MEETING NOTES

Iowa Advisory Council on Automated Transportation (ATC)

Wednesday, October 5, 2022

1 pm – 3 pm CT

https://iowadrivingav.org/

Action Items

- None

Attendees – 60 people

- Scott Marler (ATC Chair) – Director, Iowa DOT
- Robert Heilman – Highly Automated Systems Safety Center of Excellence, U.S. DOT
- Paul Steier – American Association of Motor Vehicle Administrators (AAMVA)
- Neal Hawkins – Iowa State University, InTrans
- Dylan Mullenix – Des Moines Area MPO (Policy & Legislation Chair)
- Colonel Nathan Fulk – Iowa State Patrol (Public Safety & Enforcement Chair)
- Rick Peterson – Iowa Economic Development Authority (Economic Development Chair)
- Abbie Christophersen – Iowa Economic Development Authority
- Carl Lingen – Iowa Public Transit Association
- Mickey Shields – Iowa League of Cities
- Brian Keierleber – Buchanan County
- Timothy Marshall – Federal Highway Administration (FHWA)
- Shirley McGuire – Federal Motor Carrier Safety Administration
- Johnnie Gibson – Iowa Division of the Federal Highway Administration
- Allison Meiners – Iowa Motor Truck Association
- Steve Spears – University of Iowa, School of Planning and Public Affairs
- Todd Coffelt – Iowa Department of Natural Resources
- Dave Ness – City of Dubuque
- Mark Nahra – Woodbury County
- Mark Pohlman – HDR Inc.
- Mark Pierson - HNTB
- Ray Warner – Aureon
- Eric Minge – SFR Consulting
- Eric Bakker – Chief of State to Iowa Senate Minority Leader
- Brian Willham – HR
- Nick VanGunst – Alliant Engineering, Inc.
- Eric Porter – Iowa Communications Network
- Travis Grassel – Iowa Insurance Division
- Kirby Wagner - Growmark
- Derek Snead – Jones County
- Scott Pappan – ICN
- Marcus Coenen – FHU
- Omar Ahmad, Dan McGehee, Cheryl Roe – University of Iowa, National Advanced Driving Simulator
- Zach Hans, Skylar Knickerbocker – Iowa State University, InTrans

- Newman Abuissa, Emma Borchers, Clayton Burke, Joseph Drahos, Susan Fenton, Stefani Gaede, Steve Gent, Josh Halterman, Kelli Huser, Dennis Kleen, Peggi Knight, Donna Matulac, Hossein Naraghi, Garrett Pederson, Darren Reid, Adam Shell, Tim Simodynes, Toni Smith, Stephen Stonehocker, Mark Van Dyke, Andrea White, Austin Yates, Daniel Yeh – Iowa DOT
- Four participants were phone only and their identify isn't known

1.   **Welcome –** Scott Marler, Iowa DOT Director & ATC Chair

2.   **Mobility n.0, The Transportation System of the Future –** Robert Heilman, Director, Highly Automated Systems Safety Center of Excellence (HASS COE) (slides omitted from meeting summary)

   a. Rob is the Director of HASS COE within the Office of the Chief Science Officer and Assistant Secretary for Research and Technology (OST-R), U.S. Department of Transportation (US DOT). Rob has over 30 years' experience across the Department of Transportation, Department of Defense and the commercial sector in Program Management, Research and Development Management, Science and Technology Management, Systems Engineering, Systems Integration, Test and Evaluation, and Flight.

   b. HASS COE was established by Congress and is responsible for ensuring US DOT is equipped with the expertise to review, assess, and validate the safety of highly automated systems across all modes of transportation.

   c. The transportation system is in a period of transformation that will be more substantial than the change experienced over the last century. Technology and automation are major contributors to this change. The current transportation system which is divided into three domains: space, aviation, and surface is fading away towards a more integrated, universally connected, resilient, intelligent, interoperable system of systems. The massive amounts of data available today will serve as the intelligence of the new system.

   d. Connectivity growth will lead to richer, more diverse datasets but also increased risks. Operators may become dependent on the connectivity or dependent on the automation, and data veracity issues could lead to poor machine decisions if the data is corrupted. It is important to use the data

   e. [Virtual Open Innovation Collaborative Environment for Safety](#) (VOICES) is a virtual playground for innovators in public, private, and academic sectors to test together in a co-simulation that merges the virtual and physical worlds. It allows for different prototypes at varying stages of development to practice communication by playing out scenarios togethers. This allows researchers the opportunity to improve hardware and software in an efficient, cost-effective, safe way. [VOICES YouTube](#)

   f. HASS COE coordinated a multi-modal tabletop exercise with National Aeronautics and Space Administration and the Federal Aviation Administration during the week of September 15th. The exercise discussed the transportation of vaccine delivery into an airport and onto various locations as well as transportation of the appropriate personnel needed to administer the vaccine. Several use cases, test cases, architectures, research questions, and spectrum issues were considered. Automated truck platooning, automated vans containing drones as well as Advanced Air Mobility (AAM) and automated shuttles were used in the exercise. The infrastructure included connected intersections, smart intersections, and other digital infrastructure.

   g. University Transportation Centers (UTC) Program is a congressionally mandated financial assistance program available to U.S university consortia. The University of Iowa is a Tier 1 UTC called [Safety Research Using Simulation (SAFER-SIM)](#). The latest Notice of Funding Opportunity (NOFO) included cyber for the first time. Under a new model, each UTC will be assigned a staff member from the OST-R to act as a program manager/liaison. Any automation or cyber-UTC awarded for this round will be assigned a representative from HASS COE office.

h. Advanced Research Projects Agency – Infrastructure (ARPA-I) has been authorized but has not been appropriated yet. ARPA-I will be to Transportation as Defense Advanced Research Projects Agency (DARPA) is to Defense and Advanced Research Project Agency-Energy (ARPA-E) is to Energy. This goal of ARPA-I is to develop innovative solutions to persistent problems in infrastructure and transportation. The topics of interest include digital infrastructure, automation, structure, and cross-cutting and enabling technologies.

i. US DOT Research, Development and Technology Strategic Plan (FY 2022-2026) is under final review prior to public release. It is very people centric transportation system. For the first time, the plan attempts to set the research agenda for the nation. The research development strategic plan included a list of attributes for the future transportation system: safe, intelligent & automated, pervasively connected, sustainably powered, adaptive & dynamic, data centric & driven, secure & resilient, people centered

j. The future transportation system requires a national plan that includes state, federal, and commercial transportation sectors working together.

k. Funding opportunities

   i. [Strength Mobility and Revolutionizing Transportation (SMART) Grants Program](): Deadline November 2022.

   ii. [Advanced Transportation Technologies and Innovative Mobility Deployment (ATTIMD)]()

l. Discussion

   i. Travis Grassel, Iowa Insurance Division, commented that if we want to get the public to buy-in, the focus needs to be on the safety benefits that automated vehicles (AV) can bring in the future. It's important to highlight the successes of large-scale plans and not on the few small failures that make the news. Too often what the public encounters is tied to the failures.

   ii. Rob: Challenges exist with how to extract, aggregate, and share the data for when things are going right. OEMs can be hesitant to share data for proprietary reasons. There have been discussions with OEMs and others to develop a data management strategy which might make it easier to share this data. Additional discussions have occurred with insurance industry representatives as well as independent testers for insurance companies about how we might be able to identify metrics, measures, and other parameters that deal with risk that would be sensible to the insurance industry, but also, how to communicate that risk to the public. Discussions are far from producing a solution.

3.   Safe Testing and Deployment of Vehicles Equipped with Automated Driving Systems: Edition 3 Guidance Updates – Paul Steier, Director of Vehicle Programs with the American Association of Motor Vehicle Administrators (AAMVA)

a. As director of vehicle programs at AAMVA, Paul serves as the staff lead to the Electronic Vehicle Titling Working Group and Automated Vehicles Subcommittee. Paul has been with AAMVA since 2017 and previously served 25-years as a commissioned officer with the Iowa Department of Transportation (DOT) where he was Director of the Bureau of Investigation & Identity Protection. Prior to his service as Bureau Director, Paul held the rank of Major working for the DOT's Motor Vehicle Enforcement Office where he also served as a fraud investigator and commercial vehicle enforcement officer.

b. The presentation focused on the latest updates to AAMVA's Automated Driving Systems (ADS) guidelines document [Safe Testing and Deployment of Vehicles Equipped with Automated Driving Systems Guidelines, Edition 3]() which was last updated in October 2020. These documents are developed to assist motor vehicle agencies, support stakeholder engagement, and provide recommendations for regulatory uniformity and

consistency. The current document updates are divided into four areas: vehicles, licensing, law enforcement, and other.

c. Vehicle Considerations
   i. A recommendation was made to change the terminology for describing vehicles. Instead of using "Brand", use "Designation" because sometimes "Brand" may have a negative connotation, like flood vehicle, theft vehicle.
   ii. Vehicle registration records should include a designation for the SAE level of automation. Unfortunately, this can sometimes be a challenge to identify since the levels are often not included in vehicle identification numbers (VIN). The level of automation could assist law enforcement and first responders when responding to and investigating crashes.
   iii. Vehicles completing on-road testing should require minimum liability insurance coverage.
   iv. Adequate tools and resources are not available to fully inspect all ADS or Advanced Driver Assistance System (ADAS) components, so these components will not be included as part of the actual vehicle inspections; however, any potential issues with the ADS or ADAS components should be noted.

