MEETING NOTES
Iowa Advisory Council on Automated Transportation (ATC)
Public Safety & Enforcement (PS&E) Subcommittee Meeting
Wednesday, February 15, 2023
2:00-3:00 pm CT

Action Items:
- Complete the Iowa SHSP stakeholder survey: https://www.surveymonkey.com/r/IowaSHSP

1. **Welcome and introductions** – Colonel Nathan Fulk, Public Safety and Enforcement Subcommittee Chair
   a. Attendees – 21 attendees
      - Nathan Fulk – Iowa State Patrol (PS & E Chair)
      - Chris Wiacek – National Highway Traffic Safety Administration
      - Chou-lie Cho – National Highway Traffic Safety Administration
      - Michael Current – Iowa State Patrol
      - Catherine Lucas – Department of Public Safety
      - Meredith Mitts – AAA The Auto Club Group – Minnesota/Iowa
      - Neal Hawkins, Jonathan Wood – Iowa State University (InTrans)
      - Dan McGehee, Omar Ahmad, Cherie Roe, Michelle Reyes – University of Iowa, Driving Safety Research Institute (DSRI)
      - Tom Brunn, Larry Grant, Josh Halterman, Dennis Kleen, Peggi Knight, Andy Lewis, Hossein Naraghi, Toni Smith, Adam Shell – Iowa DOT

   b. New members
      i. Larry Grant – Safety Planner, Iowa DOT
      ii. Jan Laaser-Webb – Traffic Safety Engineer, Iowa DOT
      iii. Lt. Mike Current – Planning, Technology & Technology Homeland Security, Iowa State Patrol
      iv. Sgt. Chuck McNally – Planning, Technology & Technology Homeland Security, Iowa State Patrol

2. **Real-World ADAS Effectiveness: Results from the Partnership for Analytics Research in Traffic Safety** – Chris Wiacek, PARTS ADAS Effectiveness Working Group Co-Chair, National Highway Traffic Safety Administration
   a. Chris has worked for over 20 years at the National Highway Traffic Safety Administration (NHTSA) enforcing Federal regulations, developing safety standards, and conducting traffic safety research. Currently, Chris works for NHTSA's National Center for Statistics and Analysis and is the Co-Chair of the ADAS Effectiveness Working Group for the Partnership for Analytics Research in Traffic Safety (PARTS).
   b. PARTS is a public-private partnership between USDOT, NHTSA, and 9 auto makers (Ford, General Motors, Honda, Mazda, Mitsubishi. Nissan, Stellantis, Subaru, Toyota) which began in 2018. This group leverages the resources within the agencies and the automakers to gain real-world insights to evaluate ADAS technologies. The MITRE corporation is the independent third party that manages the partnerships, facilitates discussions, and is the data trust that creates the dataset that is used for analysis.
   c. Real-world Effectives of Model Year 2015-2020 Advanced Driver Assistance Systems Final Report was published November 2022. This presentation does not include Ford in the results as they only recently joined PARTS. The analysis addressed two research questions: What is the real-world effectiveness of ADAS features in avoiding system-relevant crashes? What factors influence the ADAS feature effectiveness? Front-to-rear crashes focused on the performance of forward collision warning (FCW) and automated emergency braking (AEB). Frontal crash with a non-motorist examined the performance of pedestrian AEB. Single vehicle road departure crashes focused on the performance of lane departure warning (LDW), lane keeping assistance (LKA) and lane centering assistance (LCA).
   d. The analysis examined 2.4 million crash-involved study vehicles. NHTSA provided crash report data (2016 – 2021) from 13 different states (including Iowa) with the 17-digit Vehicle Identification Number

(VIN). The OEMs provided vehicle-built data for roughly 47 million passenger vehicles encompassing 93 models (model year 2015 - 2020) in 7 vehicle segments. MITRE linked the datasets for the analysis so that only vehicles equipped with the features were included.

e. Study variables included in the analysis: driver (age, alcohol/drugs, distraction, sex), environment (weather, road surface condition, light condition, roadway alignment, intersection), vehicle (sales type (fleet vs retail), vehicle segment, vehicle model year), and crash information (state, crash year, speed limit). Used a quasi-induced exposure and logistics regression to estimate the effectiveness.

f. A few caveats with interpreting the data. This examination focused on crash avoidance, not crash mitigation. It includes whether a vehicle was equipped with a given ADAS feature at the time of manufacture, not whether the driver disabled or activated the feature at the time of the crash. It does not directly account for different driving behaviors and their effect of ADAS effectiveness. It does not look at the variability among manufacturers.

g. <u>Front-to-rear effectiveness:</u> There was a 49% reduction in rear-end crashes when a vehicle was equipped with both AEB and FCW. Confidence internals were tight and narrow. Injury crashes saw a reduction of 53%. Serious (fatalities, incapacity) crashes saw a reduction of 42%. Inclement weather showed robust effect with only a slight decline in reduction. Drivers aged 75 and older saw a lower reduction rate than other aged drivers at only 34%. An encouraging result occurred with drivers 25 and younger which showed a reduction around 50%. When looking at injury crashes, there was a slight decline with environmental changes, however they remained around 45%.

h. <u>Pedestrian AEB</u>: Unfortunately, this analysis was unable to detect an effect. This is likely due to the newness of the technology and the small sample size. The next phase of the analysis should be more useful as the dataset will include additional years of data and data from Ford.

i. <u>LDW, LKA, LCA</u>: LDW alone did not show statistical significance with reducing single road departure crashes. Vehicles equipped with LDW, **and** an active lane keeping component (LKA or LCA) reduced single road vehicle departures crashes by approximately one-tenth. As with the Pedestrian AEB, these systems are newer. As more data becomes available, more in-depth analysis can be performed to identify effectiveness with driver and environmental variables.

j. One of the real incentives for the automakers is that they will get a benchmark for all the vehicles they are providing in the study. Automakers will know if Model A or Model B is performing to the level they are expecting. They can also identify if the changes they make to their systems is addressing the problems as intended.

k. The next phase will build upon the lessons learned from the current analysis. There will be a continued effort to identify which systems are more robust, and deeper dives into the data to identify what is making some systems better than others. As more OEMs are adding telematics to vehicles, PARTS will continue exploring what telematics are available and how to use the telematics to do more near real-time analysis. The idea would be that if a crash occurred, the telematics from the crash would go to the OEM, who would then share it with MITRE corporation so that near real-time analysis could be done. Telematics provides the opportunity to explore what is going on at a vehicle level (was the ADAS on, did it work within the parameters, where there mitigating circumstances, whether it was travelling outside ODD, etc.) not just whether the vehicle was equipped with ADAS. PARTS continues to improve methodologies and hopes to expand the partnership to include all automakers. With the addition of Ford, PARTS partners make up roughly 80% of US light vehicle sales.

