

Innovating Mobility

Randy Iwasaki

Executive Director

Contra Costa Transportation Authority

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CONTRA COSTA
transportation
authority



GOMENTUM
STATION

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.



Measure C

- Passed by voters in 1988, Measure C provided for a half-cent on the dollar sales tax for 20 years (through March 2009) to pay for an ambitious list of transportation projects and programs.
- An estimated \$1 billion was generated by this Measure, for a BART extension, freeway improvements, better bus service, enhanced bicycle facilities and more transportation options for senior citizens and people with disabilities.



Measure J

In November 2004, 71% of Contra Costa voters approved Measure J. The measure provided for the continuation of our county's half-cent transportation sales tax until 2034, and will provide approximately \$2.0 billion for countywide and local transportation projects and programs for the life of the measure.



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



FERRIES

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



BICYCLE

Invest in safe routes and infrastructure improvements for cyclists



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



PROGRAMS FOR SENIORS AND PEOPLE WITH DISABILITIES

Enhance transit options to improve mobility for seniors and people with disabilities

Promises Made

Promises Kept

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

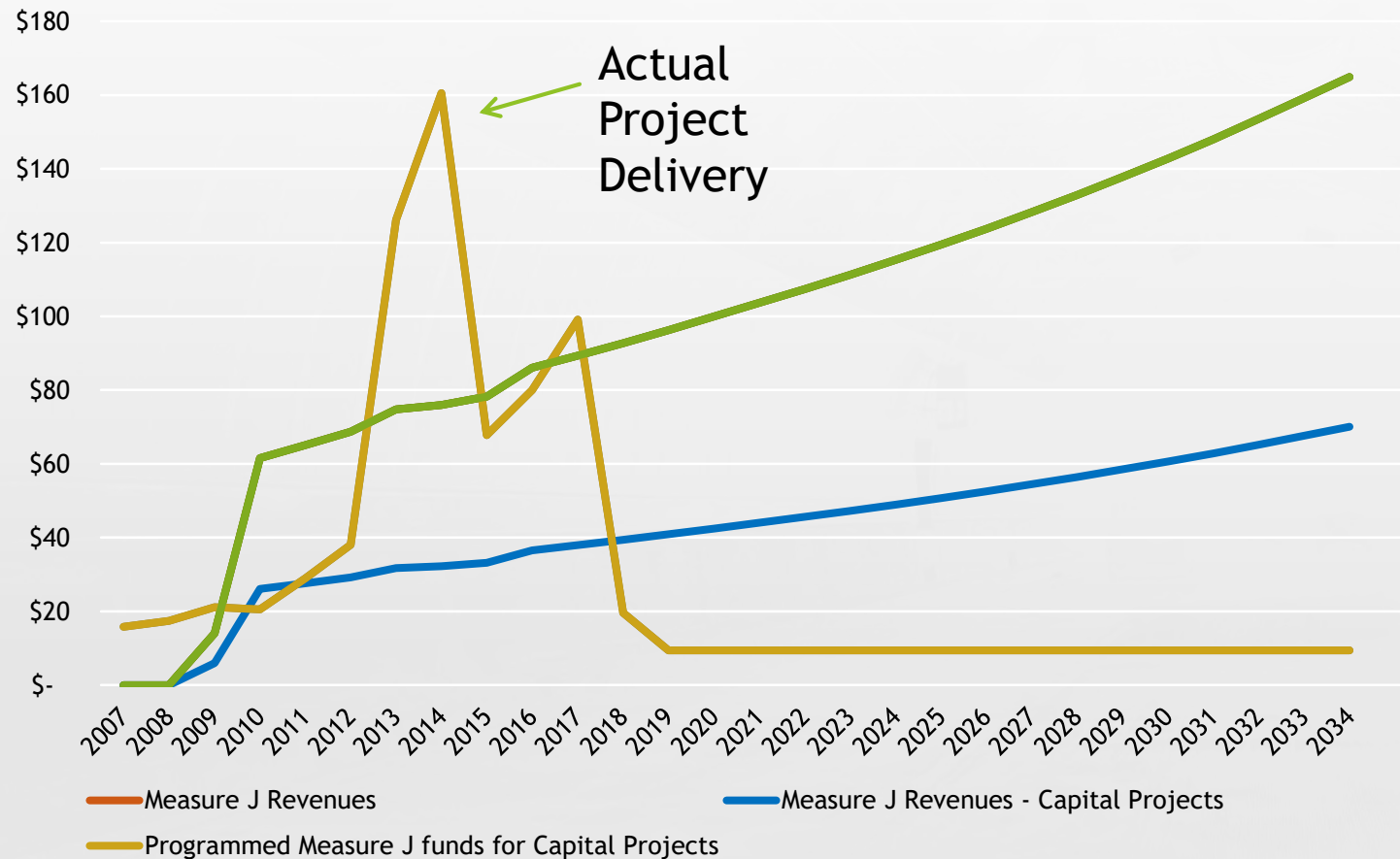
- Last bond sale – September 30th

- Provides continued funding for capital projects in the County
- \$100 million tax-exempt bonds through 2034
- Local underwriter was Alamo Capital in Walnut Creek



Measure J Delivery – 25 in 10

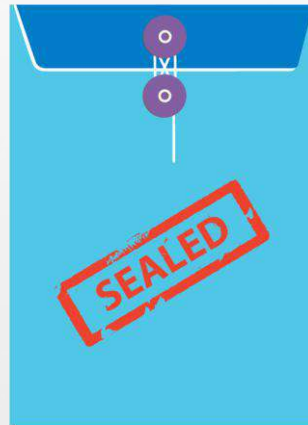
Measure J Revenues and Expenditures (\$ millions)



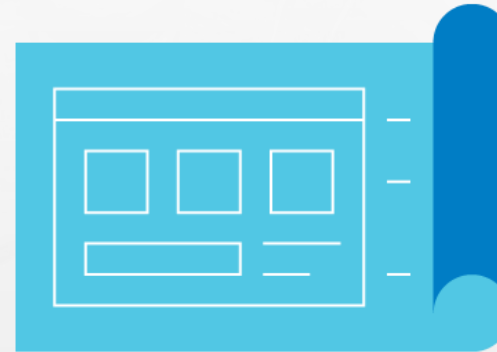
How We Are Innovating

Online Bidding

Receive sealed, secure digitally-signed bids



Offer Plans Sheets and bid documents online



Instantly communicate with bidding communities

Paperless Contracting

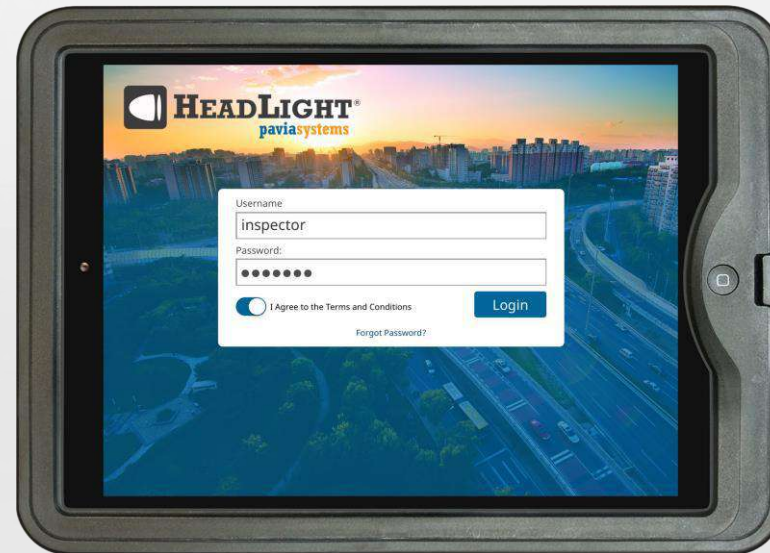
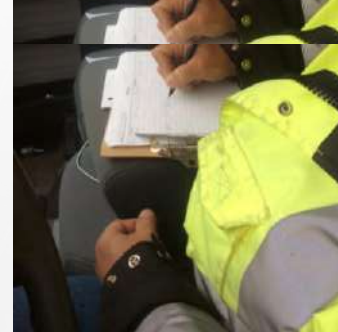
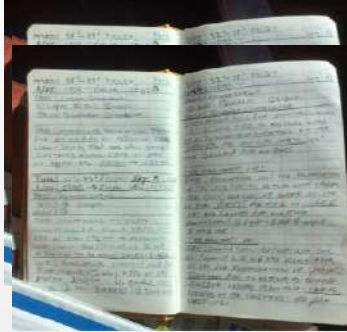
Mobile accessible – tablets/smartphones



