

# Transportation Performance Management Webinar Series

Webinar 28

## Implications of Automated Vehicles and Shared Mobility to TPM

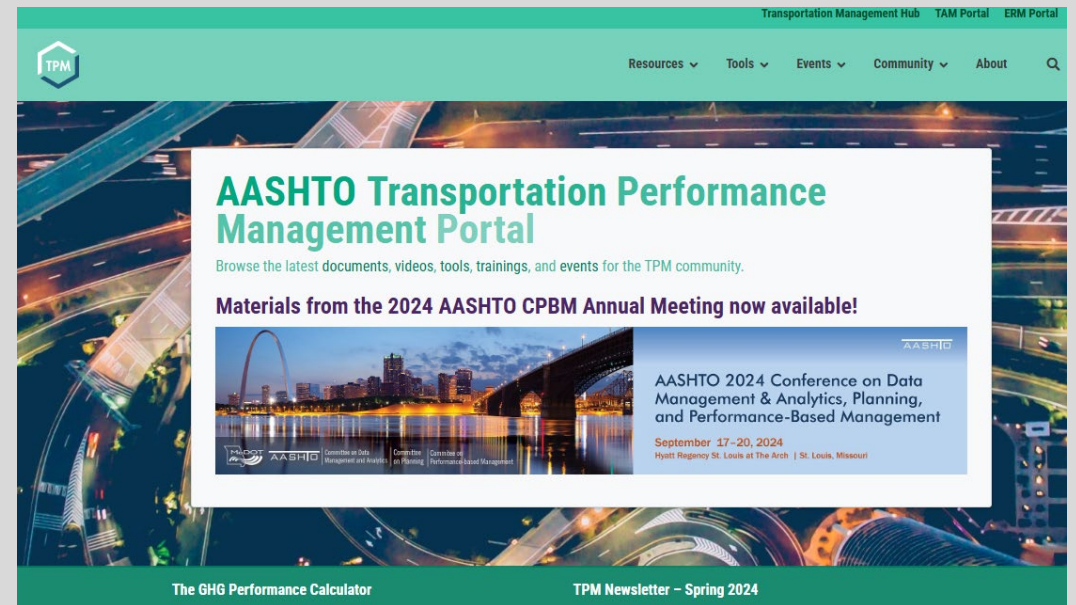
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November 12, 2025

# Transportation Performance Management Webinar Series

- Today is the **28th** webinar in our bimonthly series.
- Webinars are held every two months, on topics such as communications, data, and other performance management topics.
- We welcome ideas for future webinar topics and presentations
- Use the webinar chat panel during the webinar
  - Submit questions for today's presenters
  - Submit ideas for future webinar topics



Find us on the AASHTO TPM Portal  
<https://www.tpm-portal.com>

# Webinar Objectives

- **Explore** how automated vehicles and shared mobility are transforming transportation systems
- **Identify** how performance management must adapt to these changes by developing new metrics
- **Highlight** the benefits of integrating real-time data from these technologies in safety and mobility applications
- And as always, **share lessons learned, ideas, and knowledge!!**



# Webinar Agenda

- 2:00**     **Welcome, Overview, and Agenda**  
Christos Xenophontos, CPBM Chair and Rhode Island Department of Transportation
- 2:05**     **AASHTO Welcome**  
Anna McLaughlin, AASHTO
- 2:10**     ***Connected and Automated Vehicles***  
Mireya Kuskie, AASHTO
- 2:25**     ***CAV and TPM - Georgia***  
Alan Davis, Georgia Department of Transportation
- 2:25**     ***Implications of AV and Shared Mobility to TPM***  
Randy Iwasaki, UC Berkeley Institute of Transportation
- 2:55**     **Panelist Discussion and Wrap Up**  
Hyun-A Park, Spy Pond Partners



# Connected and Automated Vehicles

# Connected and Automated Vehicle Community of Practice

- Open Monthly Meetings
- State Round Table Peer Exchange
- 72 members currently
- Chair: Daniela Bremmer- Washington DOT
- Co-Vice Chair: Tara Olds- Minnesota DOT and Darran Anderson- Texas DOT

# System Mobility and Automated Technology Working Group

- Closed Bi-Monthly Meetings
- Review of materials
- State Roundtable
- 67 Members Currently
- Co-Chair: Daniela Bremmer- Washington DOT
- Co-Chair: John Hibbard- Georgia DOT

# AASHTO Connected and Automated Vehicles Guiding Principles- DRAFT

- Safety as the Foundation
- The future is connected and automated.
- A unified national vision requires strong federal leadership, innovation, and preservation of federal–state roles.
- Promote data sharing that preserves data privacy and security.
- Advance access and connection

# 2026 Surface Transportation Reauthorization Priorities

- Congress should sustain **support for research, development, and technology transfer** activities that drive innovation for state DOT programs across the country.
- Congress should call for collaborative industry **consideration of governance frameworks and standards** for seamless infrastructure and vehicle connectivity.
- Congress should **expand eligibility to fund technology** and **institute procurement flexibility** across all modes with an emphasis on the safe and efficient movement of people and goods.

# State Updates

- UDOT is leading the Connecting the West (CTW) program, one of three USDOT Saving Lives with Connectivity grants.
- UDOT is partnered with Colorado and Wyoming DOTs, leveraging their existing deployments and experience.
- Interoperability across jurisdictional boundaries is a key focus of the project.
- CTW has developed a uniform, interoperable approach to V2X Traveler Information Messages (TIMs).
- CTW will add RSUs at 450 signalized intersections and at 200 locations along interstates in Utah and Colorado. This will result in a 1200-mile rectangle of interstates with Direct V2X coverage.
- UDOT will use LiDAR at 20 signalized intersections to detect VRUs and warn drivers of their presence.
- All three states will expand the use of various V2X applications already in use.

# State Updates

- DDOT: [Proposed rulemaking for AV testing](#)

# AASHTO Partners

- [AVIA: The Autonomous Vehicle Industry Association](#)
- [CV Pool Fund Study](#)
  - Michael Fontaine- Virginia DOT
- [AV Pool Fund Study](#)
  - Nick Hegemier- Ohio DOT
- V2X Cohort- JPO/ FHWA/ TFHRC
  - [V2X Accelerator Program](#)
  - J.D. Schneeberger- USDOT

# Resources

- [AASHTO CAV Policy Principles: 2021](#)
- [NOCoE V2X TSMO Report Overview](#)
- [NOCoE V2X Report](#)
- [NCHRP 20-24\(147: Identify Best Practices for Automated Driving Systems and Other Emerging Technologies](#)
- [PIARC Update: New Technical Committee 2.5, Road infrastructure for Connected and Automated Mobility](#)
- [ITS America Automated Vehicle Policy Framework](#)



# CAV and TPM - Georgia

Alan Davis, PE, PTOE  
Director of Operations



## About GDOT

- 1,244 miles of interstate
- 18,000 miles of state routes
- 4,011 employees
- 500 miles of rail
- 7 Districts
- Headquarters in Atlanta



## GDOT Operations and ITS

- Interstates, Incident Management, and ITS
- Arterials and Traffic Signals
- Safety, Operational Improvement, and Permitting
- Connected and Autonomous Vehicles
- And a little bit of everything else...



