

I-880 ADAPTIVE RAMP METERING AND THE FUTURE OF TRANSPORTATION MANAGEMENT

**MTC OPERATIONS COMMITTEE
SEPTEMBER 9, 2022**

MAXIMIZE SYSTEM PERFORMANCE THROUGH TECHNOLOGY

Goal

- Deploy innovative technology to better manage the congestion on freeway system
- Provide safe, reliable, and efficient mobility for all system users

Freeway Performance Initiative

- Ramp Metering Capital Program
- Local Responsive

Adaptive Ramp Metering Implementation

- Manage traffic at the corridor level
- Adapt to traffic condition changes

Optimized Corridor Operations

- Data sharing
- System integration & Optimization

Foundation
2008-2017

On-going
Since 2017

Future
Near-term

I-880 ARM PROJECT OVERVIEW

Project Goal

Upgrade existing local responsive ramp metering to corridor-wide Adaptive Ramp Metering (ARM)

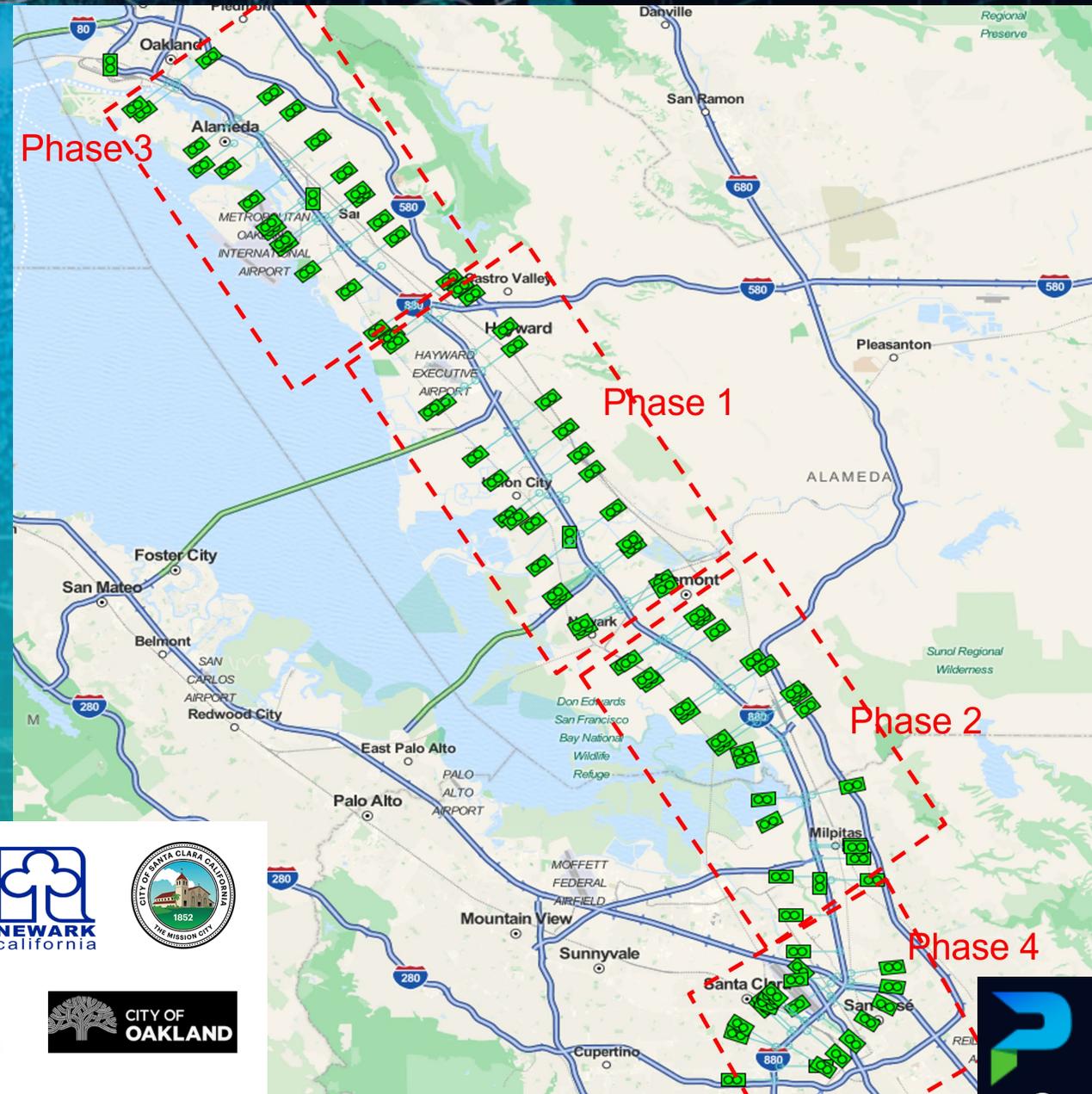
Project Scope Area

Between the I-280 interchange in Santa Clara County and the West Grand Avenue interchange in Alameda County

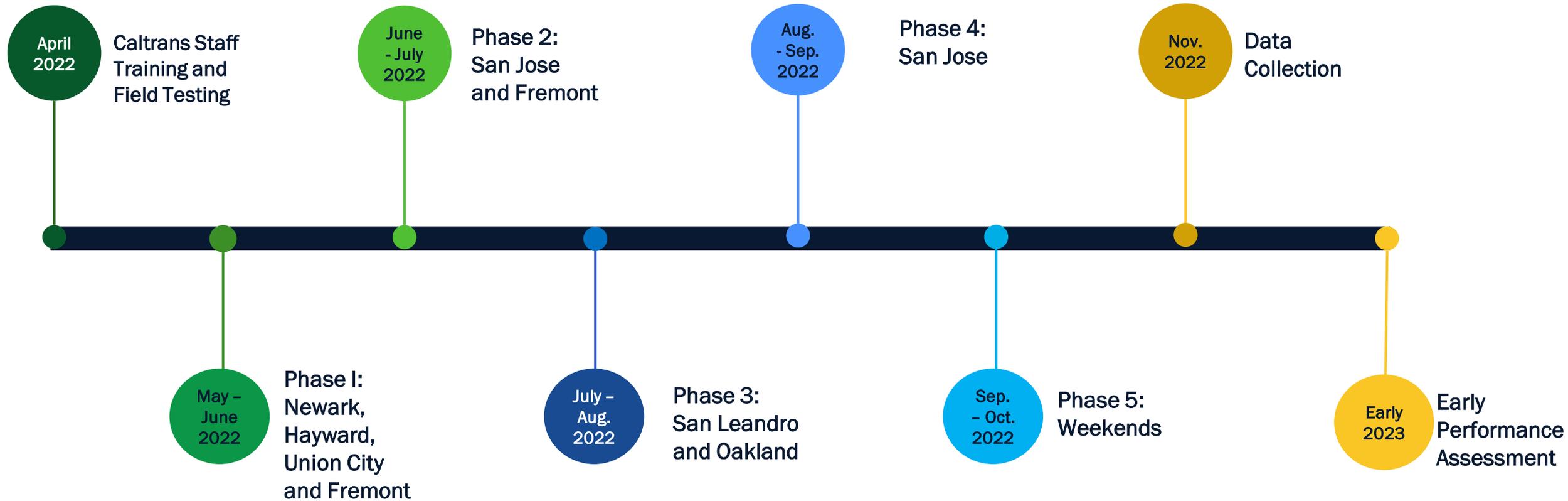
Operation Hours

5AM - 8PM for Weekdays (4 phases) and weekends (Phase 5)

The metering light will be set as Rest-in-Green when the mainline can accommodate the incoming traffic