  i. Col. Fulk remarked about how this research applies to several safety initiatives in Iowa related to reducing crashes and fatalities. He expressed interest in working with PARTS or being informed when more telematics information becomes available (how do we get access to the data, where's it at). He thinks it could be beneficial with piecing ADAS crashes together.

  ii. Chris: we don't know what is happening at the vehicle level. That telematics piece or the data that you might get from an EDR are invaluable to understanding how these systems are working. You can have a crash, but unless you understand the circumstances and what the vehicle is doing, the system might have worked as designed, but still couldn't avoid the crash 100%.

l. Dan McGehee thought it might be useful to see direct comparisons with the Insurance Institute for Highway Safety (IIHS) data. Dan was interested in seeing the IIHS data shown in a similar way as the PARTS data, especially with regards with driver age. Note: PARTS sited three IIHS publications in their report [1].

    i. Chris - AEB is a well-established technology with many vehicles on the road. This large dataset allowed us to be able to get a signal of the effectiveness quickly with high confidence. Even manufactures in the designing of their systems converged quickly to best practices. Pedestrian AEB is different because of the small sample size. The results in IIHS for pedestrian AEB could be highly sensitive to the make, model, years of the vehicles selected for the analysis whereas the PARTS included 70% of the industry. With so much variability, particularly with early systems of pedestrian AEB, it is hard to determine if either PARTS or IIHS is really telling the true picture of how effective these systems can be.

3. **PS&E Subcommittee Tactical Update**
   a. November 2022 AV Discussion (Col. Fulk)
      i. A meeting was held in November 2022 with members of the AV Crash Data working group and various stakeholders at the University of Iowa Driving Safety Research Institute, home of the National Advanced Driving Simulator. Representatives from DOT, Department of Public Safety, American Association of Motor Vehicle Administrators (AAMVA), Governor's Traffic Safety Bureau, NHTSA Region 7 and DSRI were in attendance.
      ii. Dan McGehee and Cherie Roe from the Univ. of Iowa provided an overview of the ADS for Rural America demonstration project and Advanced Driver Assistance System (ADAS) available today.
      iii. In addition to the presentations, DSRI provided on-road demonstrations in their ADS for Rural America Transit and several vehicles equipped with various ADAS features.
      iv. Other topics of discussion included AV Crash Reporting led by Josh Halterman from the DOT, AV Registration and Titling led by Toni Smith, DOT, Law Enforcement Interaction Plan led by Sgt. Chuck McNally, State Patrol
   b. Iowa State Patrol Membership to the AAMVA AV Subcommittee (Col. Fulk)
      i. AAMVA reached out to Col. Fulk asking for a representative from the Iowa State Patrol to sit on the AAMVA AV Subcommittee. This Subcommittee works with jurisdiction members, law enforcement, federal agencies, and other stakeholders to gather, organize, and share information with the AAMVA community related to the development, design, testing, use, and regulation of AV and other emerging vehicle technologies.
      ii. Lt. Mike Current from the Iowa State Patrol will be the representative
   c. ADAS Crash Investigation Research Project (Michelle Reyes, DSRI)
      i. DSRI was recently awarded a 1-year pooled-fund project from IDOT and Colorado DOT to examine crashes in both states that involve vehicles equipped with ADAS features. The objective of the project is to gain insight into the impact of ADAS features in real-world crashes. The focus will include ADAS features that intervene with control, Adaptive Cruise Control (ACC), LKA and AEB. Interview guides will be developed for motorists and investigating officers of the crash. The scope of the interviews will focus on several key areas: driver use of ADAS, driver understanding of ADAS, crash characteristics (weather, infrastructure, traffic, etc.), officer understanding of ADAS and officer method of identification & reporting of ADAS

[1] J. Cicchino, "Effectiveness of Forward Collision Warning and Autonomous Emergency Braking Systems in Reducing Front-to-rear Crash Rates," Accident Analysis and Prevention, vol. 99, pp. 142-152, 2017. https://www.sciencedirect.com/science/article/abs/pii/S0001457516304006?via%3Dihub

J. B. Cicchino, "Effects of lane departure warning on police-reported crash rates," Journal of Safety Research, vol. 66, pp. 61-70, 2018. https://www.sciencedirect.com/science/article/abs/pii/S002243751730556X

J. B. Cicchino, "Effects of automatic emergency braking systems on pedestrian crash risk," Analysis & Prevention, vol. 172, p. 106686, 2022. https://www.sciencedirect.com/science/article/abs/pii/S0001457522001221

on crash reports. A Technical Advisory Committee of stakeholders from each state will provide technical insight. The final report is anticipated to include findings and recommendations for various stakeholders including law enforcement, crash reporting agencies, DOTs, and vehicle manufacturers.

d. [Iowa Strategic Highway Safety Plan (SHSP)](#) Alignment Update (Larry Grant, DOT)
   i. The goal of the SHSP is to identify critical emphasis areas that have the greatest potential to reduce fatalities and serious injuries in Iowa. It focuses on the 18 emphasis areas from the previous SHSP.
   ii. The fatality rate in Iowa has been on a tick up even after COVID when numbers were expected to go down.
   iii. Analysis of the crash data shows that the highest emphasis areas is "local roads". It should be noted that crashes may encompass several emphasis areas at the same time, thus influencing the data rankings. Probably the most underreported when it comes to crash reports is "distracted driving". This could be due to reluctance by law enforcement to include in reports due to wanting proof to include it.
   iv. A survey was completed by the advisory committee in which they were asked to rank the 18 areas. A similar survey is available for stakeholders to complete. Larry encouraged everyone to take the survey. It is only 6 questions! https://www.surveymonkey.com/r/IowaSHSP
   v. Stakeholder response so far has been great; however, the data may be skewed slightly due the large number of law enforcement responses (225) in comparison with the other stakeholders' responses: education (9), emergency response (61), engagement/outreach (16), engineering/planning (51) was completed by education, emergency response.
   vi. The data ranked "local roads" at 1, the stakeholders ranked it at 6.
   vii. The stakeholders ranked "distracted driving" at 1, the data rank it at 11.
   viii. Another interesting result is with the emphasis area for "unprotected persons" which includes unbelted passengers, persons not wearing a helmet, etc. Both the advisory committee and the data rank it number 5, whereas the stakeholders, highly law enforcement driven, ranked it at 14. Of note, the final fatality report for the past year, showed fatalities in Iowa as 44% belted, 45% unbelted, with 9% unknown. Iowa generally ranks in mid-nineties with seatbelt compliance, which is good, but seatbelt use goes down when considering fatalities.
   ix. When it comes to vulnerable road users, bicyclists and pedestrians rank rather similarly in the data and with stakeholders. The data ranked bicyclists at 15, stakeholders ranked it at 13. The data ranked pedestrians at 14, stakeholders ranked it at 16.
   x. SHSP Advisory Team are currently developing strategies on how to make improvements in these emphasis areas to make roadways in Iowa safer.
   xi. Resources
      1. Iowa Crash Analysis Tool: [Iowa Crash Analysis Tool (ICAT) (iowadot.gov)](#)
      2. Iowa Traffic Fatality Count: https://iowadot.gov/mvd/stats/daily.pdf
      3. Potential for Crash Reduction: https://pcr.iowadot.gov/
   xii. Dan McGehee suggested that the legislators rank the traffic safety issues. Larry pointed out that the survey can be completed by anyone and encouraged that the link be shared with them.
   xiii. Dan McGehee remarked that it is important to include additional details when reporting seatbelt data. Although seatbelt compliance for the drivers in Iowa is good, it may not as be high with others in the vehicle.
   xiv. Col. Fulk identified that distracted driving is probably being underreported. There may be some difficulties with capturing it in the reports similarly to difficulties with capturing ADAS information. He feels that if hands-free bill could make a significant impact if passed.