d. Driver Licensing Considerations
   i. There is a great need to consider ADAS and educating the public about these technologies. The guidelines encourage vehicle dealers to educate their buyers. Dealers need to highlight the importance of ADAS, teach the buyers how the ADAS work and don't work, and provide buyers with various ADAS resources online.
   ii. Driver's license examiners need to be trained using AAMVA's Guidelines for Testing Drivers in Vehicles with Advanced Driver Assistance Systems. Examiners then can train new drivers regarding the value of the ADAS and how to use the ADAS in the classroom and behind-the-wheel.
   iii. Motor vehicle and law enforcement agencies need to stay current with the technology it changes daily. It is important to use proper terminology (SAE guideline) for the ADAS rather than specific manufacturer system names since manufacturer names can be misleading.

e. Law Enforcement Considerations
   i. Encourage compliance with NHTSA Standard General Order on Crash Reporting for ADS and ADAS.
   ii. Encourage strengthening distracted driving laws by using AAMVA's Strengthen Distracted Driving Education, Legislation and Enforcement white paper. Unfortunately, the public may be misled to think a vehicle does more than it is capable of which could lead to increased distraction. Public awareness about the purpose and limitations of ADAS is needed.
   iii. Law enforcement fleet managers need to study vehicles that may have ADAS systems before purchasing them so they can understand what features are available and if any of the ADAS may negatively impact job performance. Before deploying any vehicles, fleet managers must educate the officers about the ADAS because the vehicles may be quite different than previous ones.
   iv. Traffic laws should reflect SAE approved definitions when considering AVs. Jurisdictions should include who can be cited for violations and non-driving violations. Officers need to have the authority to be able to cite the responsible party, whether that is the driver, registration owner for the violation, etc. Laws also need to consider how to handle violations when there might be a remote driver in another state or country.

f. The next edition (edition 4) will include guidance for commercial motor vehicle automation, rental vehicles, minimum elements for law enforcement interaction plans, expand stakeholder engagement, expand collaborations with jurisdictions, and lessons learned.

g. Given Daniel Yeh's appointment ending, Paul encouraged Scott Marler and Iowa DOT to have another staff person be involved with AAMVA AV subcommittee.

4. **ISU/CAV Readiness Research Update –** Neal Hawkins, Planning Team Leader, System Planning Bureau – Iowa DOT

a. Neal has 30 years of experience in traffic engineering, operations, and safety, and serves a number of research and leadership roles at the Institute for Transportation at Iowa State University (InTrans). He has served as the Director for two centers: CTRE (Center for Transportation Research and Education) and CWIMS (Center for the Weather Impacts on Mobility and Safety) and is an assistant teaching professor. Neal also serves as the Iowa Department of Transportation's Research Traffic Operations Engineer.

b. The presentation highlighted the work being done at InTrans with connected vehicle (CV) data within Iowa. There is a considerable amount of data available from both CV and the infrastructure itself. All data, whether good or bad can be useful when making decisions.

c. Automating the Audible Attenuator Warning System
   i. Iowa DOT had an audible system with a huge speaker that has been instrumented on the attenuator trailers for road paint crews. When the road crew driver identifies that a motorist approaching maybe a threat, the driver pushes a button to activate the lights and/or horn warning. This can be a distraction for the driver to look ahead and behind to identify threats and signal appropriately.
   ii. This project worked to automate this alerting system. The system incorporates cameras, radar, artificial intelligence (AI) to automatically identify threats and send the appropriate warning (light and/or sound) as needed. The road crew uses a tablet to identify when the system is enabled, to trigger a warning manually, or to report false alarms or near misses. The device manufacturer has continuous communication with the devices so the data can be reviewed quickly to identify potential reasons for the false alarms or near misses.
   iii. Currently there two trucks collecting data. An additional eight are scheduled to be instrumented by the end of October. The goal of this project

d. [Work Zone Data Exchange](#) (WZDx) Update
   i. WZDx 4.0 Iowa is one of the first state to have a work zone feeds. This data is produced through QFree. This project uses smart arrow boards to update work zone data more efficiently. This is important because the information that appears on 511 may not always accurately reflect what is active because the data may not be updated in a timely manner when crews aren't able to work. Every time a smart board arrow is activated in Iowa, the location and the direction of the arrow is known. QFree takes the smart arrow board data, compares it with the planned work zone data, and when appropriate, verifies and marks the work zone as active which then appears on 511 as the start of the lane closure. This is critical data for Google, Waze, and others to be able to update motorists appropriately.
   ii. A protocol was developed for the use of smart arrow boards, however currently the group is following a national protocol for these boards. Four different manufacturers were approved for the project to provide data from the backend of the board systems. Future work looks to incorporate temporary traffic signals. This, too, would follow a national protocol. This would allow for any temporary traffic signals brought into the state to be used to inform motorists of road work.

e. Iowa Truck Parking Information and Management System (TPIMS)
   i. Iowa is one of several states that has installed TPIMS. This provides better information to freight companies and drivers regarding availability of truck parking at public rest areas and truck stops in Iowa's 511 system.

      ii.   Current data analysis has been able to identify duration of stops, busy times of day, times when locations exceed capacity, etc. As the data sample grows, there will be opportunities for predicting and forecasting.

f.   Statewide pavement marking efforts

      i.   Iowa is working to improve pavement markings statewide. This will benefit all motors as well as vehicles with ADAS. The program includes contrast white skips, improvement of pavement marking materials across the interstate system, as well as a strategy to look at and address other roads.

      ii.   A paper, [Crash Modification Factors for Contrast Pavement Markings on Light-Colored Pavement](#) was recently published that examined contrast pavement markings. The study focused on three high-speed roadway configurations (four, six, and eight lanes) in urban and suburban areas. The findings suggest that the contrast pavement markings reduced roadway departures between 5 and 29% and resulted in economic savings that greatly outweighed the additional costs to pavement markings.

      iii.   Analysis from the current interstate data indicates that there may be benefits to allowing contractors to focus on the interstate roads, thus freeing up district DOT crews to spend more time on non-interstate roads.

g.   American Association State Highway Transportation Officials (AASHTO) Signal phasing and timing (SPaT) challenge

      i.   Website: https://transportationops.org/spatchallenge

      ii.   Dedicated Short Range Communication (DSRC) service radios were installed in four cities in Iowa (near Dubuque, Iowa City, Des Moines, Ames). This installation required programming at each of the intersections, connecting to the current controllers, and a signal indication inside a vehicle equipped with a receiver. A demonstration was successful at showing the capabilities. Unfortunately, recent bandwidth issues have led to these devices being turned off. A lot of agencies are moving towards Cellular Vehicle-to-Everything (C-V2X).

      iii.   Neal attended a recent AASHTO Committee of Transportation Systems Operations (CTSO) meeting. He found it interesting with how states are addressing the bandwidth differently. Some are moving towards C-V2X, others are focusing on bus pre-emption, snowplow pre-emption, while others are on a pause to see how things work out. Iowa is probably in a pause. Neal thinks leadership from federal highway on a strategy on how to proceed is important.

h.   Automated Traffic Management System (ATMS) Incidents & Work Zones

      i.   Emergency incidents notifications (EIN) are occurring all the time in Iowa. These notifications are distributed in email form which can make it difficult to get a clear picture of where things are occurring. To address this challenge, an online dashboard was developed to allow users to view EIN updates in real-time while being able to visualize it on a map. The dashboard allows the user to categorize, filter, and/or retrieve specifics about incidents or incident types.

i.   Connected Vehicle (CV) data related studies

      i.   InTrans has been collecting AV and CV data for almost a full year. The data being collected includes vehicle movement data (hard braking, seatbelt use, windshield wiper use) and driver event data (journey (key on to key off), hard braking or harsh acceleration, speed thresholds, and seatbelt use). This data can be used for addressing crash issues, speed, performance, etc.

      ii.   A recent analysis was performed using the CV data for seatbelt usage for postal codes in Iowa. The CV seatbelt usage data for one of the postal codes was 57.8%, which is well below Iowa's survey seatbelt data which is usually in the nineties. As more CV enrich the dataset, analysis can be used to identify potential issues and/or communities that may need additional education.

iii. CV data has been used to investigate drivers' performance at signalized and unsignalized intersections. At signalized intersections, data can be captured about how drivers enter an intersection, the likelihood of running a red light, traffic density trends, etc. CV data has opened new opportunities for analysis at unsignalized intersections which is important since unsignalized intersections often lack infrastructure like cameras or power.

j. Discussion
   i. Question from Daniel Yeh about whether there have been thoughts about incorporating the real-time data to notify oversize and overweight loads. Adam clarified: Have you ever overlaid some of the lane closures information with authorized/oversized/overweight routes?
   ii. Neal: There have been some initial conversations, but we haven't gone much farther. Several possibilities are available.
   iii. Skylar Knickerbocker: The added value of the WZDx system is that the arrow board data can identify the actual work zone location, not the estimated start location along with being able to provide that data in a standard format to consumers who want it. One discussion we have had lately with a freight company of trying to get the data into their vehicles directly. That company is working on getting the WZDx integrated into their system so they could get the feed directly.

   When it comes to integration, Iowa and a handful of other states are producing WZDx feeds, each at different levels of completeness across the state. Iowa's WZDx feed is available for the entire state regardless of whether it is verified or unverified. The data consumer side is mixed. [One network](#) is integrating and consuming data from variety of states and producing it for some states. The one trucking company they we have been talking to are currently in the process of integrating it but are working through some other issues.