Digital & Electronic Signatures



Electronic Inspection



Visual Simulation



Asset Management



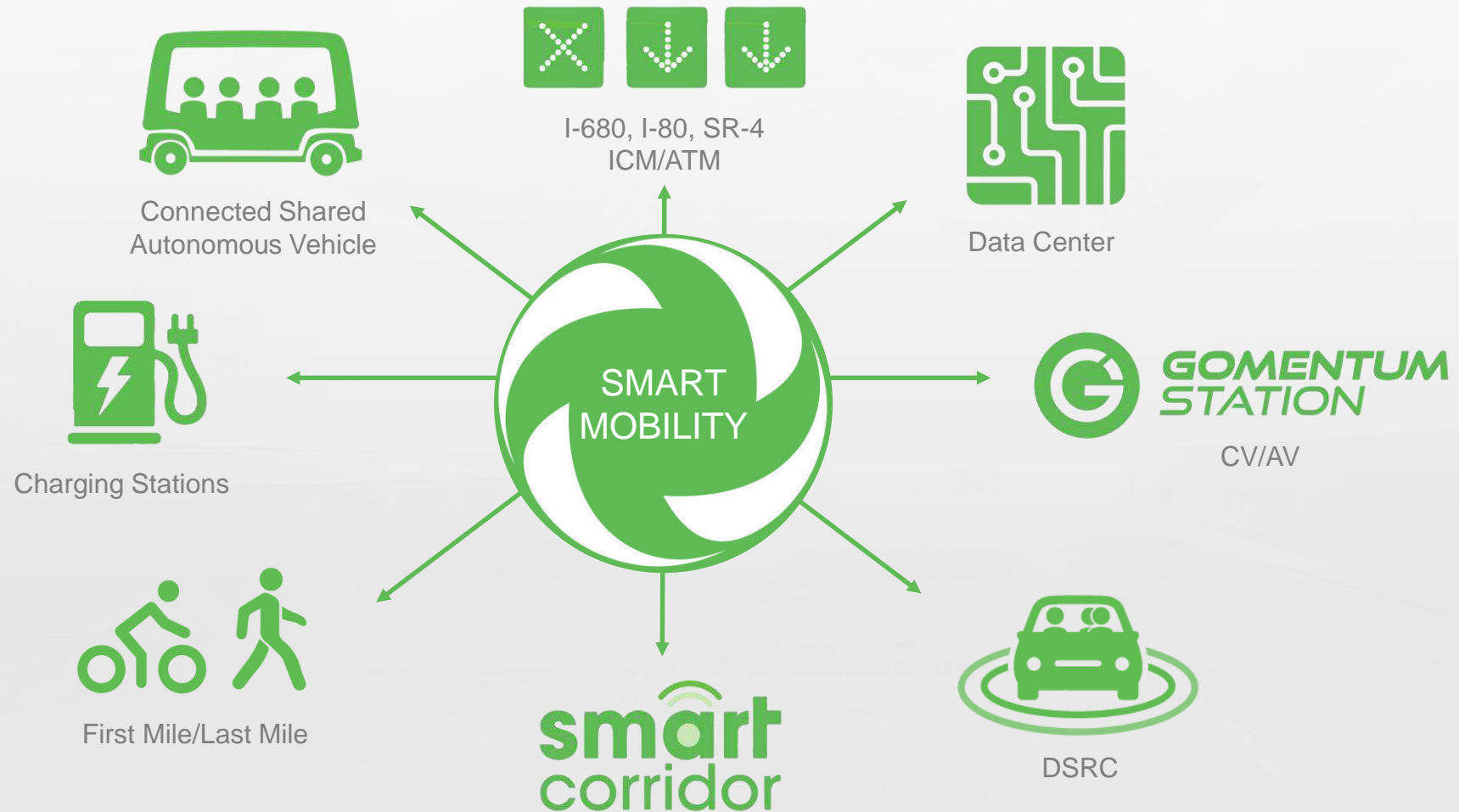
Drone Integration



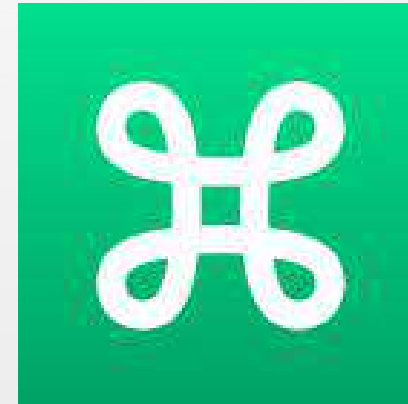
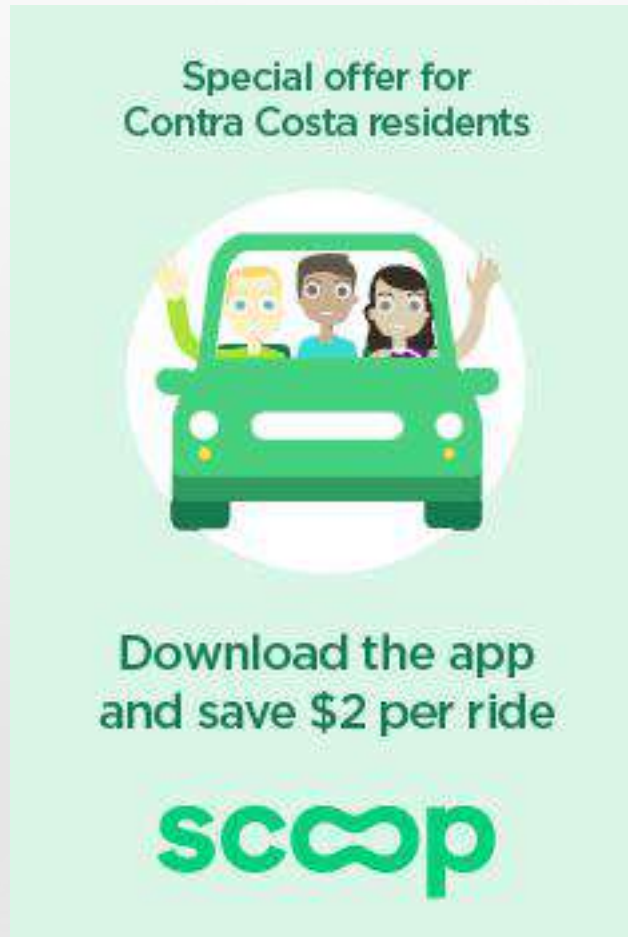
- Generate high-resolution videos and photos of jobsite
- Use of LiDAR (light detection and ranging) to assist with quantity measurements
- Monthly photogrammetry data collection
- Will be used as a check to determine final import fill.



