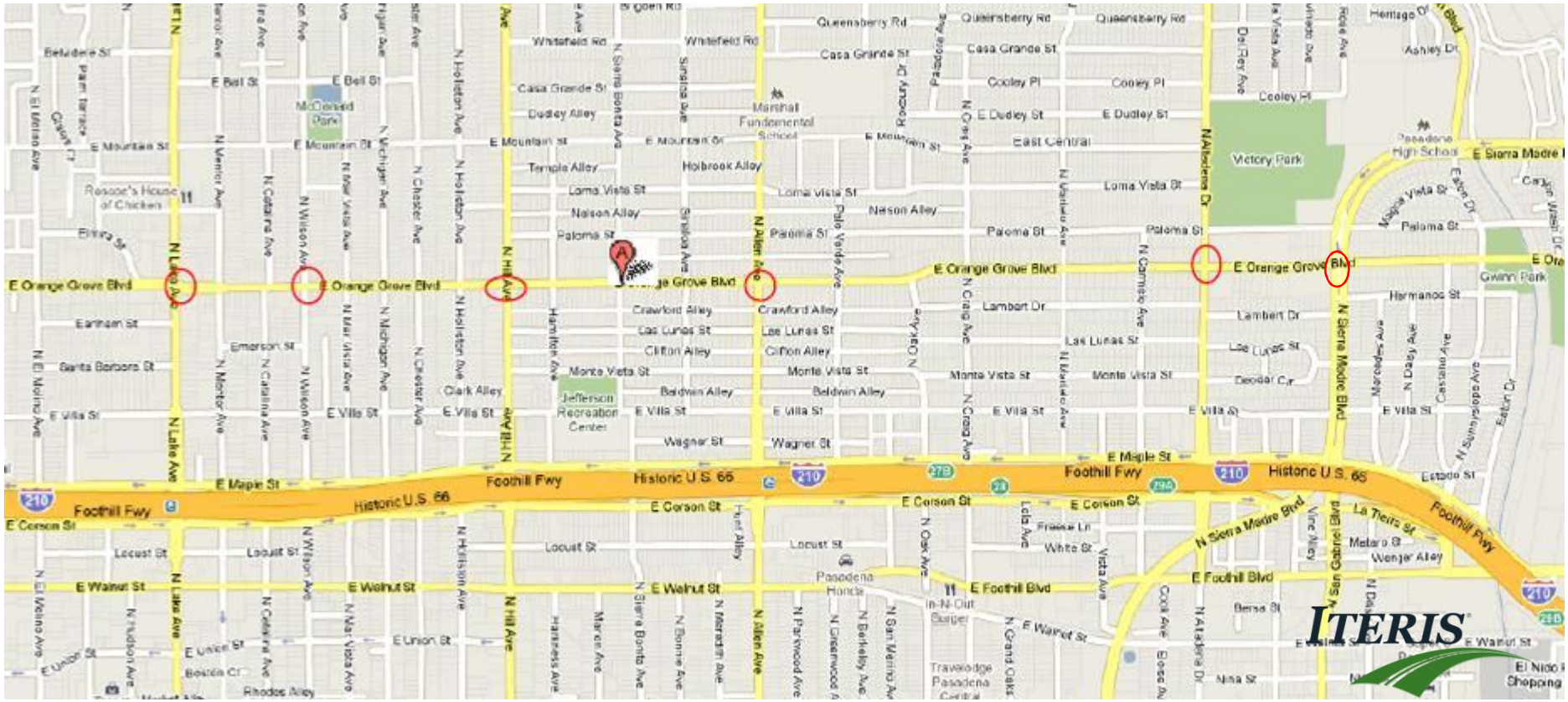
- Installation of SMART-Signal system at six intersections along Orange Grove Boulevard in Pasadena, CA in early 2011