# GDOT's Transportation Management Center

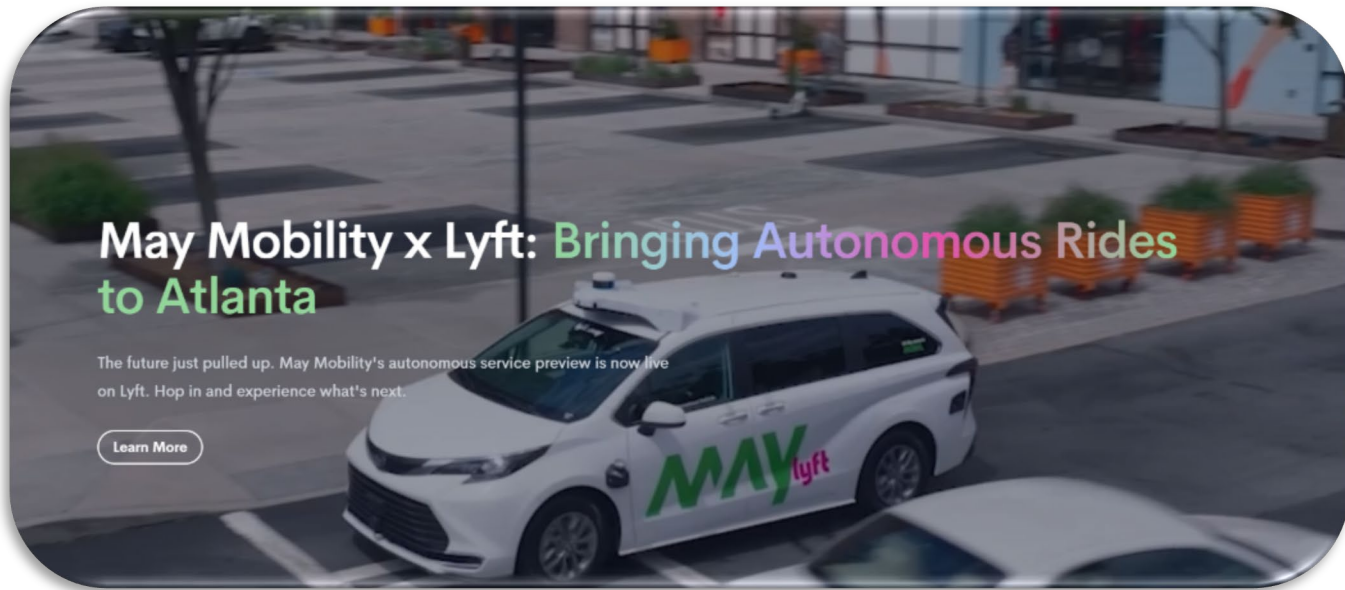


## AVs in Georgia

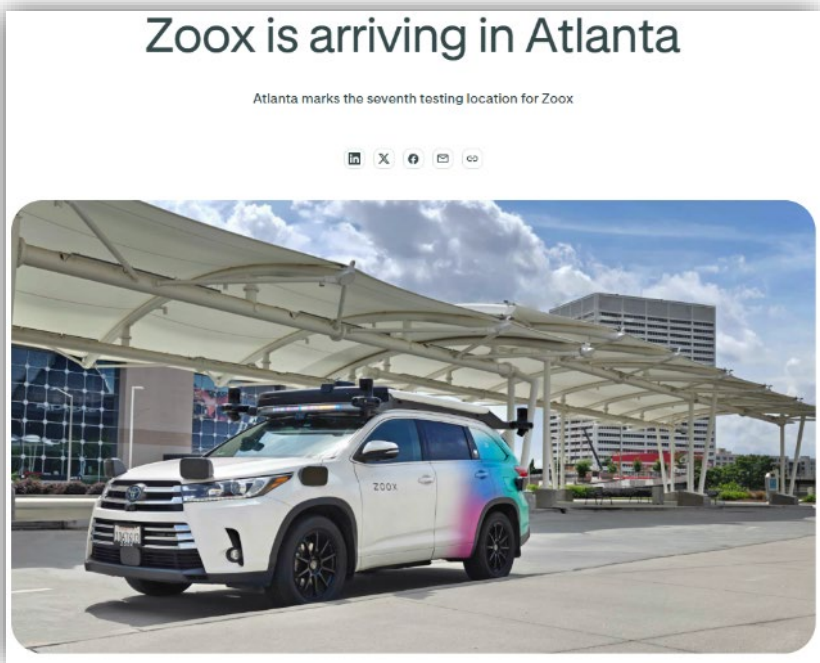
- SB 219 (2017): Broadly Enabling Legislation
  - Legal Recognition of Autonomous Vehicles
  - Driver's License Exemption
  - Accident and Law Enforcement Procedures
  - Operational and Insurance Requirements
  - Federal safety certification standards
  - Enhanced insurance coverage requirements
  - Regulatory Limitation and Applicability



# AVs in Georgia



Source: [maymobility.com](https://maymobility.com)