Redefining Mobility in Contra Costa County



TDM Pilot Projects



DriverMiles_s



innovate 



Seven Strategies

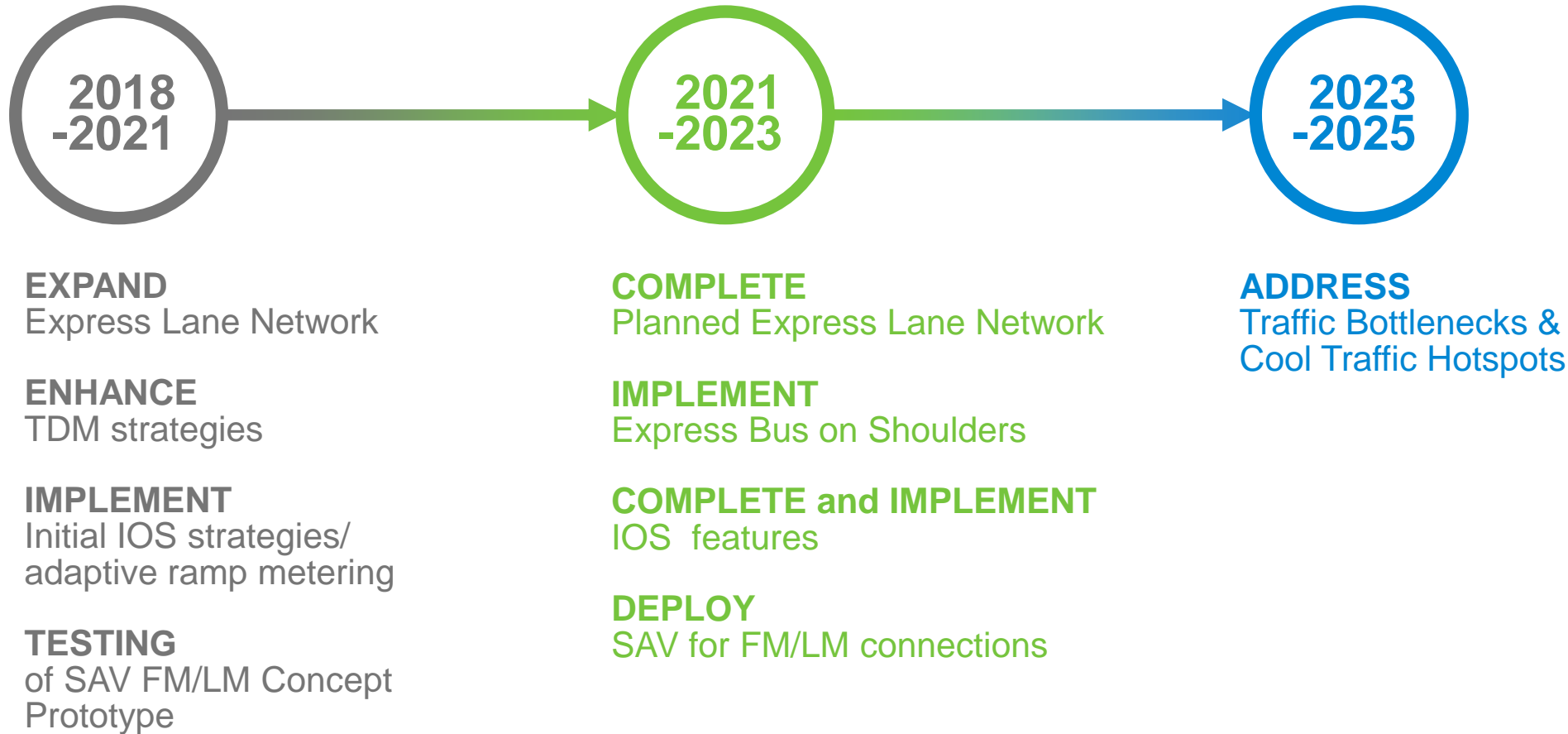


Four Projects



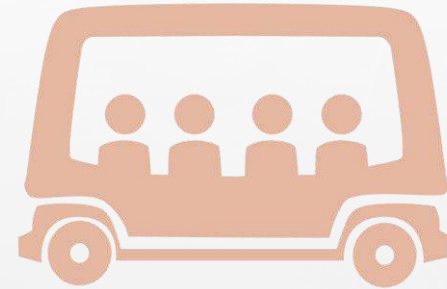


Project Schedule

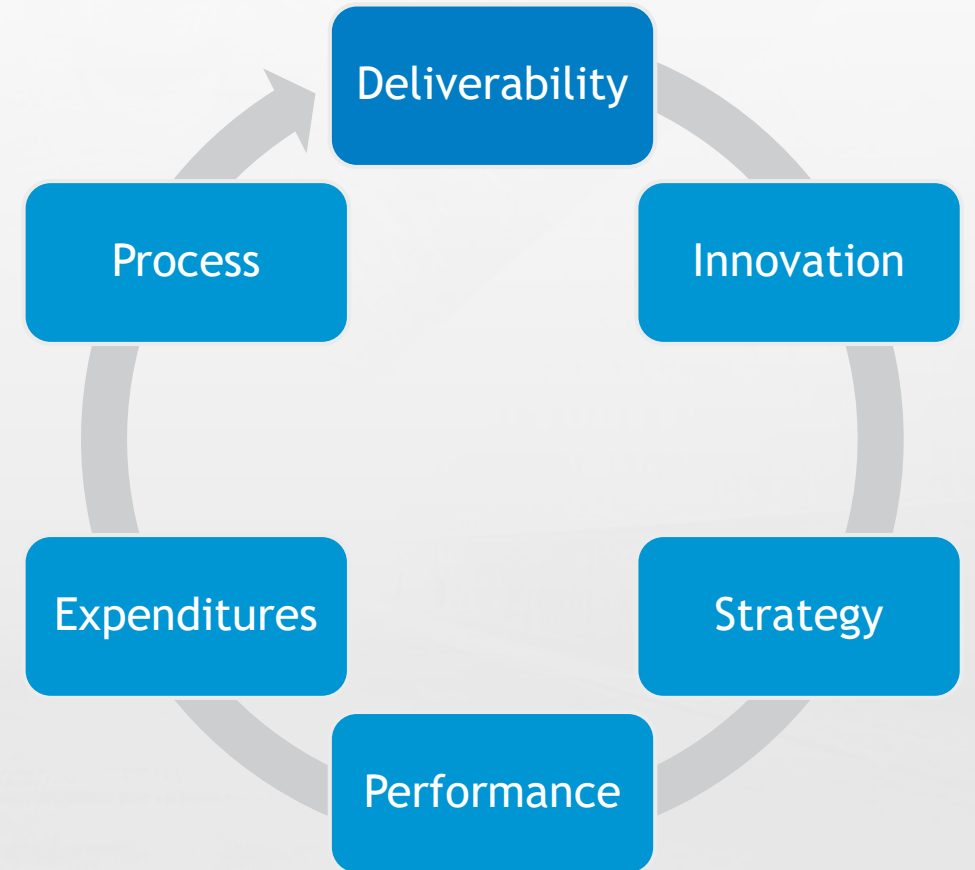


Shifts in Transportation Funding

- Senate Bill 1 (SB1)
- Active Transportation Program
- State Transportation Improvement Program (STIP)
- State Highway Operations and Protection Program (SHOPP)
- Congestion Mitigation and Air Quality (CMAQ) Improvement
- Infrastructure for Rebuilding America (INFRA)
- Transportation Investment Generating Economic Recovery (TIGER)