Infrastructure

University of Minnesota Smart Signal

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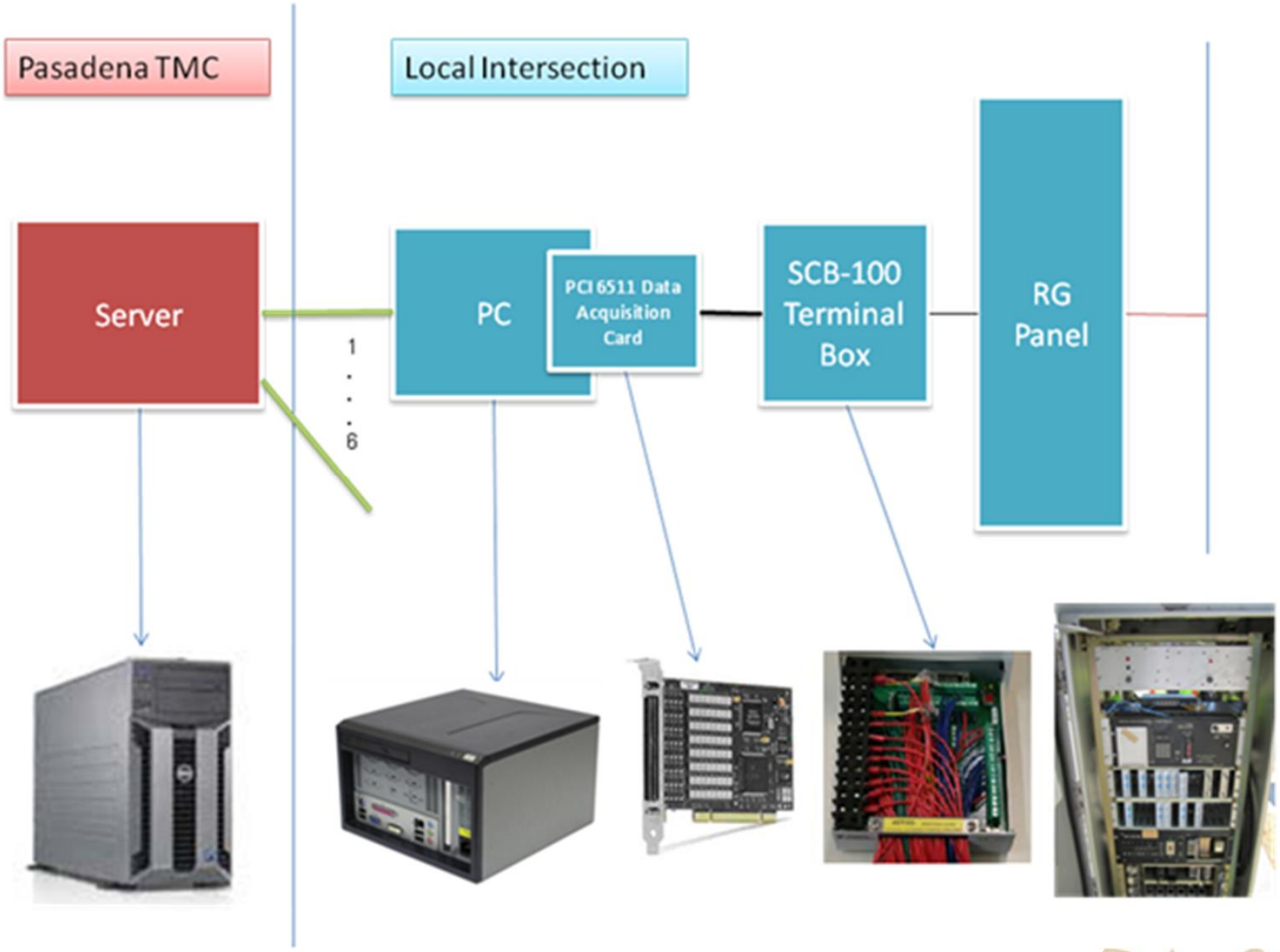

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Queue Results

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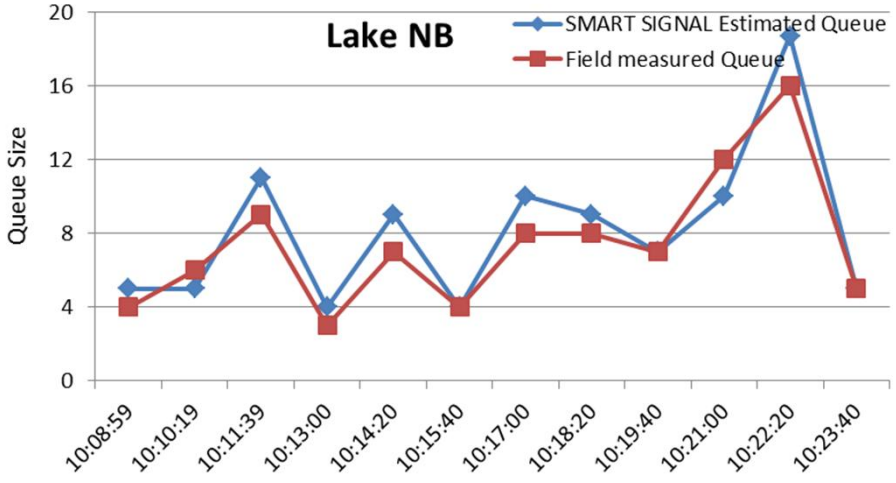

