Connected and Autonomous Vehicle Task Force

Centralina Council of Governments, 10 May 2019

The world is changing as a result of technology and innovation…

…and so is transportation.

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1999: “Don’t get in a car with strangers.”

2009: “Don’t meet people from the internet alone.”

2019: “Order yourself a stranger from the internet to get into a car with alone.

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What is the future of transportation?

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CONSIDER SEGWAY SLIDES

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What technology and applications should my agency invest in?

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What do we need to do to be ready for connected and automated vehicles?

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How can we take advantage of emerging technologies to help enable mobility in our community?

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Intelligent Mobility

A new way of thinking about how to use innovation technology, and data to better connect people to other people, places, goods, and services and to reimagine how we plan, design, operate and maintain infrastructure across all modes of transportation.

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Thoughtful
Flexible
Actionable

Thoughtful

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Flexible

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Actionable

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Agency Activities

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Examples

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Educate

Go-NV

Nevada Institute for Automated Systems

Collaborated with multiple agency stakeholders across Southern Nevada to hold a first of its kind event to promote intelligent mobility in the region by bringing in local, national, and local experts for engaging panel discussions, followed by demonstrations of emerging technologies, such as CV applications.

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Conceptualize

RoadX Bike/Ped Challenge
Colorado Department of Transportation

Held a global challenge to engage industry and innovators to develop and submit implementable solutions to enhance bicycle and pedestrian safety and efficiency.

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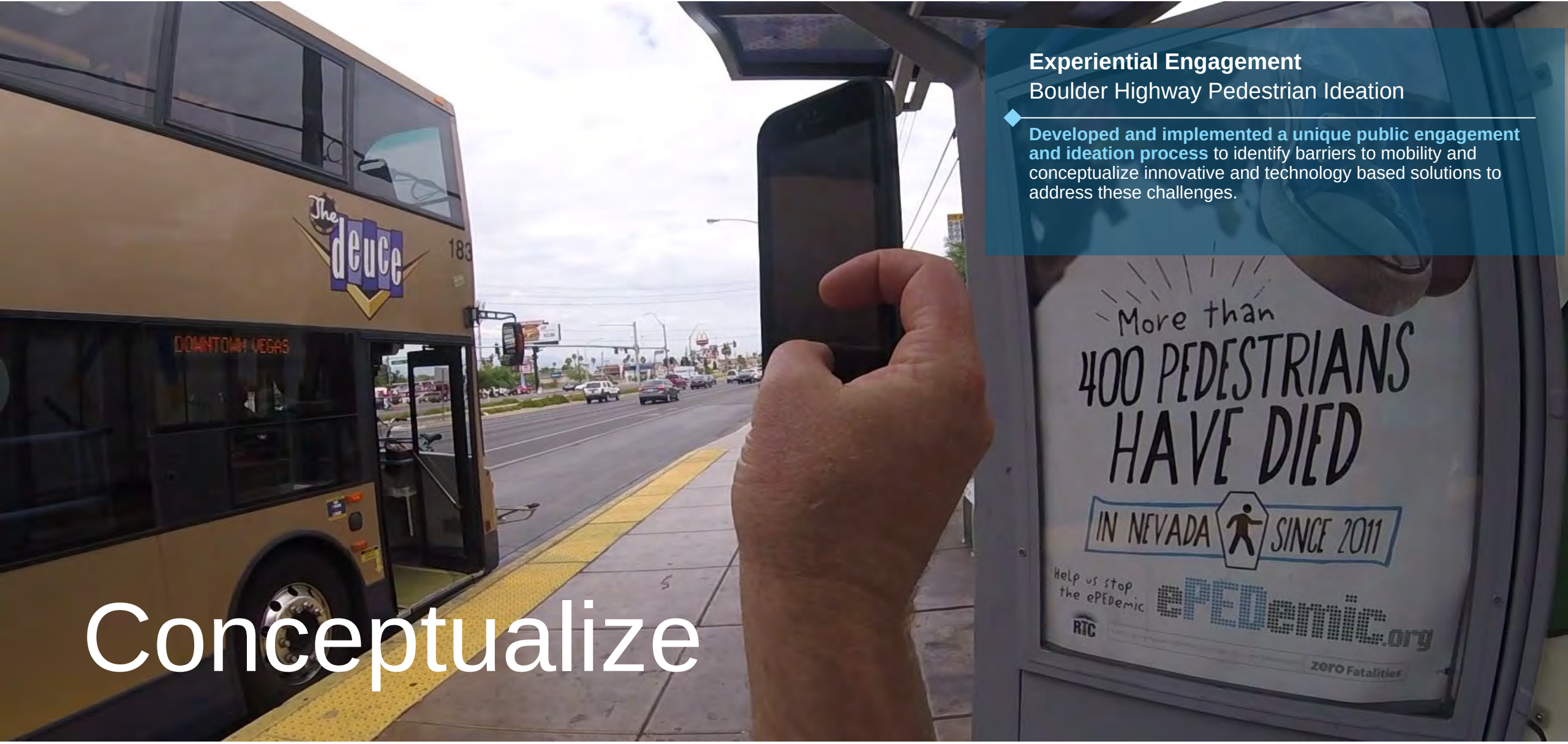
Conceptualize