5. Subcommittee Updates and Funding Opportunity – Dylan Mullenix, Adam Shell, Colonel Fulk
   a. [Policy & Legislation](#)
      i. The Policy & Legislation subcommittee last met in mid-May of this year and heard a presentation by Dr. Laura Sandt that focused on identifying vulnerable populations and their transportation needs and the benefits AVs could bring to these communities. Updates from the CAT in Planning Working Group, the DEI Working Group, and the AT Policy working group were provided. The [AT Planning Considerations](#) document was finalized and published in June 2022.

   b. [Infrastructure Readiness & Economic Development](#)
      i. The Infrastructure Readiness and Economic Development subcommittees held a joint meeting in late May of this year and heard a presentation from Brittney Kohler from the National League of Cities and Towns. The presentation highlighted what is needed for successful policy regarding AVs, the NLC's recommendations to congress regarding AVs, the upcoming Manual on Uniform Control Devices (MUTCD) and the grant programs "Safe Streets and Roads for All" and NLC "Safety First challenges" that are available for possible research with AVs. The subcommittees will continue to align and engage together to develop ideas to pursue.

   c. [Public Safety & Enforcement](#)
      i. The Public Safety & Enforcement subcommittee met in late June of this year and heard a presentation by Dan McGehee at the University of Iowa, National Advanced Driving Simulator. The presentation highlighted work that NADS performed for the National Safety Board (NTSB) that looked at crash

reconstructions with ADAS as well as Tesla crashes. Col. Fulk informed the council about his involvement with focus group with Virginia Tech Transportation Institute (VTTI) and the International Association of Chiefs of Police (IACP) and provided updates for the AV Crash Data working group and the most recent AAMVA Annual Conference. Col. Fulk mentioned that a collaborative meeting will be held at NADS with Dan McGehee, Brian Ursino (AAMVA Law Enforcement Director), and Toni Smith (IDOT).

    ii. Discussion about advanced data from the EDR
        a) Dan McGehee: Consensus standards can take several years to put together.
        b) Rob Heilman: EDR falls under the Federal Motor Vehicle Safety Standards (FMVSS) which can be laborious to change it. OEMs are not wanting to change the information in EDR. They are also not fans of the SGO. It is very difficult to understand which ADAS features were or were not engaged at the time of the incident. The OEM have the data, however it can be challenge to extract from them.

6. Wrap-Up – Adam Shell
   a. Upcoming Events (presented by Partners for Automated Vehicle Education (PAVE))
      i. [What Could AVs Mean for Black Americans? Part 2](#) (Virtual)
      ii. [CAVs Today, Emerging Trends and getting to Market](#) (Virtual)
   b. Next Meetings
      i. Target late 2022/early 2023 for upcoming ATC subcommittee meetings
   c. Press Clippings
      i. Bi-weekly update via email
      ii. Sign up here: https://iowadrivingav.org/clippings.aspx
   d. Adjourn

IOWA ADVISORY COUNCIL ON AUTOMATED TRANSPORTATION

Council Meeting

October 5, 2022

MEETING AGENDA

1. **Welcome** – Scott Marler, Iowa DOT Director and ATC Chair (5 minutes)

2. **Mobility n.0, The Transportation System of the Future** – Robert Heilman, Director, Highly Automated Systems Safety Center of Excellence, U.S. DOT (45 minutes)

3. **Safe Testing and Deployment of Vehicles Equipped with Automated Driving Systems: Edition 3 Guidance Updates** – Paul Steier, Director of Vehicle Programs, American Association of Motor Vehicle Administrators (25 minutes)

4. **ISU CAV/AT Readiness Research Update** – Neal Hawkins, Associate Director, Institute for Transportation, Iowa State University (25 minutes)

5. **Q2 2022 Subcommittee Meeting Updates** – Subcommittee Chairs (15 minutes)
   a. Policy & Legislation
   b. Economic Development & Infrastructure Readiness
   c. Public Safety & Enforcement

6. **Wrap-up** – Adam Shell (5 minutes)
   a. Upcoming Events
   b. Next Meetings
   c. Adjourn

WELCOME

Scott Marler, Iowa DOT
Director & ATC Chair

WELCOME

Council Members

- Iowa Department of Transportation

- Iowa Department of Public Safety

- Iowa Economic Development Authority

- Iowa League of Cities

- Des Moines Area MPO

- Iowa Department of Public Safety

- Iowa Motor Truck Association

- Des Moines Area Community College

- Technology Association of Iowa

- Iowa Association of Business and Industry

- Associated General Contractors of Iowa

- Iowa Communications Network

- Iowa Department of Revenue

- Iowa Public Transit Association

- Iowa Bicycle Coalition

- Freight Advisory Council

- Iowa Insurance Division

- Iowa State Association of Counties

- Iowa Department of Agriculture & Land Stewardship

- Iowa Department of Natural Resources

- National Advanced Driving Simulator, University of Iowa

- Institute for Transportation, Iowa State University

- American Association of Motor Vehicle Administrators

- Federal Highway Administration, Iowa Division

- Federal Motor Carrier Safety Administration

- National Highway Traffic Safety Administration

- Iowa Senate

MEETING AGENDA

1. **Welcome and introductions** – Scott Marler, Iowa DOT Director and ATC Chair (5 minutes)

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5. **Q2 2022 Subcommittee Meeting Updates** – Subcommittee Chairs (15 minutes)

   a. Policy & Legislation

   b. Economic Development & Infrastructure Readiness

   c. Public Safety & Enforcement

6. **Wrap-up** – Adam Shell (5 minutes)

   a. Upcoming Events

   b. Next Meetings

   c. Adjourn

HOUSEKEEPING ITEMS

- Please mute your audio!

- If available, encourage the use of video when speaking

- Please use the chat box and raise hand features to ask questions or make a comment

- Recorded Meeting

- Disable Virtual Private Network (VPN) connections

US DOT STRATEGY

Robert Heilman– Director, Highly Automated Systems Safety Center of Excellence

(slides omitted)

SAFE TESTING AND DEPLOYMENT OF VEHICLES EQUIPPED WITH AUTOMATED DRIVING SYSTEMS: EDITION 3 GUIDANCE UPDATES

Paul Steier – Director of Vehicle Programs, American Association of Motor Vehicle Administrators
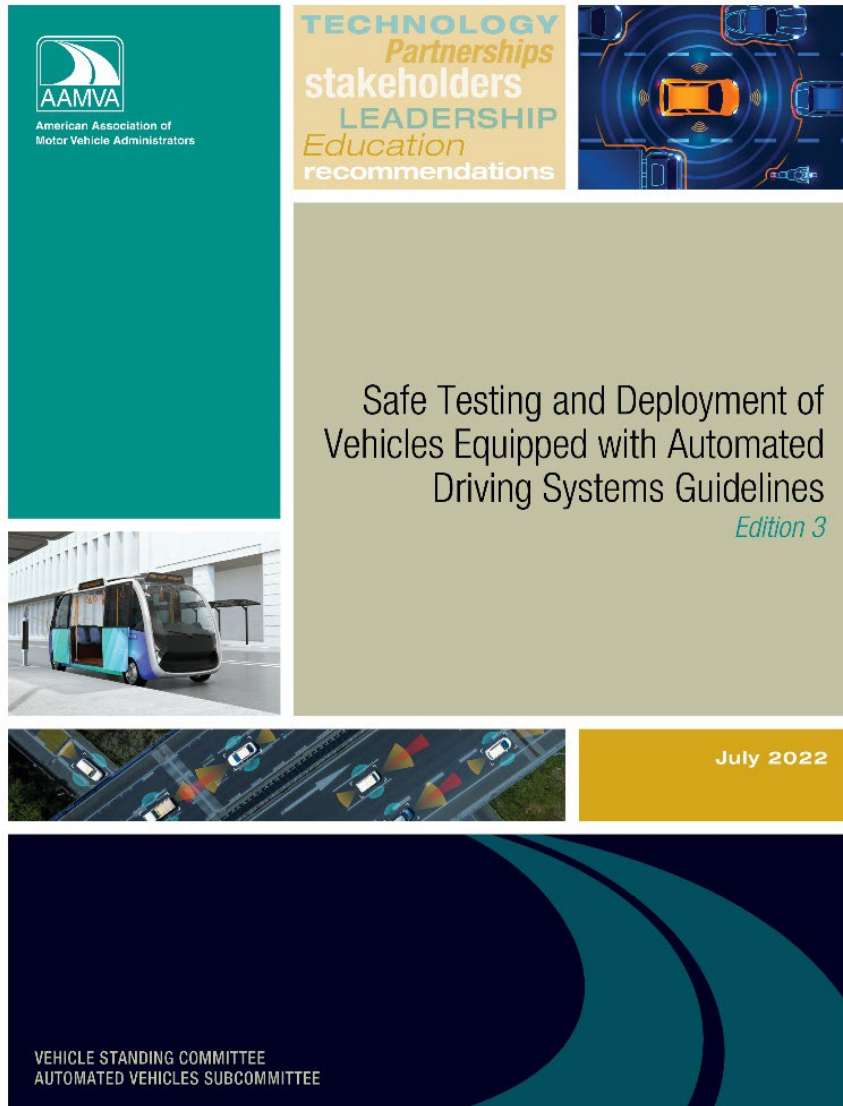
Updated from Edition 2 – Published October 2020