4. **Recent & Upcoming Activities**

    a. **Economic Development & Infrastructure Readiness Joint Subcommittee Meeting** – <u>Tuesday, January 24, 2023</u>
        i. ***[Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program Application for the Des Moines International Airport](#)*** – *Brian Mulcahy, Assistant Executive Director, Des Moines Airport Authority*

    b. **Policy & Legislation Subcommittee Meeting** – <u>Wednesday, February 8, 2023</u>
        i. AV Insurance Market Report – Steve Miller, Insurance Office of America

ATC SUBCOMMITTEE MEETING

Public Safety& Enforcement
February 15, 2023

MEETING AGENDA

1. **Welcome and introductions** – Col. Nathan Fulk, Public Safety & Enforcement Subcommittee Chair (5 minutes)

2. **Real-World ADAS Effectiveness: Results from the Partnership for Analytics Research in Traffic Safety (PARTS)** (35 minutes)
   a. Chris Wiacek, PARTS ADAS Working Group Co-Chair, National Highway Traffic Safety Administration

3. **PS&E Subcommittee Tactical Updates** (20 minutes)
   a. November 2022 AV Discussion (Col. Fulk)
   b. Iowa State Patrol Membership to the AAMVA AV Subcommittee (Col. Fulk)
   c. ADAS Crash investigation Research Project (Michelle Reyes)
   d. Iowa Strategic Highway Safety Plan (SHSP) Alignment Update (Larry Grant)

4. **Information and key upcoming dates**
   a. Economic Development & Infrastructure Readiness Joint Subcommittee Meeting – Tuesday, January 24
   b. Polity and Legislation Subcommittee Meeting – Wednesday, February 8

WELCOME AND INTRODUCTIONS

Colonel Nathan Fulk–

Public Safety and Enforcement Subcommittee Chair

NEW SUBCOMMITTEE MEMBERS

- Larry Grant- Iowa DOT (Safety Planner)
- Jan Laaser-Webb – Iowa DOT(Traffic Safety Engineer)
- Lt. Mike Current – Department of Public Safety (Iowa State Patrol)
- Sgt. Chuck McNally – Department of Public Safety (Iowa State Patrol)

REAL-WORLD ADAS EFFECTIVENESS: RESULTS FROM THE PARTNERSHIP FOR ANALYTICS RESEARCH IN TRAFFIC SAFETY (PARTS)

Chris Wiacek – PARTS ADAS Working Group Co-Chair, National Highway Traffic Safety Administration

Real-World ADAS Effectiveness: Results from the Partnership for Analytics Research in Traffic Safety

The Iowa Advisory Council on Automated Transportation, Public Safety & Enforcement Subcommittee

February 15, 2023

Chris Wiacek, National Highway Traffic Safety Administration
PARTS ADAS Effectiveness Working Group Co-Chair

The Final Report is available on the PARTS Webpage at NHTSA.gov/PARTS

PARTS
PARTNERSHIP FOR ANALYTICS
RESEARCH IN TRAFFIC SAFETY

Real-world Effectiveness of
Model Year 2015–2020
Advanced Driver Assistance Systems

November 9, 2022

To learn more about the work of this partnership, visit NHTSA.gov/PARTS

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About the Partnership for Analytics Research in Traffic Safety (PARTS)

- Public-Private Partnership among USDOT and auto manufacturers

- Pools real-world data, information, and resources for **collaborative safety analysis and discovery** that cannot be accomplished individually

- Goal is to gain **real-world insights** into safety benefits and emerging safety opportunities

