MEETING NOTES

Iowa Advisory Council on Automated Transportation (ATC)
Joint Economic Development/Infrastructure Readiness Subcommittee Meeting
Skype Conference Call – 319-467-1100, conference ID: 8442672#
Tuesday, November 19, 2019
11am-12pm

1. Welcome and introductions – Anna Dizack, UI National Advanced Driving Simulator (5 minutes)
    - Rick Peterson (Economic Development Subcommittee Chair) – Iowa Economic Development Authority
    - Erin Mullenix (Infrastructure Readiness Subcommittee Chair) – Iowa League of Cities
    - John Gibson – Iowa Division of the Federal Highway Administration (FHWA)
    - Mark Peterson – AAA – the Auto Club Group – Minnesota/Iowa
    - Mike Nahra – Woodbury County, National Association of County Engineers
    - Mike Lauer – Iowa Communications Network
    - Tom Banta – Iowa City Area Development Group
    - Rachel Bennett – Iowa State Association of Counties
    - Danny Waid – Iowa County Engineers Association Service Bureau
    - John Davis – City of Des Moines
    - Erin Cole – Clinton Regional Development Corporation
    - Sandra Larson – Stanley Consultants
    - Mindi Nguyen, Mikel Derby, Garrett Pedersen, Donna Matulac, Renee Jerman, Adam Shell – Iowa DOT
    - Dan McGehee, Omar Ahmad, Jacob Heiden, Anna Dizack – UI National Advanced Driving Simulator
    - Neal Hawkins – ISU InTrans
    - Peter Rafferty – Gannett Fleming

2. Update on ATC meeting held Thursday, September 12th – Rick Peterson, Economic Development Subcommittee Chair and Erin Mullenix, Infrastructure Readiness Subcommittee Chair (10 minutes)
    - Rick Peterson (Economic Development Subcommittee Chair) – provided information on the last ATC meeting. The $7 million Automated Driving Systems (ADS) for Rural America demonstration grant award to the UI was announced. Also discussed that the subcommittee meetings were to be joint this quarter. Peter Raffety provided a visioning effort update and there was a presentation by David Kidd with the Highway Loss Data Institute (HLDI) and discussion.
    - Erin Mullenix (Infrastructure Readiness Subcommitee Chair) – added information about the last Infrastructure Readiness subcommittee meeting where Mike Lauer presented on Iowa's network and 5G opportunities.

3. Communications update – Andrea Henry, Iowa DOT (5 minutes)
    - Andrea had a last minute conflict and couldn't join. Anna Dizack provided information on the ATC communications work to date.
    - ATC communications group – currently have Andrea Henry (Policy & Legislation subcommittee) and Rachel Bennett (Infrastructure Readiness subcommittee) as communications representatives. Still need communications representatives for the Public Safety & Enforcement and Economic Development subcommittees. If anyone has ideas for these open roles, please let us know.
    - Andrea Henry and DOT communications staff have been working on ATC branding, like the PowerPoint templates and color schemes presented at the meeting. Also drafted a website.
    - Website – ATC website has been drafted and is now live. Primary purpose for now is to provide general info about the ATC (until the Communications group meets and can discuss postings).
        - IowaDrivingAV.org is website. Also redirects from the .com and .net link.
        - Right now just have notes posted. Will not post previous presentations for now but can in the future, ensuring with presenters that they can be shared publicly.
        - Contact Us page may be revised with a more general email address in the future.

4. Equity and accessibility – Mindi Nguyen, Iowa DOT (5 minutes)
    - Mindi Nguyen – provided a brief overview of her role as Community Outreach Coordinator with the Iowa DOT.
    - Over the last few weeks she's been reviewing the documentation that the ATC has been posting. Impressed with technology, priorities. With a conscious focus on equity, we can begin to decrease some of the inequality.
    - In transportation, there is an urban vs. rural divide. On average, very low income families spend over 30% of their income on transportation. Can limit access to jobs, healthcare, etc. that impacts well-being.
    - What are the right questions we should be asking in Iowa?
    - As shared mobility and autonomous vehicles (AVs) reshape our transportation system, they offer a critical chance to redress inequities.
    - Provided a brief on this topic, created by UC Davis.
    - Dan McGehee – would like to talk about ridesharing with Mindi and others who are interested. Also, first and last mile with AVs – those with physical challenges need someone to help them get into and out of the vehicle. Need to have discussions on the challenges of not having a driver.