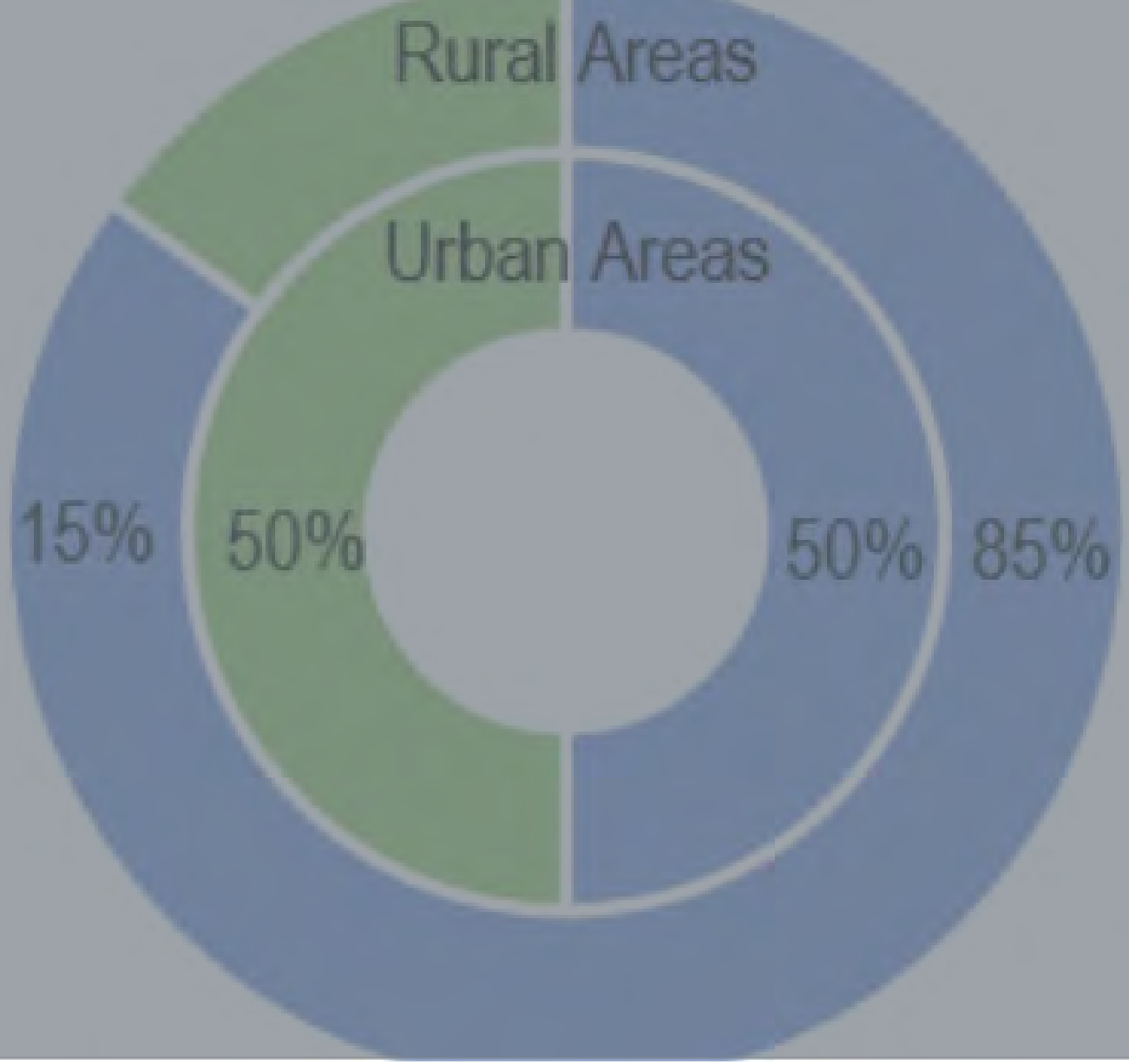


Experiential Engagement

Boulder Highway Pedestrian Ideation

Developed and implemented a unique public engagement and ideation process to identify barriers to mobility and conceptualize innovative and technology based solutions to address these challenges.

Plan



Levels of Automation

- 0 to 2 (No automation, driver assistance, or partial automation)
- 3 to 5 (Conditional automation, high automation, full automation)

CV/AV Scenario Planning
Colorado Department of Transportation

Developed various future scenarios through education and stakeholder engagement that describe with various transportation and land use impacts of connected vehicles and automated vehicles (CV/AV), for use in the state-wide travel demand model and transportation plan.

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Plan

Mobility Roadmap

Regional Transportation Commission of Southern Nevada

Developed a vision and roadmap to help RTCSNV and their agency stakeholders achieve their mobility objectives for the Las Vegas valley and prepare/take advantage of emerging technologies such as CV/AV.

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Design

Signal Phase and Timing (SPaT) Infrastructure
Georgia Department of Transportation

Designed Dedicated Short Range Communication (DSRC) road side unit infrastructure to broadcast SPaT messages to connected vehicles operating on GDOTs roadways.

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Deploy

Commercial Vehicle Signal Priority (CVSP)

Colorado Department of Transportation – Region 4

Deployed infrastructure to allow CDOT's traffic signals to prioritize commercial vehicles approaching an intersection in order to improve safety, freight efficiency, and overall corridor efficiency.

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Operate

North Avenue Smart Corridor
Renew Atlanta

Worked with the City of Atlanta and agency partners to design, deploy and operate connected and automated vehicle infrastructure and systems along North Avenue to test emerging technologies and to serve as a framework for future deployments of these emerging technologies in Atlanta.