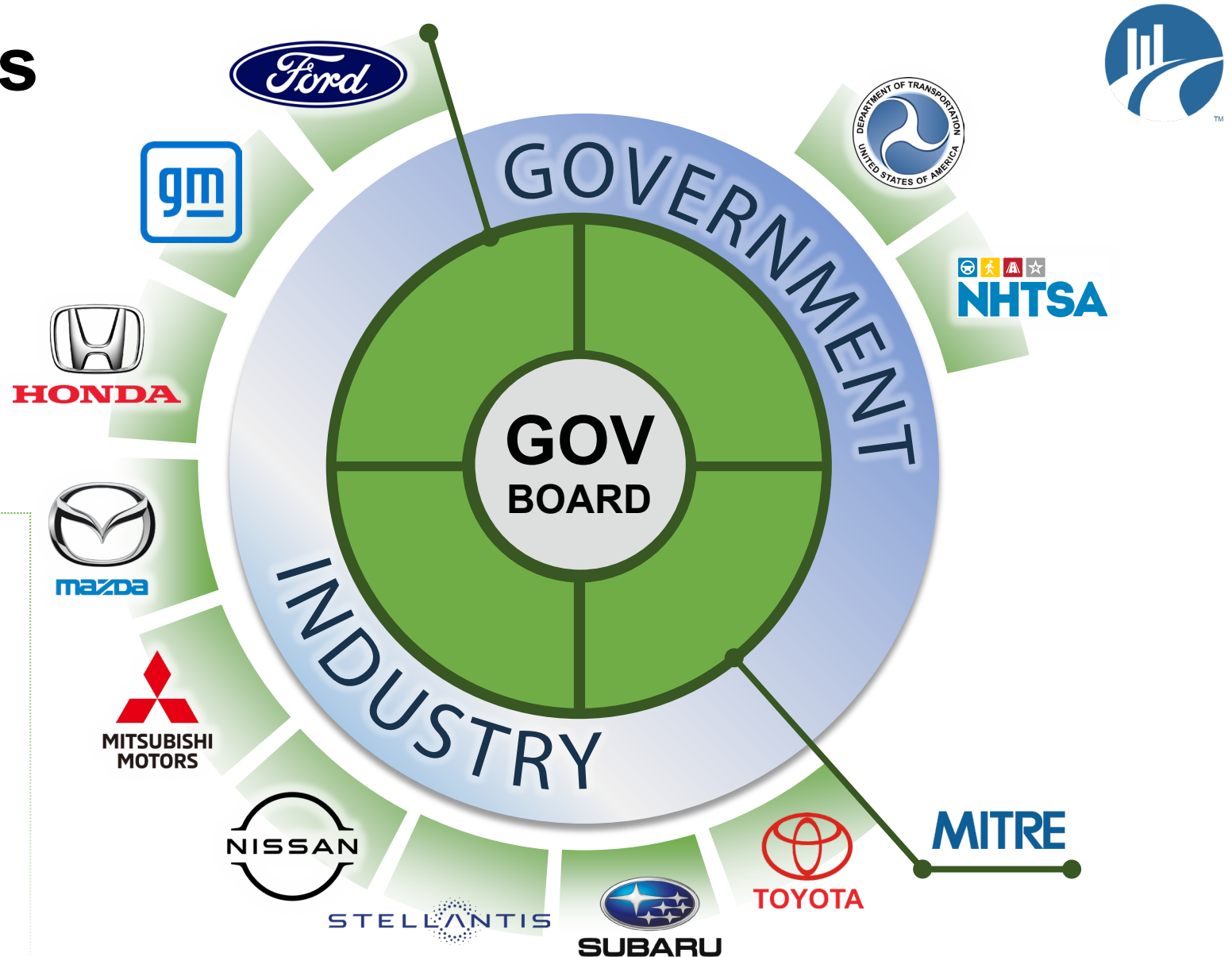- Started in 2018, continuing to evolve
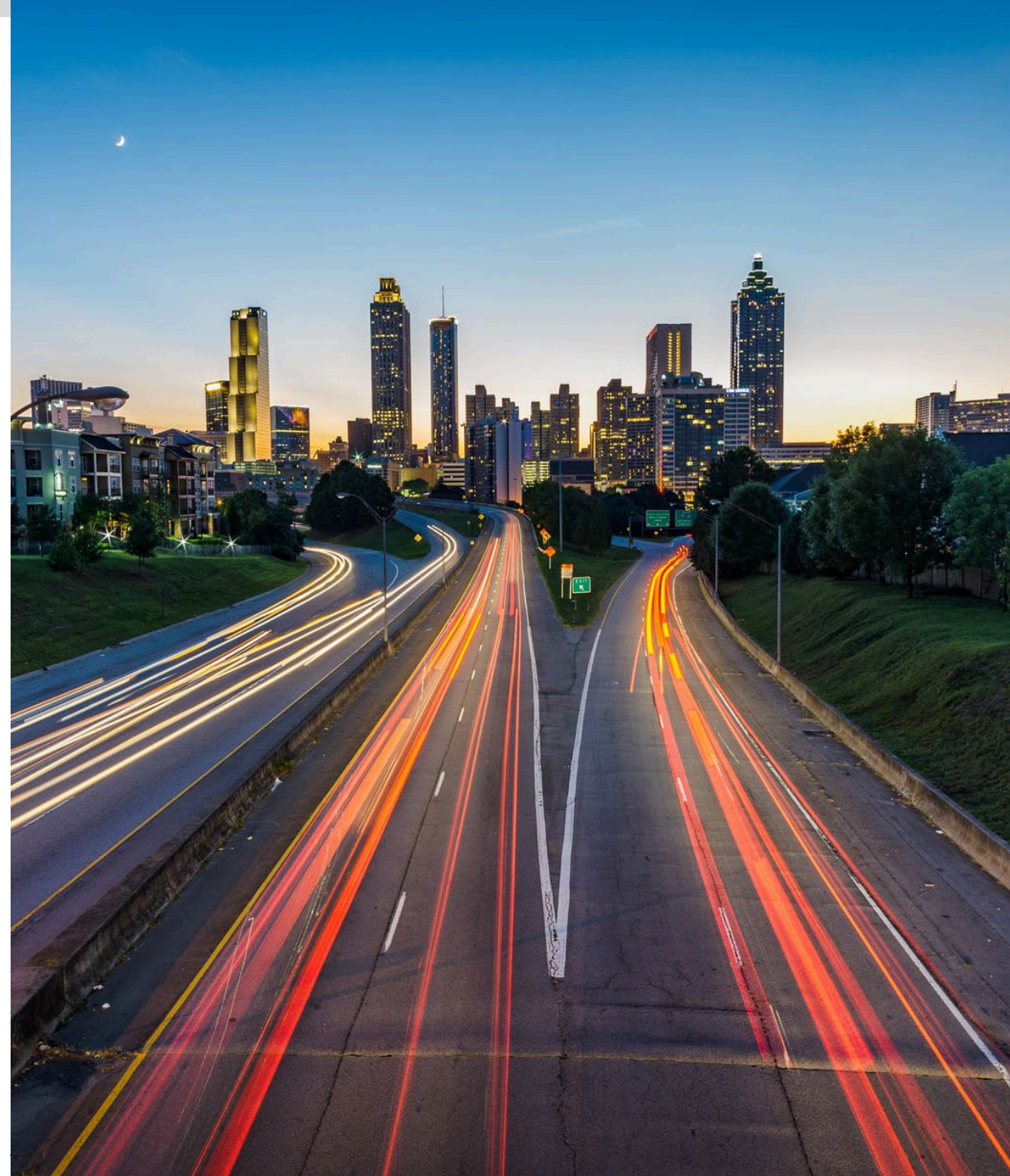
PARTS Participants

Highly Engaged Set of Partners

9 Automakers

- Contributions include data, insights, and collaborative interpretation of results

- Independent Third Party provides built-in data safeguards

- Consensus-based decision making

Overview of 2015-2020 MY Study

Research Objectives

1. What is the real-world effectiveness of ADAS features in avoiding system-relevant crashes?

2. What factors influence ADAS feature effectiveness?

Features Studied

Forward Collision Warning (FCW)

Automatic Emergency Braking (AEB)

Pedestrian AEB (PAEB)

Lane Departure Warning (LDW)

Lane Keeping Assistance (LKA)

Lane Centering Assistance (LCA)