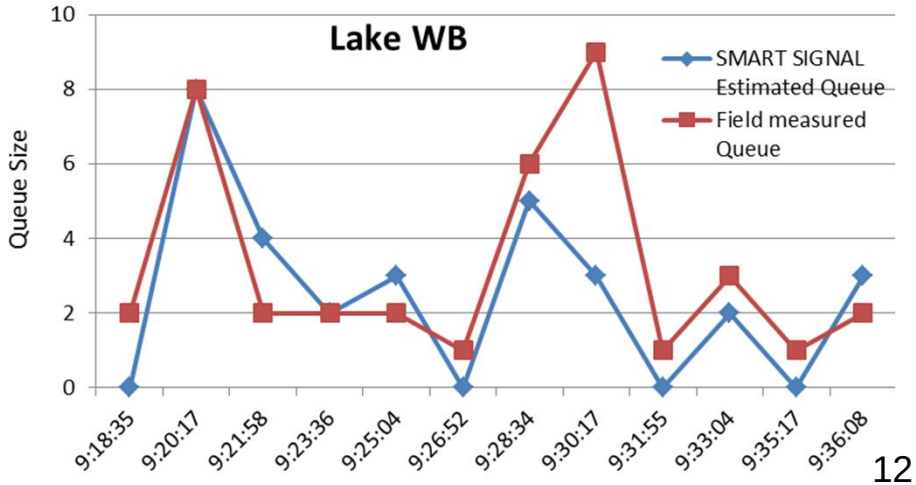

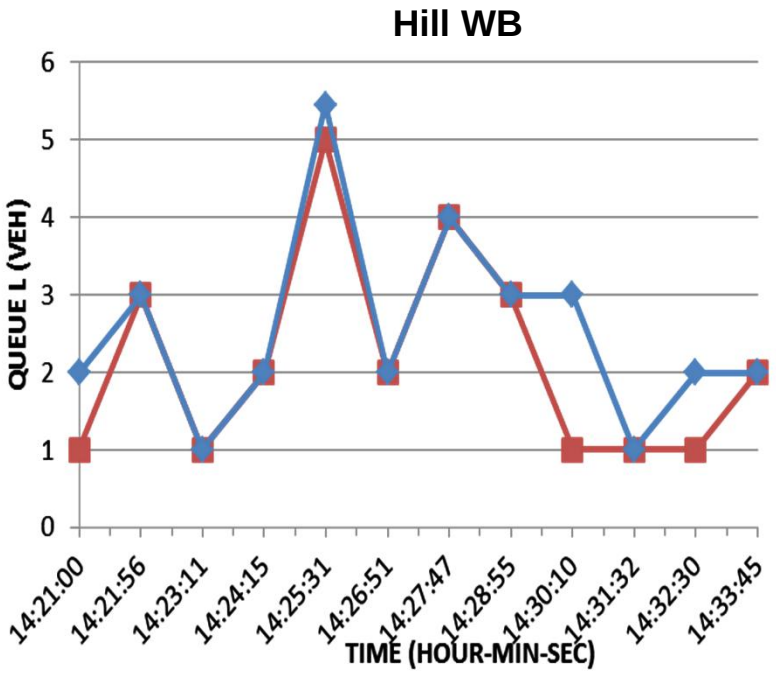

SCATS