5. CAT challenge pilot program opportunity – Adam Shell, Iowa DOT (20 minutes)
    - See the Minnesota DOT program as an example: https://www.dot.state.mn.us/newsrels/18/10/15-avc.html
        - Adam Shell – presented information to bring awareness to the ATC subcommittees of the potential for a competitive Cooperative & Automated Transportation (CAT) Pilot Program. In a meeting with the CAV-X team at the Minnesota DOT, they informed the Iowa DOT about their program. This information is presented to recommend to the ATC

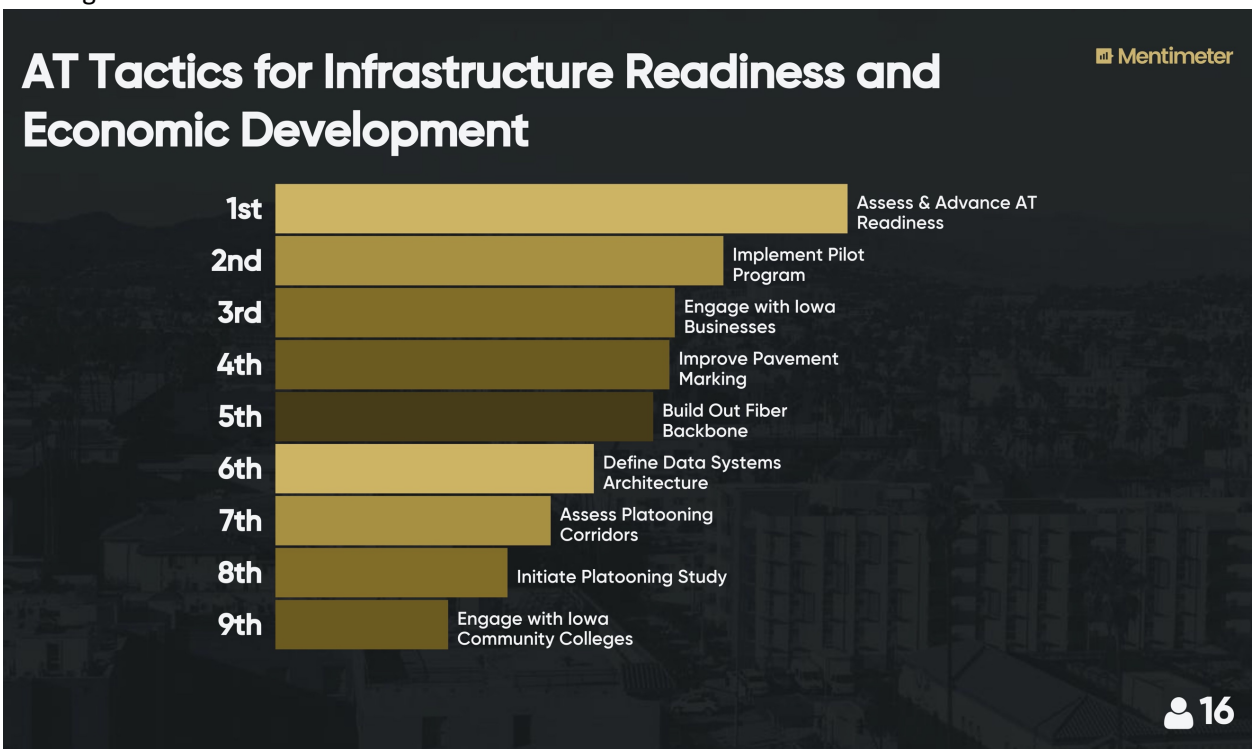
subcommittees to consider and support the development of a CAT pilot program. This presentation was about what other states are doing and what Iowa could do.