Source: <https://zoox.com/journal/atlanta-expansion-2025/>



Source: <https://ridebeep.com/locations/atlanta-ga-2>

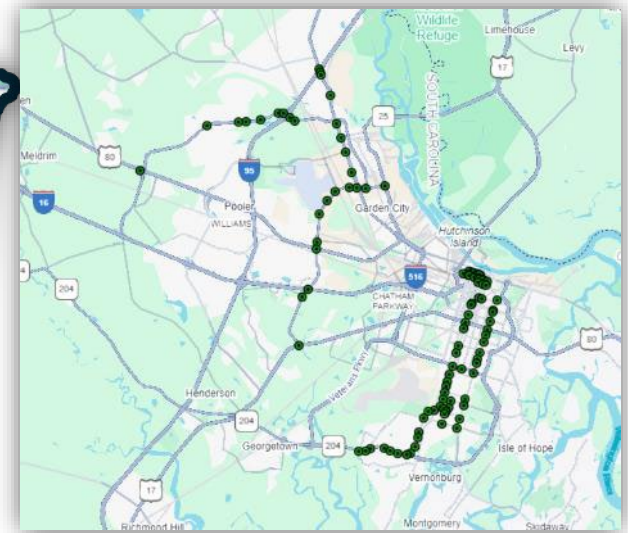
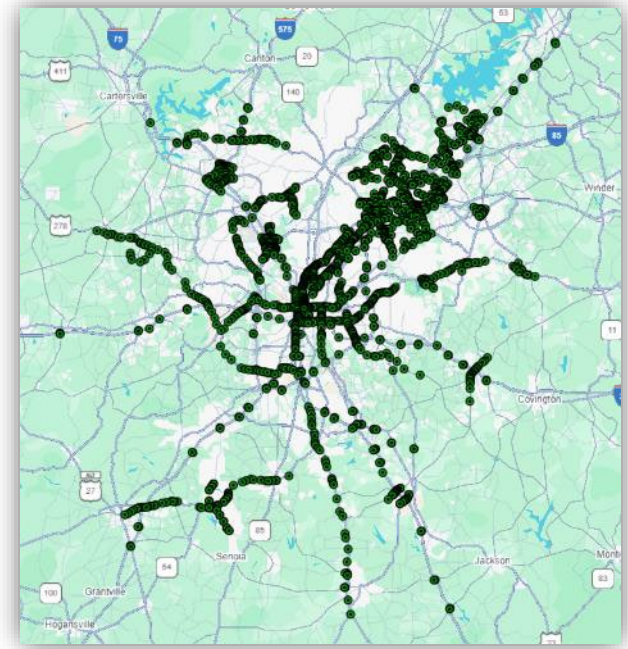
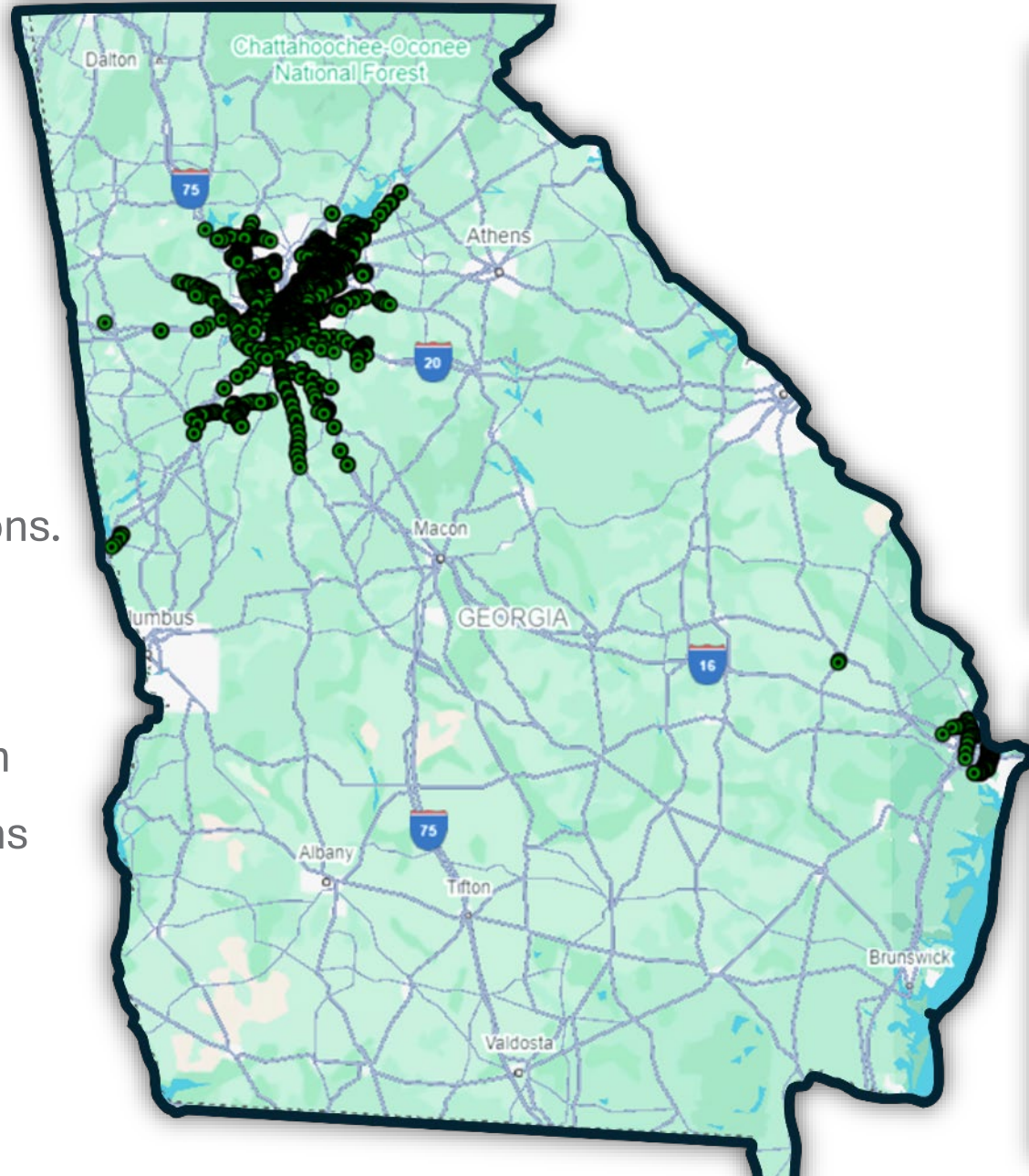
## AVs in Georgia

- Assets for the Autonomous Driver
  - Pavement markings
  - Traffic signals
  - Signs
- Uniformity and consistency
  - More important than ever
- Digital Assets
  - V2X messages
  - Work zones



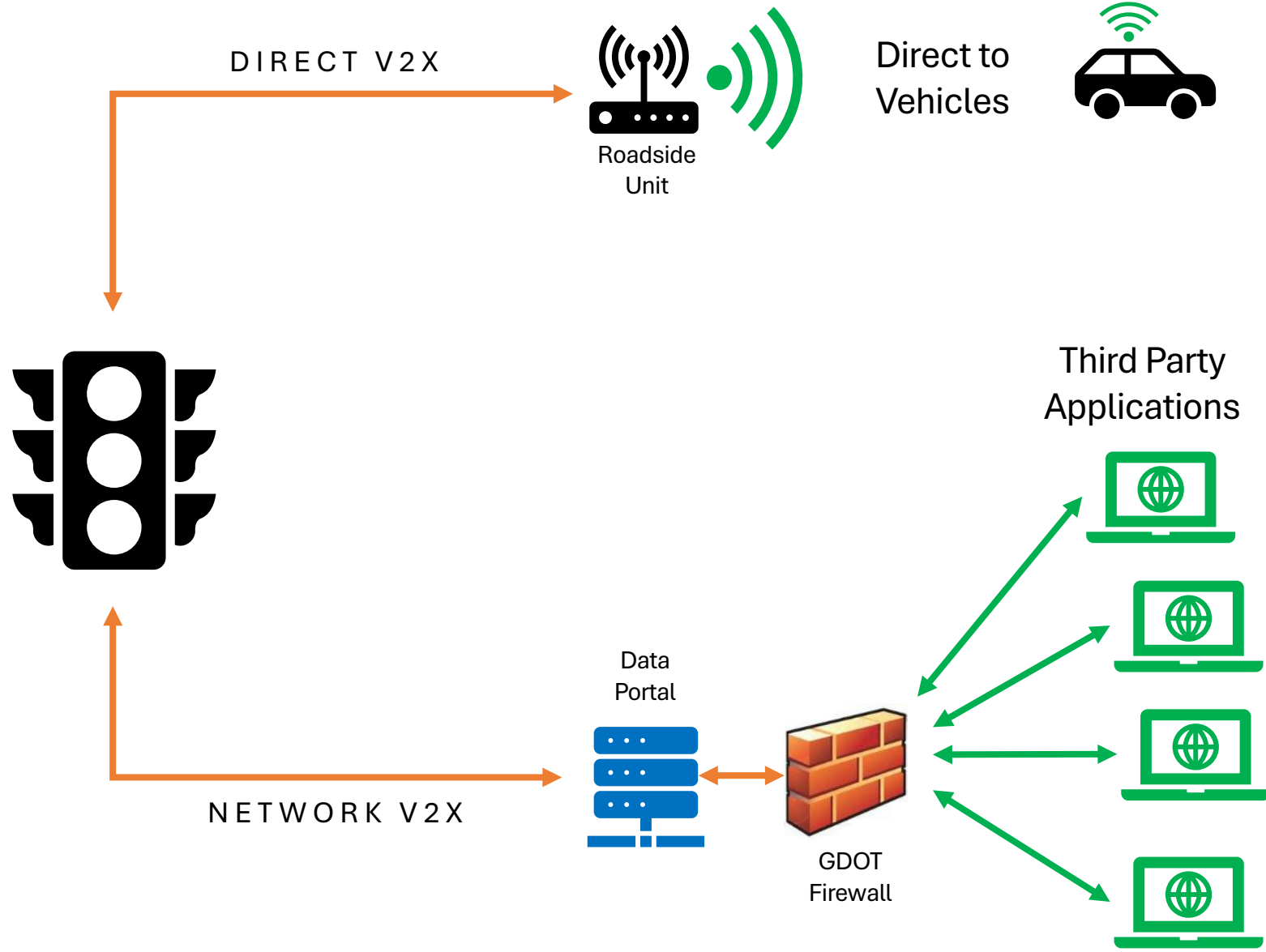
# V2X Infrastructure

- Over 2,300 RSUs deployed throughout the state.
- Focusing on public sector fleets and intersection-based applications.
  - Freight Signal Priority
  - Transit Signal Priority
  - Emergency Vehicle Preemption
- Application of safety applications for equipped vehicles.