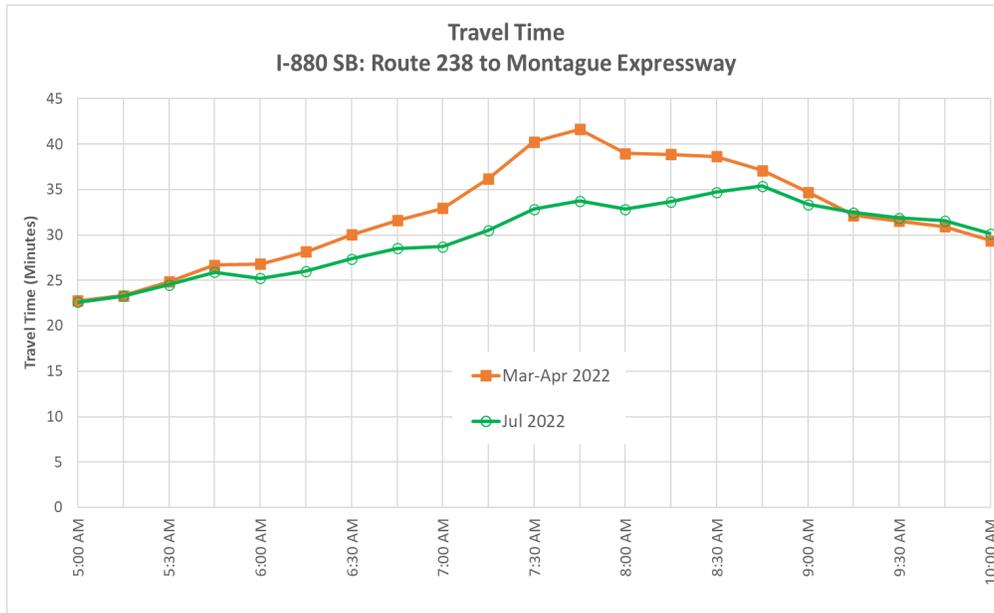
I-880 ARM ROLLOUT SCHEDULE



I-880 PERFORMANCE DURING PEAK PERIOD

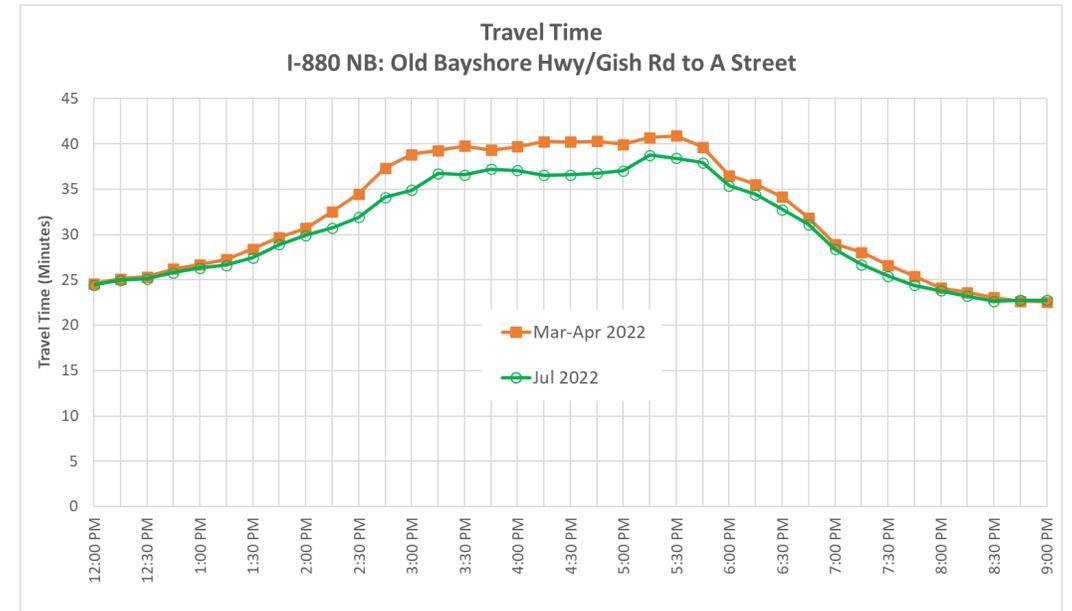
AFTER PHASE 2 IMPLEMENTATION

I-880 Southbound – AM Peak



- Congestion Duration Reduction - Varies from 18% to 25%
- Travel Time Improvement – Up to 10 mins

