

Performance Based Planning and Operations in the San Diego Region

SoCal ITS/OCTEC Luncheon

February 25, 2016



Overview

- Initial Performance Efforts
- Regional Performance: State of the Commute
- Real-Time Corridor Operations: I-15 ICM
- Corridor Management: I-15 Express Lanes

SANDAG Builds Consensus

Board of Directors

Borders Committee

Executive Committee

Public Safety
Committee

Regional Planning
Committee

Transportation
Committee

Executive Office

Department of Administration

Department of Finance

Department of Land Use and
Transportation Planning

Department of Mobility Management
and Project Implementation

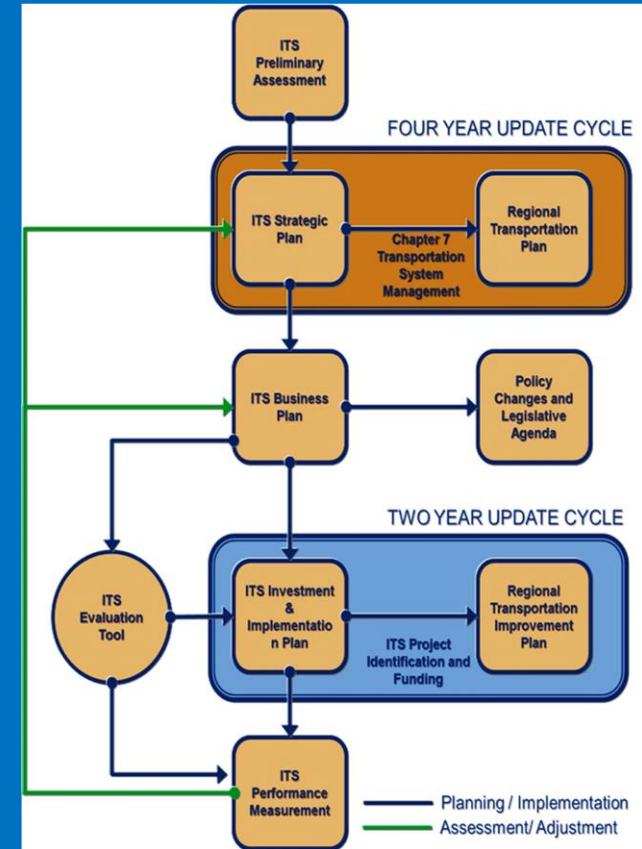
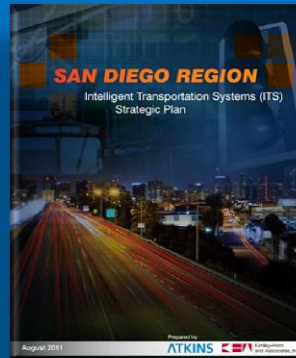
Department of Operations

Department of Technical Services

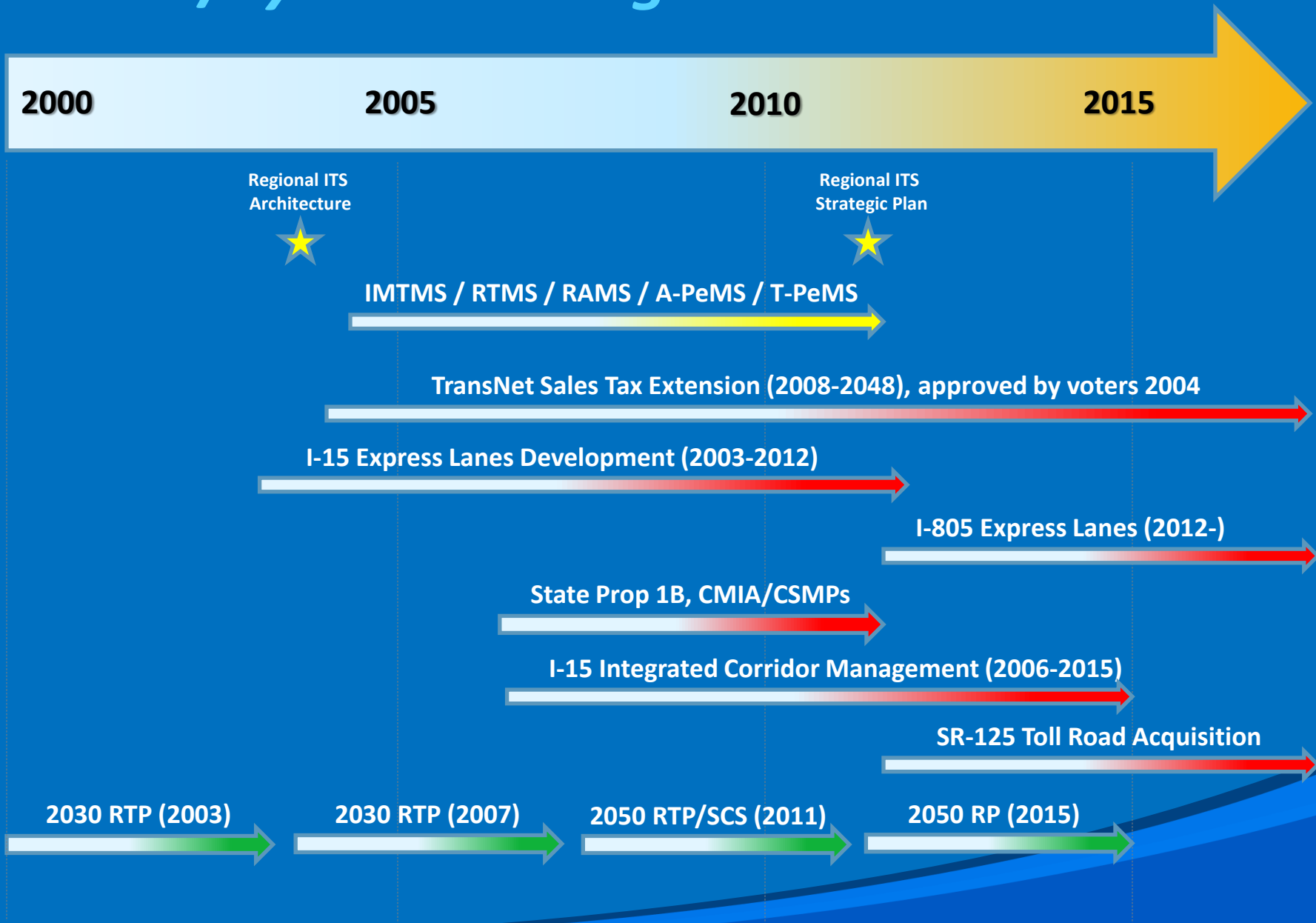
- *Forum for regional decision-making*
- *Build consensus*
- *Make strategic plans*
- *Obtain and allocate resources*
- *Plan, engineer, & build public transit*
- *Provide information and technical assistance*