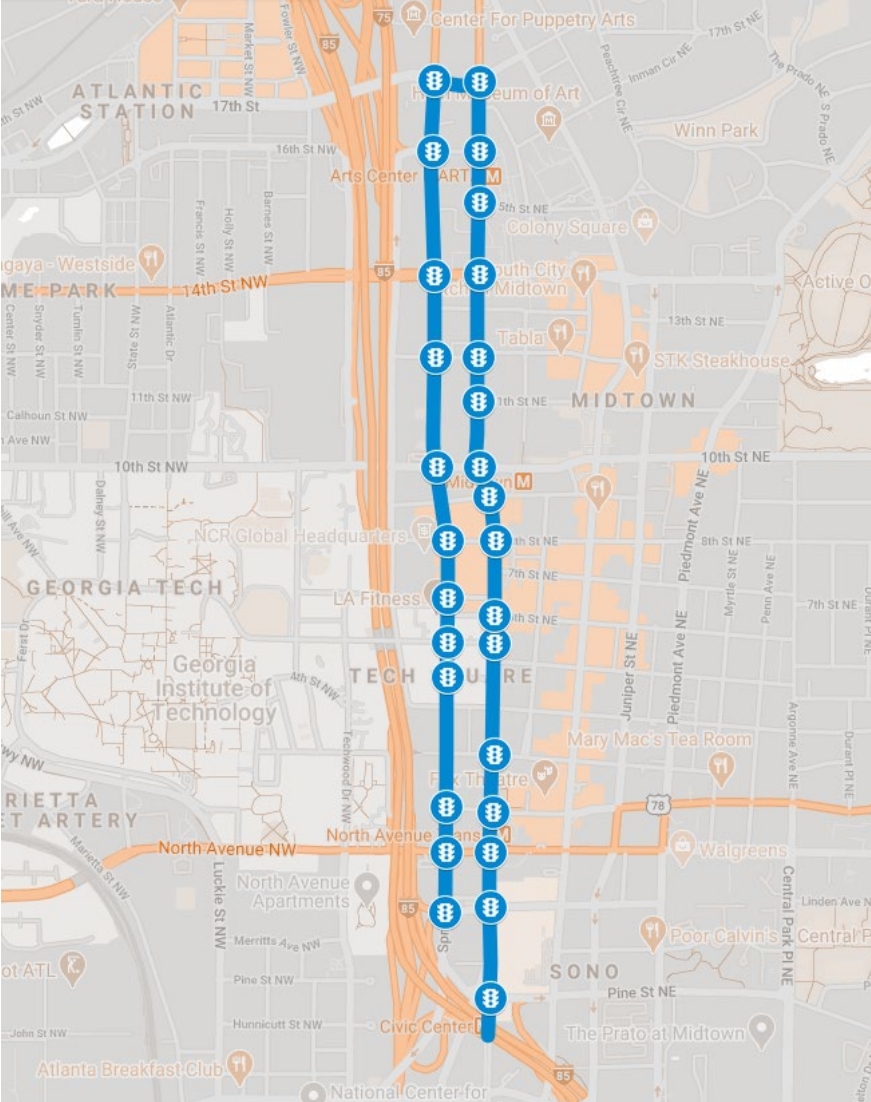
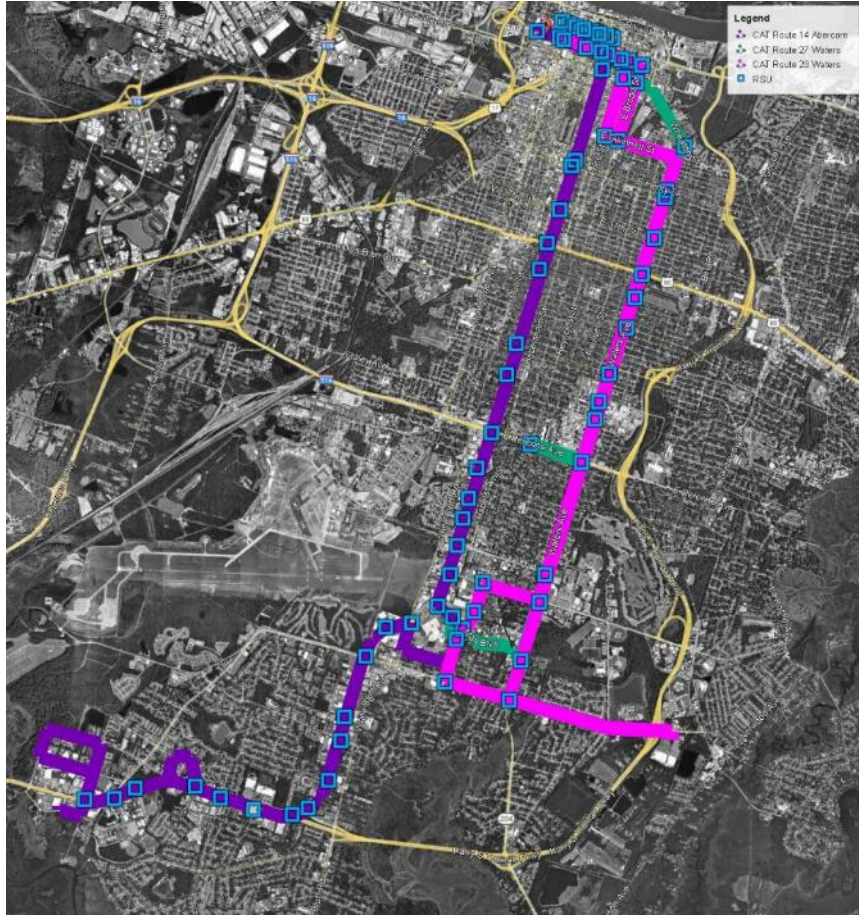
# GDOT V2X Framework

- Safety and mobility applications achieved through multiple means.
- The application drives the method the data arrives to a user.
- Consistency, accuracy, reliability, and security of all messages and applications.