System-relevant Crashes

Front-to-rear crash

Frontal crash with a non-motorist
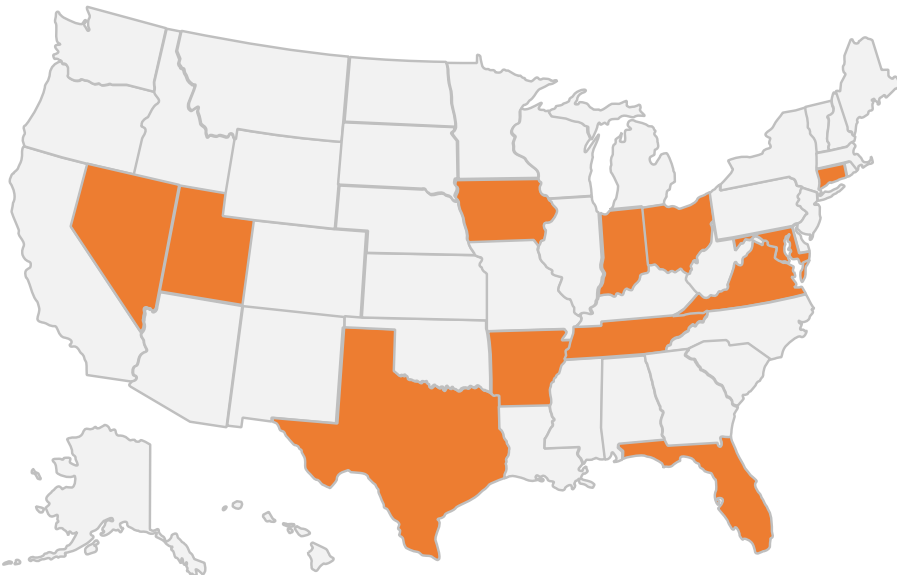
Single vehicle road departure crash

Large, Unique, Harmonized Dataset
2.4M crash-involved study vehicles

NHTSA Crash Data

- Police-reported crash data 2016 - 2021
- 17-digit VIN-level to enable linkage
- 21.7M vehicles from 12.2M crashes
- 13 states participating

OEM's Vehicle Equipment Data

- 47M passenger vehicles
- 93 models (MY2015–MY2020)
- 7 vehicle segments

OEM									Total
	GM	HONDA	MAZDA	MITSUBISHI	NISSAN	STELLANTIS	SUBARU	TOYOTA	
Small Car		Acura ILX Honda Civic, Fit, & Insight	Mazda3 sedan & hatchback		Versa Sentra		Impreza WRX Crosstrek	Toyota Corolla, Prius, and C-HR	14
Midsize Car	Buick Regal Chevrolet Malibu	Acura TLX Honda Accord	Mazda6		Altima Maxima	Alfa Romeo Giulia Chrysler 200	Legacy Outback	Toyota Camry Lexus IS	13
Large Car	Buick LaCrosse Chevrolet Impala					Chrysler 300 Dodge Charger & Challenger		Toyota Avalon Lexus ES and LS	8
Small SUV	Buick Envision Chevrolet Equinox GMC Terrain	Acura RDX Honda HR-V & CR-V	CX-3 CX-5 CX-30	Outlander Sport Eclipse Cross	Rogue	Fiat 500X Jeep Renegade, Compass, & Wrangler2DR	Forester	Toyota RAV4 Lexus NX	19
Midsize SUV	Buick Enclave Chevrolet Traverse Cadillac SRX & XT5 GMC Acadia	Acura MDX Honda Pilot & Passport	CX-9	Outlander	Murano Pathfinder	Alfa Romeo Stelvio Dodge Durango Jeep Cherokee, Grand Cherokee, & Wrangler Unlimited	Ascent	Toyota Highlander and 4Runner Lexus RX and GX	22
Pick-Up and Large SUV	Chevrolet Tahoe / GMC Yukon GMC Sierra 1500	Honda Ridgeline			Armada Titan Frontier	Jeep Gladiator Ram 1500 Ram 2500 Ram 3500		Toyota Tundra, Tacoma, and Sequoia	14
Minivan		Honda Odyssey				Chrysler Pacifica		Toyota Sienna	3

Methodology Highlights

Key Study Variables

Driver	Environment	Vehicle	Crash Information
Driver Age	Weather	Sales Type (Fleet vs Retail)	Crash State
Alcohol/Drugs	Road Surface Condition	Vehicle Segment	Crash Year
Distracted	Light Condition	Vehicle Model Year	Speed Limit
Driver Gender	Roadway Alignment		
	Intersection		

- **Quasi-induced exposure and logistic regression to estimate the reduction in system-relevant crashes** due to the presence of the vehicles equipped with ADAS

- Compared vehicles equipped with the set of ADAS features under study against vehicles without those features

- Controlled for key variables

Context for Interpreting ADAS Study Results

This study…

…was focused on crash avoidance—not crash mitigation

…considers only whether a vehicle is equipped with a given ADAS feature set at the time of manufacture, not whether features were driver-disabled or activated at the time of crash

…does not **_directly_** account for different driving behaviors and their effect on ADAS effectiveness

AEB/FCW Effectiveness in Real-World Conditions

	% Crash Reduction		
	ALL FRONT-TO-REAR CRASHES	**CRASHES WITH INJURY** (removed PDO crashes)	**SERIOUS CRASHES**
OVERALL EFFECTIVENESS:	**49% (48, 50)** *Interpretation: AEB-equipped vehicles are* **49% less likely** *to be the striking vehicle in a front-to-rear crash.*	**53% (51, 54)**	**42% (33, 50)**
Bad Weather	**42%** (39, 45)	44% (39, 49)	
Wet Road Surface	**44%** (42, 47)	46% (41, 50)	
Dark Light Conditions	**42%** (39, 44)	45% (40, 49)	
Curved Roadway	**34%** (30, 38)	38% (30, 45)	
Intersection	**45%** (43, 46)		
Driver Age	**Lower as driver age increased** Age 75 and older: **34%** (29, 38)		
Fleet Vehicles	**43%** (40, 45)	45% (41,49)	

Pedestrian AEB (PAEB) Effectiveness in Real-World Conditions
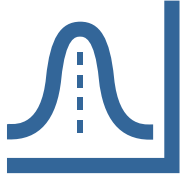
Unable to detect an effect likely due to limitations in data

- Pre-crash movement or visibility prior to crash not included

- Physical characteristics or behaviors of the non-motorist not included

- Vehicle kinematics of the strike not included

- Non-motorist crashes more limited sample than other crash types

- Lower level of market penetration compared to AEB

Next Iteration of Research

- Allow for more PAEB market penetration and exposure in the field

- Understand what happened leading to and around the time of pedestrian crashes

- Derive insights that can lead to improve PAEB systems and injury mitigation

Lane Management Feature Effectiveness in Real-World Conditions

Results are for Single Road Departure Crashes

	% Crash Reduction		
	ALL CRASHES	CRASHES WITH INJURY (removed PDO crashes)	SERIOUS CRASHES
LDW	3% (-2, 8)	5% (-3, 13)	5% (-16, 22)
LDW + LKW	8% (5, 12)	7% (1, 13)	13 (-1, 24)
LDW + LKA + LCA	9% (4, 14)	8% (0, 16)	16% (-4, 31%)

Vehicles equipped with LDW *and* any form of automated lane management feature reduce single road vehicle departure crashes **by approximately one-tenth.**