Vision for Transportation System Management

- Multimodal Integration and Performance Based Management
- Traveler Information
- Arterial Management
- Freeway Management
- Transit Management
- Electronic Payment System



Corridor/System Management



Corridor Planning and Development – Initial Efforts on Performance

- Prop 1B – Corridor Mobility Improvement Account
 - Establishing Project Needs via Performance
 - Development of Corridor System Management Plans
 - Emphasis on Simulation Modeling
 - Developed for Major Corridors (I-5, I-805 and I-15)
- I-15 Integrated Corridor Management
 - Stage 1: ITS Planning
 - Stage 2: Analysis, Modeling and Simulation
 - Stage 3: Implementation

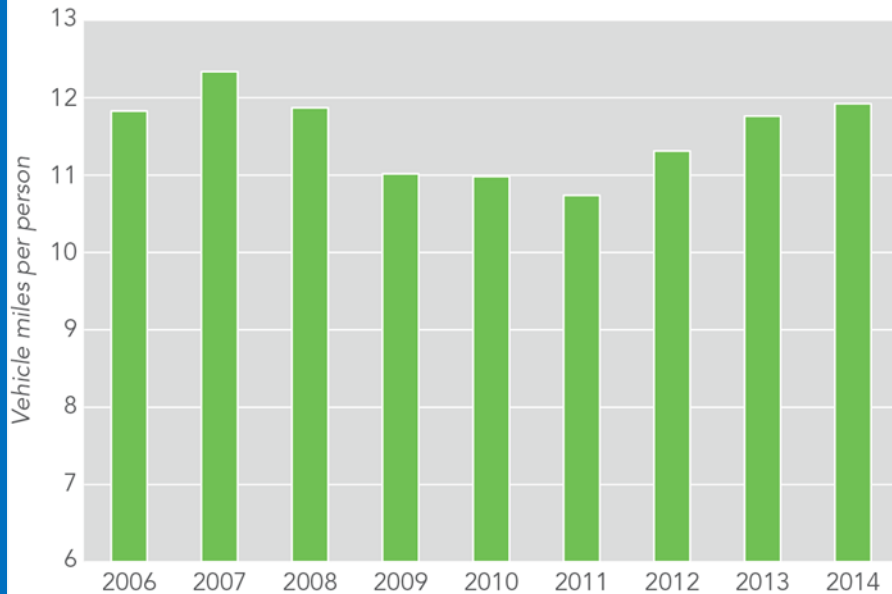
State of the Commute Report

- Annual Report on Transportation Performance
- Required by Sales-Tax Ordinance
- Highway Performance via Caltrans PeMS
- Transit Performance via Transit Operators
- Project Benefits linked to Performance
- Consistent, data-driven reporting platform

