Technology Opportunities

TECHNOLOGY SHARING • TECHNOLOGY FUNDING • PILOT IMPLEMENTATION

INTRODUCTION

Being in the geographic center of the region, Alameda County roads experience a disproportionate amount of regional congestion – one-third of all trips pass through the county, while nearly half of all congestion occurs on Alameda County roads. In response to these challenges, Alameda CTC continues to implement creative transportation solutions, including some of the region's most pioneering projects. Considering the rapid advancement in transportation technology, the Commission had the foresight to carve out funding for implementing technology in the 2014 voter-approved Measure BB Transportation Expenditure Plan.

PURPOSE

Alameda CTC is currently developing a framework for implementation of advanced intelligent transportation systems (ITS) and technologies that leverage progress in transportation technology to improve the county's rich multimodal transportation system and provide state-of-the-art mobility options for people and goods. The framework reflects the potential roles of Alameda CTC and identifies short-term, practical project options for implementation. Technology solutions and strategies are expected to **improve safety**, **multimodal mobility** and the **environment** while **reducing congestion and increasing accessibility**.

The practical framework builds on existing Alameda County and regional efforts, coordinates with local and regional partners and applies available advanced technologies.
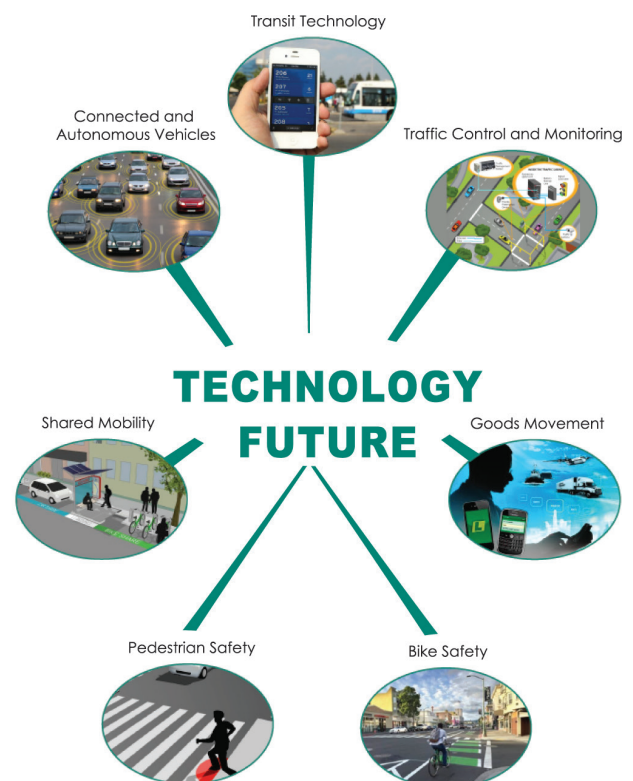
ALAMEDA CTC FRAMEWORK

✓ **Technology sharing forum**
  Ongoing collaboration with partners
  Educate and share technology applications

✓ **Refine Alameda CTC's technology approach**

✓ **Project/pilot implementation**
  Near-term project/pilot implementation

ALAMEDA CTC'S ROLE

Alameda CTC will advance technology solutions to address Alameda County's transportation needs as a:

- **Facilitator**
- **Implementer**
- **Funding agency**
- **Partner**

TECHNOLOGY FUTURE

Transit Technology
Connected and Autonomous Vehicles
Traffic Control and Monitoring
Shared Mobility
Goods Movement
Pedestrian Safety
Bike Safety

A County of Firsts

TECHNOLOGY SHARING • **TECHNOLOGY FUNDING** • **PILOT IMPLEMENTATION**

Alameda County and local partners have pioneered and implemented technological solutions to address Alameda County's transportation issues. All of these are firsts in the Bay region or East Bay.

ALAMEDA CTC EFFORTS:

- **Express Lanes**
  I-680
  I-580 (continuous access)

- **East Bay SMART Corridors**

- **East Bay Bus Rapid Transit (BRT)**

- **I-80 Integrated Corridor Mobility (ICM)**

- **BikeMobile**

- **Paratransit vehicle technology**

OTHER LOCAL PARTNERS' EFFORTS:

- **AC Transit Flex Service in Newark/ Castro Valley**

- **AC Transit automated vehicle locator upgrade**

- **Livermore Amador Valley Transportation Authority pilot program for first/last mile connections**

- **Vision Zero Plans (Fremont and Oakland)**

- **Dynamic parking pricing (Go Berkeley)**

Implementation Opportunities

TECHNOLOGY SHARING • TECHNOLOGY FUNDING • PILOT IMPLEMENTATION

POTENTIAL PROJECTS FOR NEAR-TERM IMPLEMENTATION (1-3 YEARS)
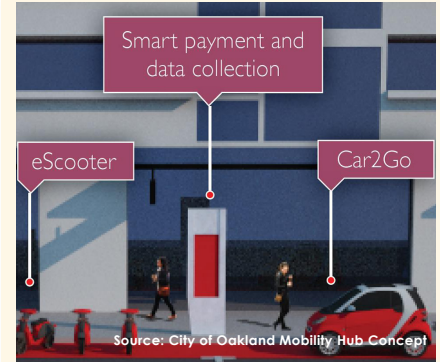

AC Transit Connected and Rapid Services

This project emphasizes improving real-time communications between riders, buses, roadside infrastructures and other modal users. The project will identify and implement transit technologies that address transit delay, improve reliability and safety, and enhance traveler information to make transit a more attractive option and increase ridership.

