



## MEETING SUMMARY

**Meeting:** Executive Committee, Meeting #8

**Location:** Virtual Meeting only

**Date:** November 12, 2020

### Members in Attendance:

Member*	Organization	Present (Y/N)	Rep Sent in Place (Y/N)
James A. Restucci (Chair)	Washington State Transportation Commission	Y	--
Shiv Batra (Vice Chair)	Washington State Transportation Commission	Y	--
Senator Curtis King	Washington State Legislature	N	N
Senator Ann Rivers	Washington State Legislature	N	N
Senator Joe Nguyen	Washington State Legislature	Y	--
Senator Mona Das	Washington State Legislature	N	N
Rep Zack Hudgins	Washington State Legislature	Y	--
Rep Shelley Kloba	Washington State Legislature	Y	--
Rep Mary Dye	Washington State Legislature	N	N
Rep Matt Boehnke	Washington State Legislature	Y	--
Rep Jake Fey*	Washington State Legislature	Y	--
John Batiste	State Patrol	N	Y – Shannon Bendiksen
Pam Pannkuk	State Traffic Safety Commission	Y	--
Mike Kreidler	State Insurance Commission	N	Y – Jack Lovell
Teresa Bertsen	Department of Licensing	Y	--
Roger Millar	Department of Transportation	N	Y – Daniela Bremmer
Joel Sacks	Department of Labor & Industries	N	Y – Maggie Leland
Laura Johnson	Department of Health	Y	--
Suzan LeVine	Employment Security Department	N	Y – Bianca Stoner
Jim Weaver	State Chief Information Office, WaTech	N	N
Charles Knutson	Governor's Office	Y	--
Dr. Yin Hai Wang	Smart Transportation Applications & Research Laboratory (STAR Lab), University of Washington	Y	--
Justin Leighton	Washington State Transit Association	Y	--
Tom Alberg	ACES Northwest	Y	--
Sam Zimbabwe	City of Seattle Transportation Department	N	Y – Alex Pazuchanics
Curt Augustine	Alliance for Automotive Innovation	Y	--
Brenda Wiest	Teamsters Local 117	Y	--
Todd O'Brien	Adams County	Y	--
Jessica Ramirez	Puget Sound Sage	N	--
Bryan Mistele	INRIX	Y	--
John Milbrath	AAA	Y	--
Bryce Yadon	Futurewise	Y	--
Caleb Weaver	Uber	Y	--



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Member*	Organization	Present (Y/N)	Rep Sent in Place (Y/N)
Steve Gordon	Gordon Truck Centers	Y	--
Anna Zivarts	Disability Rights Washington	Y	--
Annabel Chang	Waymo	Y	--

\* AV Work Group meetings are open to all Washington State Legislature Committee Chairs.

**A full recording of the virtual meeting and the meeting presentation deck are available on the WA AV Work Group website:**

Meeting session recording: [https://www.youtube.com/watch?v=j94\\_Q2y5PXU&feature=youtu.be](https://www.youtube.com/watch?v=j94_Q2y5PXU&feature=youtu.be)

Meeting agenda and presentation materials: <https://avworkgroupwa.org/committee-meeting/executive-committee-meeting-8>

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## WELCOME AND INTRODUCTIONS

Jim Restucci, Acting Chair of the AV Work Group, opened the meeting with introductions of Executive Committee members, an overview of the meeting agenda, and a walk through of virtual meeting operations and functionality.

Acting Chair Restucci brought forth a request from the Washington State Transportation Commission documented in a [letter to the Executive Committee](#)<sup>1</sup> from Transportation Commission Chairman Jerry Litt. The Commission appointed Commissioner Shiv Batra to the AV Work Group Executive Committee, and requested the Executive Committee designate Commissioner Jim Restucci as the Chair of the Executive Committee and Commissioner Batra as the Vice-Chair for the remainder of the Work Group.

Motion on the floor to adopt the recommendation. Motion seconded. No further debate or discussion was brought forth by Executive Committee members. Chair Restucci asked if there were any objections to the motion. With no objection the motion was so ordered.

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## 10 BEST PRACTICES FOR STATE AUTOMATED VEHICLE POLICY

*Marc Scribner, Senior Transportation Policy Analyst, Reason Foundation*

Marc Scribner, Senior Transportation Policy Analyst for the Reason Foundation, presented on [10 Best Practices for State Automated Vehicle Policy](#)<sup>2</sup>, a report published by the Reason Foundation in September 2020. Mr. Scribner walked through the SAE levels of driving automation and related use cases at each level. Level 4 prototypes, such as automated taxi

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<sup>1</sup> Transportation Commission letter to the AV Work Group Executive Committee: [https://oohwstcavworkgroup.blob.core.windows.net/media/Default/documents/executive-committee/Meeting\\_8/WSTC\\_AVWG\\_Executive\\_Committee\\_Meeting\\_8\\_ViceChair\\_Appts.pdf](https://oohwstcavworkgroup.blob.core.windows.net/media/Default/documents/executive-committee/Meeting_8/WSTC_AVWG_Executive_Committee_Meeting_8_ViceChair_Appts.pdf)

<sup>2</sup> 10 Best Practices for State Automated Vehicle Policy Report, September 2020: <https://reason.org/policy-brief/10-best-practices-for-state-automated-vehicle-policy/>

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cabs, last mile delivery, fixed route transit, and long-haul freight are most of what we are seeing being tested on the roads today.