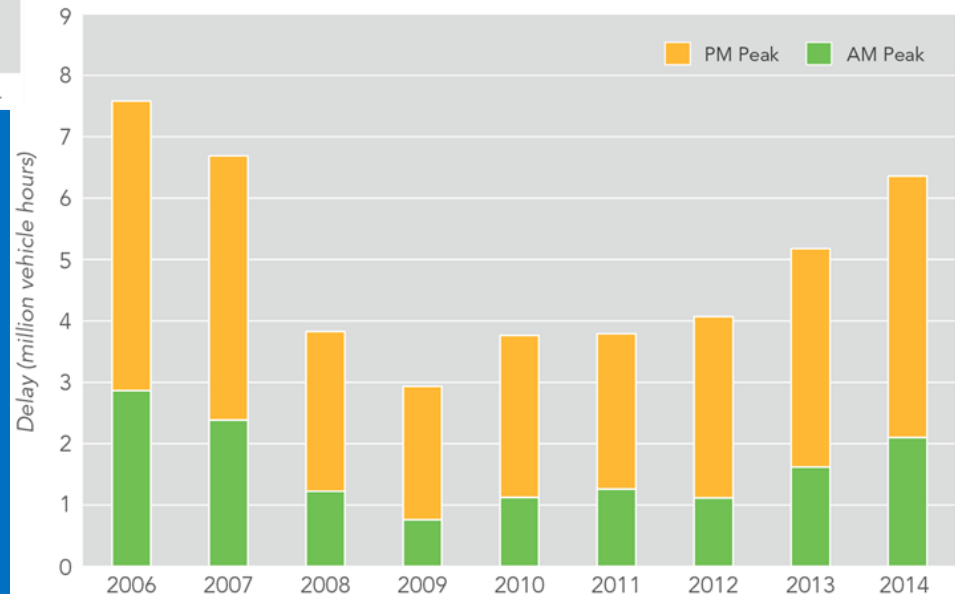


State of the Commute Report – Regional Hwy

(Fig. 1.1) AVERAGE WEEKDAY
FREEWAY TRAVEL PER PERSON

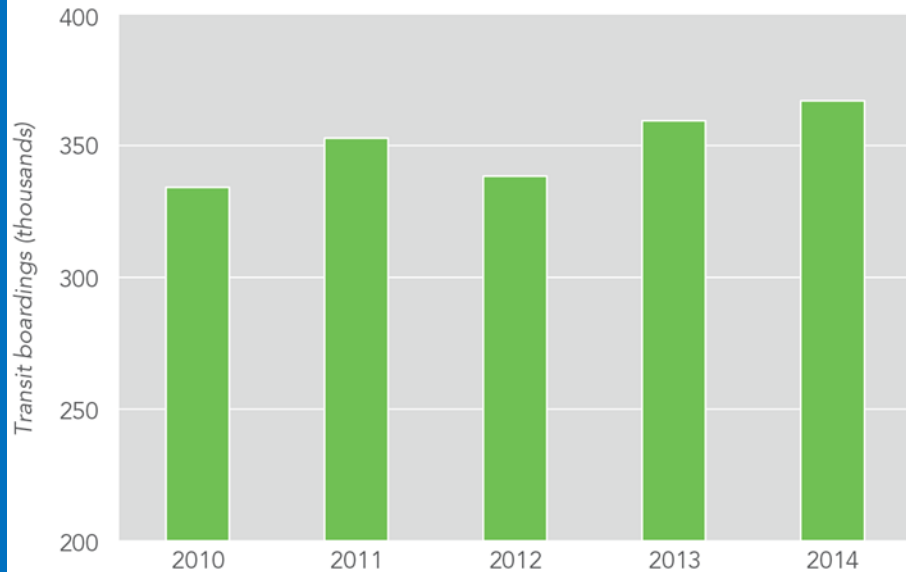


(Fig. 2.2) ANNUAL PEAK PERIOD
FREEWAY DELAY - WEEKDAYS

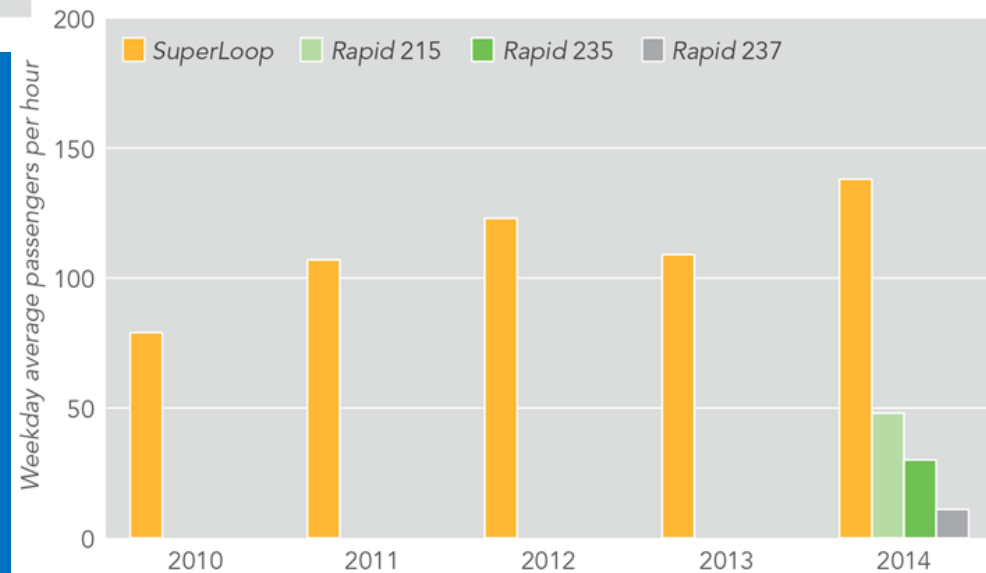


State of the Commute Report – Transit

(Fig. 1.4) AVERAGE WEEKDAY
TRANSIT RIDERSHIP

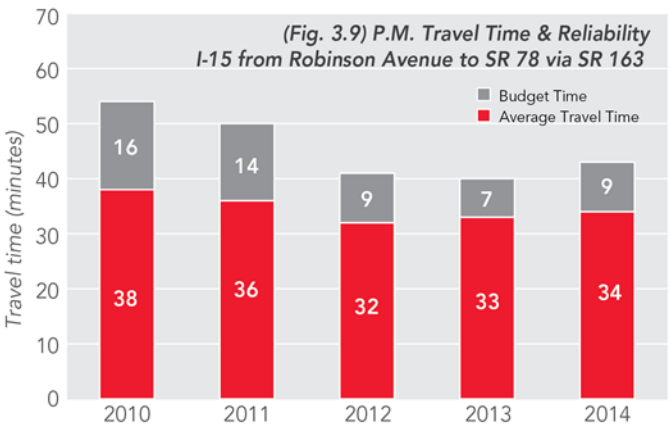


(Fig. 2.8) REGIONAL TRANSIT PRODUCTIVITY
TRANSNET-SUPPORTED BUS SERVICES

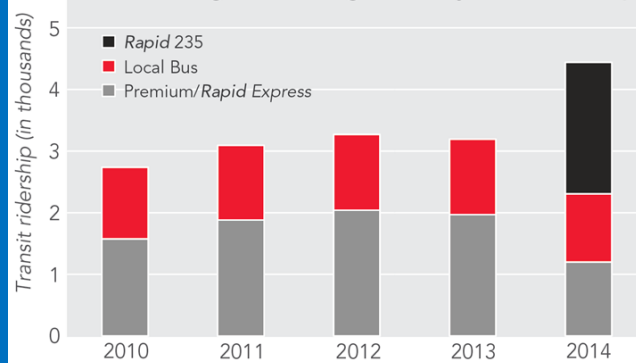


State of the Commute Report - Corridor

(Fig. 3.9) P.M. Travel Time & Reliability
I-15 from Robinson Avenue to SR 78 via SR 163