PURPOSE

➢ Assist Motor Vehicle Agencies and Law Enforcement
   - Guidance for Oversight of AV Testing and Deployment

➢ Support Stakeholder Engagement

➢ Provide Recommendations
   - Regulatory Uniformity and Consistency

American Association of Motor Vehicle Administrators

AAMVA.org/vehicles
Safe Testing and Deployment of Vehicles Equipped with Automated Driving Systems Guidelines

Main Chapters: Considerations for Vehicle, Driver Licensing, Law Enforcement, and Other

Vehicle

➤ Brand replaced with designation

➤ Include SAE level of automation

➤ On-Road Testing: require minimum liability insurance coverage

➤ Vehicle Inspections: do not include ADAS/ADS components

American Association of Motor Vehicle Administrators

Driver Licensing

➢ Encourage vehicle dealers to communicate with drivers

➢ Driver license examiners – use AAMVA guidelines on definitions and terminology

➢ Recommend use of the AAMVA's *Guidelines for Testing Drivers in Vehicles with Advanced Driver-Assistance Systems*

➢ Provide behind-the-wheel instruction on use of ADAS

➢ Keep current on new technology

Law Enforcement

➢ Require compliance with NHTSA crash reporting requirements

➢ Encourage strengthening distracted driving laws, use *AAMVA's Distracted Driving White Paper.* Promote public awareness.

➢ Agency fleet managers need to be knowledgeable of technology

➢ Traffic laws should reflect SAE definitions and be kept current

➢ Support legislation - allowing remote driver to be cited for violations and nondriving violations, and registered owner to be cited

- ➤ Commercial Motor Vehicle Automation - Guidance

- ➤ Rental Vehicles

- ➤ Recommend Minimum Elements for a Law Enforcement Interaction Plan

- ➤ Expand Stakeholder Engagement

- ➤ Expand Collaboration with Jurisdictions
  - Public Education

- ➤ Lessons Learned

Questions

Paul Steier
Director, Vehicle Programs
AAMVA

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703-270-8932

ISU CAV/AT READINESS RESEARCH UPDATE

Neal Hawkins– Associate Director, Institute of Transportation at Iowa State University

Institute for Transportation

Automating the Audible Attenuator Warning System

Marking Material

Wet Reflective Media

70 mph

9 mph

WET PAINT

MACK

ET-6770

WZDx Grant/Improved Work Zone Data Feed Update

- WZDx **4.0** Iowa produced through Qfree
- Arrow board data associated to WZ, "Actual" shows up as Verified and shows up as the start of the WZ in 511

Smart Arrow Board

- 4 mfg's approved
- Looking to expand to connected temp traffic signals
  - Similar to Smart Arrow Board Protocol (national)

Iowa Truck Parking Information and Management System (TPIMS)

44 truck parking sites (rest areas and truck stops)
- Occupancy sensors, or
- Radar sensors
- Cameras

Statewide Pavement Marking Efforts

FY24 budget
High-Build
ILDOT Study

The Problem: Nighttime vs. Daytime Fatality Rates

Fatality Rate per Million VMT by Hour (2015-2019)
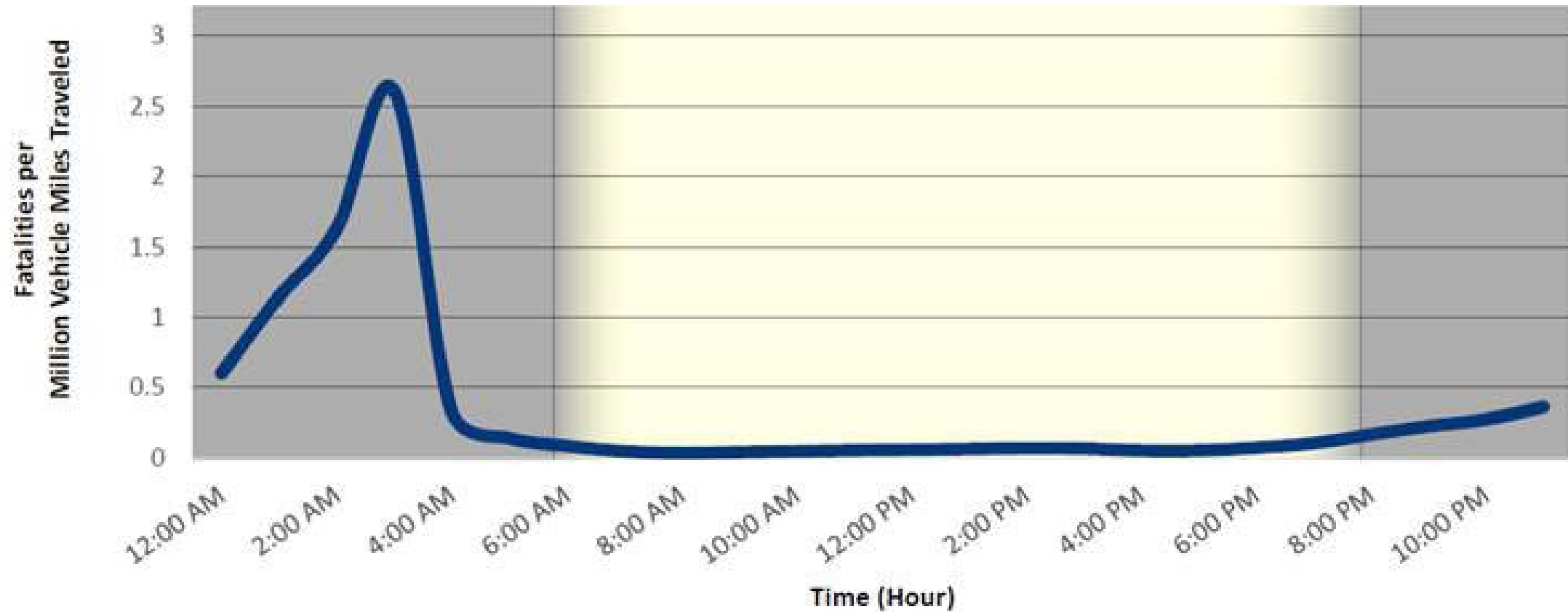
Abstract

Roadway departure crashes are a leading cause of fatal and severe injury crashes on high-speed roadways. **The objective of this project was to evaluate the safety benefits of contrast pavement markings and to develop a benefit-cost analysis tool for use in project selection**.

Exec Summary

- Findings suggest a reduction in roadway departure crashes (RwD) crashes on all roadway types and severity levels
- **The findings suggest contrast pavement markings reduce RwD crashes between 5% and 29%**
- Based on the findings, contrast pavement markings are believed to be effective at reducing RwD crashes on the three high-speed roadway configurations tested—four, six, and eight lanes —in urban/suburban areas. They provide crash reductions resulting in economic savings related to **crash costs that greatly outweigh the additional cost of contrast pavement markings.**
- The developed benefit-cost analysis tool can be used to support the decision-making process by providing a quantitative analysis in dollars regarding economic savings due to contrast pavement markings.

CIVIL ENGINEERING STUDIES
Illinois Center for Transportation Series No. 22-010
UILU-ENG-2022-2010
ISSN: 0197-9191

Crash Modification Factors for
Contrast Pavement Markings on
Light-Colored Pavement

Prepared By
Michael Williamson
Sumit Singh
Indiana State University

Research Report No. FHWA-ICT-22-010

A report of the findings of
ICT PROJECT R27-223
Crash Modification Factors (CMFs) for Contrast Pavement
Markings on Light-Colored Pavement
https://doi.org/10.36501/0197-9191/22-010

Illinois Center for Transportation
August 2022

SPaT

DSRC
CV2X
CTSO

ATMS Incidents and Work Zones

- Dashboard is functioning and updating in real time.
- Provides map and additional details beyond just EIN email notifications

For Iowa DOT/InTrans, the "**Wejo Data**" means:

☐ Vehicle Movement Data

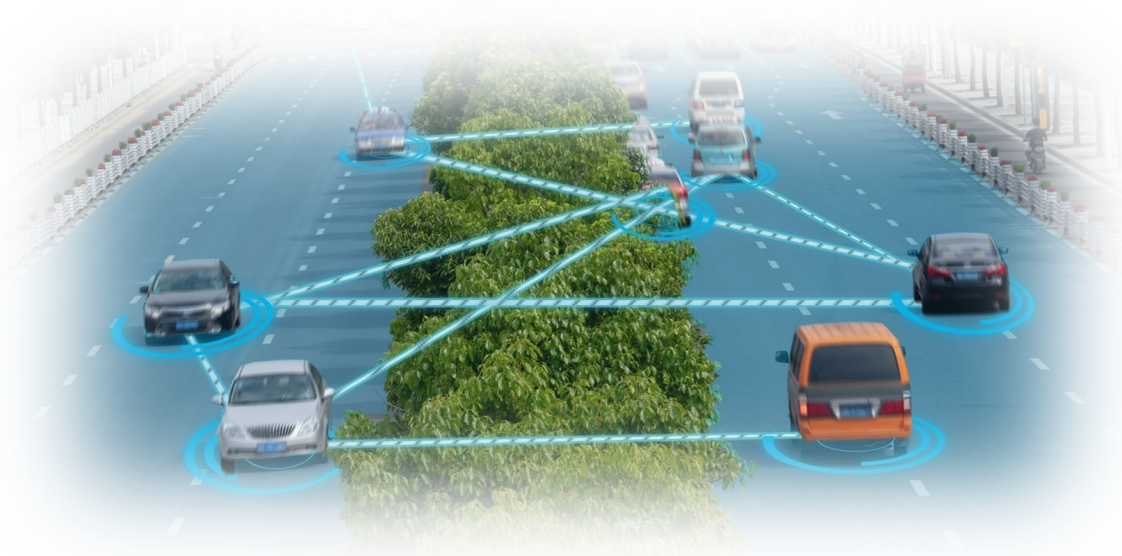a collection of vehicle telemetry data, captured approximately every three seconds from vehicles

☐ Driver Event Data

a collection of driver behaviors throughout their journey (where harsh braking or speeding occurs, what routes, when the journey ends, etc.)