- Presented on the competitive grant challenge program examples with the Georgia DOT, Michigan DOT, and Minnesota DOT.
- Should Iowa pursue a CAT challenge pilot program? It would support the research, innovation, and pilot opportunities of emerging technologies under the umbrella of CAT. Could support possible economic opportunities and support business growth.
- Coordination and partnerships within and outside of Iowa.
    - Empower Rural Iowa Initiative has a clear tie and may provide further opportunities for the ATC to get involved and address rural Iowa mobility needs.
    - Future Ready Iowa program aligns well with the ATC and the need to ensure our workforce is prepared to support CAT.
    - Opportunities regionally and nationally with the Mid-America Association of State Transportation Officials and AASHTO.
- Primary challenge is to establish dedicated funding for such a competitive grant program.
- Provided a chart of possible responsibilities and a support structure for a possible CAT Challenge Program: Executive Committee would secure and approve funding, Evaluation Committee would perform an independent review of each proposal, Technical Advisors would serve as advisors to Executive and Evaluation committees as needed, and Contract administrator would support and facilitate the process.
- Timing is right to have the discussions, leading into the next legislative session as we seek possible support from ATC and legislature.
- Dan McGehee – one of the broader questions to talk about is talking about pitching bigger projects to FHWA as part of the pooled fund. Opportunities to team with other states for bigger funding.
- Rick Peterson – wants to continue to evaluate, discuss where the Iowa Economic Development Authority contract administrator reside within the organization.

6. ATC vision project – Peter Rafferty, Gannett Fleming (15 minutes)
    - Peter Rafferty – provided a recap and overview of the process. presented the AT tactics for the Economic Development and Infrastructure Readiness subcommittees (list attached after meeting notes). Asked meeting participants to log on and rank these tactics.
    - Next steps – will conduct similar exercise with other subcommittee joint meeting. Will circulate draft vision plan at December 4th ATC meeting and continue working with subcommittees to keep the ball rolling.
    - Erin Mullenix – appreciated the soft infrastructure topic and asked if this relates to the workforce related item.
    - Peter – we didn't have a tactic specifically formulated for this, but it can be discussed.
        - Infrastructure Readiness
            1. Assess & Advance AT Readiness
            2. Improve Pavement Marking
            3. Build Out Fiber Backbone
            4. Implement Pilot Program
            5. Define Data Systems Architecture

- Economic Development
    1. Assess Platooning Corridors
    2. Initiate Platooning Study
    3. Engage with Iowa Businesses
    4. Engage with Iowa Community Colleges
    5. Implement Pilot Program

Ranking outcome:



7. Information and key upcoming dates – Anna Dizack, UI National Advanced Driving Simulator
    - Iowa ATC Meeting: Wednesday, December 4th, 1-3pm, Iowa League of Cities

Iowa AT Vision: Tactics Summary

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Please review these items, then during the November 19, 2019 joint subcommittee meeting participants visit menti.com, enter a six-digit code, and submit priority rankings

INFRASTRUCTURE READINESS

1. **Assess & Advance AT Readiness** – fund and execute a statewide assessment of infrastructure, traffic control assets, communications (coverage, speed, security), EV support, connectivity, IT capability, etc.; must align with the CAT SLP and draw on national and international guidance; should culminate with gap identification and an improvement plan; and may incorporate CAT CMM/CMF

2. **Improve Pavement Marking** – inventory pavement marking, develop and implement policy for improving visibility and upgrading to 6-inch standard, including development of criteria for identifying and prioritizing corridors for upgrade, e.g., based on freight network, traffic volumes, roadway classification, crashes, etc.