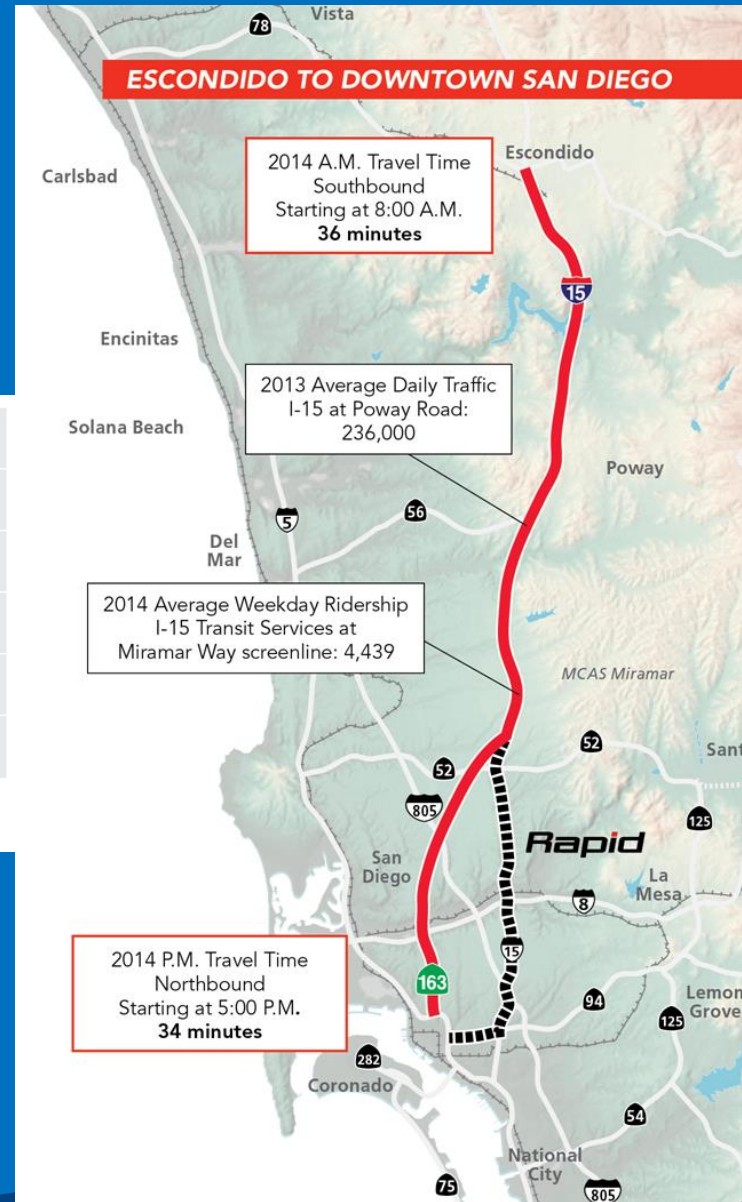
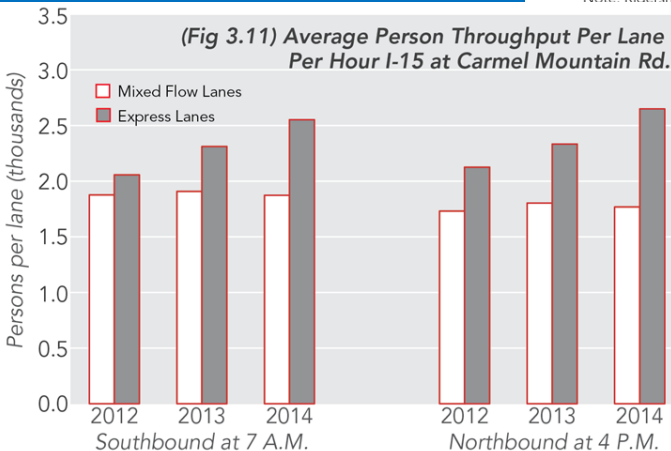


(Fig. 3.10) Average Weekday Transit Ridership



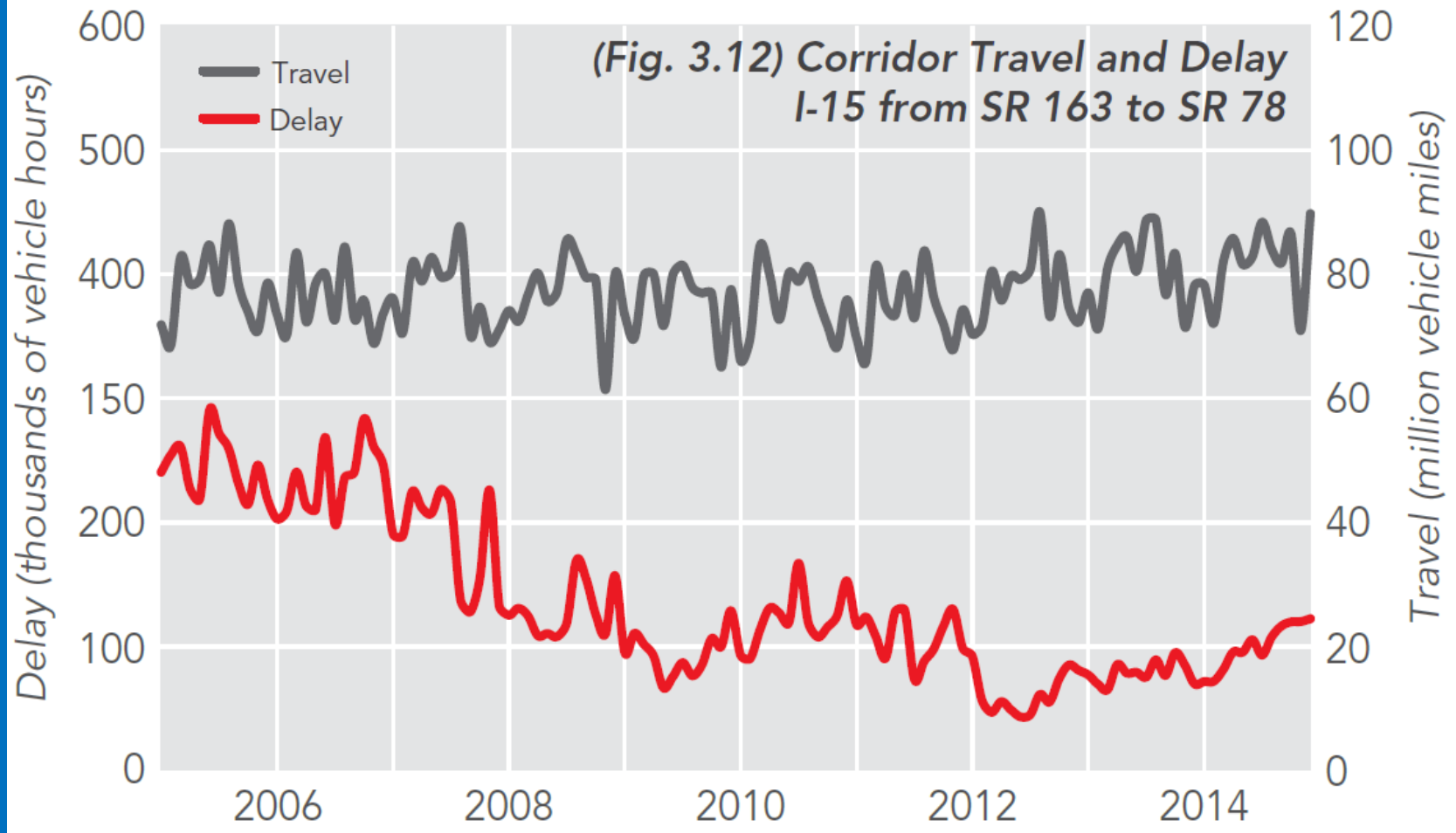
Note: Ridership at Miramar Way screenline for Route 20, 110, 210, 235, 280, 290, 800 Express buses.