Participating Automakers Receive Individualized Benchmarking Results

Benchmark results incentivize participation and give partners insights to explore

SAMPLE AEB Benchmark Results
(Mock Data)

Model A — 45%
Model B — 35%
All Other Vehicles in Segment — 55%
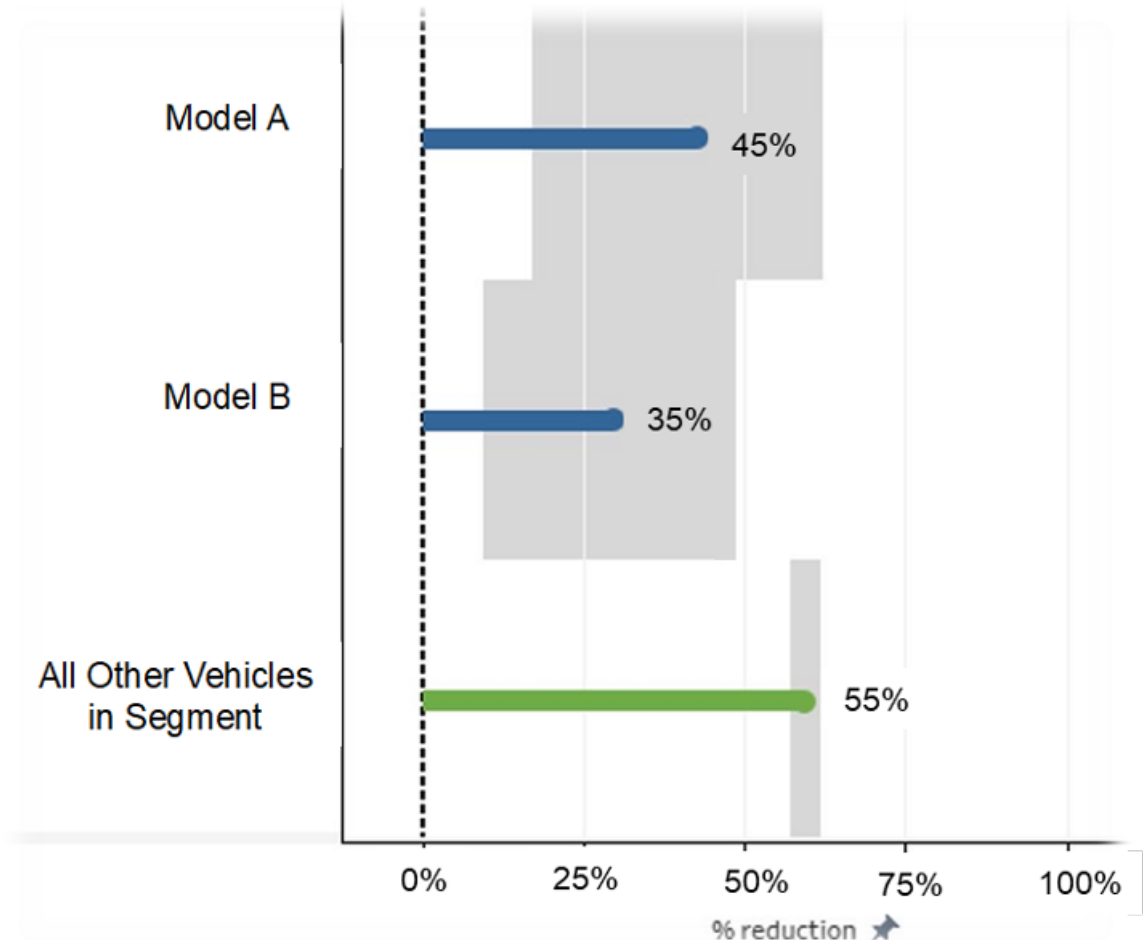
0%   25%   50%   75%   100%

% reduction

- **No evidence** that **Model A** effectiveness is different than other OEMs
- **Very Strong Evidence** that **Model B** effectiveness is **lower** than other OEMs

PLANS

ANALYZE

Increase Depth and Breadth of ADAS Feature Analysis

Iterate to Show Effectiveness Over Time

Driver Behavior Effects

Infrastructure Effects

EXPLORE

Telematics

New datasets

New research questions

MATURE

More Partners, More Data (Automakers and States)

Mature Technical Infrastructure for Data-sharing

Methodology Refresh

Questions?

www.NHTSA.gov/PARTS

Feel free to contact any of the following Work Group Chairs:

- **Schuyler St. Lawrence**
  schuyler.stlawrence@toyota.com

- **Chris Wiacek,** chris.wiacek@dot.gov

- **Jennifer Morrison,** JMORRI54@mazdausa.com

- **Amy Aukema,** aaukema@mitre.org

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PUBLIC SAFETY AND ENFORCEMENT SUBCOMMITTEE TACTICAL UPDATES

PUBLIC SAFETY & ENFORCEMENT SUBCOMMITTEE TACTICAL UPDATES

November 2022 AV Discussion (with AAMVA, DOT, DPS, GTSB, NHTSA Region 7, Univ. of Iowa) – Col. Fulk

Iowa State Patrol Membership to the AAMVA AV Subcommittee – Col. Fulk

ADAS Crash Investigation Research Project – Michelle Reyes

Iowa Strategic Highway Safety Plan (SHSP) Alignment Update – Larry Grant

2022 AV Discussion

→ University of Iowa Driving Safety Research Institute (DSRI), home of the National Advanced Driving Simulator

→ DOT, DPS, AAMVA, GTSTB, NHTSA Region 7, & UI

→ Challenges with AV in Rural Areas and Automation Today – *Daniel McGehee & Cherie Roe*

→ ADS and ADAS Demonstrations

→ AV Crash Reporting Requirements – *Josh Halterman*

→ AV Title and Registration – *Toni Smith*

→ Law Enforcement Interaction Plan – *Sgt. McNally*

IOWA

PUBLIC SAFETY & ENFORCEMENT SUBCOMMITTEE TACTICAL UPDATES

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ADAS Crash Investigation Research Project

→ Address the gaps in knowledge regarding the impact of ADAS features in real-world crashes occurring in Iowa and Colorado

→ Funding Iowa DOT and Colorado DOT

→ Interviews with motorists & officers investigating crashes with ADAS

→ Key interview areas
  - Driver use of ADAS
  - Driver understanding/mental model of the vehicle's ADAS feature(s)
  - Crash characteristics (weather, infrastructure, traffic)
  - Can we determine whether the feature(s) potentially contributed to or mitigated the crash
  - Officer understanding of ADAS features(s)
  - Officer method for identifying & reporting of ADAS feature(s) on crash reports