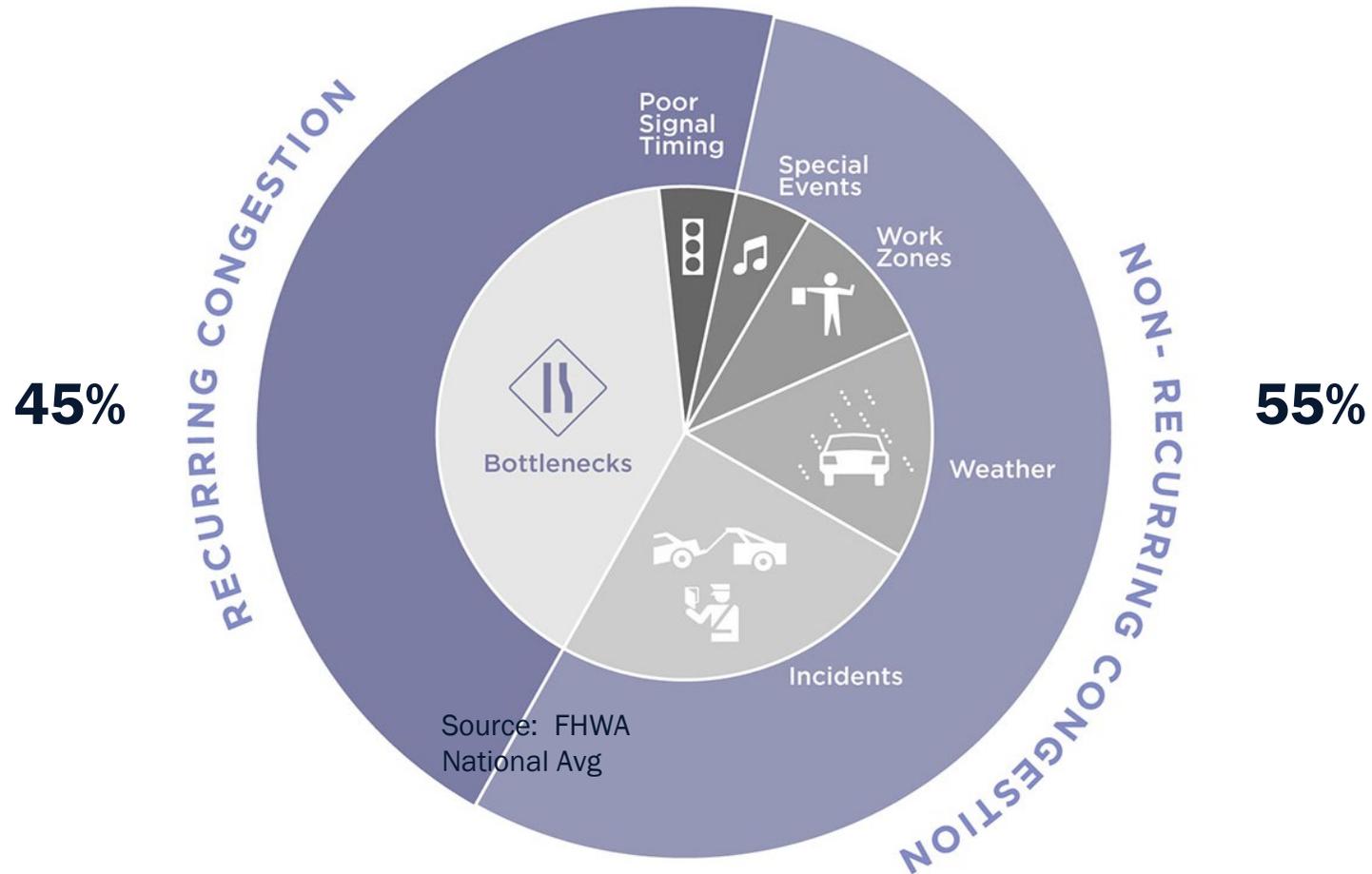
I-880 Northbound – PM Peak



- Congestion Duration Reduction - Up to 14%
- Travel Time Improvement – Up to 4 mins