City of Fremont Example of Vision Zero Location of Major Crashes in Past 3 Years Source: City of Fremont
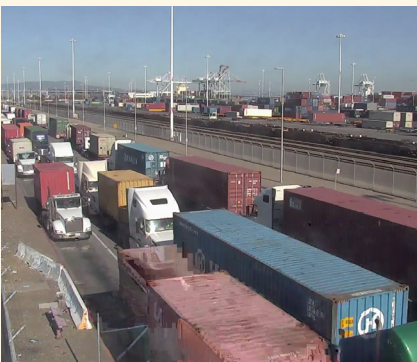
Vision Zero Improvements: Improving Safety on Alameda County High-Injury Corridors and Intersections

Alameda CTC has a commitment to safety and has led countywide planning, investment and programming efforts to promote and implement roadway safety improvements. The project will implement recent advances in visual detection, automation, mobile phone capability and overall connectivity to improve safety across all modes of transportation.

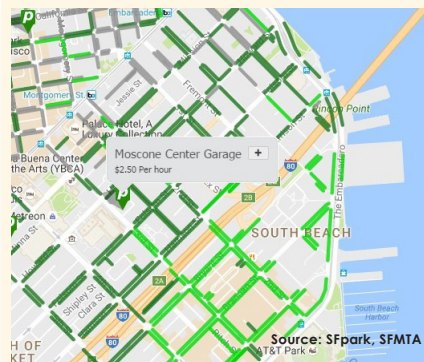Source: City of Oakland Mobility Hub Concept

Mobility Hubs: Improving First-and Last-Mile Access to/from Transit

Mobility hubs offer diverse mobility options (i.e., car share, bike share, scooter share and ride share) at centralized locations as well as serving as potential nodes for transit and "flex" transit options. These hubs will also provide real-time travel information and automated payment options to users.
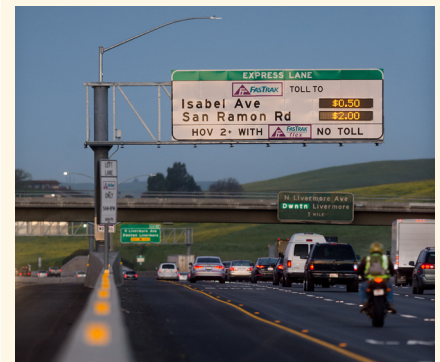

Port of Oakland Intelligent Transportation Systems

Trucks arriving and leaving the Port experience long wait times, and truck queues cause congestion and traffic backups. With more information provided through advanced technologies, truckers can make informed decisions about their trip. The fully integrated intelligent transportation system will improve the overall efficiency of goods movement in the Bay Area region.

Source: SFpark, SFMTA

Smart Parking Management

Alameda County drivers must contend with full commuter parking lots and circling to find rare on-street parking. Local jurisdictions can use real-time parking availability monitoring to develop dynamic parking pricing that encourages travelers to use alternate modes, carpool or more efficiently use available parking spaces, which saves time and can reduce emissions.

Coordinated Operational Improvements Along I-580 Express Lane Corridor

The I-580 express lanes offer drivers a more reliable corridor travel option. Yet operational improvements are necessary to ensure that parallel arterial roadway signals are dynamically coordinated with conditions on I-580 and freeway on/off ramps, including parking availability information, which will improve travel-time reliability and encourage travelers to use alternate modes along the corridor.

Next Steps

TECHNOLOGY SHARING ○ **TECHNOLOGY FUNDING** ○ **PILOT IMPLEMENTATION**

Over the next few years, Alameda CTC and local partners plan to develop policies related to technology and seek opportunities to implement several technology pilot projects.

POLICY

- **2017: Develop technology guidelines/policy for Alameda CTC-led projects.**

- **2017: Refine Alameda CTC's technology approach.**

- **2017: Assess needs and identify priority technology projects.**

PILOT PROJECT IMPLEMENTATION

- **2016-2018: Port of Oakland ITS (GoPort) implementation.**

- **2016-2017: Alameda CTC establishes technology exchange forum with the Alameda County Technical Advisory Committee to identify opportunities for countywide partnership and collaboration.**

- **2017-2019: AC Transit technology upgrades on Rapid corridors.**

- **2017: Alameda CTC to identify funding, resources, partnerships and project delivery plan for additional pilot projects.**

- **2017 and beyond: Implement Commission-approved pilot programs.**