

Contra Costa Countywide Smart Signals

City of Hercules City Council Meeting

3/26/2024

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CONTRA COSTA
transportation
authority

SMART SIGNALS Goals



**IMPROVE SAFETY,
MINIMIZE CRASHES,
ELIMINATE
INJURIES +
FATALITIES,
VISION ZERO**



**OPTIMIZE MOBILITY,
RELIEVE
CONGESTION +
MANAGE
EVACUATION ROUTES**



**ADVANCE THE
SMART COUNTY
SYSTEM /
PREPARE
ARTERIALS FOR
THE FUTURE**



Key Benefits

- Supports multi-modal transportation for all users
- Increases safety
- Increases transit reliability
- Improves emergency vehicle response time
- Relieves congestion

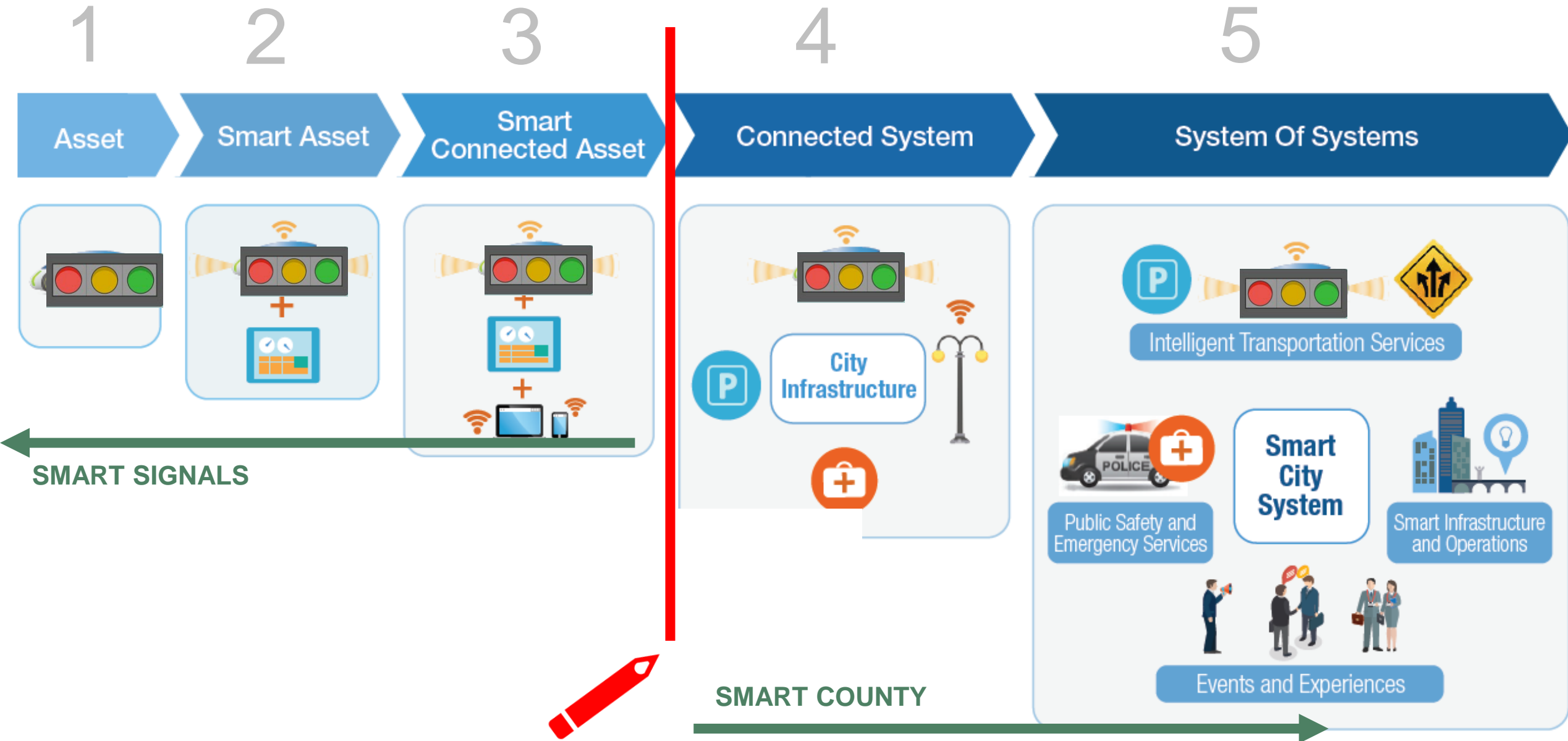


How does the **SMART Signal System** work?