Image Source: Monopoly919/stock.adobe.com

Image Sources: ambrozinio/stock.adobe.com; Maxim P/stock.adobe.com

IOWA STATE UNIVERSITY
Institute for Transportation

IOWA DOT

InTrans is downloading the Wejo data daily.

JSON format, with download sizes per day and data type shown on the graph here.

Data coverage is statewide.

Available from:
Oct. 1, 2021
continuing until:
Sept. 30, 2022

REACTOR Lab **daily download** of Wejo data
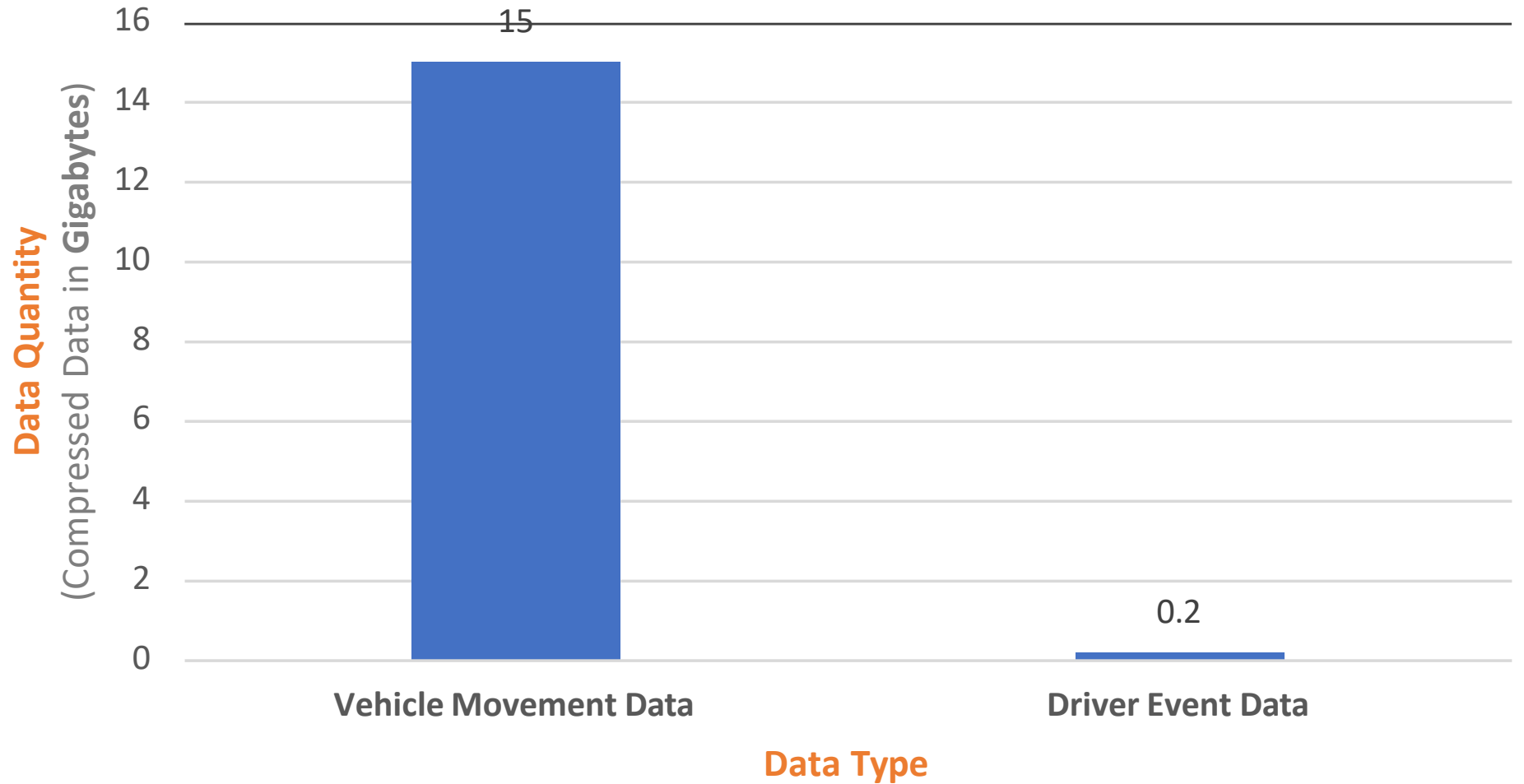
Wejo
Driver Event Data

Categories

Event Types

Event name	Description
Journey	Recorded when the ignition status changes to on or off
Acceleration	Recorded when car detects a hard braking or harsh acceleration event
Speed Threshold	Recorded when the car detects a speed above or below threshold event
Seatbelt	Recorded when the car detects the seatbelt becoming latched or unlatched

Seatbelt Usage in Iowa

Seatbelt Percentage
0.0%   100.0%

Postalcode: 51551
Number of Journey's: 13,437
Seatbelt Percentage: 57.8%

© 2022 Mapbox © OpenStreetMap
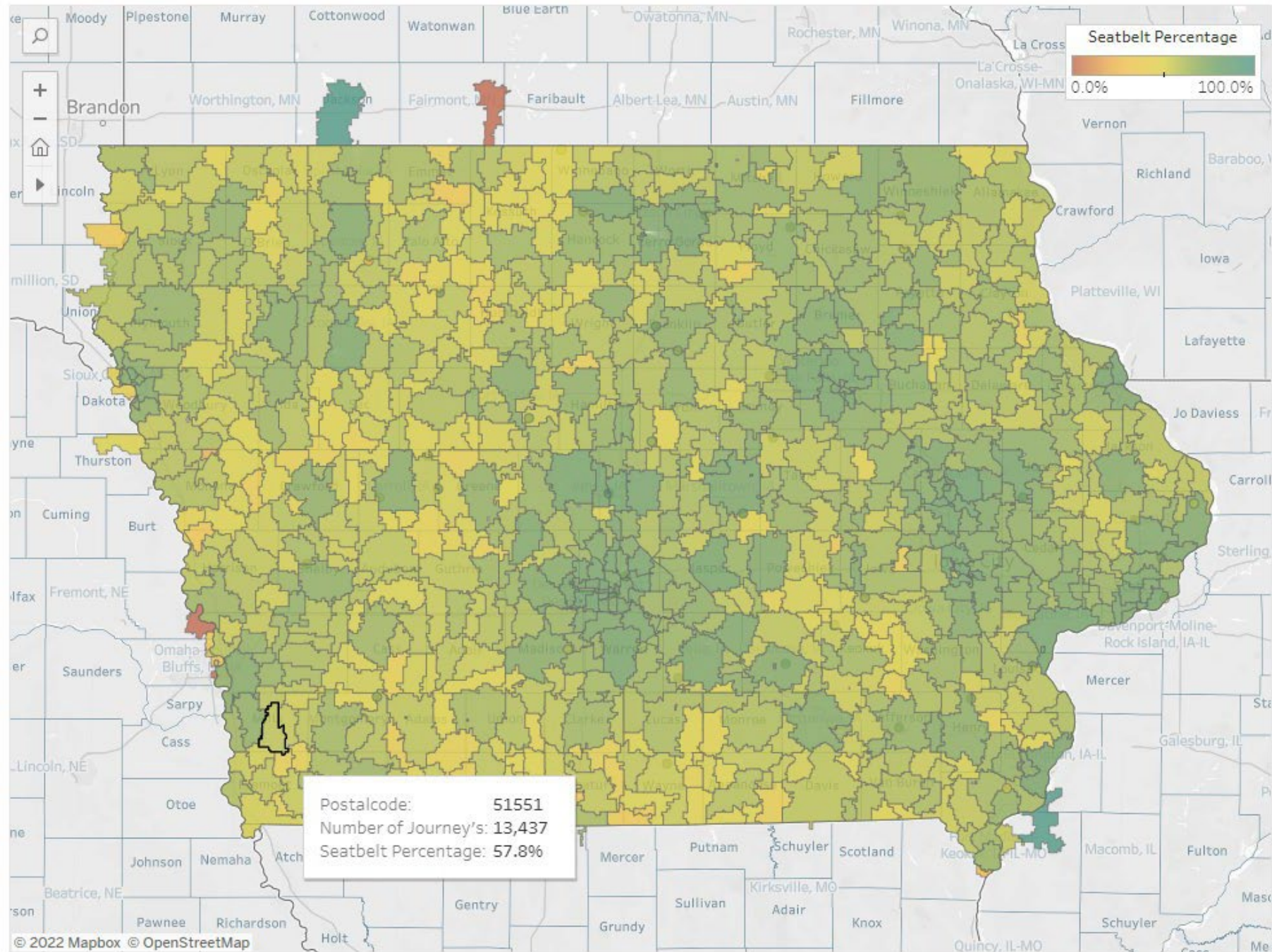
Driver Reaction to Start of Yellow

Can the data be used to evaluate the likelihood of red light running, or other such metrics?