IMPORTANCE OF TRANSPORTATION MANAGEMENT

STATEWIDE PERSPECTIVE

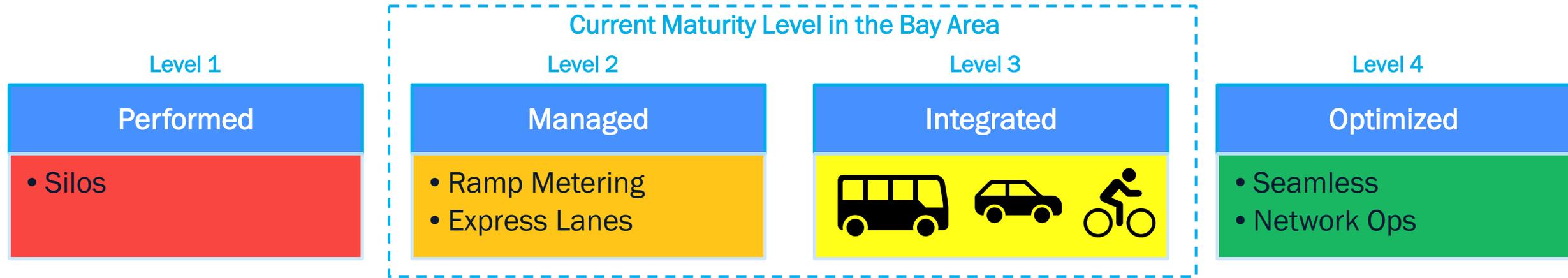


Caltrans Goals



IMPORTANCE OF TRANSPORTATION MANAGEMENT

TRANSPORTATION MANAGEMENT ASSESSMENT



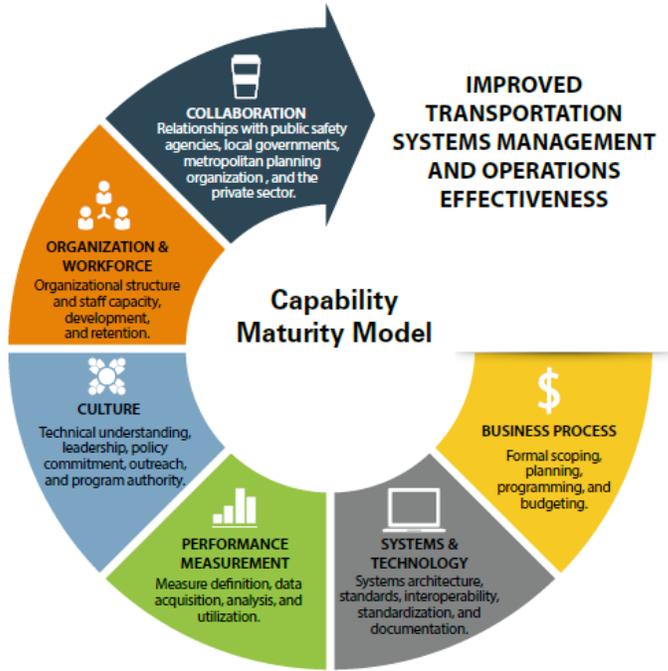
Many Possibilities

- Regional TMC
- Corridor Management
- SMART Cities
- Adaptive Systems

← OAKLAND TMC THROUGH THE YEARS →

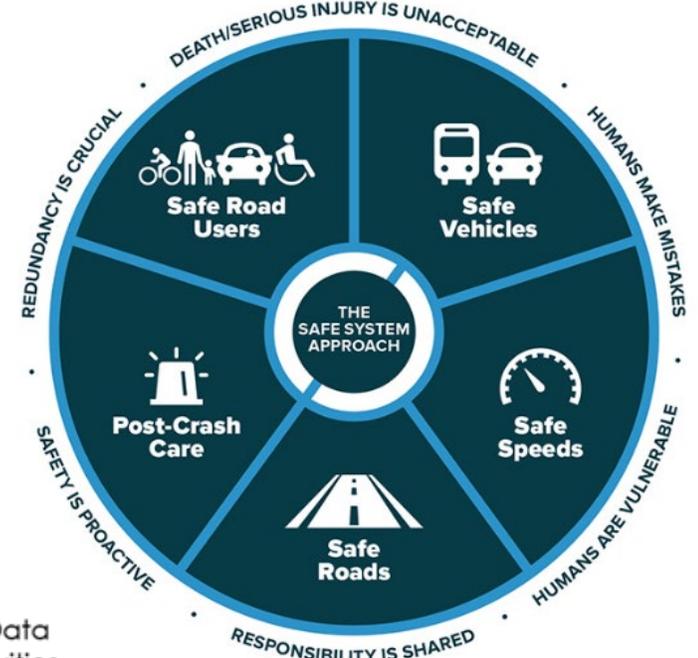
FUTURE OF TRANSPORTATION MANAGEMENT

STATEWIDE APPROACH



Transportation Systems Management & Operations

- **Systems & Technology**
- **Operational Strategies**
- **Business & Organization**