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Other Lessons Learned

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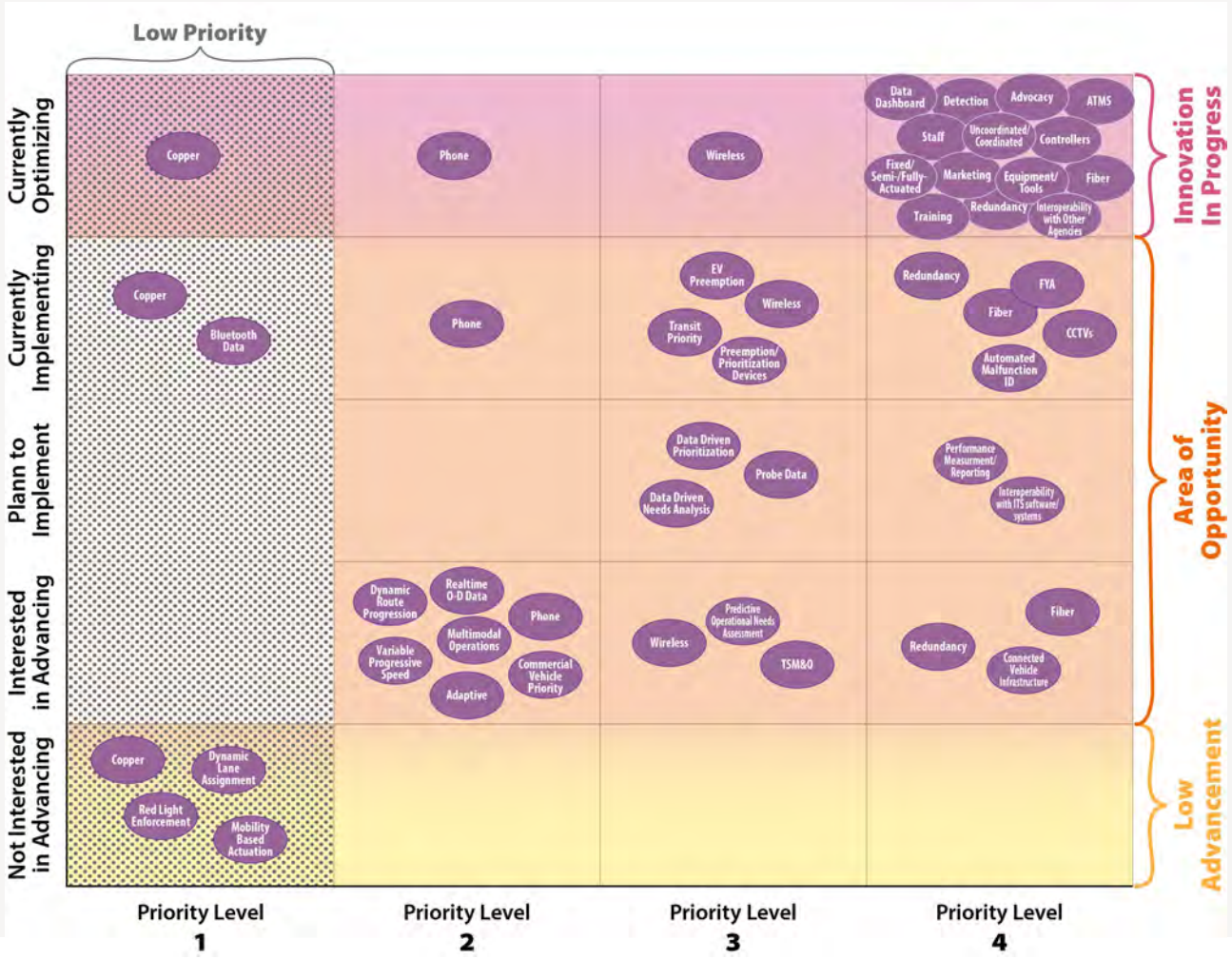
Greater Charlotte Area ACV Roadmap Action Plan

- Fleet Management
- Modeling and Forecasting
- Transportation Planning
- Infrastructure Costs
- Land Use Planning
- State Policy and Regulations

RTC FAST Mobility Roadmap – Areas of Opportunity



- Data Management
- Data Driven Planning
- Traffic Signal Operations
- Multimodal Operations
- Emerging Technologies

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i2a – Performance Metrics

- Reduce injuries and fatalities
- Reduce multi-car collisions
- Improve travel times on road
- Reduce per incident costs
- Reduce Road Ranger response times
- Reduce abandoned vehicle rates

- Reduce traffic violations
- Reduce pedestrian detection failures
- Reduce gap in real-time data and reported conditions
- Increase dedicated bike/ped facilities

- Increase number of connected users
- Increase transit ridership
- Better access to choices for all
- Improve modal-split
- Improve access to jobs/services for all
- Improve personal travel time

- Increase miles of CAV compatible
- Increase number of shared, discoverable data sources
- Increase number of agencies with shared communication infrastructure
- Increase number of innovative intersections

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i2a – Implementation Strategy

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Douglas County Intelligent Mobility Road Map

ROADMAP CATEGORIES

Leverage existing technology

Prepare infrastructure for vehicles with automated driving features

Install CV roadside units

Evaluate traffic signal operation and performance

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What are the biggest mobility challenges you face?

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Thank You

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