- Pedestrian and bicycle detection system supports proactive identification and prevention of “near miss” situations
- Signal Synchronization controls and smooths traffic flow
- Signal Control and Prioritization (SCP) to
 - Reduce emergency vehicle response time
 - Increase transit reliability
 - Effectively manage arterial traffic during day-to day operations, major incidents on freeway, evacuations, or major events
- Real-time monitoring of traffic conditions allows CCTA/cities/Caltrans access to monitor all videos and signals to optimize operations
- Connected infrastructure to support deployment of connected and autonomous vehicles (V2X, V2I, V2P)

Five Steps to a SMART City System



SMART Signal Improvements



SMART MOBILITY / Signal Control And Prioritization (TSP/EVP)



VULNERABLE ROAD USER PROTECTION
BENEFIT: Pedestrian Safety and Health

VIDEO / DATA ANALYTICS

BENEFIT: Safety Monitoring and Alerts



FIBER OPTIC/CELLULAR COMMUNICATION

BENEFIT: Better Capacity and Reliability



UPGRADE TO ADVANCED CONTROLLERS & ATC CABINETS
BENEFIT: ADVANCED MOBILITY



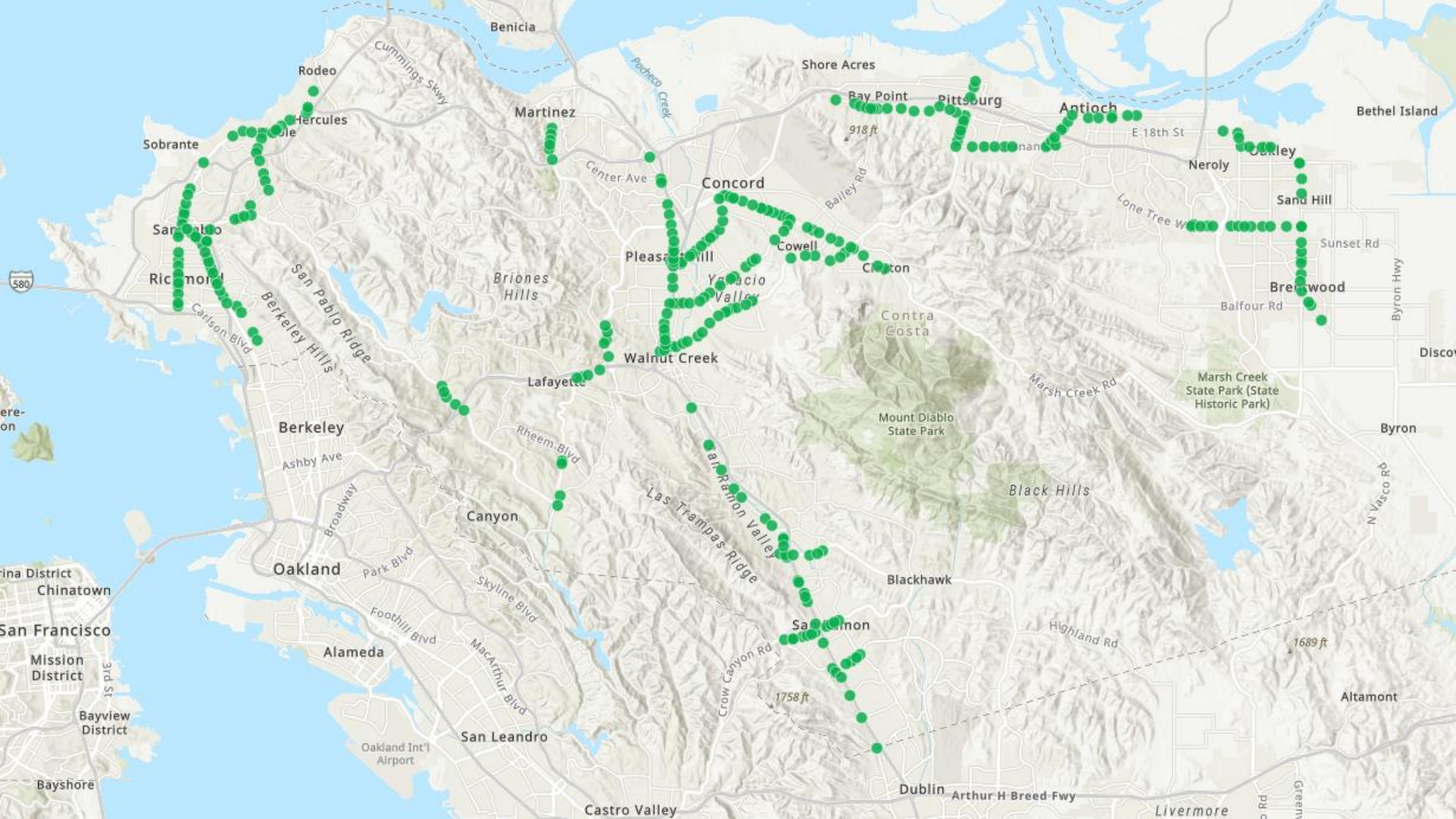
VIDEO DETECTION

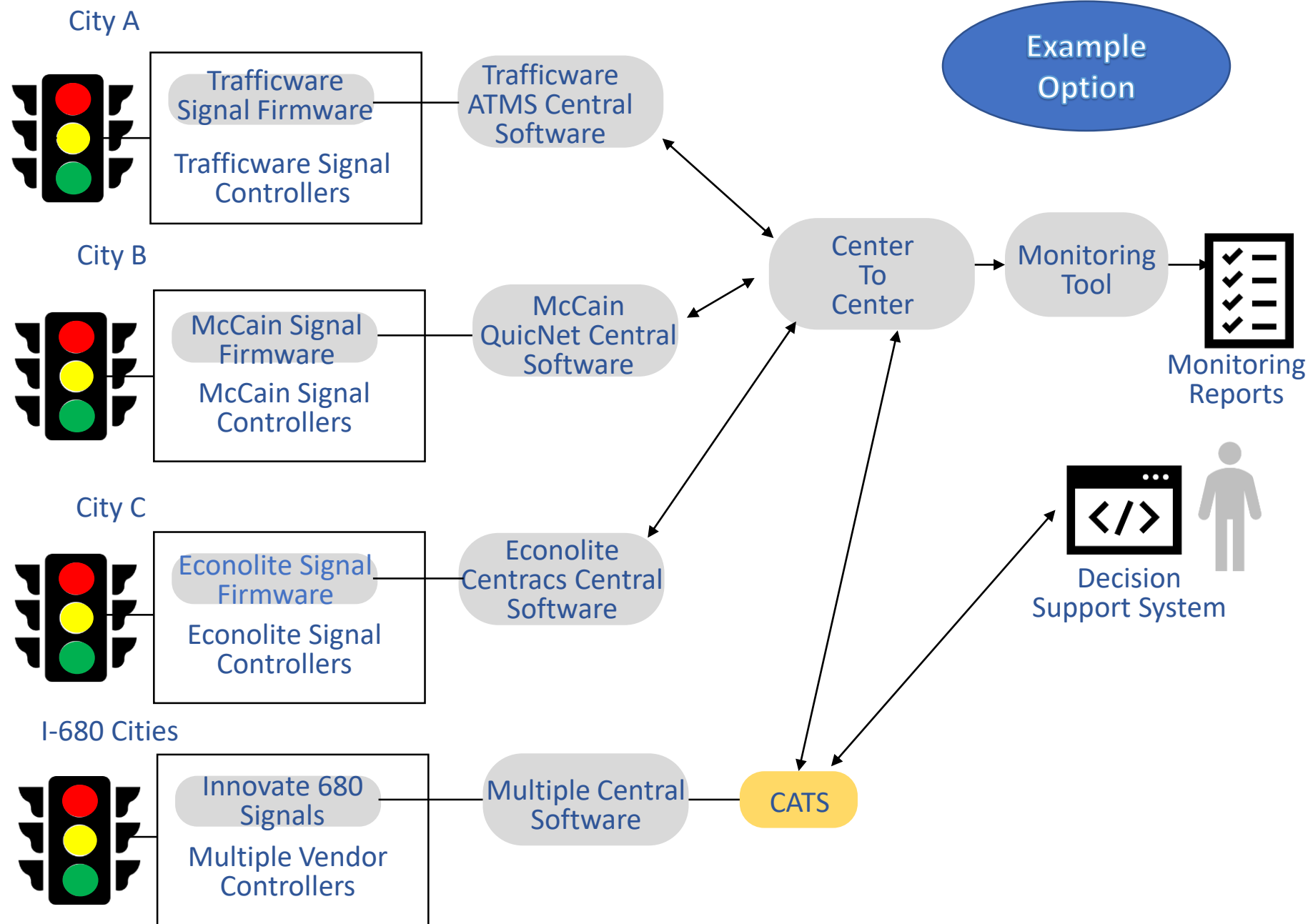
BENEFIT: Unobtrusive Monitoring and Managing of the Road Network

SMART Signal - Intersection Prioritizing

- ▶ On regional routes of significance
- ▶ In Priority Development Area (PDA) or access to PDA + Downtown and Commercial Districts
- ▶ Presence of transit routes and connection to BART
- ▶ Presence of bicycle lanes
- ▶ Bicycle and pedestrian collisions
- ▶ Connection to Shared Mobility Hubs
- ▶ Traffic volume







PROJECT TEAM

Design & Management Team

Internal CCTA staff, AMG, consultants/contractors performing day-to-day activities.