Start by identifying vehicles that pass through the intersection by finding points within each of these areas
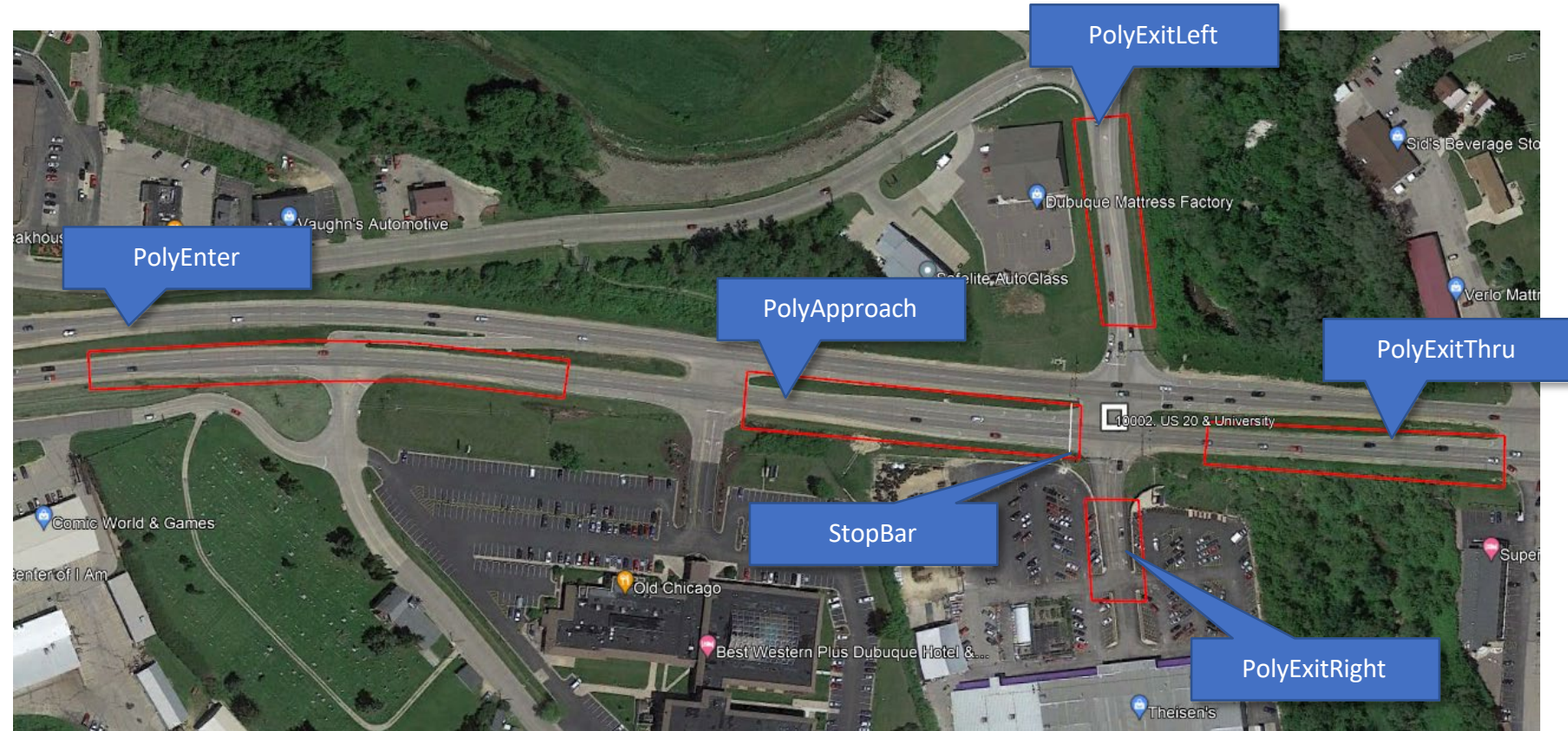
Relating the trajectory data to signal status...