# GDOT V2X Applications

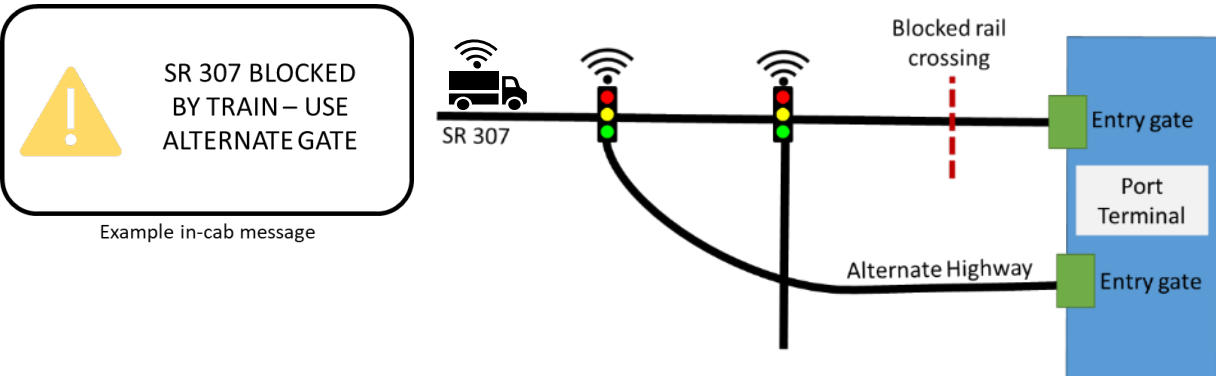
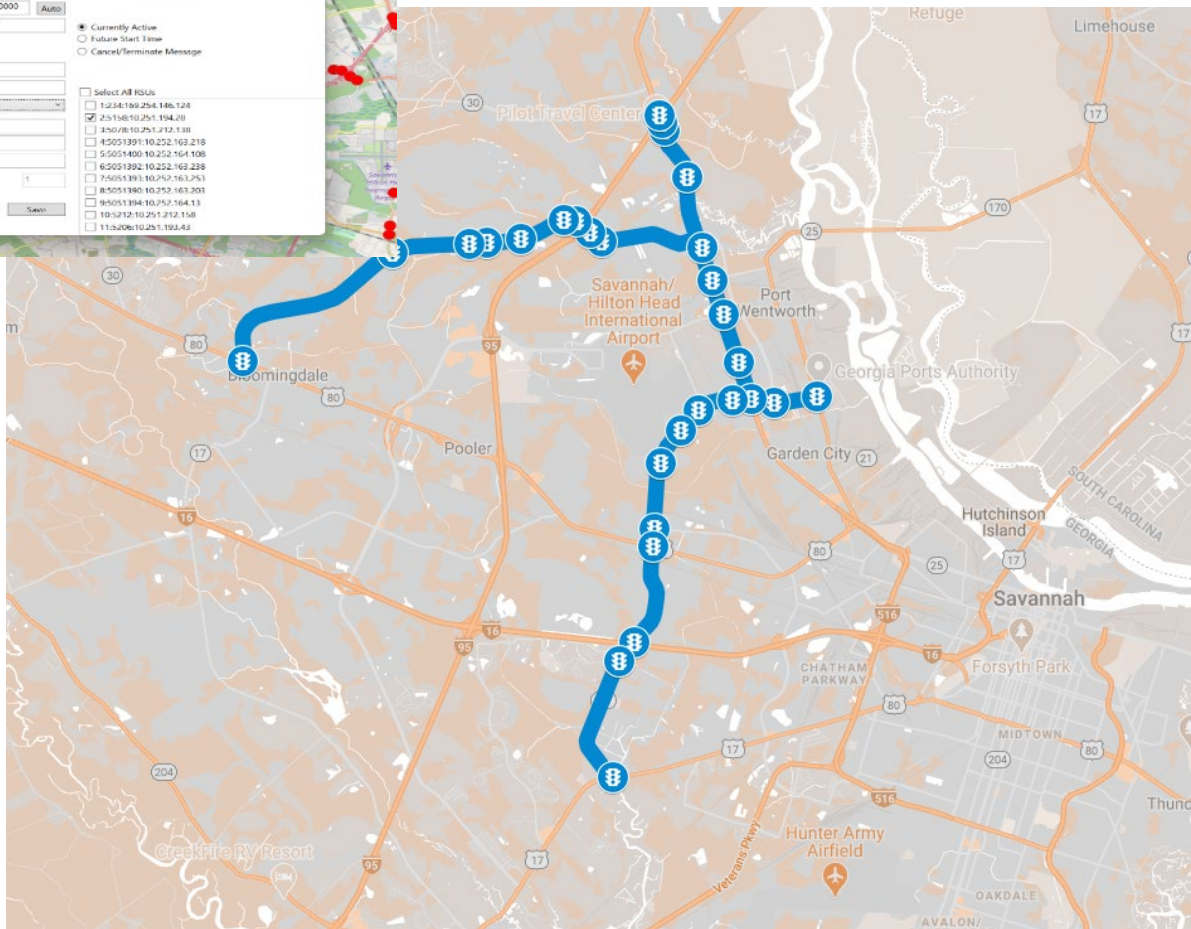
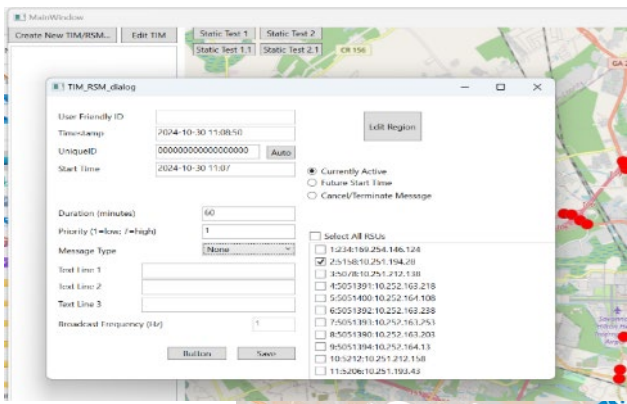
## Transit Signal Priority



# GDOT V2X Applications





## Freight TIM & Signal Priority

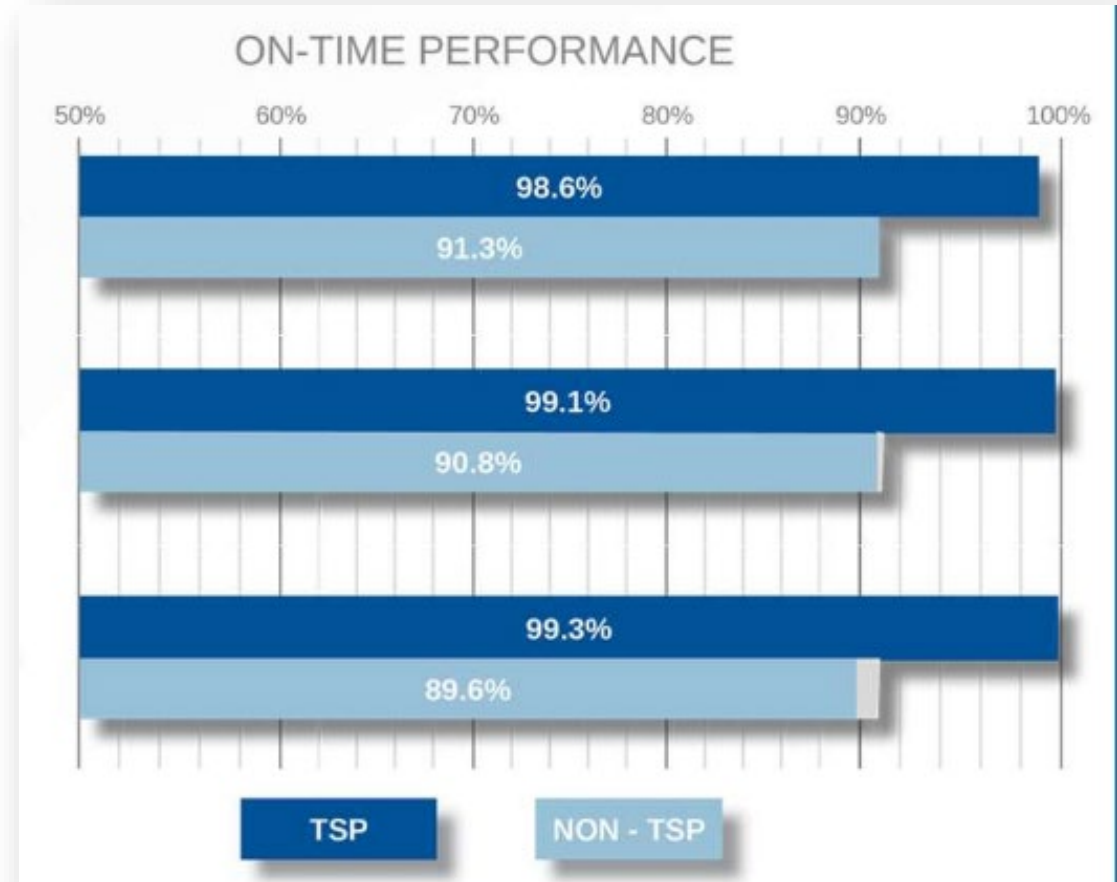
- Installation of RSUs at signalized intersections around port ingress/egress routes
- Broadcasting SPaT and MAP, traveler information messages for road conditions
- Demonstration of freight signal priority
- Outfitting fleet vehicles