(bi-monthly meetings)

Core Advisory Committee (CAG)

Technical Staff from CCTA , local cities, Contra Costa County and transit agencies

(Monthly meetings a week prior to Stakeholder meetings)

Stakeholders

Traffic engineer and public work staff from all agencies, including Cities, County, CHP, and Transit agencies.

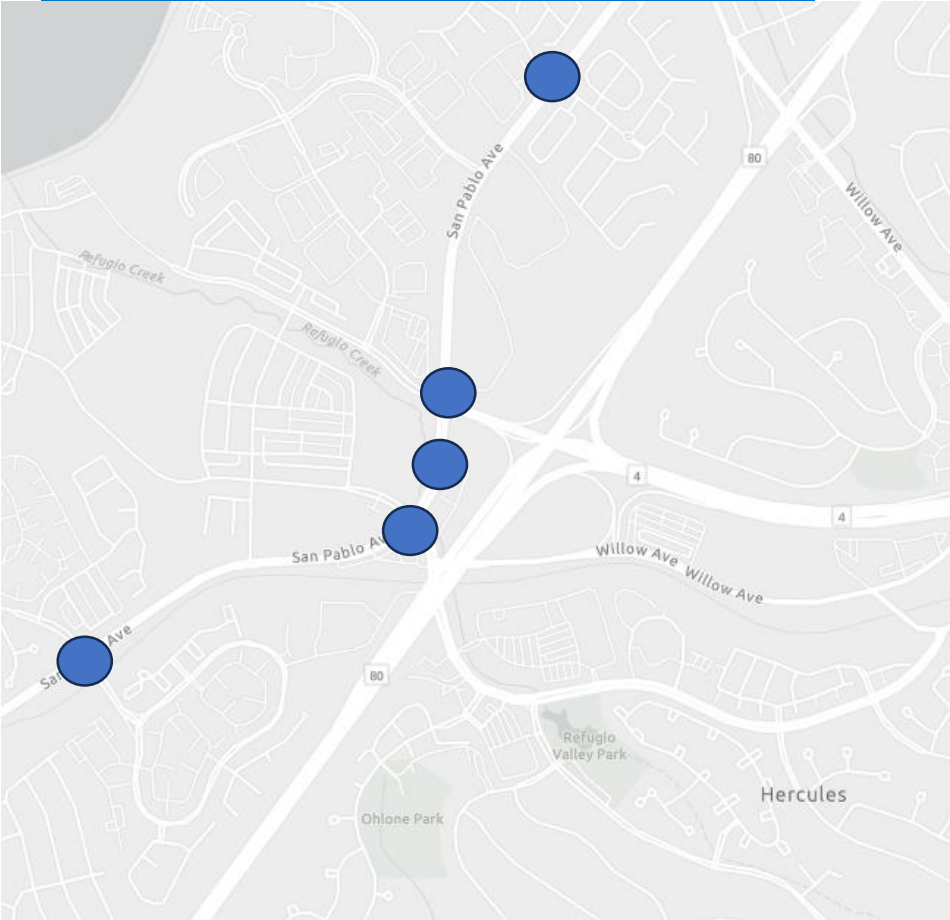
(Monthly meetings a week after CAG meetings)

FUNDING PLAN

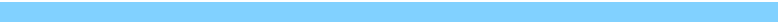
Project Phases	Total Cost	Secured Funds	
		Amount	Fund Sources
Planning/ Conceptual	\$ 250,000	\$ 250,000	Measure J
Environmental Studies (PA&ED)	\$ 440,280	\$ 440,280	Measure J
Design Engineering (PS&E)	\$ 1,651,050	\$ 189,375	City Local Match
		\$ 1,461,675	OBAG
Right-of-way Construction	\$ 28,433,092	\$ 3,339,767	City Local Match
		\$ 25,093,325	OBAG 3
Total	\$ 30,774,422	\$ 30,774,422	



CITY OF HERCULES



San Pablo Ave	Hercules Ave
San Pablo Ave	Sycamore Ave
San Pablo Ave	Market Dr
San Pablo Ave	John Muir Pkwy
San Pablo Ave	Victoria Cres E



CITY OF HERCULES

Hercules	Amount
Total	\$567,597
Match (11.47%)	\$65,091

PROJECT SCHEDULE

Systems Engineering

← SPRING 2023 - SPRING 2024

Plan, Specifications, & Estimate

← SPRING 2024 - FALL 2025

Construction

← FALL 2025 – FALL 2026

Systems Integration

← FALL 2026 – FALL 2027

Project Close Out

← FALL 2028



Questions