Vehicles that do stop

Vehicles that do not stop

Vehicles that might stop
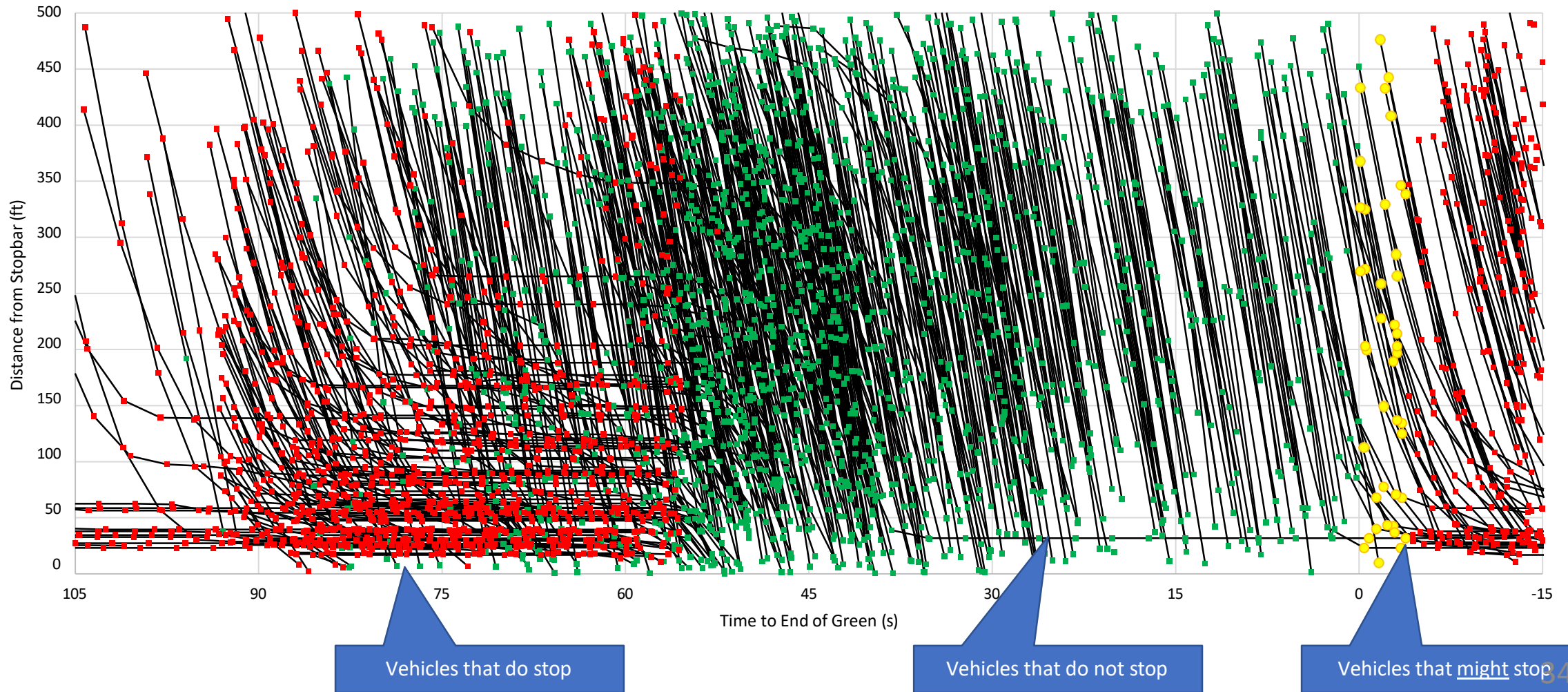
Two-Way Stopped Control Intersection (Grand Ave and 16th Street)
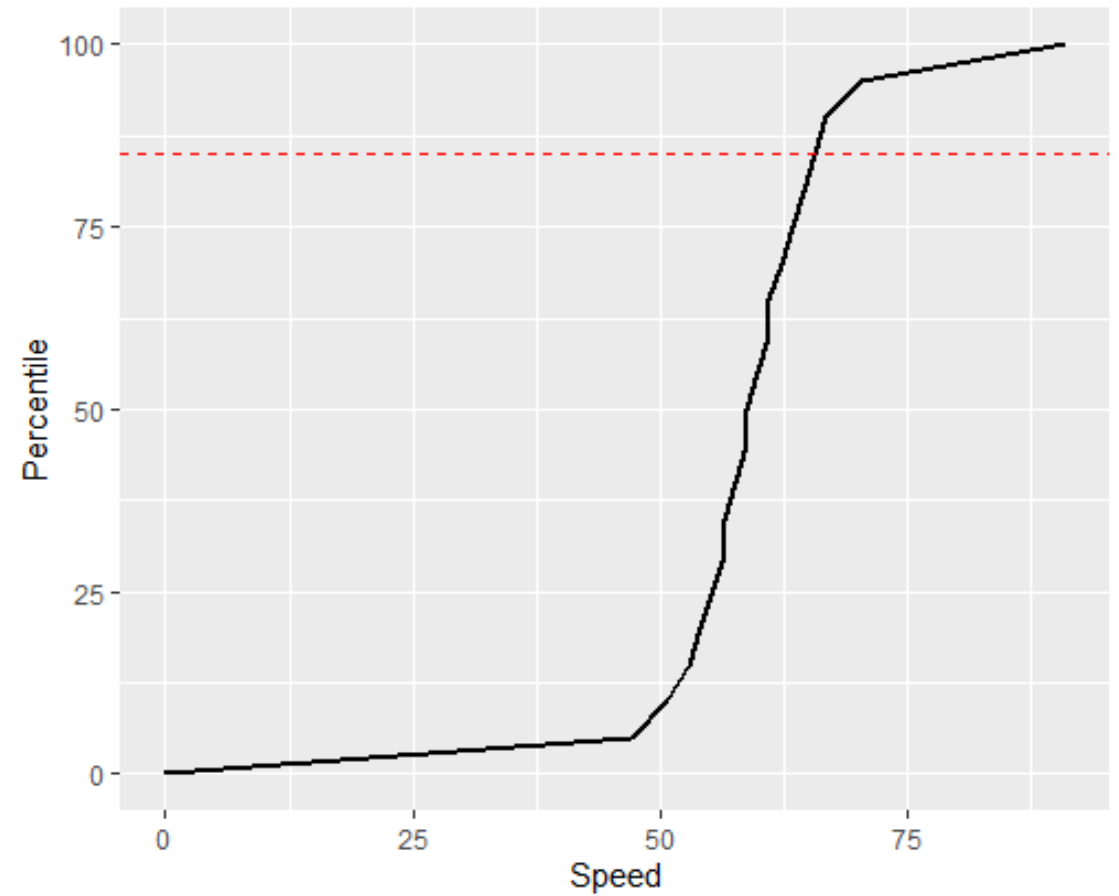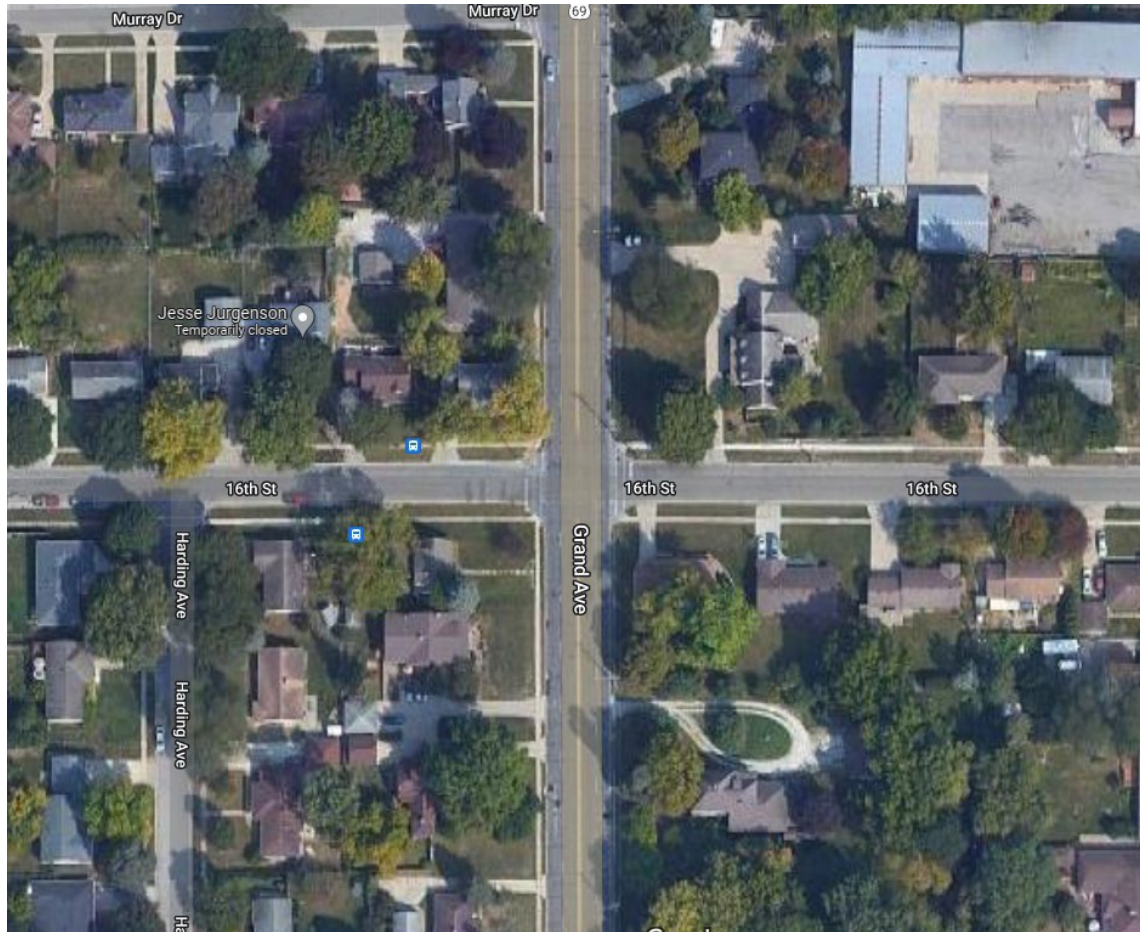
Delay Based LOS: Grand and 16th
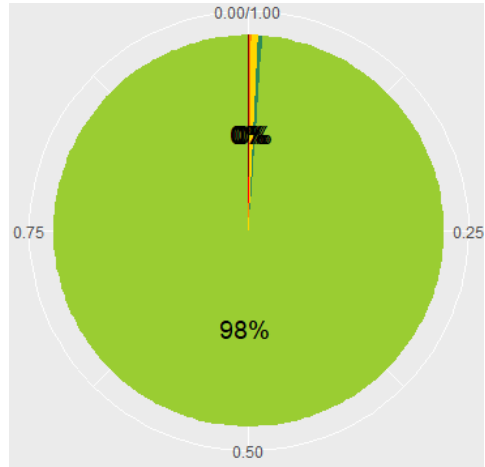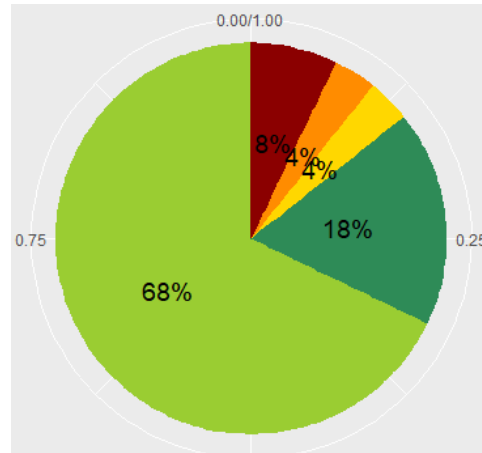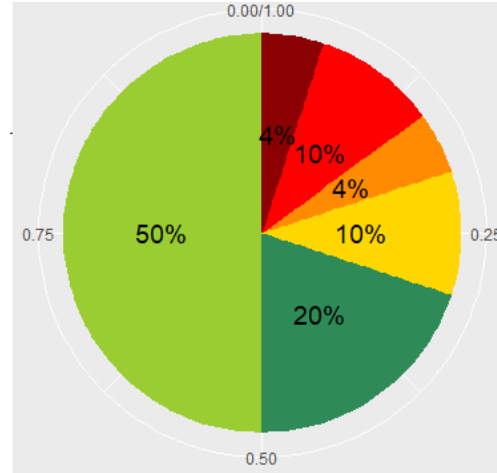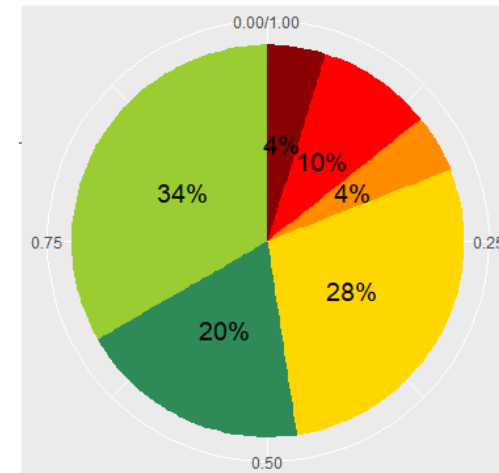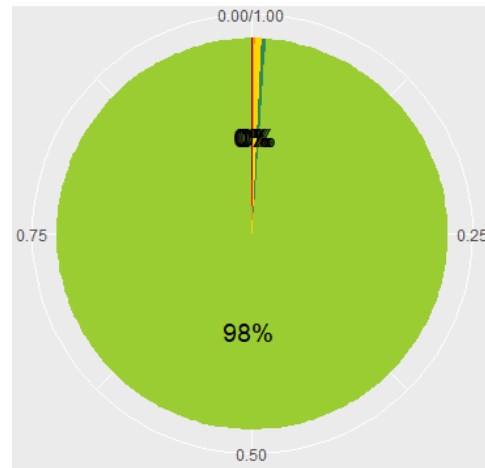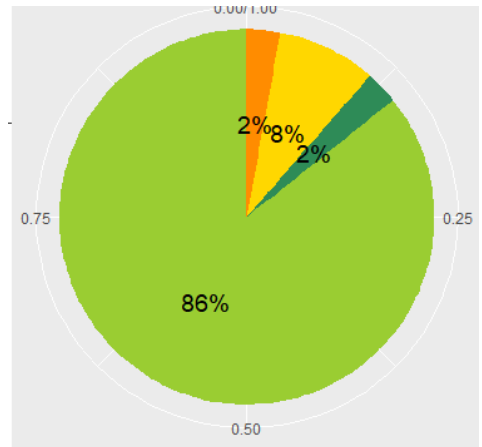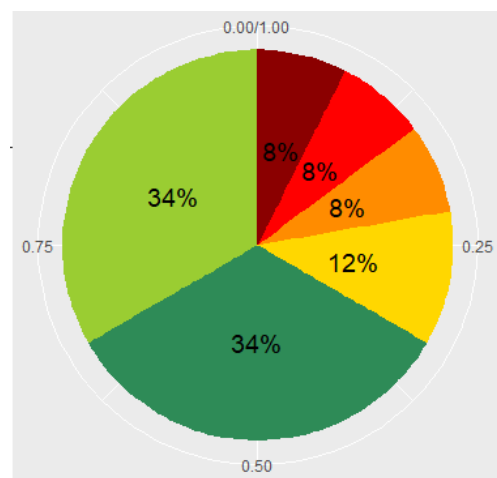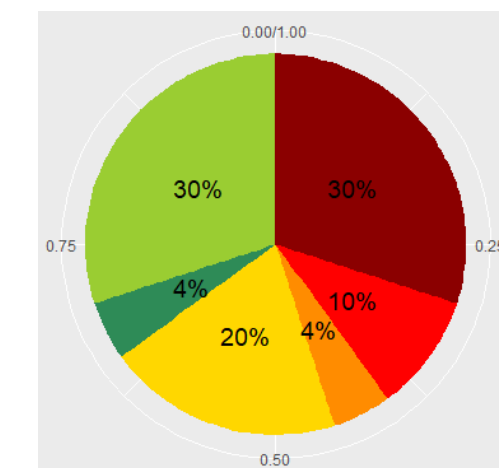
Institute for Transportation