Safe Systems Approach

I-880 OPTIMIZED CORRIDOR OPERATIONS

MATURITY @ CORRIDOR LEVEL

Project Goal

Integrate existing and planned traffic management systems to optimize the operations of the I-880 corridor:

- Adaptive Ramp Metering
- Express Lanes
- Incident Management

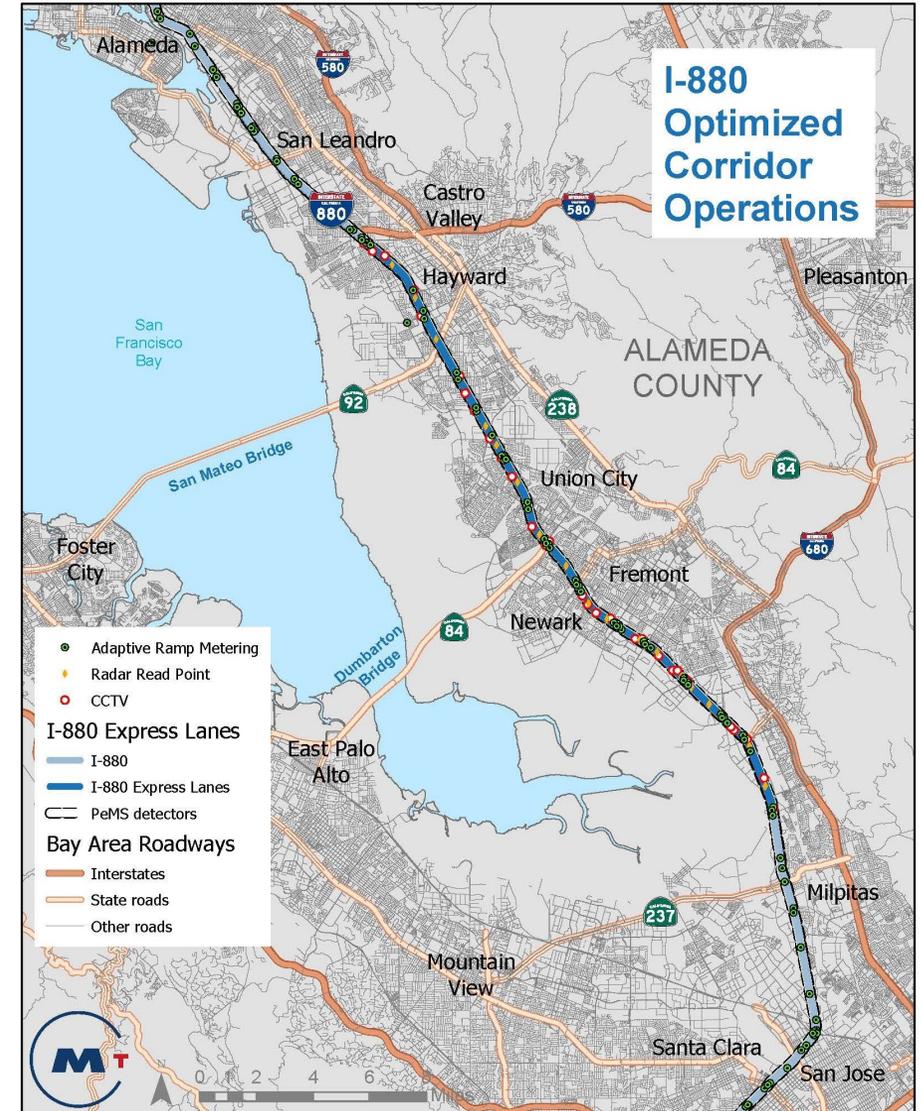
Challenges

- Legacy Technology
- Minimal infrastructure investment
- Multi-agency coordination and data sharing
- Budget and Funding

Project Status - Planning

Developing strategies for data sharing and system integration:

- Existing Condition Assessment
- TSMO Corridor Integration Plan
- Information and Data Sharing Plan
- Corridor Performance Monitoring Plan
- Implementation Plan for Integration
- Concept of Operations



Questions?

THANK YOU

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