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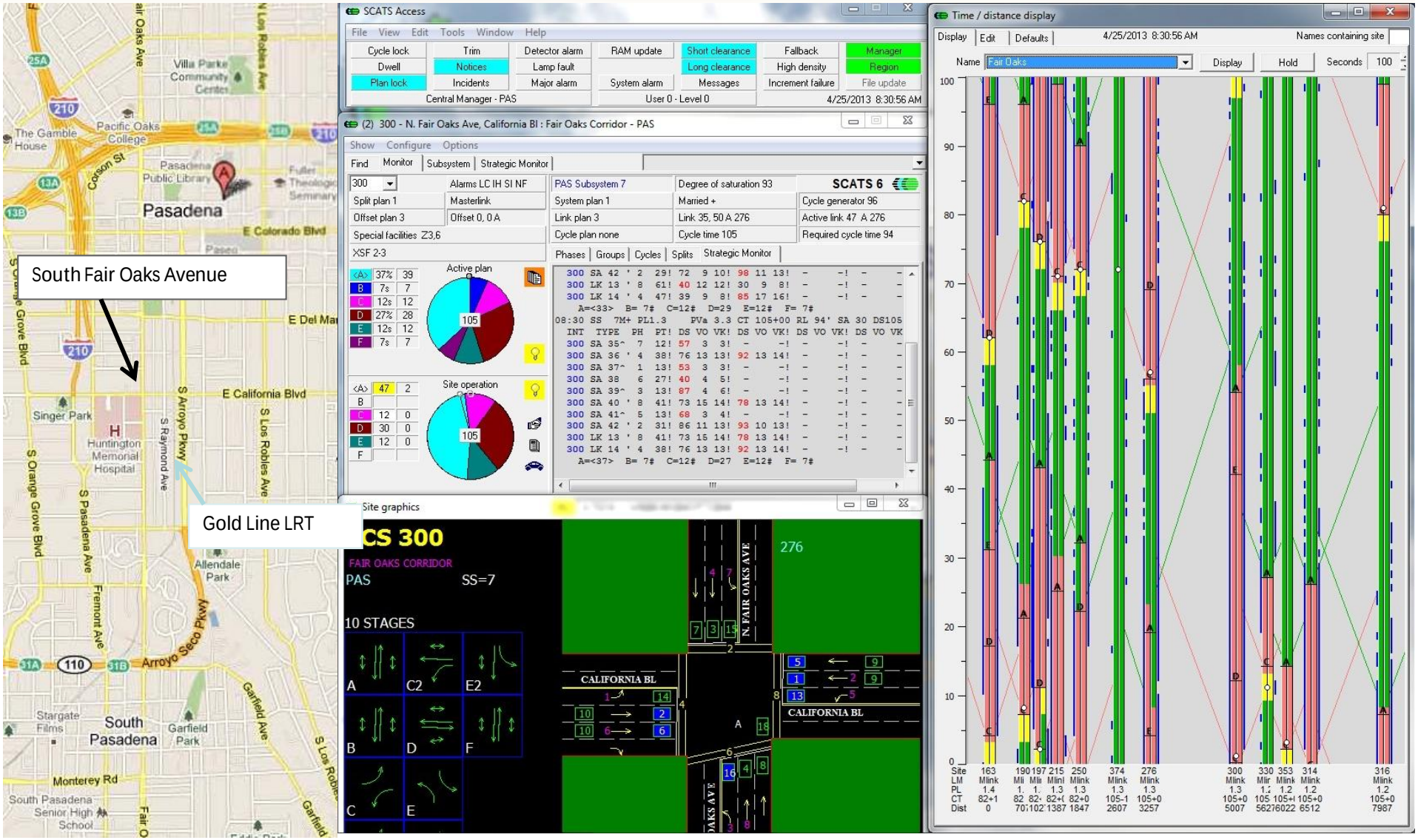