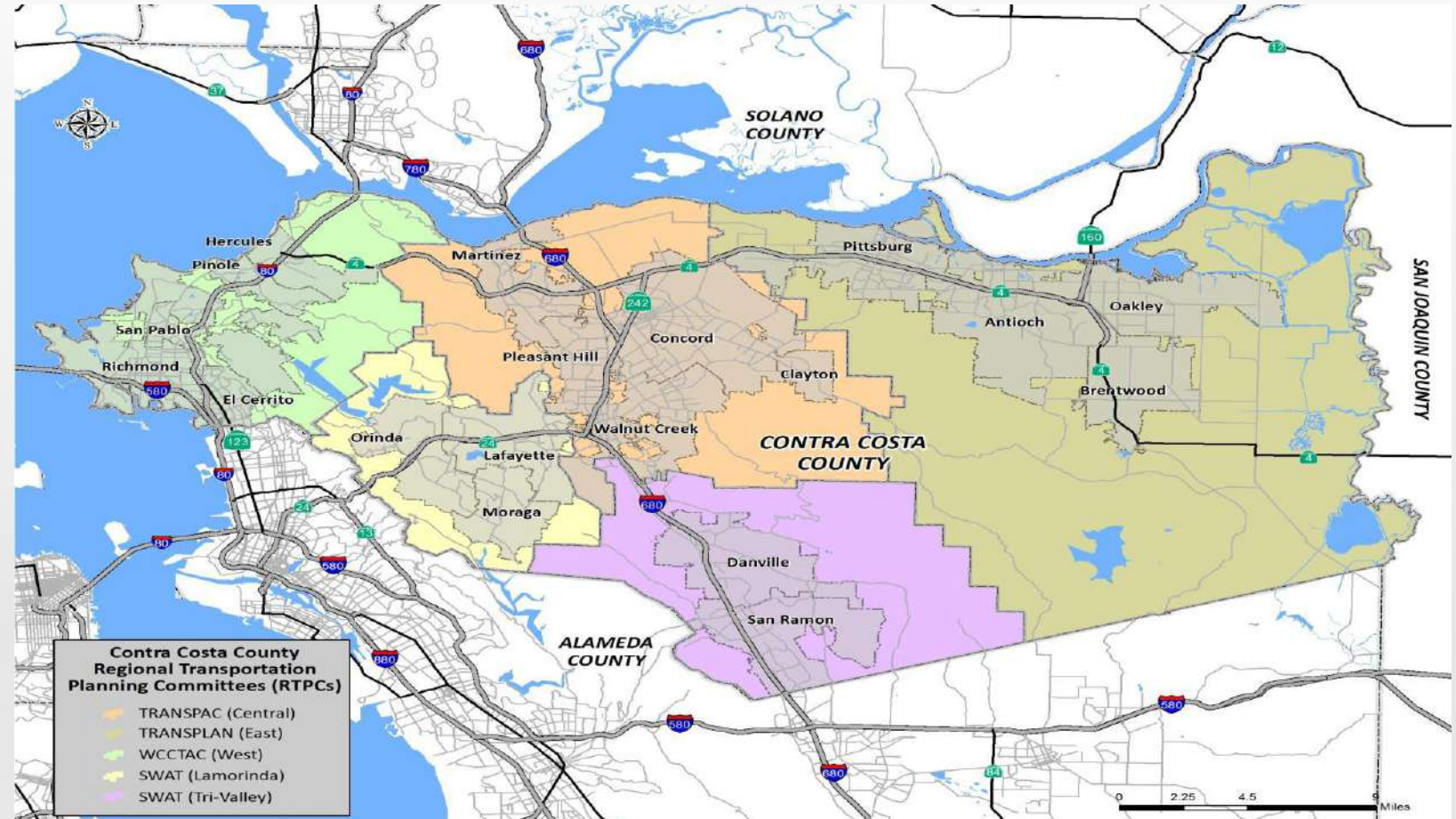
Leveraging Local Funding for Project Delivery



Transportation Planning

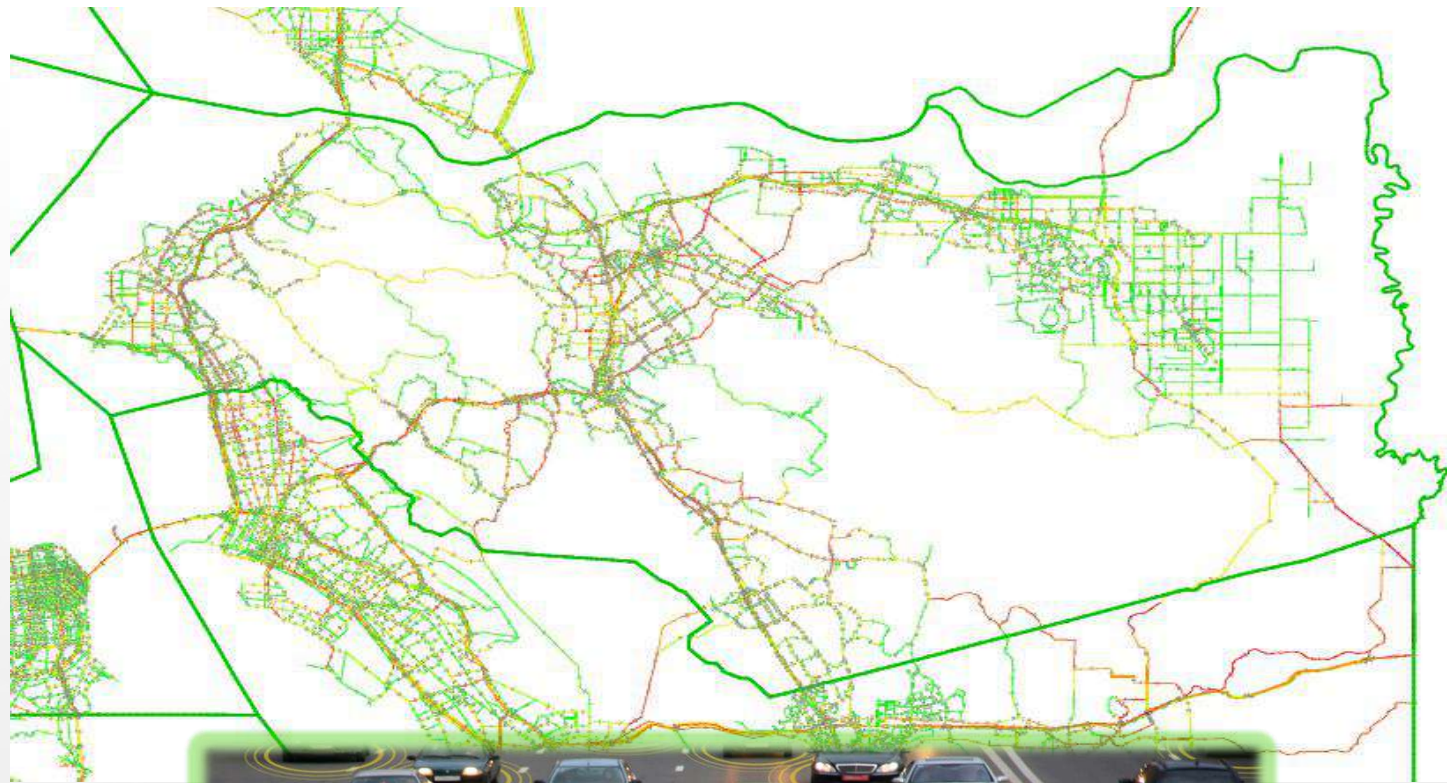
Regional Transportation Planning Committees

- Four Distinct Sub-regions
- Responsible for prioritizing local projects and programs
- Develop Action Plans for Routes of Regional Significance



Travel Demand Forecast Modeling

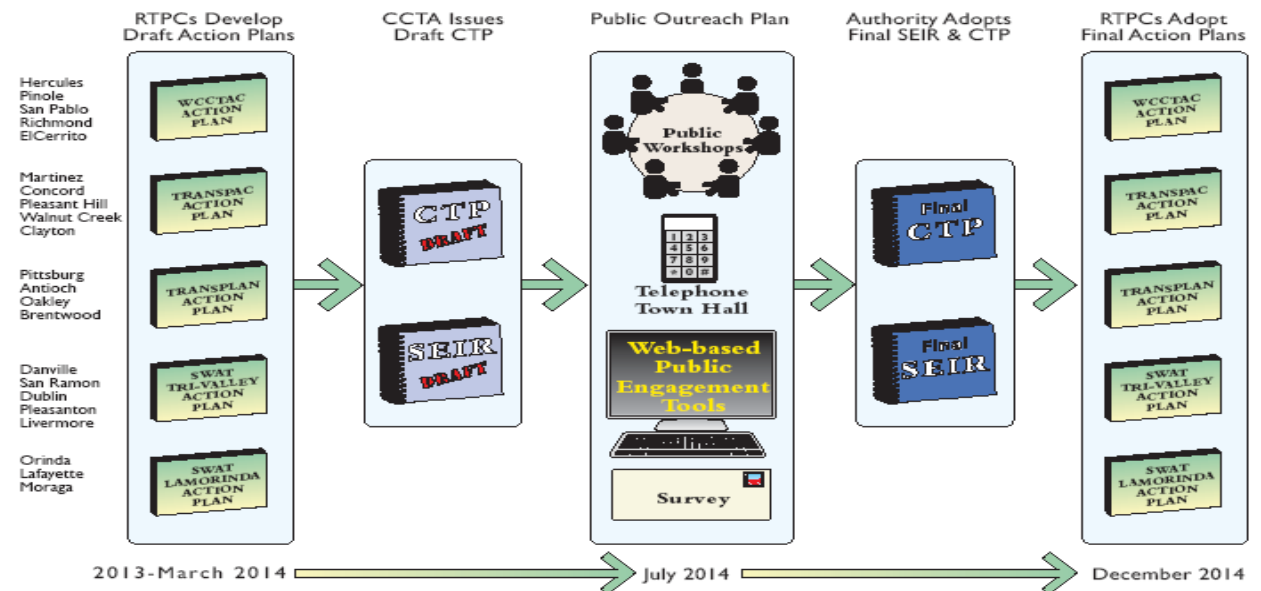
- Used to determine impacts of land use developments and transportation improvements through year 2040
- Model assumes increased capacity of existing roadways due to automated/connected vehicles
- Accounts for clean vehicle deployment over time
- Model provides future forecasts of GHG emissions, Vehicle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