Automatic Emergency Braking

Adaptive Cruise Control

Lane Keeping Assist

IOWA

PUBLIC SAFETY & ENFORCEMENT SUBCOMMITTEE TACTICAL UPDATES

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2024-2028 Iowa Strategic Highway Safety Plan
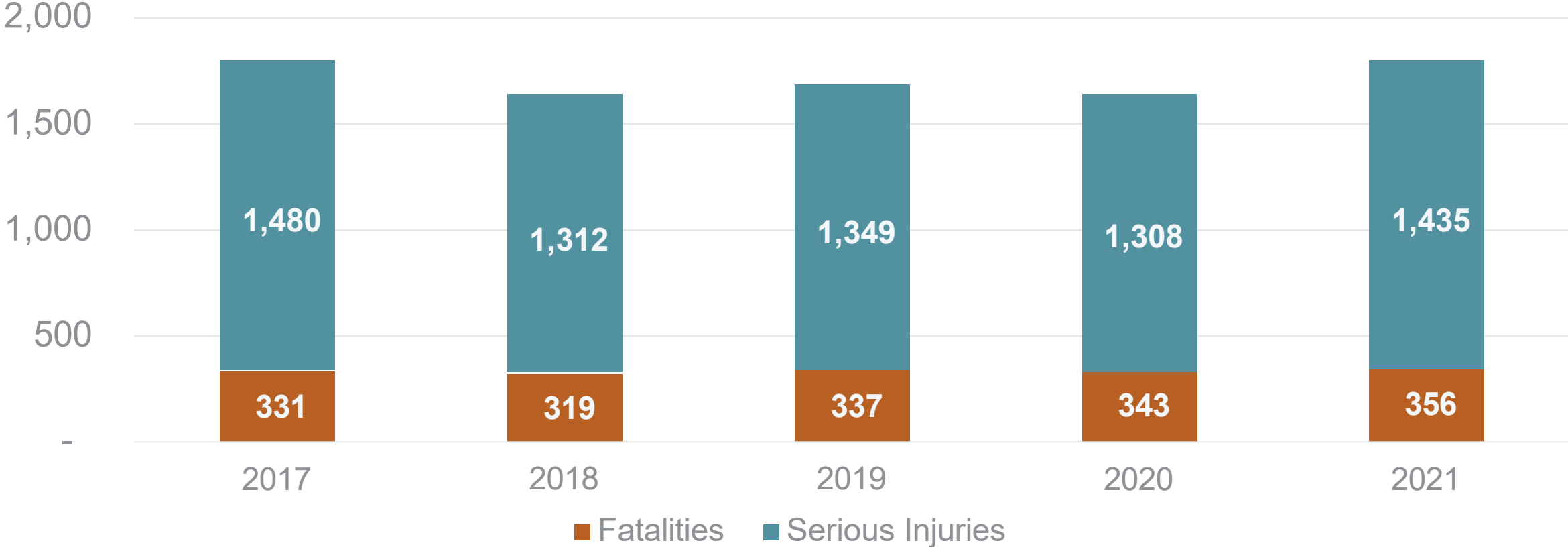
IOWADOT   Kimley»Horn

SHSP Emphasis Areas

- Analyzed 18 emphasis areas that impact roadway safety
    - Fatal and serious injury crash analysis by emphasis
    - Survey of Advisory Team and stakeholders

> Goal: Identify critical emphasis areas that have the greatest potential to reduce fatalities and serious injuries on Iowa's roads
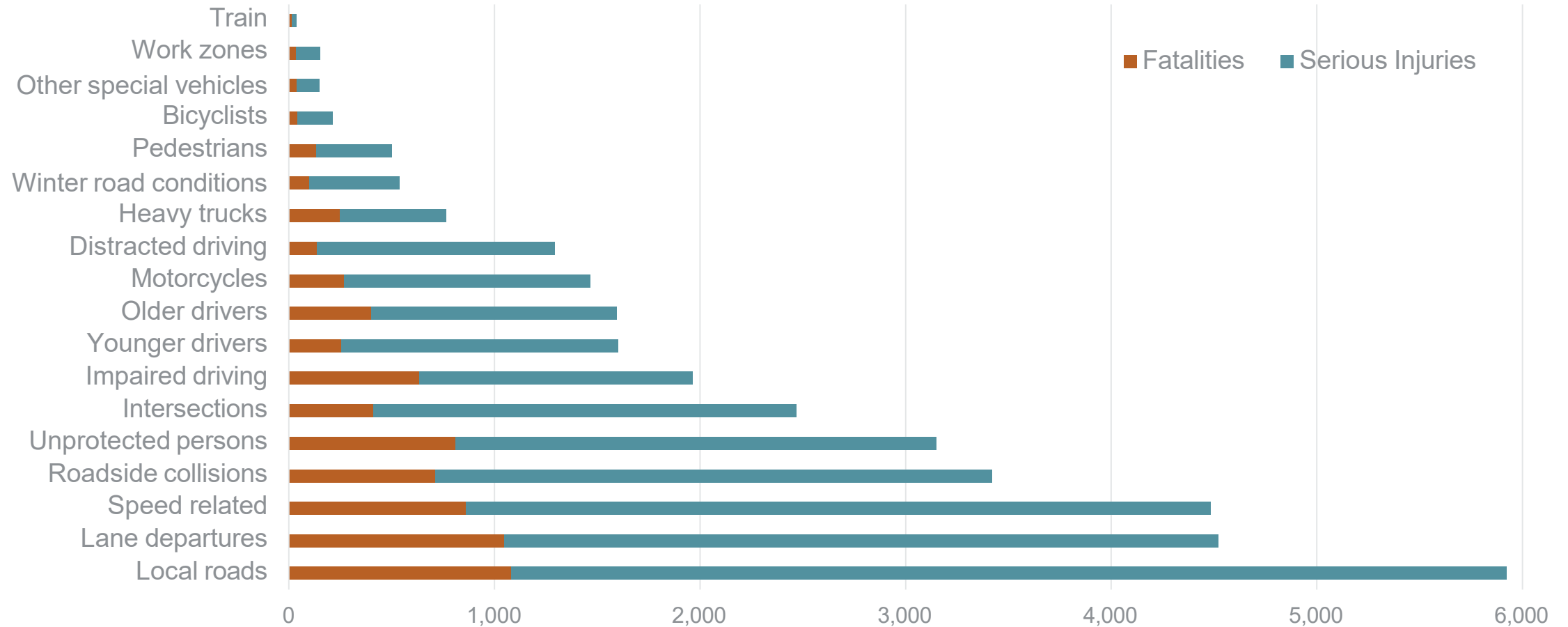
Crash Analysis

Iowa Fatalities and Serious Injuries by Year

Year	Serious Injuries	Fatalities
2017	1,480	331
2018	1,312	319
2019	1,349	337
2020	1,308	343
2021	1,435	356