# Freight and Transit Priority – Measured Benefits



-  **15 – 20%**  
reduction in emissions
-  **5 – 10%**  
reduction in fuel consumption
-  **10 – 15%**  
reduction in number of stops
-  **5%**  
reduction in travel time



# Building the Digital Interstates

- Five (5) Design-Build Projects:
  - Design-Build #1: Under construction
  - Design-Build #2: Under construction
  - Design-Build #3: Awarded
  - Design-Build #4: Project Programmed
  - Design-Build #5: Project Programmed
  
- Project Scope:
  - Communication infrastructure: Seven (7) Conduit and Two (2) 288-Count Fiber Optic Cables
  - ITS devices: C-V2X RSUs, CCTVs and other ITS devices
  
- Project Goals:
  - Provide infrastructure necessary to support CV and broadband initiatives
  - Provide additional ITS coverage to support Interstate safety and operations



# Data as an Asset

## Building the Digital Interstates

- Infrastructure generates data
  - ITS devices
  - Traffic signals
  - Connected vehicle infrastructure
  - AVs
- Agency processes and external partners rely on that data
- Data governance
- Data maintenance
- Data quality



THANK  
**YOU**

**Alan Davis, PE, PTOE**  
**Director of Operations**

[aladavis@dot.ga.gov](mailto:aladavis@dot.ga.gov)