(Fig 3.11) Average Person Throughput Per Lane Per Hour I-15 at Carmel Mountain Rd.



State of the Commute Report – Project Benefits

I-15 IMPROVEMENTS: BEFORE AND AFTER



State of the Commute Report

- Rich in Highway Data, challenges integrating with data from alternative modes
- Performance from a **personal** mobility perspective
- Turning data into useful information for the intended audience(s)
- Collecting and analyzing data and getting information out in a timely manner
- Balancing consistent reporting with contextual messaging

Interstate 15 Integrated Corridor Management

- ICM is about management of a corridor
- Management implies planning for, and responding to, what is happening across ALL networks



I-15 Integrated Corridor Management Project

1 Main Lanes

2 Express Lanes

3 DAR

4 Transit

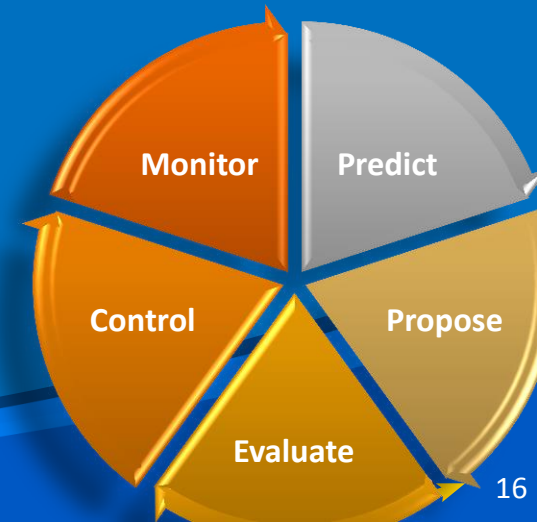
5 *Rapid* Transit Station

6 Arterial Network

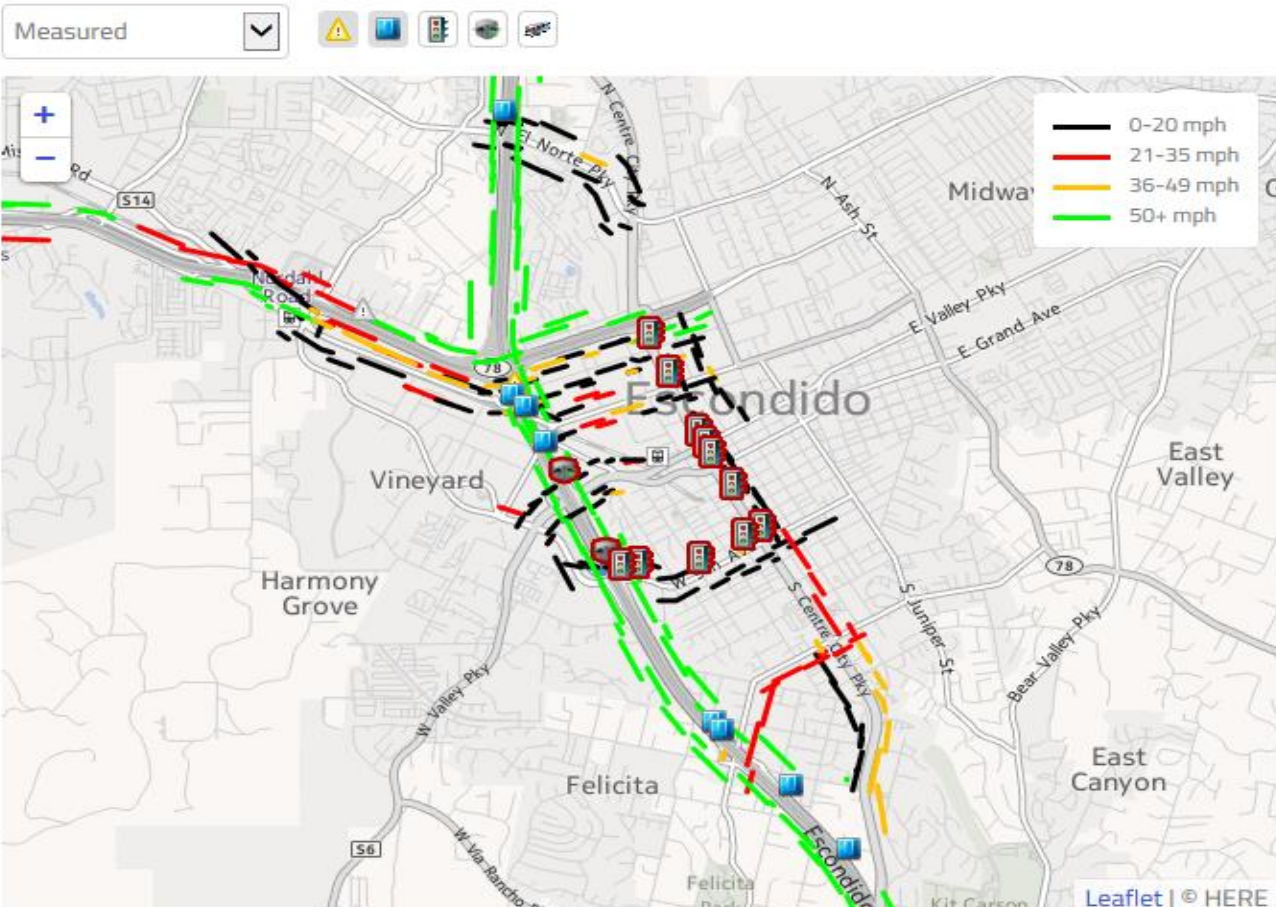
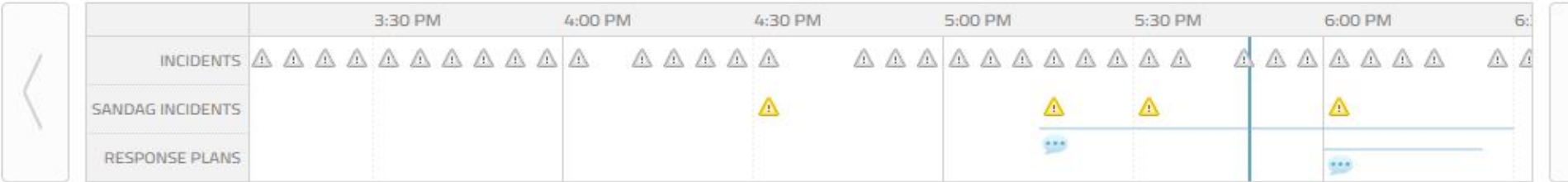