SCAT-Sim Module

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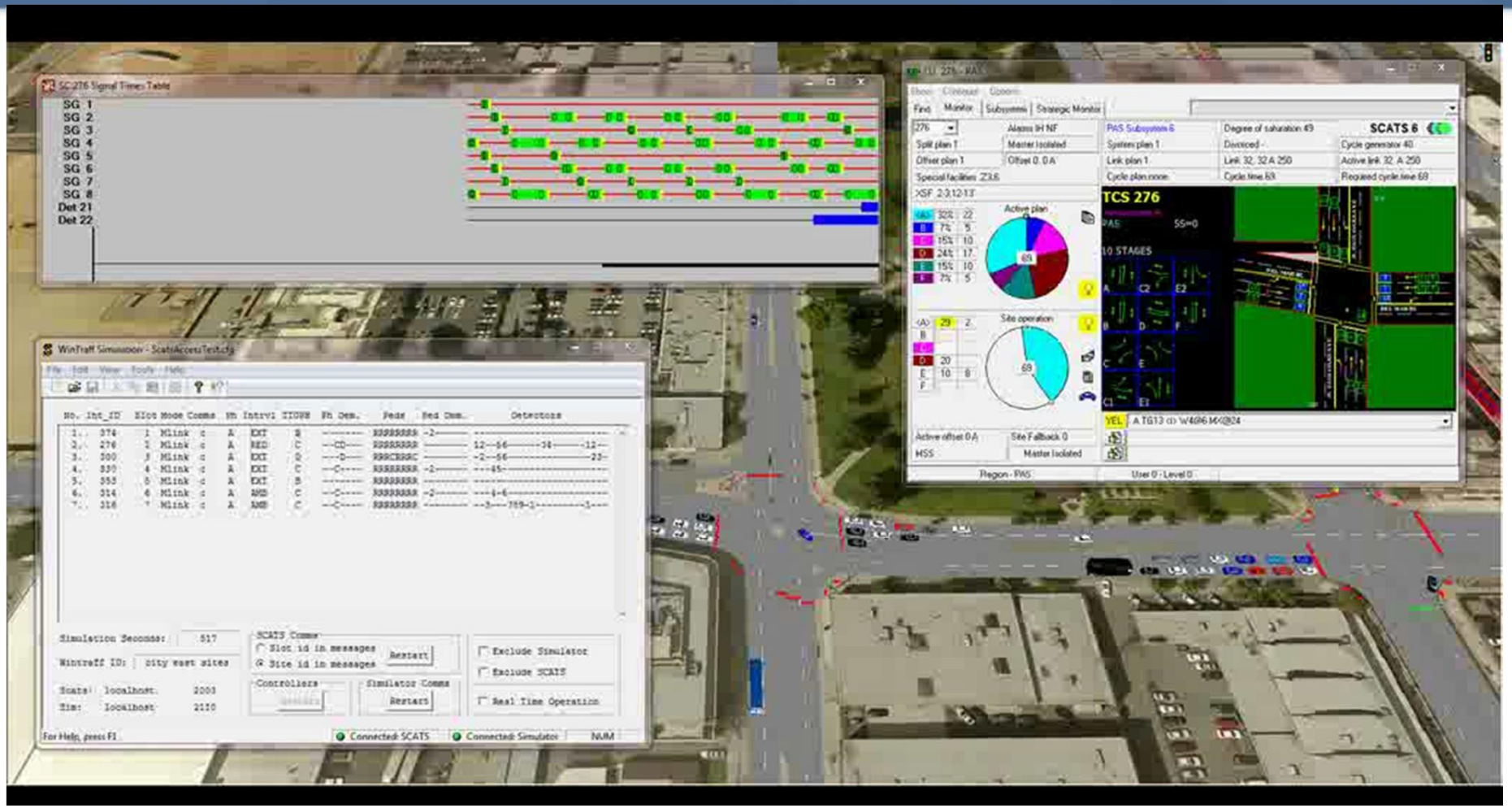

Ongoing Projects

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- Transit Arrival Information System
  - > Displays at stops, IVR, Web-based
  - > Real-time bus position
  - > On-time performance data by stop
- Parking Guidance System
  - > Real-time off-street parking availability
  - > Integrate with wayfinding signage
  - > Provide dynamic guidance
- Emergency Vehicle Preemption