Q2 2022 SUBCOMMITTEE MEETING UPDATES

Subcommittee Chairs

- Dylan Mullenix, Policy & Legislation

- Erin Mullenix, Infrastructure Readiness

- Rick Petersen, Economic Development

- Col. Nathan Fulk, Public Safety & Enforcement

POLICY & LEGISLATION – MAY 17, 2022

Dylan Mullenix, P&L Chair

- **Mobility Justice in AV Planning and Community Readiness** - *Dr. Laura Sandt, Senior Research Associate, University of North Carolina Safety Research Center*

- **P& L Work Plan & Tactical Action Updates**

  - CAT in Planning Working Group

  - DEI Working Group

  - AT Policy Update

    - Occupant Protection for Vehicles with Automated Driving Systems

    - New Car Assessment Program (NCAP)

    - Congressional Letter on AV Implementation

- **Advanced Technologies Project & Opportunities Discussion**

  - Iowa Public Transit Association (public transportation, workforce)

POLICY & LEGISLATION SUBCOMMITTEE

AUTOMATED TRANSPORTATION PLANNING CONSIDERATIONS

Iowa Advisory Council on Automated Transportation
Iowa Department of Transportation

IOWADOT   May 2022

Automated Transportation Planning Considerations

ECONOMIC DEVELOPMENT & INFRASTRUCTURE READINESS – MAY 24, 2022

Erin Mullenix, IR Chair & Rick Petersen, EcDev Chair

- **Autonomous Vehicles Navigating to American Cities & Towns** - *Brittney Kohler, Legislative Director, Transportation & Infrastructure Service, National League of Cities*

- **Updated Manual on Uniform Traffic Control Devices (MUTCD)**

  anticipated May 15, 2023

- **Advanced Technology Project and Opportunities Discussion**
  - Slow speed maintenance operations (e.g., ATMA)
  - Technology solutions to collect or validate transportation data
  - Driver behavior in work zones
  - Statewide Traveler Information & Work Zones/Operations real-time data
  - Expanded pavement markings
 - Smart city technology partnership opportunities
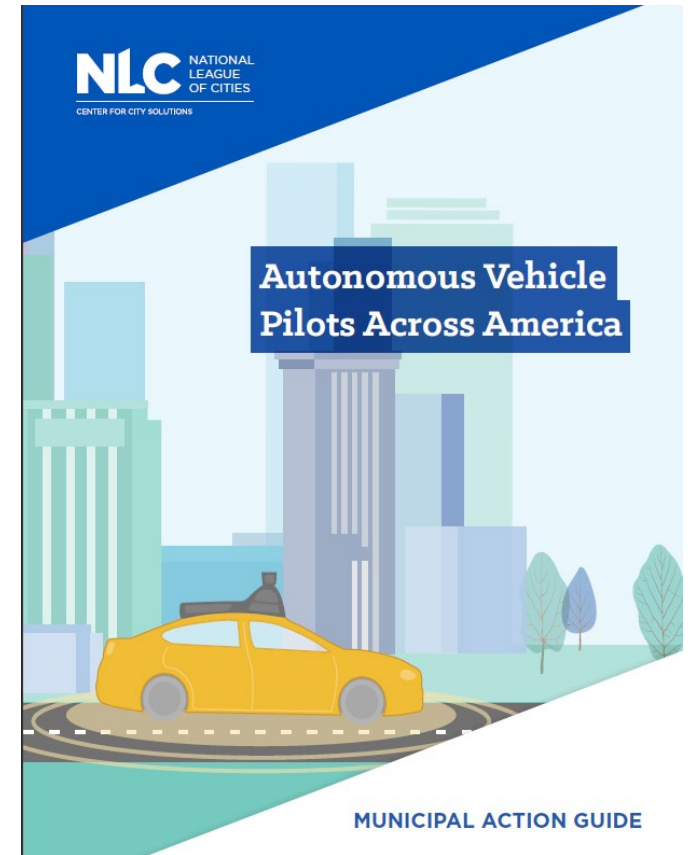
Autonomous Vehicle Pilots Across America

PUBLIC SAFETY & ENFORCEMENT – JUNE 29, 2022

Col. Nathan Fulk, PS&E Chair

- **Reconstruction & Visualization of Next Generation Automated Vehicles** - *Dan McGehee, Director, National Advanced Driving Simulator, University of Iowa*

- **PS&E Work Plan & Tactical Action Updates**
  - VTTI & IACP engagement
  - AV Crash Data Working Group
  - AAMVA Annual International Conference

- **Advanced Technology Project and Opportunities Discussion**
  - Laws should address ADS vehicles interactions with VRU
  - Opportunities with SAE On-Road Automated Driving committee
  - Speed feedback signs on primary highway systems
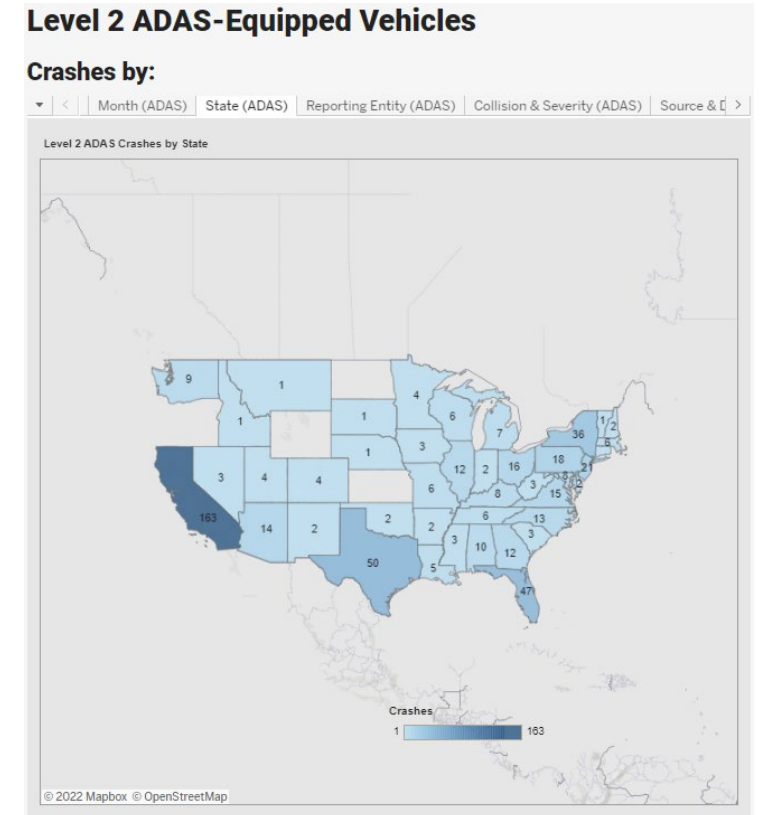
Standing General Order on Crash Reporting

WRAP-UP

- **Upcoming Events**
  - [What could AVs mean for Black Americans? Part 2](#) – (Virtual)
    Partners for Automated Vehicle Education (PAVE)
    Wednesday, October 26th 1:00 - 1:30 pm CT

  - [CAVs Today, Emerging Trends and getting to Market](#) (Virtual)
    Partners for Automated Vehicle Education (PAVE)
    Wednesday, November 2nd 1:00 - 3:00 pm CT

- **Next Meetings**

  - Target late 2022/early 2023 for upcoming ATC subcommittee meetings

- **Press Clippings**

  - Bi-weekly update via email
  - Sign-up here: https://iowadrivingav.org/clippings.aspx

- **Adjourn**

THANK YOU