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

Figure I-2: CTP Development & Adoption Process



Implications of Urban Mobility Planning

6%

Consider impact
of driverless car
technology

50%

Consider explicit
recommendations
of or new highway
construction

3%

Consider impact
of Uber and Lyft

12%

Consider no new
highway
construction

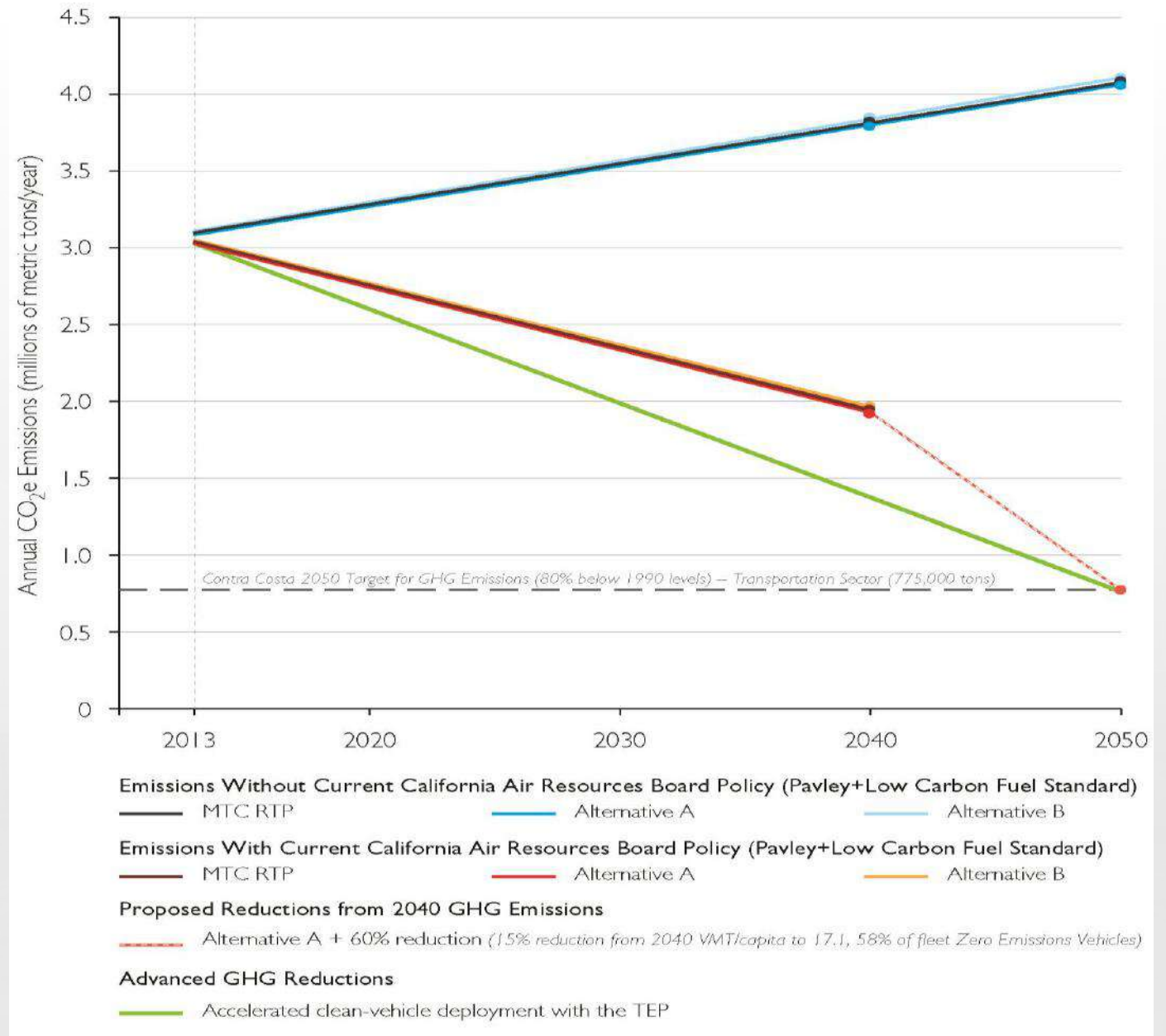
20%

Consider impact
of roadway diets

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



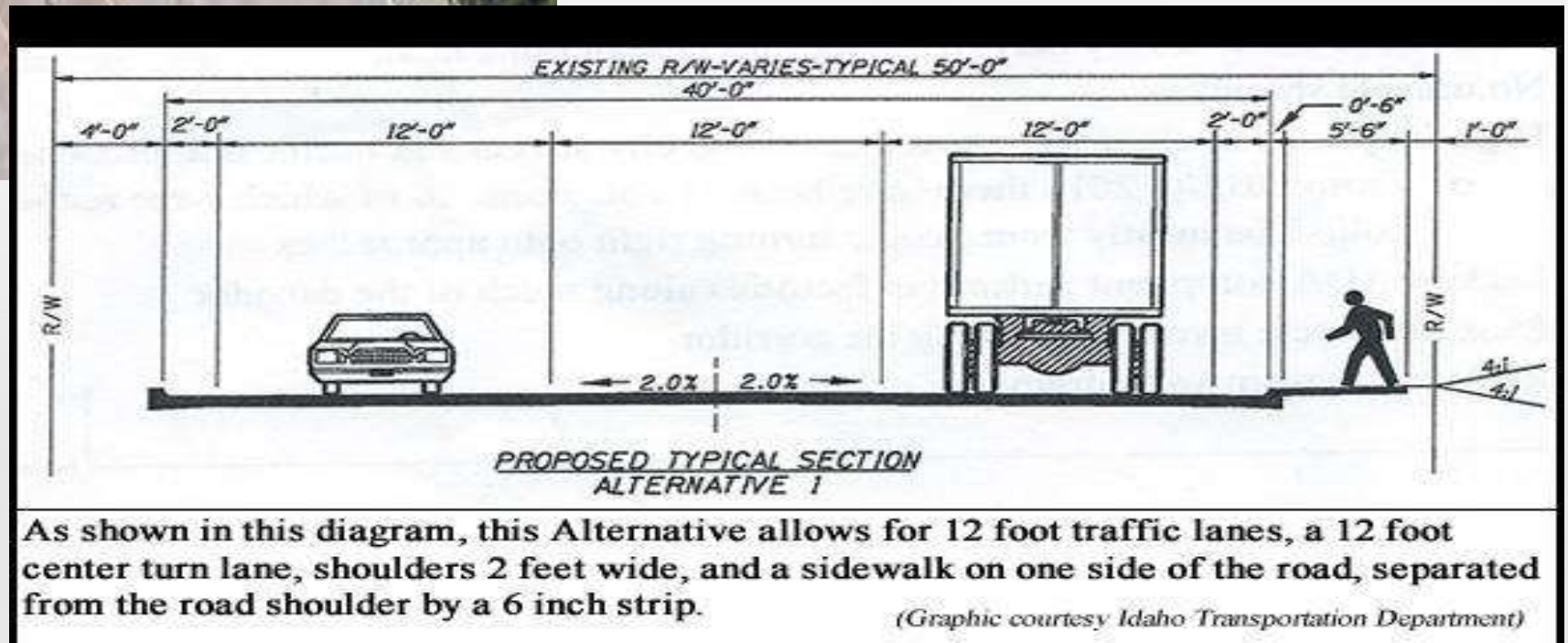
Design Procurement & Standards

Do we need ever to widen a roadway & highway?