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Bluetooth Pilot

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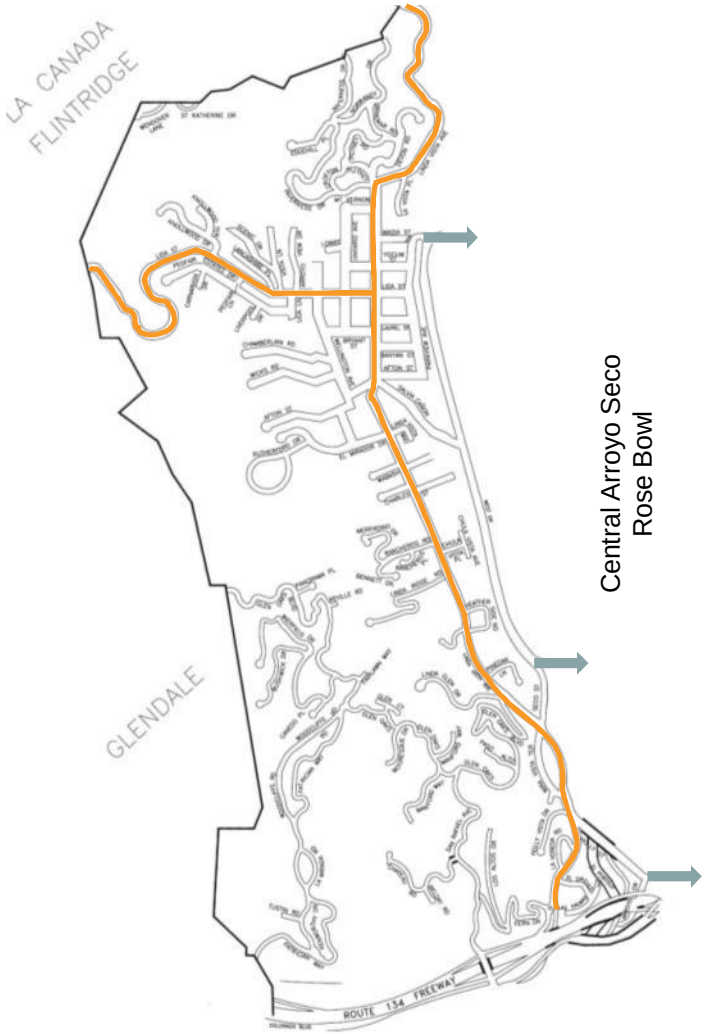

- Linda Vista Annandale Neighborhood Area
- Connector Streets
  - > Linda Vista accesses both I-210 and SR 134
  - > Lida links to Glendale
- Tracks travel patterns
  - > Effect of event traffic
  - > freeway to freeway bypass trips

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DTA Modeling

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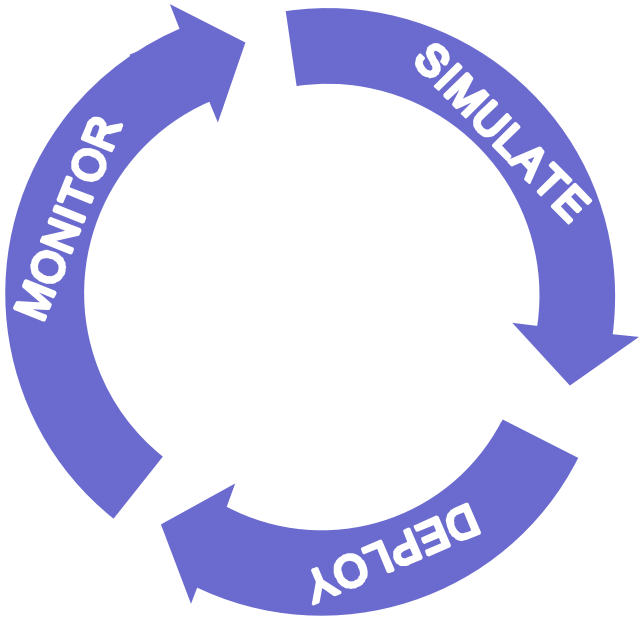