# Implications of AV and Shared Mobility to TPM

**Randell H. Iwasaki, P.E.**

**Iwasaki Consulting Services, Inc**

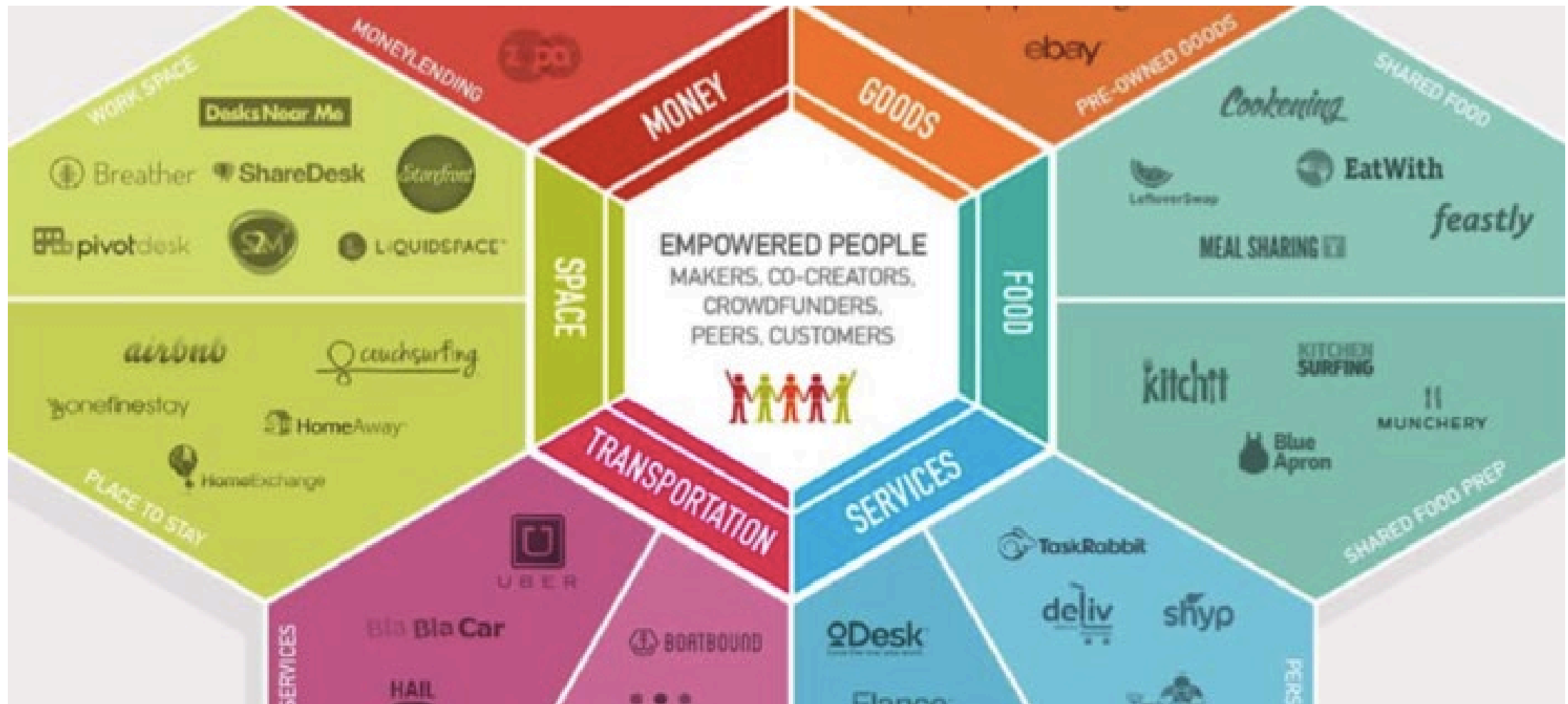
**President and CEO**



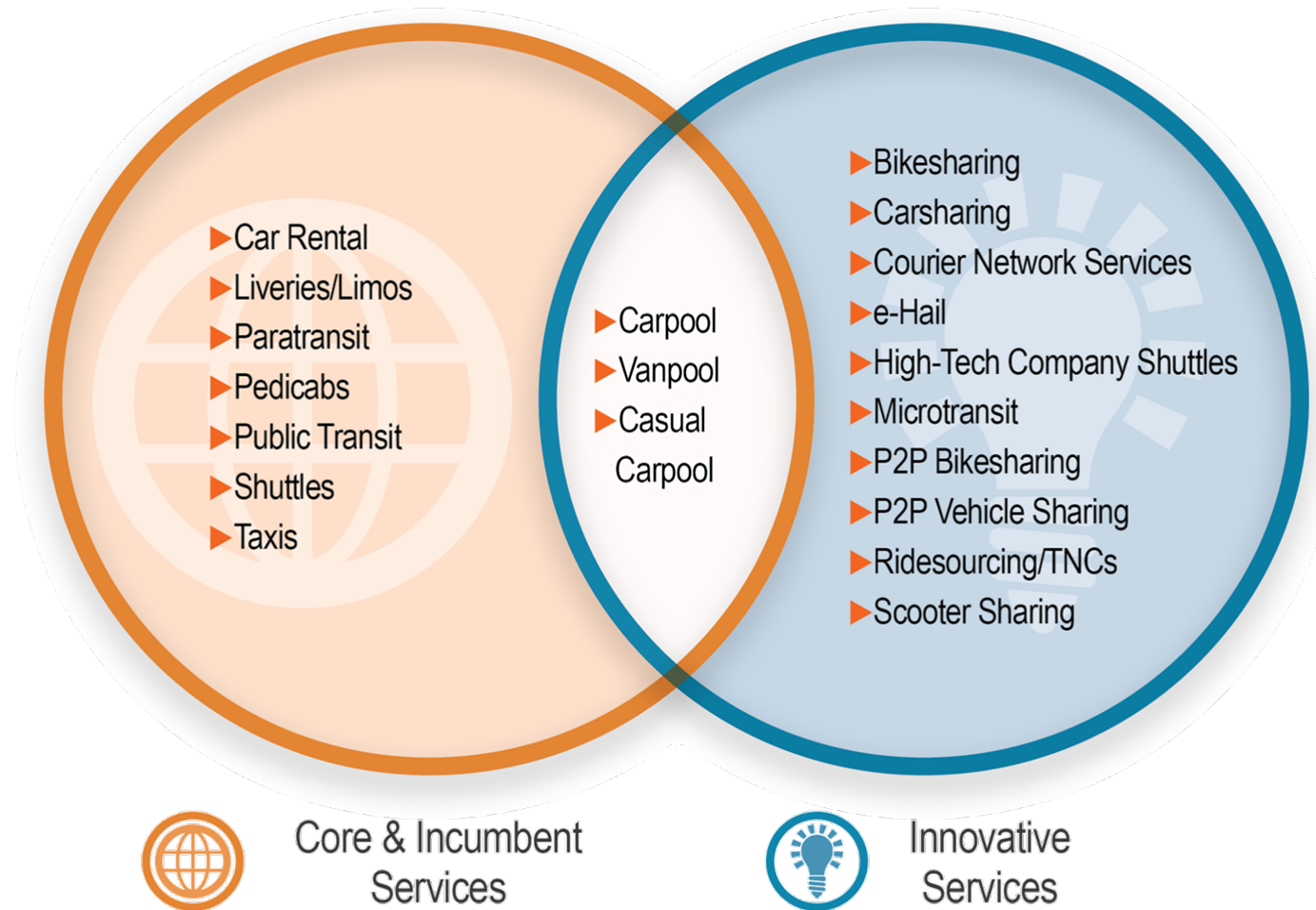


# The Sharing Economy

# The Sharing Economy




# Shared Mobility Ecosystem





# Mobility as a Service



ON  580  
EAST OF GRAND AVE  
OVER 4 1/2 TONS

 BUSES AND  
CARPOOLS ONLY  
9AM-10AM MO-V-FRI  
3PM-7PM  
**San Francisco**  
ONLY 

END  
CARPOOL  
LANE  
600 FEET  


 580 **Oakland**  880  
**San Jose**  
  

 80  
**San Francisco**  
3 RIGHT LANES

 LEFT  
LANE  
MUST  
EXIT  
HERE

 149  
LEFT  
LANE

 CALL  
580-5



 EXIT  
9 

 ROADWAY



# Mobility as a Service (MaaS)

A combination of public and private transportation services that provides personalized mobility options based on traveler needs, to enable end-to-end journeys paid for by the traveler with a single payment, and aims to optimize the transportation system

**APPS + SERVICES**



**TRIP PLANNER**



**SCHEDULING**



**UNIFORM PAY**



**REAL-TIME INFORMATION**



**REWARDS + INCENTIVES**



**CONNECTION PROTECTION**

**ASSETS**

**C2C COMMUNICATION**



**RIDE SHARING + CARPOOLING**  
(Scoop, 511 CC)



**CAR SHARING**  
(Zip Car, Gig, Amber Mobility)



**BICYCLES**  
(Bike Sharing, 511 CC Bike Mapper)



**TRANSIT**  
(BART, Bus, Rail)




**SAV SHUTTLES**  
(EasyMile, First Transit)



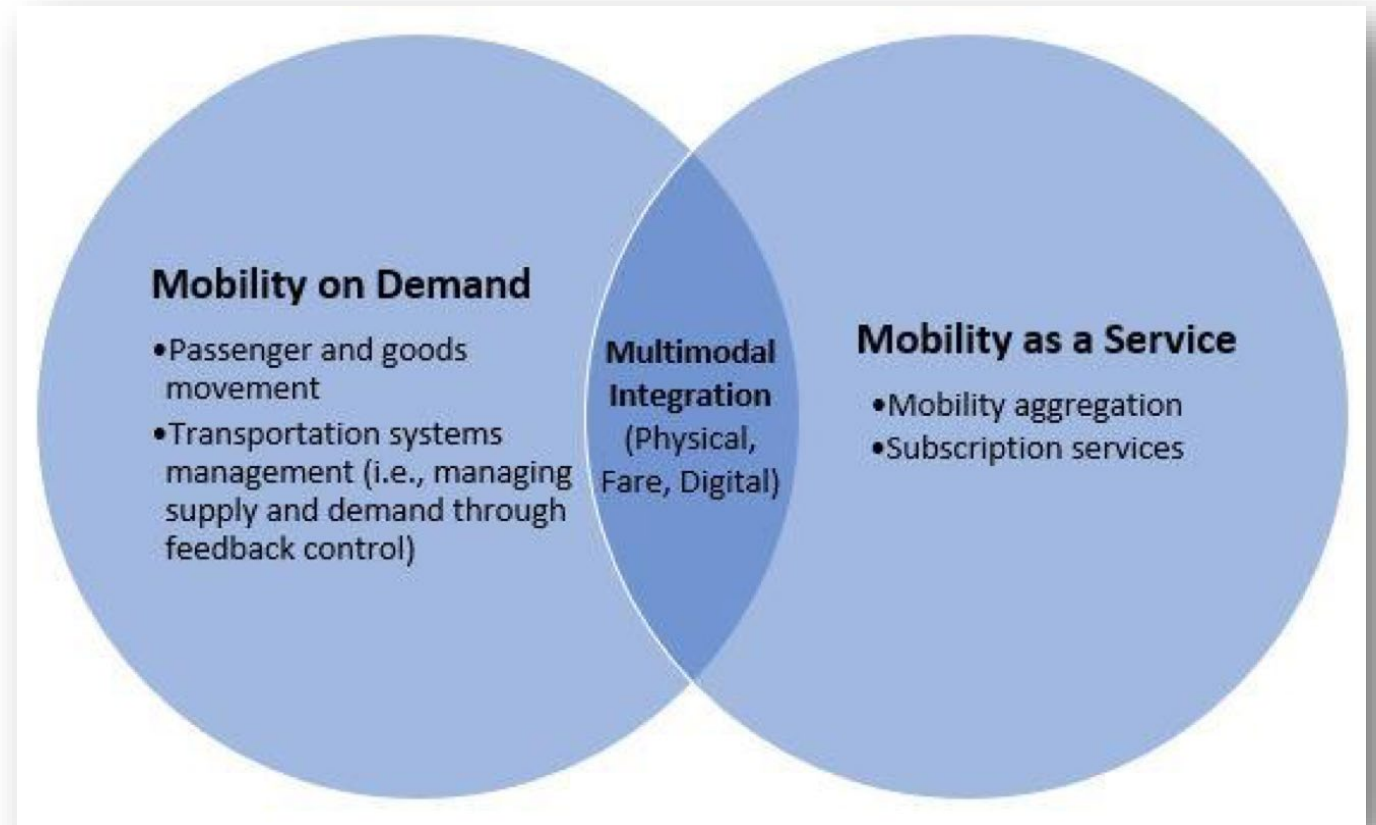
**DYNAMIC PARKING + EV CHARGING**  
(PMS, Wireless Charging, EV Charging)



**TNC's + RIDESOURCING**  
(Uber Pool, Lyft Line)

- 
- MOD focuses on commodification of passenger mobility
    - Includes goods delivery
    - Incorporates principles of transportation systems management (managing supply and demand)

- MaaS largely focuses on passenger mobility aggregation and subscription services
  - Brokering travel with suppliers, repackaging, and reselling it as a bundled package (e.g., UbiGo)



# Trends: What's Driving MaaS and MOD?



- Transportation is increasingly relying on data
- Prevalence of mobile devices
- Automated transportation offers new possibilities
- Integration of services



- On average, Americans spend over 40 hours stuck in traffic each year, costing \$160 billion
- There is growing popularity of shared mobility services
- Focus on transportation demand management
- Dynamic management



- Over the next 30 years, the U.S. population is expected to grow by 70 million
- By 2045, the number of Americans over the age of 65 will increase by 77%
- 20% of population with disabilities
- **Urbanization**