3. **Build Out Fiber Backbone** – supporting needed communications infrastructure for CAV operations, fund and execute recommendations in Iowa DOT's ITS & Communications SLP, collaborate with ICN, explore public-private partnerships, and ensure alignment with the Governor's broadband initiative

4. **Implement Pilot Program** – develop and fund the Iowa CAT Challenge to support AT innovation, advancement, and trials in Iowa; solicit proposals to bring emerging technologies forward more deliberately and quickly; this item is also noted in the Policy & Legislation and Economic Development areas

5. **Define Data Systems Architecture** – to prepare for more and new types of data while ensuring performance, security, and privacy; develop plan for AT-related data management in concert with DOT's IT and ITS architectures

ECONOMIC DEVELOPMENT

1. **Assess Platooning Corridors** – in collaboration with ISP, MVE, and Planning, and in coordination with the CAT SLP, identify roadway characteristics most amenable to platooning, as well as risks to infrastructure and other uses; then perform system screening; determine best approach for designating corridors for truck platooning, integrating with the State Freight Plan, and considering regulatory and enforcement steps

2. **Initiate Platooning Study** – to assess benefits to Iowa, risks and opportunities, regulatory and enforcement issues, jurisdictional barriers, etc.; will include stakeholder engagement (ISP, MVE, IMTA, and others) during concept exploration

3. **Engage with Iowa Businesses** – reach out to Iowa companies for ongoing dialogue for advancing AT, solicit innovations, explore public-private partnerships, etc.

4. **Engage with Iowa Community Colleges** – in support of workforce development, education and training initiatives, reach out to the IACCT and related businesses and non-profit advocates in support of capacity building for post-secondary technical education

5. **Implement Pilot Program** – (see item above from Infrastructure Readiness); included here because this also promotes both industry growth and public benefits

Sharing, Electrification and Automation
3 REVOLUTIONS

ITS UCDAVIS
INSTITUTE OF TRANSPORTATION STUDIES

Policy Brief

February 2017

Can We Advance Social Equity with Shared, Autonomous and Electric Vehicles?

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In November 2016, the Institute of Transportation Studies at the University of California, Davis (ITS-Davis) convened leading academic, government, private industry, and public interest stakeholders to explore science-based policies that could steer the three transportation revolutions- shared mobility, electrification, and autonomous vehicles, toward the public interest.

This policy brief reflects the opinions of the authors and not UC Davis. This brief is one in a series that presents a range of policy concepts, recommendations and research needs discussed at the Three Revolutions Conference.

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Summary

A future with shared, electric autonomous vehicles holds many promises. But without an intentional focus on equity, it may exacerbate existing barriers and increase inequality. Policymakers must consider not only how to deploy this technology quickly and safely, but also how it can be used to improve the lives of those who need it most.

Introduction

For more than half a century our transportation system has largely focused on moving cars, in part to support increasingly sprawling land uses. Over-reliance on vehicles has come at a high expense to personal budgets, public health and the environment. Very low-income families spend, on average, over 30% of their income on transportation. For those without a private vehicle, limited access to jobs, education, health care and other

opportunities is a barrier to self-sufficiency. Pollution from vehicles leads to asthma and a host of diseases that fall hardest on communities of color.[1]

As shared mobility and autonomous vehicles (AVs) reshape our transportation system, they offer a critical chance to redress these inequities. Without smart policy and planning, however, they may instead widen the access and inequality gap. This brief focuses on solutions that can benefit the following disadvantaged communities:

1. Low-income communities
2. Mobility-challenged people, including people with disabilities, seniors and youth
3. Other historically disadvantaged communities, including people of color, immigrant communities (including those with language barriers) and rural communities

Some early patterns already raise equity concerns, such as much longer wait times and cancellation rates for transportation network companies (TNCs) like Uber and Lyft in people-of-color communities, especially for black men.[2] [3] Even more concerning are public agencies that are cutting bus lines and replacing them with TNC subsidies, but often without analysis of cost to low-income riders.

The convergence of autonomous, shared, and electric vehicles will have a profound impact on society. Unlike our current transportation system, this new system may be largely designed and driven by the private sector. This makes it all the more urgent to put forward a framework that lifts social equity to the top of the policy agenda. It is critical to begin immediately exploring strategies and overcoming barriers for policies and practices that improve equity, including shared vehicles, shared rides, and equal access for people of every age, ability, and income.