What are the ICM Strategies

- Implement Active Traffic Management (ATM):
- First in the nation real-time multimodal response and control (DSS System)
 - Proactively manage multiple modes through and along the corridor
 - En-route traveler information (CMS Signs, 511 San Diego mobile app)
 - Pre-trip traveler information (511 San Diego mobile app, 511 phone system)
 - Signal coordination on local roadways with freeway ramp metering
 - Transit rerouting
- Dynamic rerouting (pending)
- Corridor ramp metering (pending)



Response Plan Analysis Tool



Details

17:35	Response plan ID :19539	NS
17:48	Response plan ID :19535	-1.7
17:48	Response plan ID :19535	-1.7
17:48	Response plan ID :19536	21.1
17:48	Response plan ID :19535	-1.7
17:48	Response plan ID :19536	21.1

LOCALTIME 07/07/2014 17:48
RESPONSE PLAN ID 19536
EVENT ID 639956
SCORE STATUS activated
SCORE 21.068744

3 DMS were affected

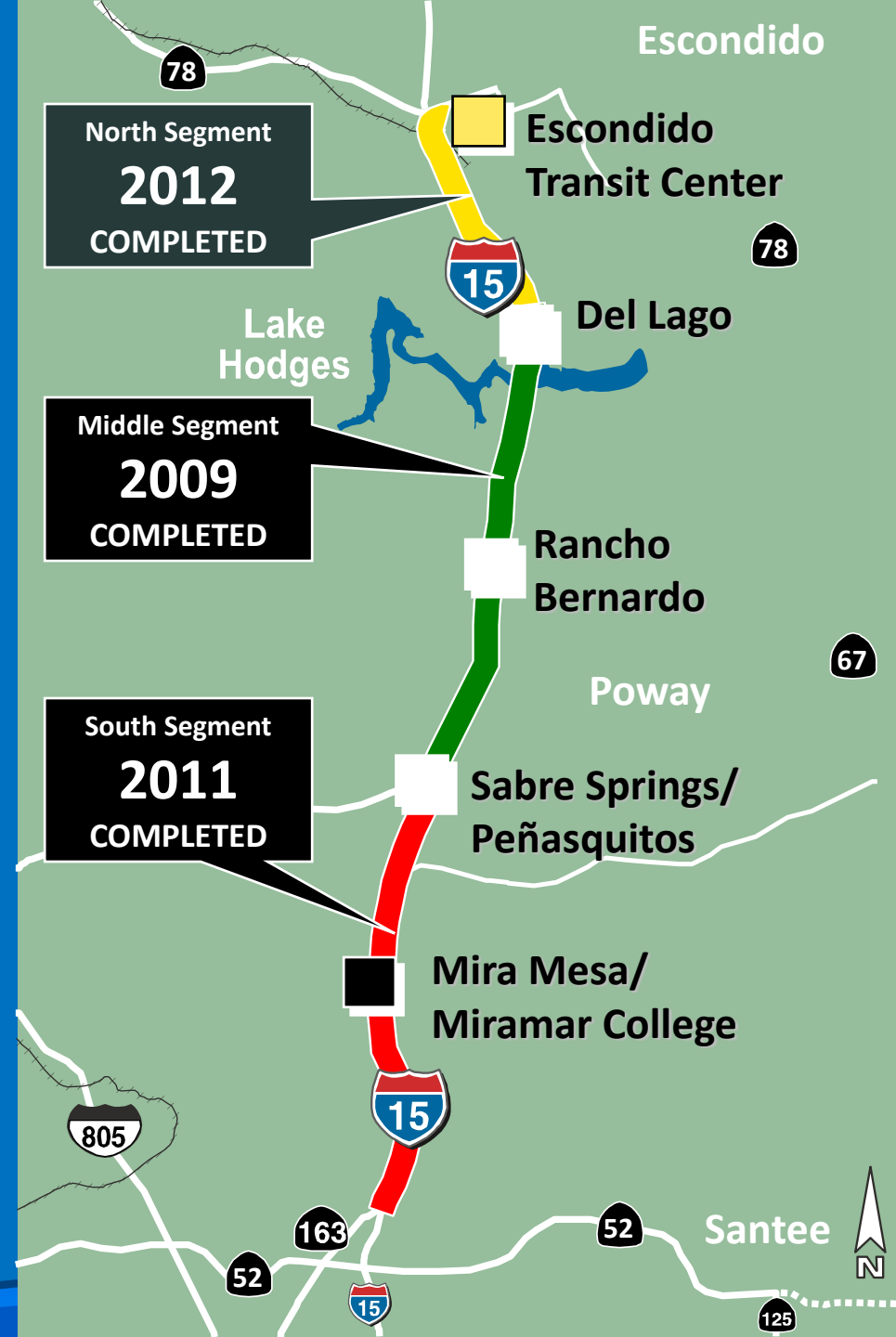
Caltrans-D11.1120662
STATUS: proposed
ACTION PLAN ID: 211551
COMMAND: put up custom message
MESSAGE:

**SLOWING AT
RTE 78
USE ALT**

Caltrans-D11.1120662
STATUS: proposed
ACTION PLAN ID: 211551
COMMAND: put up custom message

I-15 Express Lanes Corridor Performance

- Constructed in 3 Stages
- Full Operations Jan 2012
- HOT Lanes in median
- Intermediate access
- Direct access ramps
- Value Pricing
- Fastrak ETC
- Moveable Barrier



I-15 Corridor Management Team

- Long term corridor management vision
- Assess and analyze corridor management strategies
- Make actionable recommendations