■ Fatalities ■ Serious Injuries

Crash Analysis

Fatalities and Serious Injuries by Emphasis Area (2017 - 2021)
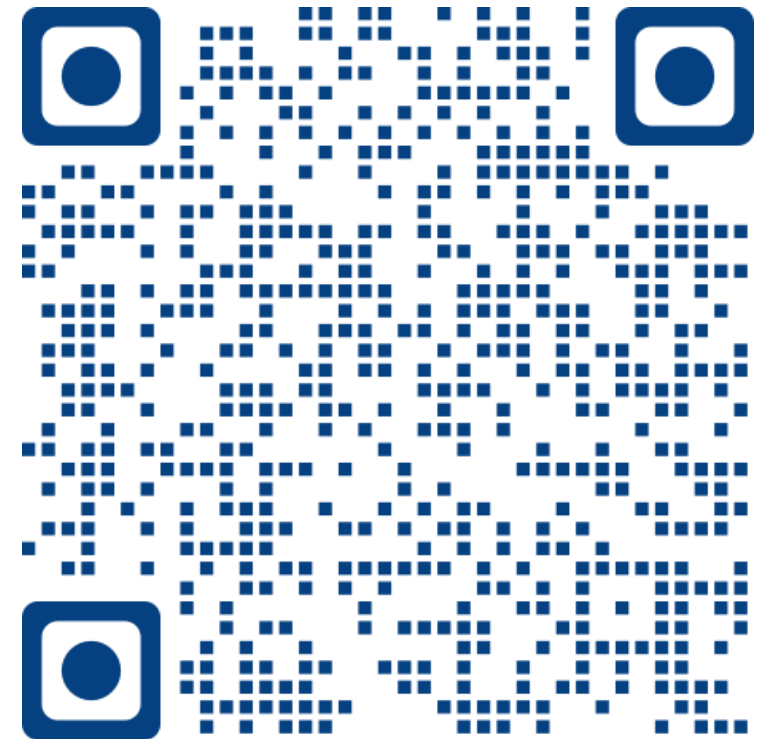
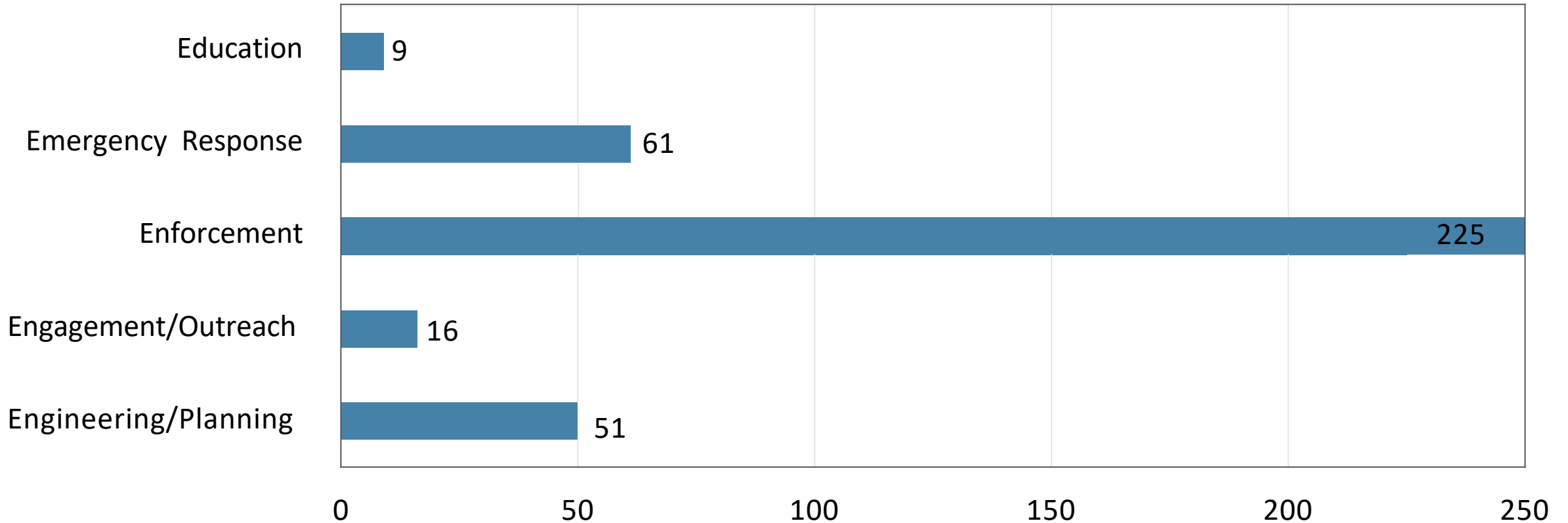Note: Fatalities and serious injuries can include multiple emphasis areas.

Stakeholder Survey

- Survey to obtain feedback on selection of the emphasis areas
- https://www.surveymonkey.com/r/IowaSHSP
- Or scan the QR Code

Just 6 questions!

Survey and Crash Analysis Results

Emphasis Area	Rank			2017 to 2021 Fatalities and Serious Injuries Rank
	All	Stakeholder	Advisory Team	
Distracted Driving	1	1	1	11
Impairment Involved	2	2	2	7
Speed-Related	3	3	3	3
Intersections	4	4	6	6
Lane Departures	5	5	4	2
Local Roads	6	6	12	1
Younger Drivers	7	7	7	8
Roadside Collisions	8	8	13	4
Heavy Trucks	9	10	9	12
Winter Road Conditions	10	9	16	13
Older Drivers	11	11	10	9
Motorcycles	12	12	11	10
Bicyclists	13	13	14	15
Unprotected Persons	14	14	5	5
Work Zones	15	15	8	17
Pedestrians	16	16	15	14
Other Special Vehicles	17	17	17	16
Train	18	18	18	18

Next Steps

Feb
- Convene SHSP Advisory Team
- Compile survey results

Mar
- Identify strategies in coordination with SHSP Advisory Team

Apr/May
- Define output measures in coordination with SHSP Advisory Team
- Annotated outline

Nov
- Final SHSP

Resources

- [Iowa Crash Analysis Tool: Iowa Crash Analysis Tool (ICAT) (iowadot.gov)](iowadot.gov)

- Iowa Traffic Fatality Count: https://iowadot.gov/mvd/stats/daily.pdf

- Potential for Crash Reduction: https://pcr.iowadot.gov/

Contact

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RECENT MEETING DATES

Economic Development & Infrastructure Readiness Joint Subcommittee Meeting – Tuesday, January 24 from 11:00 am – 12:00 pm

- *Brian Mulcahy, Assistant Executive Director, Des Moines Airport Authority, Strengthening Mobility and Revolutionizing Transportation (SMART) Grant Application, Des Moines International Airport*

Policy & Legislation Subcommittee Meeting – Wednesday, February 8 from 10:00 – 11:00 am

- *Steve Miller, Innovation Lead, AV Insurance Market Report*

THANK YOU