Background

Equity Priorities

Dozens of measures and indicators can be used to evaluate the impact of transportation and land use on social equity. For this high-level analysis and discussion of different transportation futures and potential policy interventions, we propose four primary performance measures:

1. **Cost:** Low-income households spend a large proportion of their income on transportation, primarily because of reliance on vehicles for many trips. These transportation costs are much higher in sprawling areas.

   For each new policy change or project involving fleets of autonomous vehicles that are electric and shared (FAVES), what is the impact on transportation costs for low-income households, in absolute terms and relative to others?

1 http://www.who.int/kobe_centre/publications/hiddencities_media/who_un_habitat_hidden_cities_web.pdf?ua=1

2 https://www.theatlantic.com/business/archive/2016/10/uber-lyft-and-the-false-promise-of-fair-rides/506000/

3 https://economics.stanford.edu/sites/default/files/zoepf.pdf

Can We Advance Social Equity with Shared, Autonomous and Electric Vehicles?

2. **Access:** Access to destinations is one of the main factors in lifelong earning potential, and unequal access is a major cause of overall inequality. About 70% of regional jobs, retail, and other opportunities are now outside of downtown centers. Lack of access to vehicles, reliable public transit, and safe active transportation options decreases those opportunities.

   For each new FAVES policy change or project, what is the change in access to jobs, education, health care and other destinations?

3. **Public Health:** Disadvantaged communities often suffer the worst impacts of our current transportation system, from higher levels of air pollution to greater numbers of injuries and deaths from car crashes.

   For each new FAVES policy change or project, what are the likely health outcomes on disadvantaged communities?

4. **Employment:** There is a growing income gap, with a dearth of middle income jobs. For example, TNCs disrupted the taxi industry in many communities, and AVs may have more profound impacts including on freight transportation including trucking. Advocates argue that FAVES will create jobs but it is important to consider the changes in not only the number of jobs by region but also the types of jobs and skills needed for those positions.

   For each new FAVES policy change or project, what is the impact on employment, particularly on access to stable, well-paying jobs?

Findings and Policy Recommendations

This section outlines several problems to achieving equity in costs, access, public health and employment, and proposes policy solutions. These solutions can be further prioritized at various geographic, political and temporal scales.

1. Problem: **Disadvantaged communities are not strongly engaged in issues of shared mobility, and have difficulty affording electric vehicles (EVs) or accessing the infrastructure for them.** As we enter into a period of faster change and disruption, these communities need to be part of the planning process to ensure solutions are tailored to community needs.

Possible Actions for Local Government and Transit Agencies:

a) Expand efforts to engage and include disadvantaged communities in transportation planning, especially regarding shared mobility.

b) Use the four equity priorities described above (cost, access, public health, and employment) as a

framework for evaluating equity goals and impacts of policy interventions.

c) Support demonstration projects and spread case studies, best practices, model policies and programs.

d) Create or support networks focused on overcoming barriers to shared mobility.

2. Problem: **Disadvantaged communities face barriers to using shared mobility including financial, technological, and language and cultural barriers.** This creates unequal access to many services. Since many new technologies rely on scaling up the number of users in a given area, this may mean services, such as carpooling and car-sharing, are simply unavailable.

Possible Actions for Local Government, Regional Agencies, Transit Agencies, and Private Sector Partners:

a) Support demonstration projects that overcome obstacles to shared mobility or EV penetration. Examples include the new low-income electric car-sharing project in Los Angeles called Blue California and Oakland's new Shared Mobility for All project.

b) Develop platforms for households that don't have bank accounts, credit cards or online payment systems to access shared mobility, and for platforms to include multiple mobility providers (e.g. Chicago's Ventra card and app).

c) Create new revenue streams to support equitable access to new mobility. For instance, Oakland sells permits for car-sharing curb space. These funds go to reduce car-sharing cost for low-income communities.

d) Reduce parking requirements for multi-family homes and commercial centers that include car- and bike-sharing, distribute transit passes or provide other trip reduction strategies. (See GreenTRIP Connect[4] for additional strategies and their impacts).