The vision *The team will carry out a multi-modal platform that places emphasis on corridor performance monitoring and management to optimize overall corridor operations in an on-going basis and identify near-term, cost-effective solutions to get the most out of our transportation system. Efforts will serve as model for other corridors.*

I-15 Corridor Management Team

- Joint collaboration between Caltrans, SANDAG and MTS
- On-going performance monitoring and measurement
- Based on regional and agency goals and objectives, corridor user needs
- “Lever” concept: pull lever and monitor corridor performance measures
- Establish thresholds and tolerance levels to initiate action, stop action or “stay the course”



I-15 Corridor Management Team

Goals, Objectives and Performance Measures

Optimize/Maintain
Trip Reliability

Minimize Person
Delay

Maximize Person
Throughput

Enhance Corridor
Management
Operations

Maximize Non-SOV
Mode Share

Maximize
Efficiency in the
Express Lanes

Maximize Transit
Service
Performance

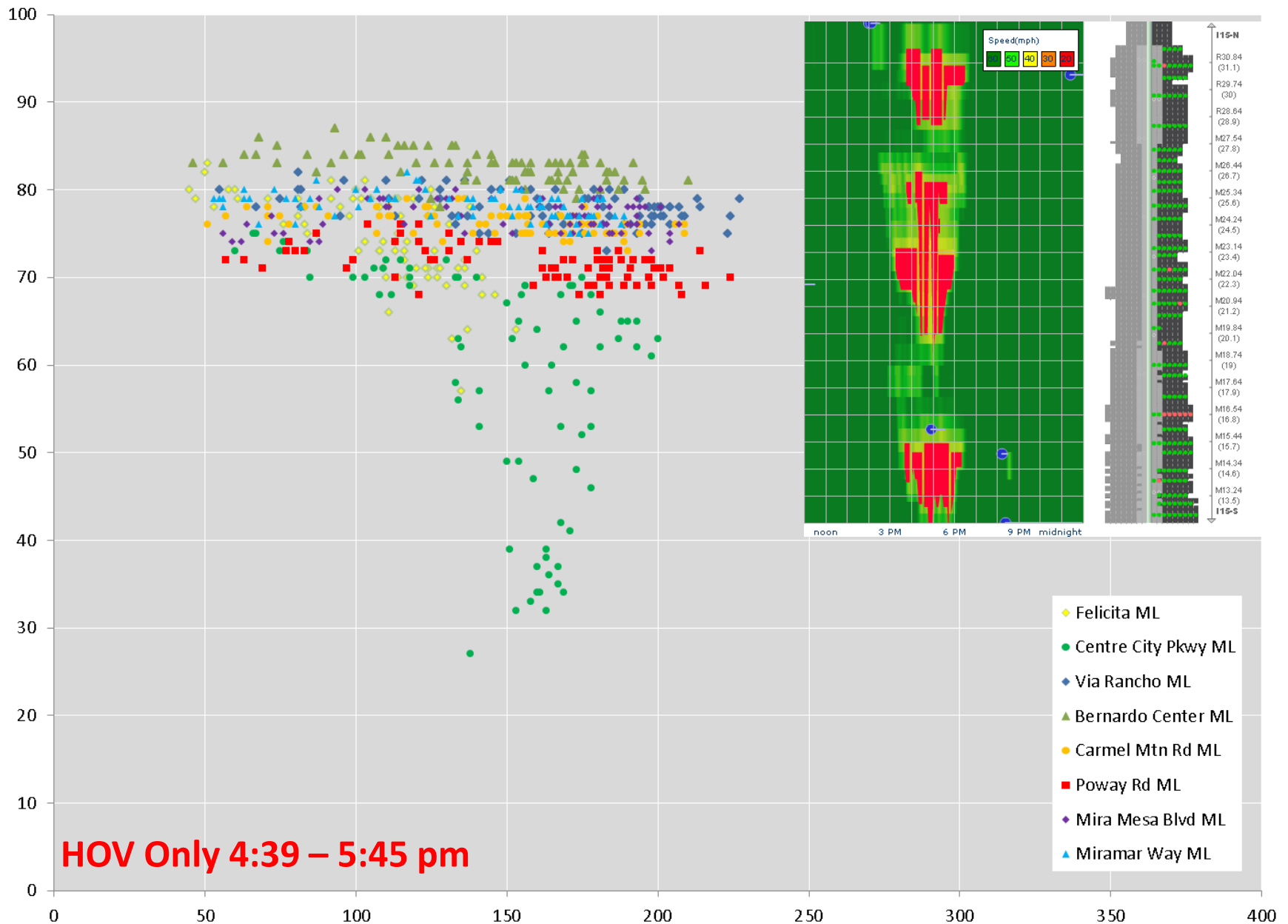
Measures of Effectiveness (MOEs) and Accurate Data Collection

I-15 Corridor Management Team

- Highway data PeMS, RMIS, ATMS
- C-PeMS data from SANDAG
- Fastrak/ETC data from SANDAG
- Transit performance data SANDAG/transit agencies
- Operational perspective
- 3-min data for tolling performance
- 30-min data for highway performance
- Daily/monthly/quarterly for other modes
- Comparing to baseline performance
- Performance by Day Type vs. “the average weekday”

NB I-15 Express Lanes. Thursday, 10/22/2015, 3:00 – 7:00 PM

3-minute Speed (mph)