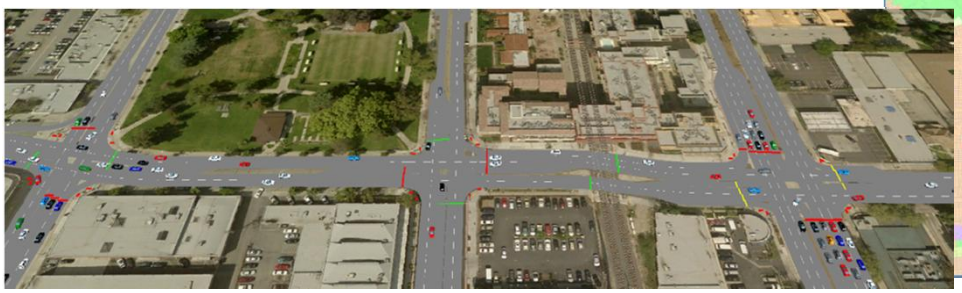

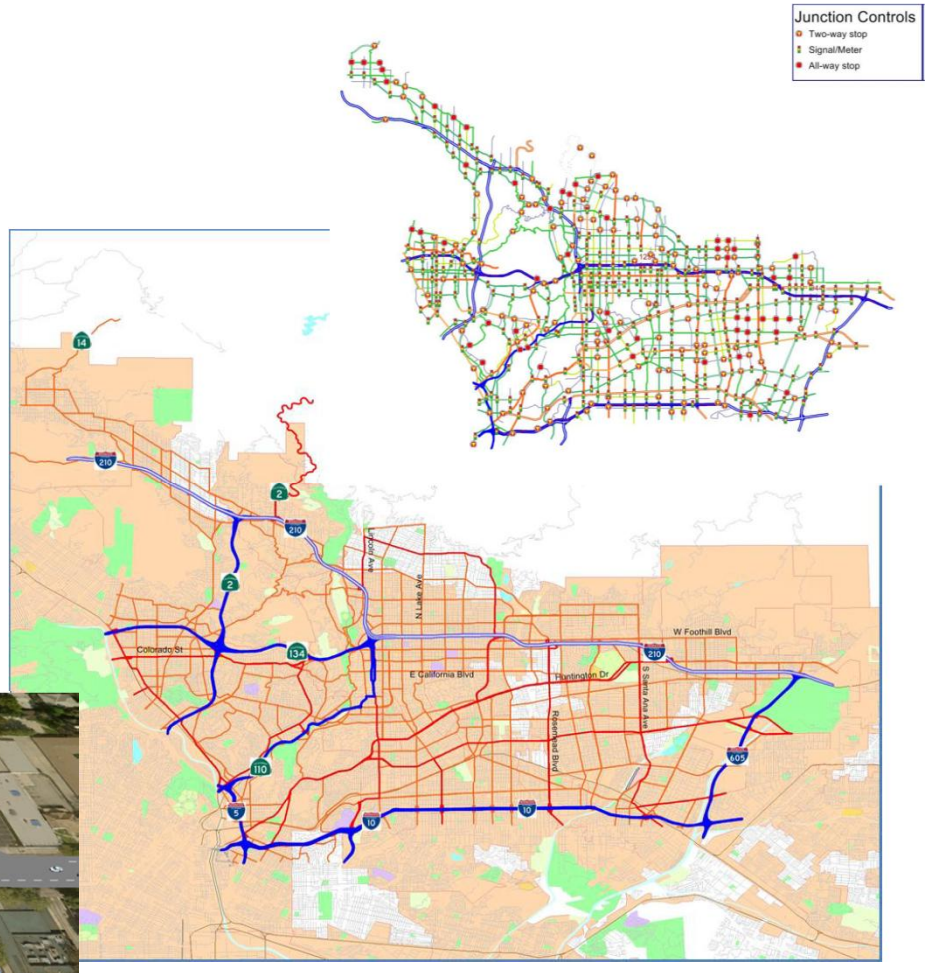

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Upcoming Projects

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- ITS Phase II (in final design)
  - > 5 miles of fiber optic communication
  - > Signal synch
- ITS Phase III (design in FY 2014)
  - > 10 miles of fiber optic communication
  - > Signal synch
- Mobility Corridors – Rose Bowl Access System (design in FY2016)

Upcoming Projects

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- Metro Gold Line Supervised Loop Design (design in FY 2013)
  - > Advance Gate Down Circuit
  - > Serial Traffic Signal Cabinet to LRT Cabinet communication
- Bicycle Detection at Signalized Intersections (design in FY2014)
  - > 4 bicycle corridors
  - > 38 signalized intersections

Funding Streams

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- GRANTS
  - Federal Earmarks
  - Metro Grants
- Prop A and C
- Private Capital
  - Traffic Fees
  - Developer conditions
- General Fund (Gas Tax)

Importance of Master Plans

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- Provides Strategic Blueprint by which system is expanded
- Fosters partnerships with all possible stakeholders from within and outside the organization for joint uses (fiber or video systems)
- Align goals to General City Policies and Objectives
- Allow agencies to compete well in seeking grant funds

Importance of Master Plans

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- Traffic Control and Monitoring System Intelligent Transportation System (ITS) Project prepared by Meyer Mohaddes (ITERIS) in 2004 for about $ 250k-$300k

- ITS Master Plan Framework Update also prepared by ITERIS in 2012 will guide future expansion including consideration for short and long term effects of emerging technology

Leveraging Existing Issues

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- Lack of 710 Freeway
- Metrogold Line LRT
- City's Location and Significance to Regional Mobility (Roadways Parallel to Major Freeways)
- City's General Plan

Issues – Lessons Learned

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- Maintenance and Operation
- Staffing Issues
- Performance Metrics
  - > Adjusting to levels of expectation
  - > Travel Speeds vs. Reliable Travel
  - > System Monitoring

More Information

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