Emerging Technologies & Autonomous Vehicle Readiness Planning

Georgia Planning Association Conference
Jekyll Island, GA
September 5, 2018
Agenda

1. U.S. Context
3. 15 Strategies to Prepare for Emerging Technologies & Highly Autonomous Vehicles
U.S. Context

Emerging Technologies
Rapid Advancement in Autonomous Vehicles

11 Largest Automakers

2018 - 2021

Fully Autonomous Vehicles on Highways

https://www.planning.org/knowledgebase/autonomousvehicles/
Emerging Technology Initiatives

- Las Vegas, NV
- “M City,” MI
- Denver, CO
- San Ramon, CA
- Arlington, TX
- Gainesville, FL
U.S. Survey on Emerging Technologies & Autonomous Vehicle Readiness Planning

Overview and Results
Survey Overview

- Conducted March - April 2018
- United States
- Fully funded by Modern Mobility Partners, LLC
- Readiness Planning Focus

The Emerging Technologies & Autonomous vehicle Readiness Planning survey was conducted during March - April 2018 by Modern Mobility Partners, LLC. The purpose was to gain an understanding of the level of preparedness for emerging technologies and start the planning process for the local, regional, and state levels for emerging technologies and highly autonomous vehicles (HAVs). In addition, the intent was to bring an awareness of the different areas of impacts that emerging technologies and HAVs will have on the transportation sector and provide recommendations for potential readiness actions.

Survey Respondents from 28 States

- 26% of respondents stated they fully understand the implications of HAVs and their role in helping their organization prepare.
- 91% of respondents stated that at some point in time, emerging technologies and/or HAVs will impact their day-to-day job activities.
15 Strategies

Preparing for Emerging Technologies & Highly Autonomous Vehicles (HAVs)
1. Regional stakeholder coordination

- Formal Stakeholder Coordination Structure
- Traditional and Non-Traditional Stakeholders
- Policies
- Technology Interoperability
- Cross Jurisdictions
- Data Sharing
Mobility as a service (Maas) Plan

2. TICKET PAY PLAN TRIP
2. Mobility as a service (Maas) Plan
2. Mobility as a service (Maas) Plan (Cont’d)

- Step 1: Pros, Cons, Challenges & Opportunities
- Step 2: Data Requirements
- Step 3: Inventory of Supply by Mode
- Step 4: Partnering Opportunities
- Step 5: Impact to Operations
- Step 6: Action Plan
3. Transportation Demand Management (TDM) Plan/Update

- **Historical**
  - Transit,
  - Carpool,
  - Vanpool,
  - Bike,
  - Flexible Work Hours,
  - Teleworking

- **Current**
  - Transit,
  - Ridehailing,
  - Bike Share,
  - Car Share,
  - Flexible Work Hours,
  - Teleworking

- **Near Future**
  - Mobility as a Service (Maas)

- **Long-Term**
  - Autonomous cars, policies to discourage "zombie cars"
4. Curbside Management Plan

- Passenger and package loading zones
- Re-purpose on-street parking
- Curbside flex zones
5. Parking / Land Use Redevelopment Plan

Self-Parking Cars

Cars With Driver
Long Range Transportation Plan

6.

- Vision
- Stakeholders
- New Data
- Project Prioritization
- Alternate Future Scenarios
- Short-Term Travel Demand Tools
- Aging & Disabled
- Project Types
- Revenue Impacts
- Leverage Innovation for Grants
- Project Cost Estimate
- Revisit Plan Annually
Alternative Pavement Technologies Evaluation

- Generate solar energy
- Charge electric vehicles
- Provide Wifi
- Provide connected vehicle advanced warning increasing time for human intervention
- Monitor pavement conditions
- Prevent icing

Photo Source: Solar Roadways
Electric Vehicle Charging Infrastructure

Photo Source: Futurecar.com
Emerging Technologies

Interoperability

Cross-Jurisdictional

Regional Intelligent Transportation Systems (ITS) Architecture
10. HAV Managed Lane Study
11. Safety Impacts Analysis

Mix of Self-Driving and Human-Driven Vehicles

Design for Safe Cycling

Design for Safe Walking
Transit Impacts Analysis

1. Ride-hailing
   First- and last-mile

2. Fixed Routes
   Focus on higher density and high ridership routes

3. Paratransit
   Consider partnering with ride-hailing companies

4. Mobility-as-a-Service
   Open data and partnerships
Freight Impacts Analysis

13. TRAVEL BEHAVIOR

ROADWAY DESIGN

RAIL/TRUCK MODE SHIFT

WAREHOUSING MODELS

PAVEMENT CONDITIONS

TRUCK PARKING

FREIGHT IMPACTS
Airport impacts Analysis

14. Staging Areas

- Curbside Congestion
- Signage
- Parking Capacity
- Parking Revenue
- Enforcement
- Rental Car Facilities
- Concession Agreements
Emerging Technologies/HAV Readiness Plan

Increase in Highly Autonomous Vehicles
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