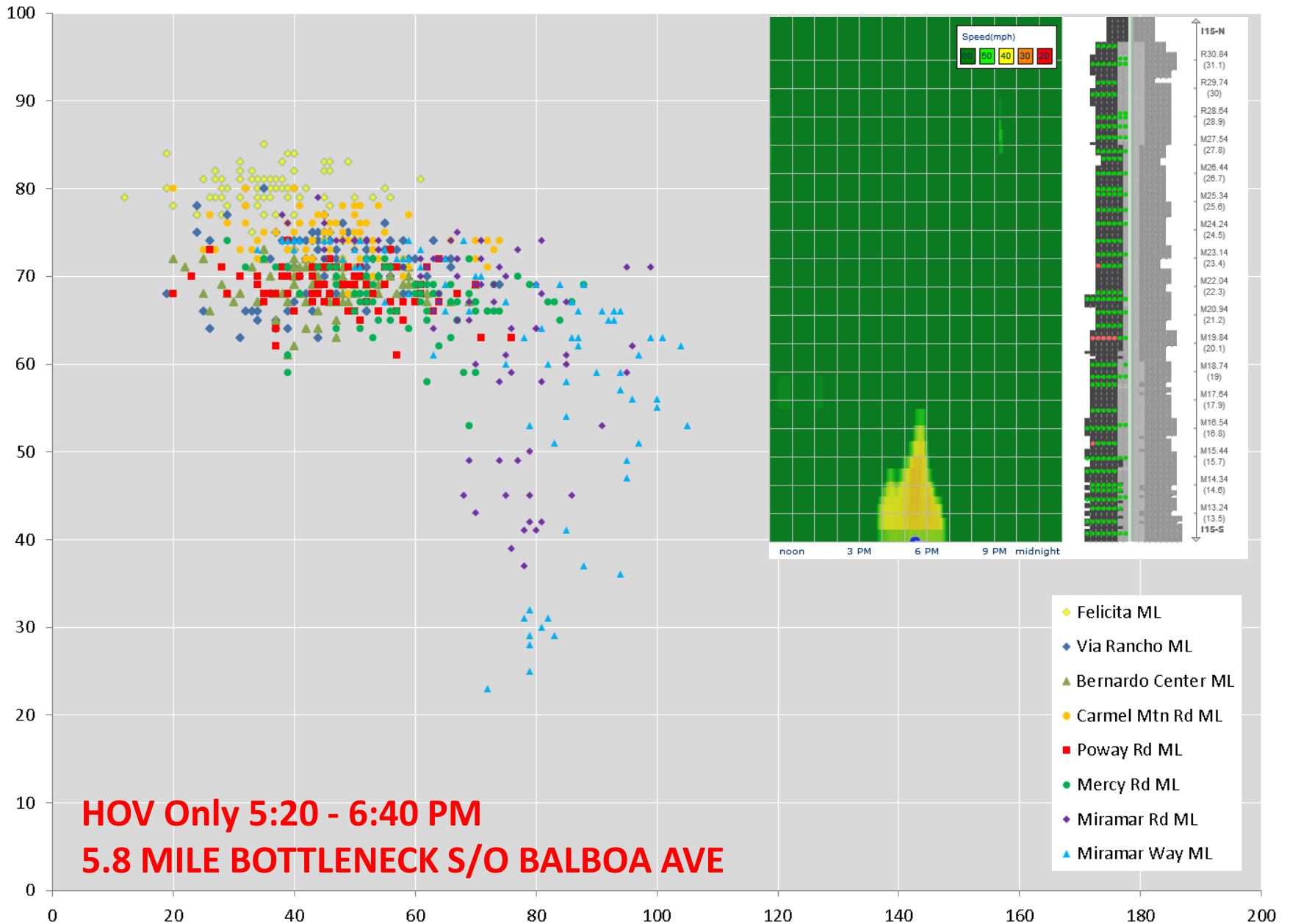


3-minute Volume

SANDAG

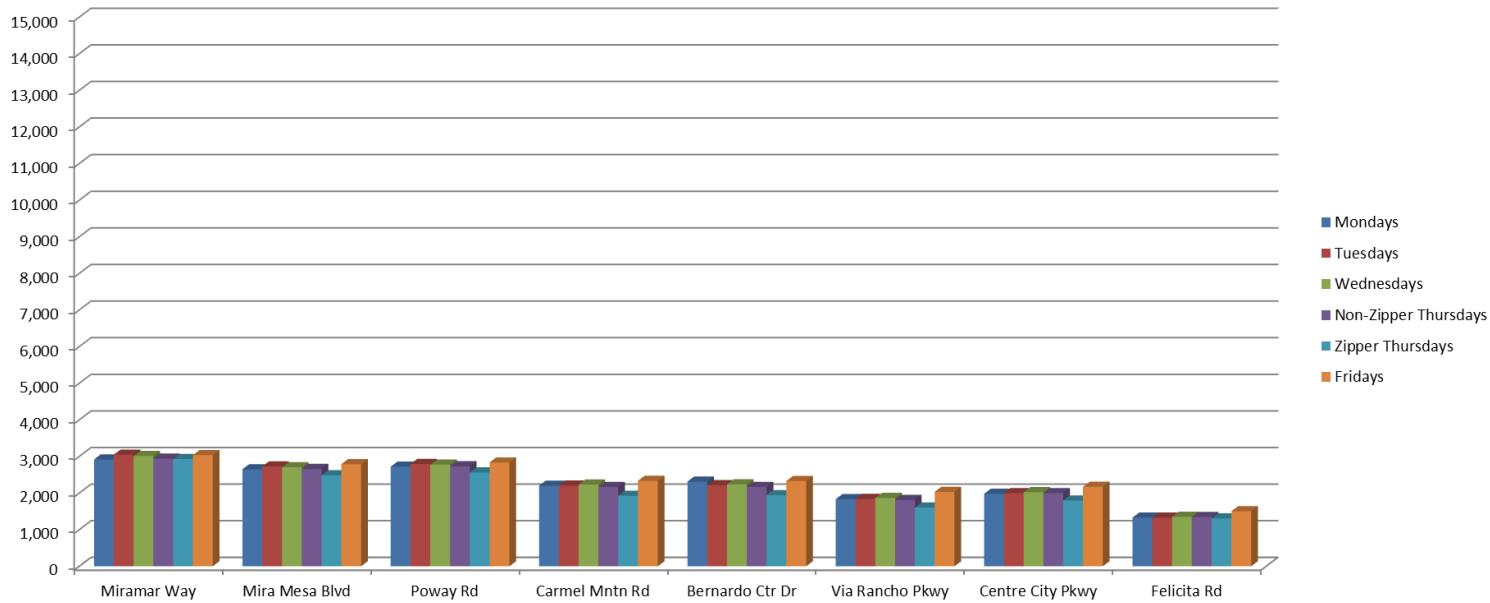
SB I-15 Express Lanes. Thursday, 9/17/2015, 3:00 – 7:00 PM

3-minute Speed (mph)



3-minute Volume

I-15 Express Lanes - Northbound - Year 2015 AM Peak Period Volumes (6-10 am)



I-15 Express Lanes - Southbound - Year 2015 AM Peak Period Volumes (6-10 am)