3. Problem: **Shared mobility does not always get priority in planning or infrastructure.** A critical way to promote both public transit and FAVES is to ensure that shared vehicles are faster and more convenient than solo driving trips. This is both an equity issue, since low-income commuters are more reliant on transit and other shared modes, and one of increasing transportation efficiency overall.

Possible Actions for Local Government, Regional Planning Agencies, Caltrans:

a) Enforce HOV lane laws to reduce growing congestion. Cite cheaters and increase carpooling to 3+ where appropriate.

4 http://www.transformca.org/greentrip/connect

b) Allow conversion of mixed-flow general purpose lanes to Express Lanes to allow priority for shared vehicles and to close gaps in the HOV/Express networks without requiring wider roads.

c) Provide priority for shared vehicles in urban areas, including designating curb space or shared mobility lanes (including Bus Rapid Transit).

d) Analyze how widespread use of shared mobility, and especially connected AVs, may be able to make more efficient use of road and parking space, freeing up space for other forms of transportation (such as BRT and bike lanes). This could lead to reduced spending on roadway expansion and justify additional investment in shared mobility. This should be an integral part of Regional and County Transportation Plans.

4. Problem: **Shared mobility may replace transit in some areas** without accounting for the barriers to disadvantaged communities (e.g., Dublin, CA). [5]Shared mobility can be a great complement to public transit, and even improve access by replacing inefficient public transit, especially in suburban or rural areas. However, this strategy may increase cost or diminish access for populations that have structural or language barriers.

Possible Actions for Transit Agencies:

a) Re-examine transit routes and possible alternatives, coupled with subsidies, to serve populations more efficiently at lower costs. Create subsidy structures that specifically account for low-income riders, and work to keep their costs from increasing over current costs.
b) Account for travel time, cost implications, and other barriers as agencies implement first- and last-mile partnerships focused on increasing access to transit.

c) Encourage public-private partnerships between transit agencies, TNCs, car-sharing and bike-sharing, to create multi-modal transportation hubs in low-income communities.

d) Develop requirements for ADA access, especially as transit and taxi service are reduced in areas.

5. Problem: **Shared autonomous vehicles may increase driving and local air pollution,** impacting disadvantaged communities that already suffer from higher rates of asthma and other medical conditions.

Possible Actions for Local Government and State Agencies

a) Offer greater benefits or incentives to encourage shared AVs that are also zero emission vehicles.

b) Increase incentives and resources for implementing EV infrastructure, with a focus on low-income

5 http://www.wheelsbus.com/news/wheels-partners-uber-lyft-desoto-cab-offer-demand-real-time-travel-convenience-dublin/

communities.

6. Problem: **Higher rates of bicycle and pedestrian collisions in disadvantaged communities.**

Possible Actions for Local Governments

a) Utilize AVs to set pedestrian- and bike-friendly speed maximums, safe buffer zones, and standardized signalization for human-vehicle interface.

b) Ensure priority is given to repurposing parking and other infrastructure into activity and opportunity centers, such as parks, trails, bike paths, or affordable infill development, in disadvantaged communities. Such land uses have been demonstrated to increase physical activity and decrease health risks and costs.

Opportunities for Future Research

Insufficient data on impact of new technologies, or of potential policy interventions. It is important to keep information open and widely available for the broadest benefit, while protecting customer and driver privacy.

Possible Actions for Local, State and Federal Agencies

a) Ensure data reciprocity from private sector players when they benefit from public policies or open public data.

b) Analyze data for accessibility of services to low-income, disabled and other populations, and use it to plan for policy interventions.

c) Evaluate possibilities for repurposing parking for public benefit.

Conclusion

All new technologies, when distributed rapidly, create new inequities. Just as public agencies intervened to ensure electricity got to rural areas and phones are affordable to more, it is imperative we find ways to ensure that the promise of FAVES improves the lives of those who now face the most serious transportation barriers. Doing so successfully will require a clear framework to approach social equity, bold experimentation, and sharing successes across the private and public sectors. It will take constant vigilance.