# Automated Driving System (ADS) Grant

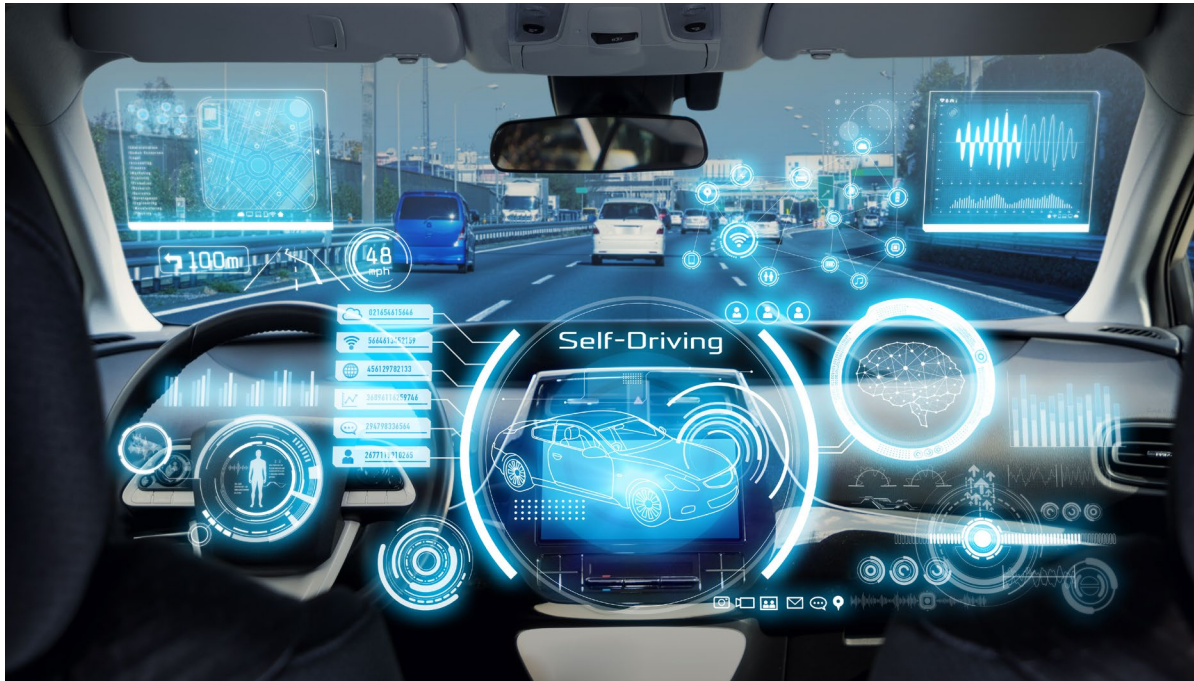


# Automated Driving System (ADS) Grant



# Automated Driving System (ADS) Grant

# Automated Vehicles





# Automated Driving System Demonstration Goals

- Advance safety
- Facilitate data collection to support rulemaking
- Provide unprecedented mobility choices
- Expand shared mobility options



# Rossmoor First Mile/Last Mile Shared Autonomous Vehicles

Walnut Creek, CA

- Increase transit accessibility for the elderly community
- Data gathered will help develop safety performance measures
- User Acceptance

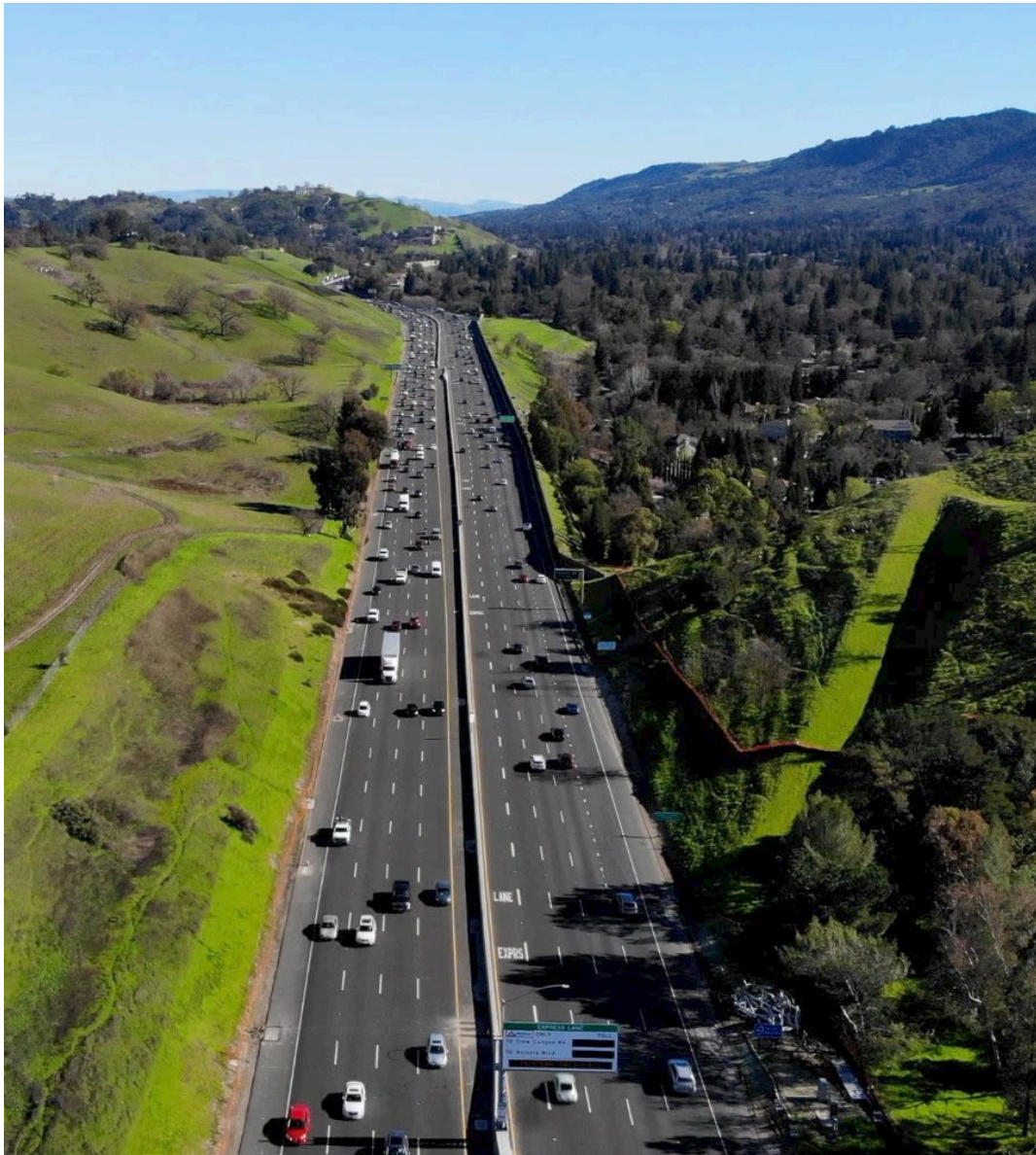


# County Hospital Accessible Transportation

Martinez, CA

- On-demand, wheelchair accessible, autonomous vehicle (AV) shuttle service
- Accessible transportation to public health facility to reduce missed appointments
- Data gathered will advance ADS safety performance standards





# Personal Mobility on I-680

San Ramon, CA

- Prepare 2-miles of I-680 corridor for future CAVs
- Install upgraded V2I and V2V 4G/5G communications
- Implement innovative operational strategies
- Utilize technologies such as HD dynamic mapping to collect data for development of AV technologies

# Curb Space & Shared Mobility Hubs



# Resources

Shared mobility resource library available on [http://innovativemobility.org/?page\\_id=2762](http://innovativemobility.org/?page_id=2762)





# Thank you!

**Randell Iwasaki**

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ICS

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Save the Dates!

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Next Webinar

**TPM Webinar 29**

TBD

More to follow!



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