

CONTRA COSTA COUNTYWIDE SMART SIGNALS

Contra Costa Transportation Authority (CCTA) is leading a Countywide Smart Signals Project (Project) to upgrade traffic signal and communication systems at 328 intersections within Contra Costa County throughout the 19 cities/towns and unincorporated communities located along major arterial streets and roads designated as Routes of Regional Significance.

PURPOSE + NEED | Existing traffic signal systems in most cities within Contra Costa County consist of outdated legacy systems that lack fiber and/or ethernet base communication making traffic signal synchronization and coordination between traffic signals difficult. Additionally, most corridors need Signal Control and Prioritization (SCP) technologies that can promote transit usage and mode shift. These operational deficiencies result in severe traffic congestion within the cities which can also lead to spillover on the freeways; increasing commuter travel times, greenhouse gas emissions, fuel consumption, and accidents.



SOLUTION | Implementation of the planned Intelligent Transportation System (ITS) elements will unify Contra Costa County's signal technology and communication systems to optimize traffic flow. It will provide an interconnected Advanced Traffic Management System (ATMS) with the ability to monitor traffic conditions in real-time, safely, and efficiently manage incidents, and share information between agencies and the public.

The goals of the project are to improve safety, optimize mobility, prepare for emerging transportation technologies, and advance Smart Cities.

BENEFITS



SAFETY

Upgrading traffic signal equipment and applying smart control systems at intersections will:

- ▶ Improve emergency service response time;
- ▶ Help first responders and law enforcement manage traffic or crime incidents; and
- ▶ Implement Video analytics that can identify near miss situations, prevent future occurrences, and reduce secondary accidents.



OPERATIONAL IMPROVEMENTS

Signal synchronization and implementation of SCP technologies will:

- ▶ Smooth traffic flow and reduce idling;
- ▶ Increase average speed;
- ▶ Decrease travel time and total delay;
- ▶ Reduce greenhouse gas emissions; and
- ▶ Increase transit reliability by improving on-time service.



TRAFFIC MANAGEMENT ENHANCEMENTS

Shared control and improved cross jurisdictional traffic management will:

- ▶ Provide cities and Caltrans access to monitor all videos and signals in real-time;
- ▶ Optimize day-to-day traffic operations and manage local events through signal timing options;
- ▶ Effectively manage arterial traffic during major incidents on the freeway, evacuations, or major events; and
- ▶ Enable cities to prioritize transit and emergency vehicles.



KEY PROJECT FEATURES

- ▶ Traffic signal system upgrades
- ▶ ATMS upgrades for each agency to provide remote command and control at a centralized Traffic Management Center (TMC) location
- ▶ Close Circuit Television (CCTV) cameras
- ▶ Pedestrian and bicycle detection system
- ▶ Shared control and operation to allow cross jurisdictional traffic management
- ▶ Automated data collection
- ▶ SCP for transit and emergency vehicles
- ▶ Vehicle detection system on designated arterials and state routes

FUNDING + SCHEDULE

Project Phase	Total Cost	Fund Source	Start Date
Planning/ Conceptual	\$250,000	Measure J	Jul-22
Environmental Studies (PA&ED)	\$440,280	Measure J	Mar-23
Design Engineering (PS&E)	\$1,651,050	Local Match, OBAG 3*	Sep-24
Construction	\$28,433,092	Local Match, OBAG 3, LPP-F**	Sep-25
Total	\$ 30,774,422		

*One Bay Area Grant (OBAG) 3 federal funding provided by Metropolitan Transportation Commission (MTC).

** Local Partnership Program – Formulaic (LPP-F) state funding provided by California Transportation Commission (CTC).

STAKEHOLDERS

Antioch	Brentwood	Clayton	Concord	Danville
El Cerrito	Hercules	Lafayette	Martinez	Moraga
Oakley	Orinda	Pinole	Pittsburg	Pleasant Hill
Richmond	San Pablo	San Ramon	Walnut Creek	Contra Costa County

The project is being implemented in collaboration with Central Contra Costa Transit Authority (County Connection), Eastern Contra Costa Transit Authority (Tri Delta Transit), Western Contra Costa County Transit (WestCAT), Alameda-Contra Costa Transit District (AC Transit), Bay Area Rapid Transit (BART), California Department of Transportation (Caltrans), and MTC.