Do we need to design 12 foot lanes anymore?



Shoulder Lane Utilization?



Complete Streets

“Complete Street” Design Create a Safe Environment

Street modifications
can have a significant
positive impact on
safety

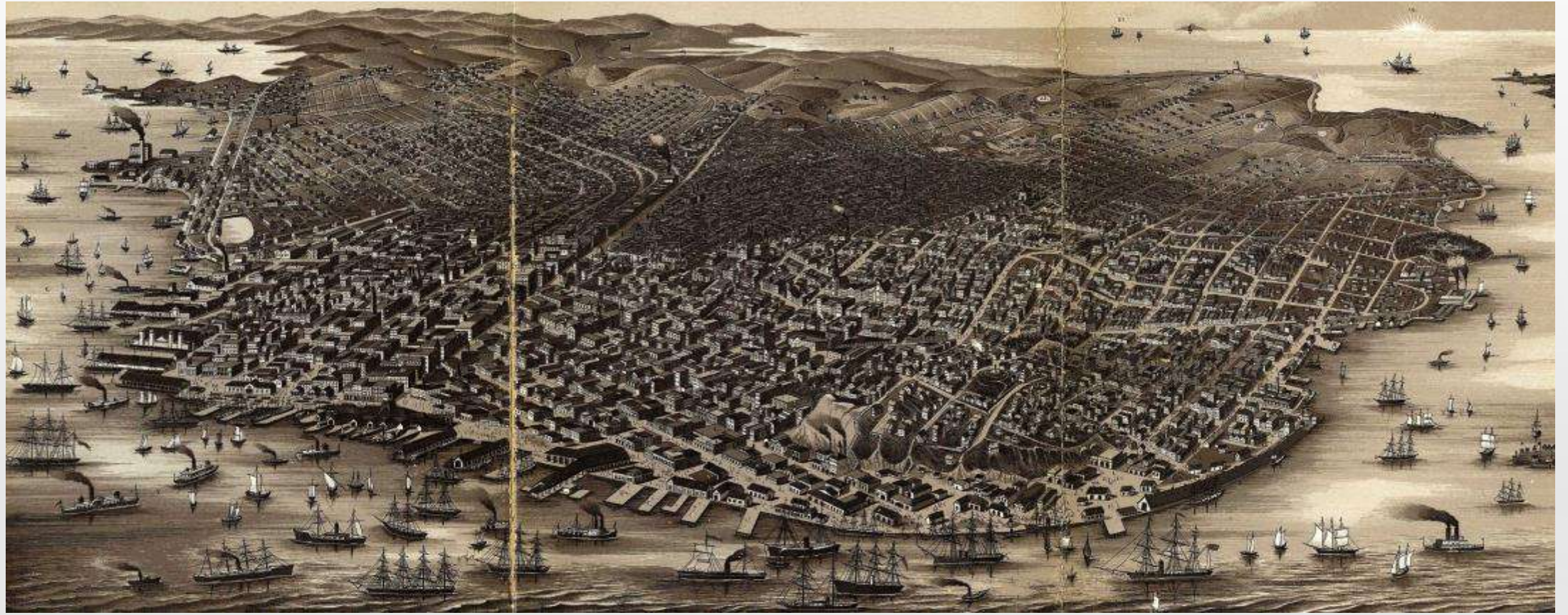


3M Striping



How Cities Have Evolved

City 1.0



City 2.0



City 3.0



Graphic from Information Age

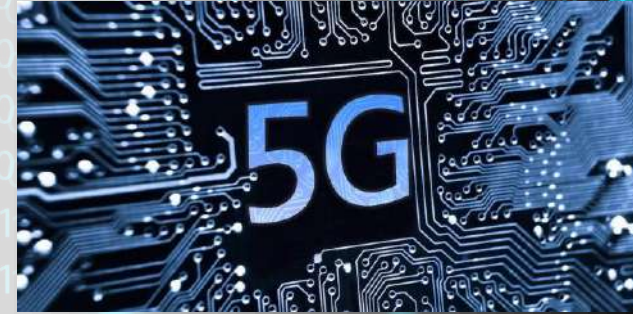
City 5.0



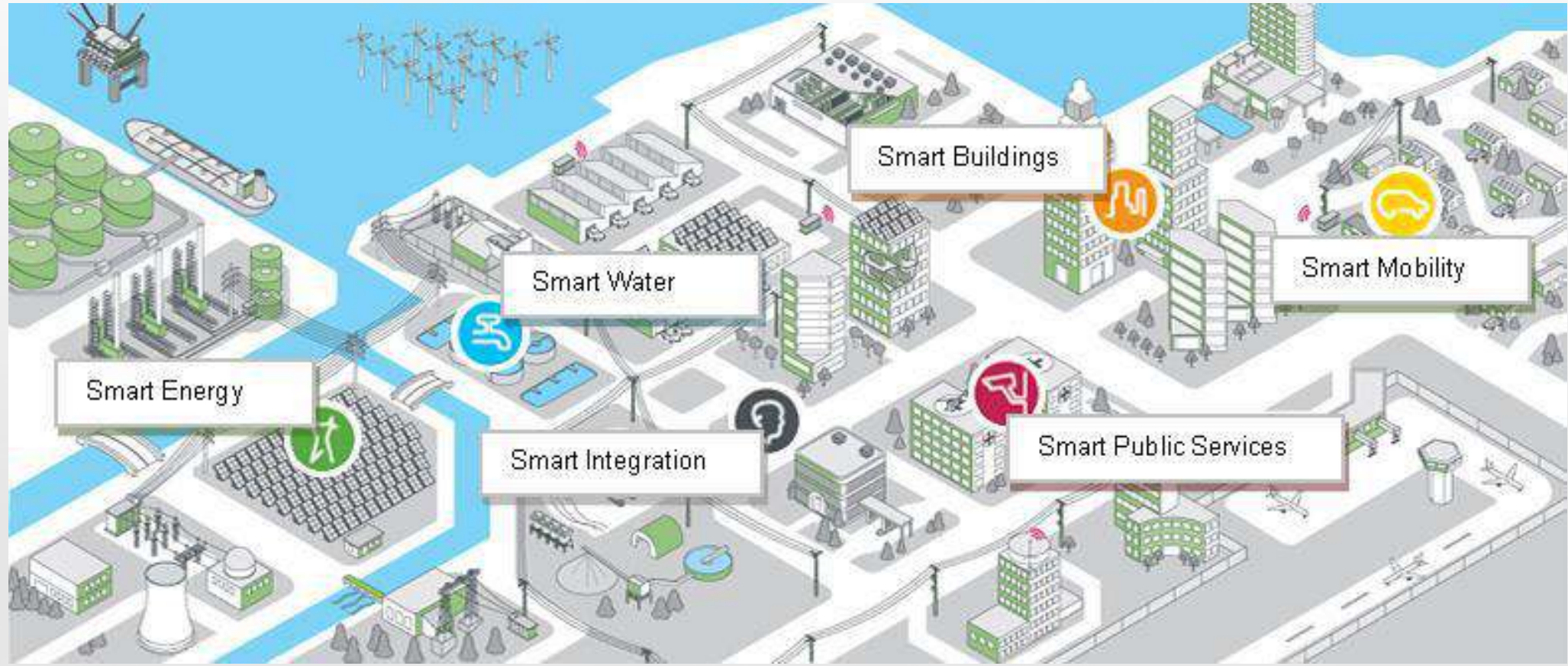
Data Driven Mobility

Sensible & Digital City

