Innovating Mobility

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Contra Costa Transportation Authority
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Who We Are

- CCTA is a public agency formed by voters in 1988 to manage the county’s transportation sales tax program and to lead transportation planning efforts.

- We are responsible for maintaining and improving the county’s transportation system by delivering critical transportation infrastructure projects to safely and efficiently get people where they need to go.

- Managing entity of autonomous vehicle (AV) testing site: GoMentum Station.
Contra Costa County, California

Location
Eastern suburb of the San Francisco Bay Area

Population
1 Million+

Thriving Commerce
Businesses headquartered in Contra Costa County include:

Diverse
Demographically, economically and geographically
What We Do

PEDESTRIAN
Make improvements to sidewalks, crosswalks, trails, and paths

LOCAL STREETS
Smooth traffic flow on major roads and invest in improvements such as repairing potholes and road surfaces

BUSES
Invest in a reliable, comfortable and convenient bus network

SAFE ROUTES TO SCHOOLS
Focus on programs and projects aimed at bicycle and pedestrian safety for K-12 students

BICYCLE
Invest in safe routes and infrastructure improvements for bicyclists

BART
Improve BART service and stations, extend routes and increase parking at stations

HIGHWAYS
Complete Contra Costa’s highway system, and improve air quality and noise protection along these corridors

CARPOOL/RIDESHARE
Implement programs to reduce traffic congestion by encouraging carpooling and ridesharing

FERRIES
Expand the Bay Area ferry system by looking to ferries as an alternate commute method between West County and San Francisco

PROGRAMS FOR SENIORS AND PEOPLE WITH DISABILITIES
Enhance transit options to improve mobility for seniors and people with disabilities
Redefining Mobility in Contra Costa County
Prudent Financial Stewardship

- Highly Rated
  - AA+ Bond Rating by Fitch
  - AA+ by Standard & Poor’s
  - Recipient of “Excellence in Government Financial Reporting” by Government Finance Officers Association

- Responsible management through recession
  - 29.14% cumulative growth in sales tax revenues since 2010

- Lean Organization
  - 20 employees
  - Established budget controls – 1% limitation on administration costs
  - Conservative pension plan – no spiking, no unfunded liability
  - Low debt levels

- Last bond sale – September 30th
  - Provides continued funding for capital projects in the County
  - $100 million tax-exempt bonds through 2034
  - Local underwriter was Alamo Capital in Walnut Creek
Cities of the Future
City 5.0

Data Driven Mobility   Sensible & Digital City   Intermodal Innovations
City 5.0 Environment

- Smart Energy
- Smart Water
- Smart Integration
- Smart Buildings
- Smart Mobility
- Smart Public Services
Why Autonomous Vehicles?

- Safer Roads
- Less Congestion & Better Air Quality
- Increased Accessibility & Opportunity
Studies show that commute time is the key factor in social mobility, more so even than factors related to crime or education.*

*Transportation Emerges as Crucial to Escaping Poverty, NY Times May 2015
Transportation Planning
Planning for the Future –
The Countywide Transportation Plan

- Updated Every 4-5 Years
- Documents the Authority’s Goals, Vision, and Strategies
- Action Plans are Developed by the Regional Committees
- Includes 10- and 20-Year Financially Constrained Project Lists
Travel Demand Forecast Modeling

- Used to determine impacts of land use developments and transportation improvements through year 2040
- Model assumes increased capacity of existing roadways due to automated/connected vehicles
- Accounts for clean vehicle deployment over time
- Model provides future forecasts of GHG emissions, Vehicle Miles Traveled and Vehicle Hours of Delay under various scenarios
Implications of Urban Mobility Planning

- 6% Consider impact of driverless car technology
- 3% Consider impact of Uber and Lyft
- 20% Consider impact of roadway diets
- 50% Consider explicit recommendations of or new highway construction
- 12% Consider no new highway construction

Source: National League of Cities
Climate Change and Transportation

- Authority’s plans build upon California’s strong GHG emission reduction policies
- Includes accelerated clean vehicle deployment and automated vehicle technology
Electric Vehicle Grid Master Plan

- Develop readiness plan for electric vehicle shared mobility in the county
- Study best practices for EV port turnover
- Support electric transit fleet and future demand for electricity storage and inductive charging
Design Procurement & Standards
Do we need ever to widen a roadway and highway?
Do we need to design 12 foot lanes anymore?

As shown in this diagram, this Alternative allows for 12 foot traffic lanes, a 12 foot center turn lane, shoulders 2 feet wide, and a sidewalk on one side of the road, separated from the road shoulder by a 6 inch strip.