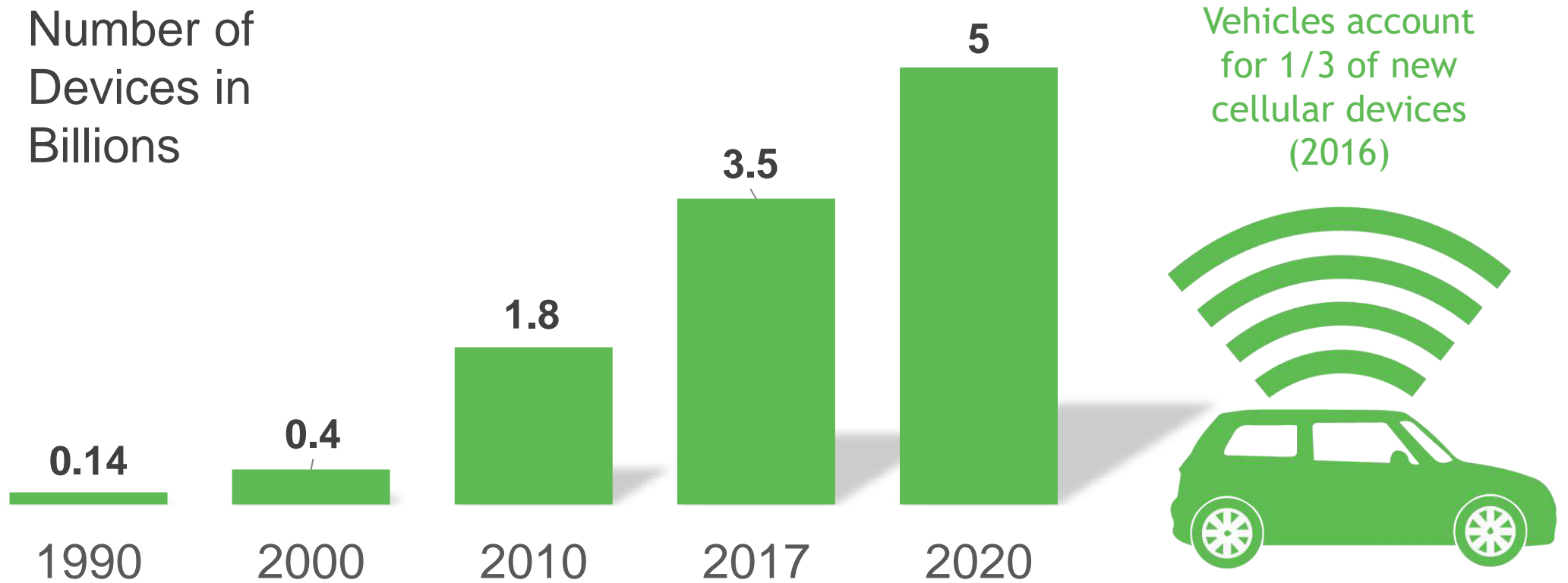
Intermodal Innovations



City 5.0 Environment



Connectivity Emerging Faster



Mobility Revolution

Why Autonomous Vehicles?

- Safer Roads
- Less Congestion & Better Air Quality
- Increased Accessibility & Opportunity



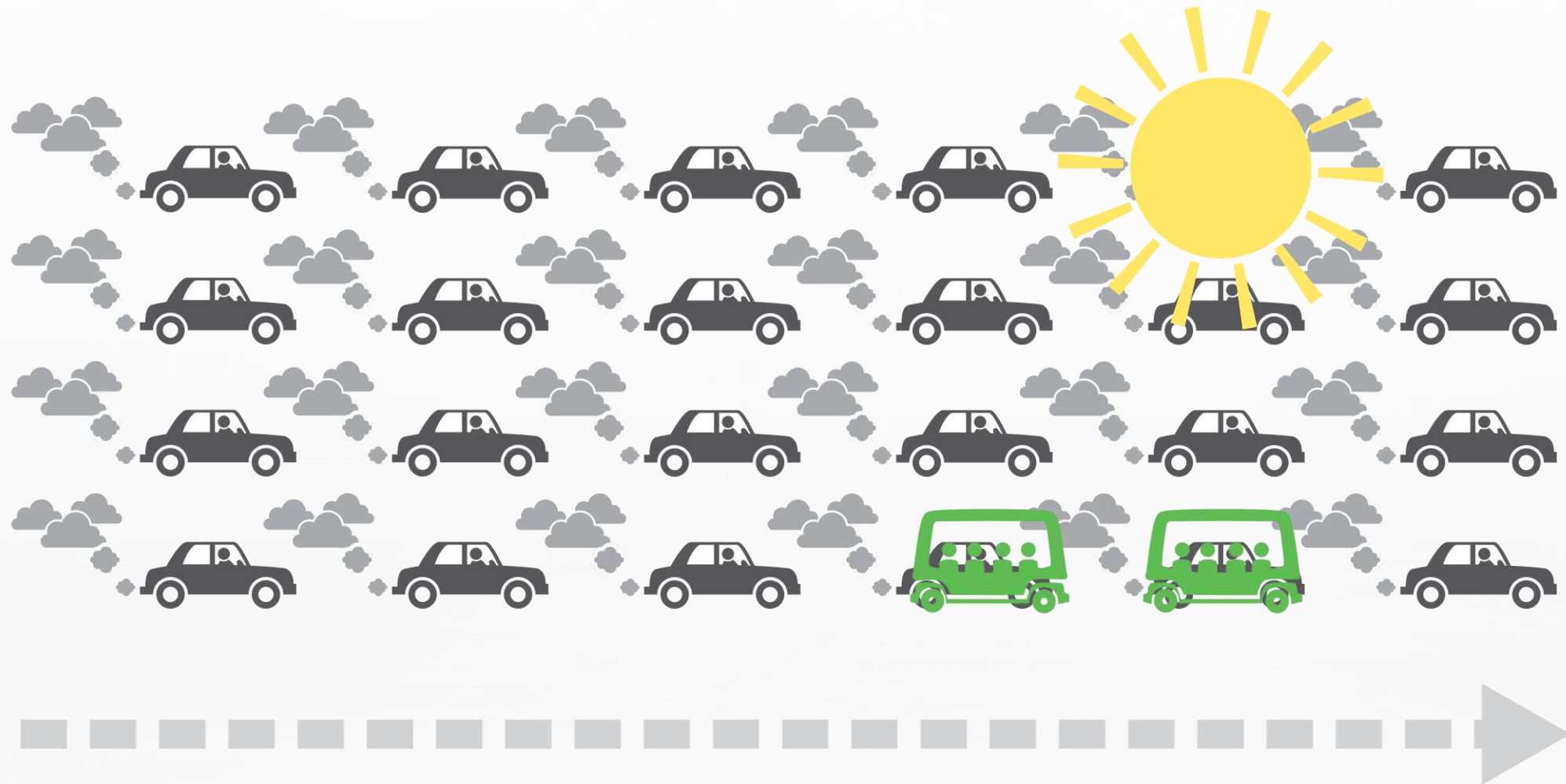
Safer Roads

39,492

ACCIDENTS DUE TO HUMAN ERROR (2015)

*NHTSA Survey, Feb 2015

Less Congestion, Better Air



* Operations of a Shared Autonomous Vehicle Fleet for Austin, Texas Market- Fagant, Kockelman, Bansal

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.*

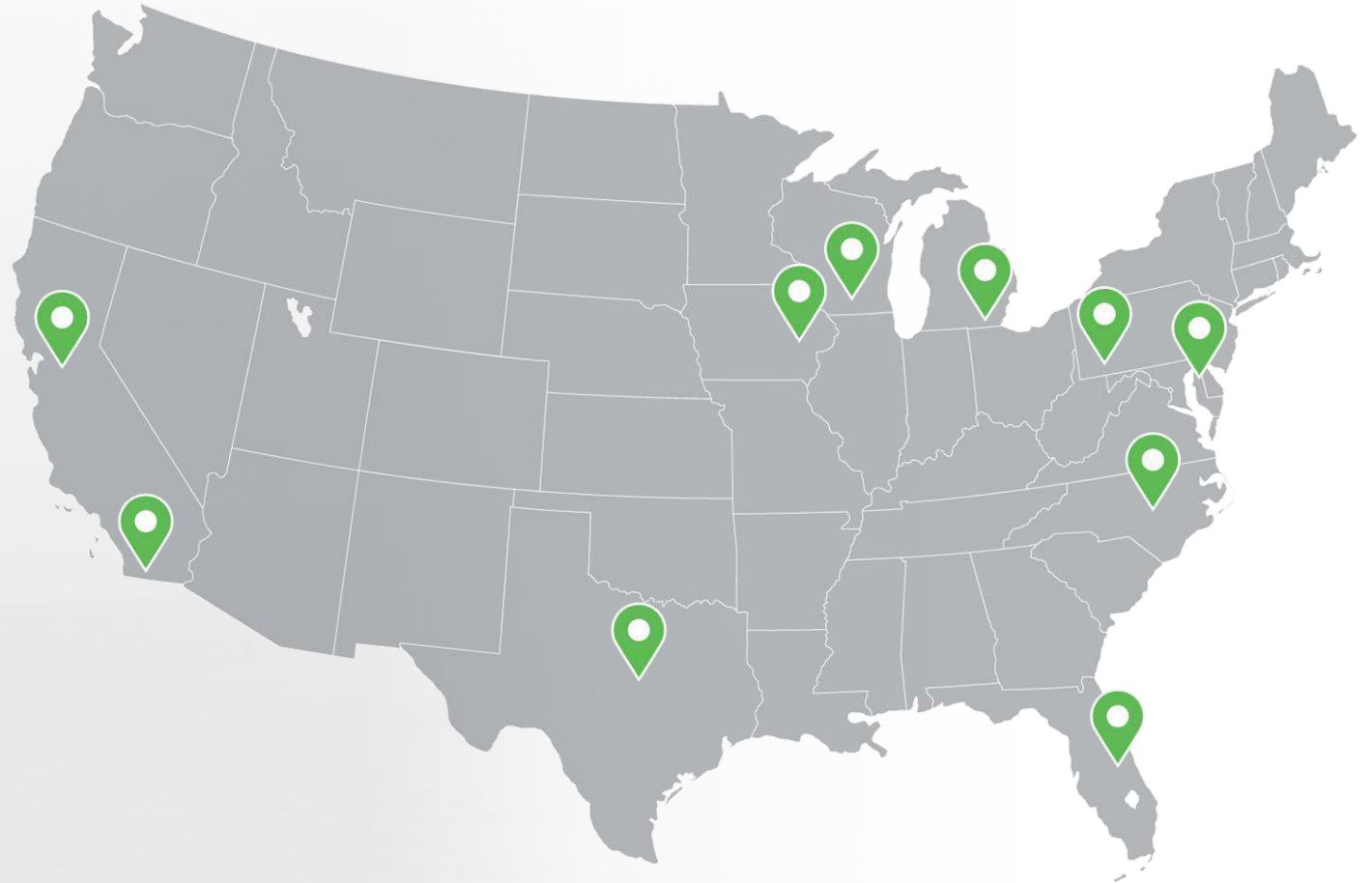


**Transportation Emerges as Crucial to Escaping Poverty, NY Times May 2015*

GoMentum Station

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



GoMentum Station

DOT designated testing site with
more than **5,000 acres**

2,100 acres currently available for testing



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



Goals of GoMentum

ECONOMIC GROWTH
& JOB CREATION

EFFICIENT MOBILITY

ENHANCED SAFETY

HEALTHIER
ENVIRONMENTS

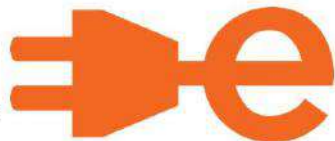
**21st CENTURY
TRANSPORTATION**



Testing Partners



Smart Mobility
Smart Cities
Smart Solutions



UBER FREIGHT



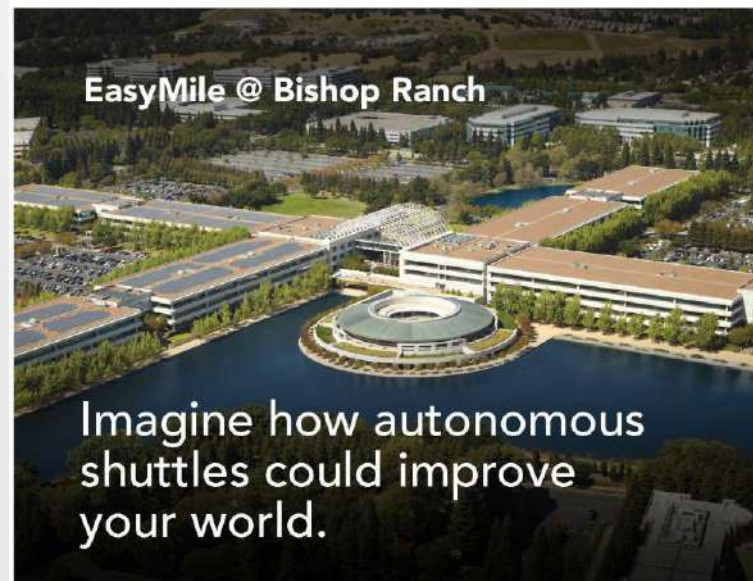
Shared Autonomous Vehicle (SAV) Project

Project Progress

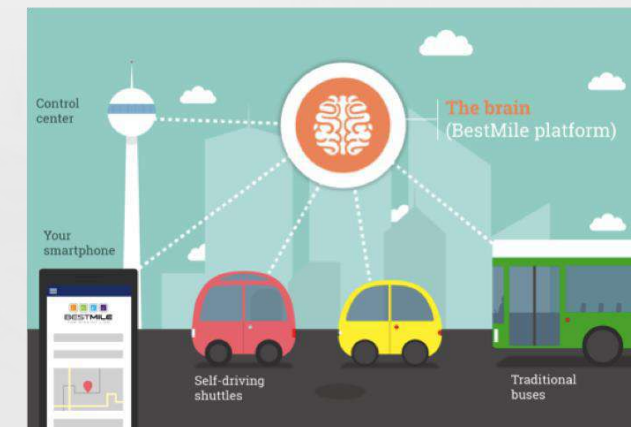
- ✓ Proposed and passed Assembly Bill 1592 (Bonilla, 2016) authorizing pilot project of vehicle with no steering wheel, brake pedal or operator
- ✓ Secured Bishop Ranch as partner and shared autonomous vehicles
- ✓ Obtained City permission to operate on public streets
- ✓ Obtained waiver from National Traffic Highway Safety Administration (NHTSA) to operate on public streets
- ✓ Currently collaborating with California DMV on obtaining permission to operate on public streets

Test Phasing

Testing for EasyMile shuttles began in fall 2016 and is structured to happen in three stages, with the final phase complete in early 2019.



SAV Partners



Impacted Industries

GoMentum Station CV/AV Program

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

Source: <https://www.cbinsights.com/blog/13-industries-disrupted-driverless-cars/>



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



Regulatory Considerations

- Liability
- Licensing
- Insurance
- Registration of Vehicles
- Technical Standards
- Security/Safety Requirements (operators)
- Cybersecurity



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



Preparing for the future

The Path Forward

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



2018

redefining

MOBILITY SUMMIT



CONTRA COSTA
transportation
authority



March 29

Be there.

Thank you

Randell Iwasaki

Executive Director

Contra Costa Transportation Authority

riwasaki@ccta.net

 [@riwasaki2](https://twitter.com/riwasaki2)