(Graphic courtesy: Metro Transportation Department)
Shoulder Lane Utilization?

outside shoulder

inside shoulder
“Complete Street” Design Creates a Safe Environment

Street modifications can have a significant positive impact on safety
GoMentum Station
GoMentum Station

DOT designated testing site with more than 5,000 acres

2,100 acres currently available for testing
Goals of GoMentum

- Economic Growth & Job Creation
- Efficient Mobility
- Enhanced Safety
- Healthier Environments

21st Century Transportation
One of Ten

GoMentum is 1 of 10 federally approved AV test sites in U.S.
Global Test Centers

GoMentum Station is an International Entity
Paved Roads

Over 20 miles of paved roadways including a 7-mile long spine road for high speed testing
Tunnels

Two 1400-ft. long tunnels ideal for testing guidance, sensors & communications technologies
Bridges

Freeway underpasses and variable roadway geometrics
Parking Lots

Several parking lots for testing by multiple users
Shared Autonomous Vehicle (SAV) Project
Project Progress

✓ Proposed and passed Assembly Bill 1592 (Bonilla, 2016) authorizing pilot project of vehicle with no steering wheel, brake pedal or operator

✓ Secured Bishop Ranch as partner and shared autonomous vehicles

✓ Obtained City permission to operate on public streets

✓ Obtained waiver from National Traffic Highway Safety Administration (NHTSA) to operate on public streets

✓ Obtained first license from California DMV to operate Shared Autonomous Vehicle on public streets
SAV Partners
Proclamations
Encouraging Autonomous Vehicle Testing in Our Cities

Proclamation Encouraging Autonomous Vehicle Testing as a Public Safety and Economic Development Initiative

WHEREAS, the introduction of passenger and freight automobiles operating with autonomous functionality is imminent and likely to profoundly affect our lives and our communities; and

WHEREAS, these vehicles have the potential to greatly reduce or eliminate traffic fatalities caused by human error and distraction. Furthermore, intelligent vehicles will reduce congestion, emissions and the need for costly additions of lanes to busy roadways; and

WHEREAS, the Contra Costa Transportation Authority and its partners at GoMentum Station – the largest secure connected and autonomous vehicle proving grounds in the nation, located in Contra Costa County – are at the forefront of advancing innovations in vehicle-to-vehicle communications, sensor technology, human factors, artificial intelligence, clean air, safety, and public policy issues critical to the success of this transformational change; and

WHEREAS, many companies in our region have been successfully pioneering similar vehicle systems in the passenger, freight and transit fields, and there exists a robust community of software and technology companies whose development can be encouraged by supportive cities; and

WHEREAS, it is our stated goal to engage in strategic economic development initiatives that will create high-paying employment opportunities to strengthen our overall economy and provide benefit to all citizens. We realize that those communities and states that are first to embrace this life-saving and transformational technological advancement will stand to gain the most potential economic benefit.

NOW, THEREFORE, be it resolved that I, Kevin Romick, Mayor of the City of Oakley on behalf of the City Council, do hereby proclaim that Contra Costa County and the City of Oakley welcome the testing and operation of intelligent vehicles on the streets and roads over which we have jurisdiction in accordance with applicable law, as a means to encourage the advancement of this technology and to create economic benefit, and will, if necessary, work collaboratively with other jurisdictions in Contra Costa County to address any issues that arise in order to best protect the safety of our citizens.

September 13, 2016

Kevin Romick, Mayor
The Challenges
Consumer Sentiment

87% of U.S. adults favor a requirement that all driverless vehicles have a human in the driver’s seat who can take control if needed.

Pew Research Center
Regulating Innovation

Conflicting laws and incompatible regulations are the enemy of innovation.
CCTA’s Challenges

- Liability agreements
- Lack of funding (staffing and improvements to site cost money)
- Recordkeeping requirements are cumbersome
- Personal security (of riders)
- No roadmap for this work- lack of precedent
Impacted Industries
Impacted Industries

- Insurance
- Auto Repairs
- Professional Drivers
- Hotels
- Airlines
- Auto Parts
- TNCs
- Public Transit
- Parking lots
- Fast Food
- Gas Stations
- Real Estate
- Media
- Auto Industry

https://www.cbinsights.com/blog/13-industries-disrupted-driverless-cars
Preparing for the future
The Path Forward

- Education & Outreach
- Planning Process
- Engagement
- Flexibility
- Leverage
- Consistency
- Collaboration
- Partnerships
Thank you

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