Mr. Scribner provided an overview of existing state automated vehicle policies and regulations, the most popular of which have been definitions, commercial (i.e. truck platooning), operation on public roads, operator requirements and vehicle testing.

The Report's recommendations for best practices in state automated vehicle policy include:

- 1) Adopt a standard vocabulary: SAE J3016 is recommended as the national standard for consistency among states.
- 2) Recognize the legality of automated vehicles: Although there is nothing unlawful about bringing AV technology to public roads, a state declaring that AVs are legal can send a signal to the industry that the state is thinking about and open to AVs.
- 3) Respect competencies at various levels of government: Federal, state, and municipal levels of government have specific areas of expertise and authority, and those competencies should be respected and continued.
- 4) Audit motor vehicle codes for existing barriers: Evaluate current motor vehicle codes for potential barriers to AV testing and deployment that could be exempted or rewritten.
- 5) Distinguish between vehicle types: Not all AVs are the same and should not be held to the same standards. For example, a low speed, low mass, geographically constrained passenger shuttle needs to have very different expectations and requirements than a high-speed highway vehicle that must operate in any operational design domain.
- 6) Remain neutral on future business models: Be careful in legislation on making presumptions that may present unnecessary restrictions.
  - a. One example of this is the Uniform Law Commission (ULC) Automated Operation of Vehicles Act, which assumed AVs would only be owned and operated in a fleet model, and resulted in language that would prevent any other business model from being able to operate.
  - b. Mr. Scribner noted that Washington State is the only state that has considered the ULC model Act.
- 7) Avoid questionable legal frameworks: Be wary of misuse of executive orders and guidance documents that may pose litigation risks or deter industry interest in the state.
- 8) Focus on infrastructure state of good repair: Acknowledge that not all AVs must be connected, and many AVs do not require smart infrastructure to operate. Infrastructure improvements should focus on the basics – well-maintained, modern roadways.
- 9) Designate a lead AV policy office: Identify one state agency to serve as the clearinghouse and coordinating body for AV policy decisions and operation.
- 10) Prepare for an extended period of uncertainty: Less can be more. Focus on discrete, known problems and avoid codifying predictions. Adopt a general principle for AV policy making that respects uncertainty and allows for flexibility.

*Questions and presenter responses can be found in the Presentation Questions Log table at the end of this document.*



WASHINGTON STATE

AUTONOMOUS VEHICLE  
WORK GROUP

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### **AAMVA UPDATED GUIDANCE ON SAFE TESTING OF AVs**

*Brian Ursino, Director of Law Enforcement, AAMVA & Bernard Soriano, Deputy Director, California Department of Motor Vehicles and Chair, AAMVA Autonomous Vehicles Subcommittee*

Brian Ursino, Director of Law Enforcement with the American Association of Motor Vehicle Administrators (AAMVA) and Bernard Soriano, Deputy Director for the California Department of Motor Vehicles and Chair, of the AAMVA Autonomous Vehicles Subcommittee, presented on AAMVA's recently published [Safe Testing and Deployment of Vehicles Equipped with Automated Driving Systems Guidelines Edition 2](#)<sup>3</sup>. This report provides a set of voluntary recommended guidelines aimed to balance current public safety with the advancement of vehicle innovations to reduce crashes, fatalities, injuries, and property damage. Edition 2 addresses the evolving AV industry and technology with several new sections, updated sections, and over 100 recommendations for jurisdictions and manufacturers and other entities (MOEs).

Mr. Ursino and Mr. Soriano discussed how evolving technologies in the AV industry influenced many of the updates in Edition 2 of the Report, such as remote driving and advanced driver assistive systems (ADAS). The Report also includes a new chapter on other considerations, such as cybersecurity, data collection and management, low speed shuttles, connected vehicles and platooning.

Mr. Ursino and Mr. Soriano closed with the subcommittee's next steps of developing white papers on automated delivery vehicles and ADAS implications on and updates to distracted driving laws, both expected early 2021.

*Questions and presenter responses can be found in the Presentation Questions Log table at the end of this document.*

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### **PANEL: REGULATION TO SAFEGUARD WASHINGTON RESIDENTS**

*Phil Koopman, Co-Founder, Edge Case Research & Daniel Malarkey, Senior Fellow, Sightline Institute*

Daniel Malarkey, Senior Fellow with the Sightline Institute provided an overview on how the use of a regulatory framework can encourage the benefits of AVs while ensuring the technology is safe to operate on Washington's public roadways. Mr. Malarkey walked through different types of regulatory frameworks that exist today in other industries:

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<sup>3</sup> AAMVA Safe Testing and Deployment of Vehicles Equipped with Automated Driving Systems Guidelines Edition 2: <https://www.aamva.org/SafeTestingandDeploymentOfVehiclesEquippedwithADSGuidelines/>

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- Reputation and tort law, such as that used in the medical field. This is similar to Washington's current approach to AV regulation, relying on the interest from and reputation of the AV industry to regulate it.
- Graduated testing, such as that used for vaccines. It is likely the AV industry could not drive enough miles to prove the technology is safe under this framework, and each software update would require the graduated testing process to start over.
- Prescriptive standards, such as those used to govern elevators. AV technology is advancing rapidly, which would make it difficult to standardize and could impede innovation.
- Structured argument with evidence, such as that used for municipal bonds. In the AV space, a company would make an argument, with the evidence to back it up, to prove the AV technology is safe.

Mr. Malarkey then introduced Phil Koopman, professor at Carnegie Mellon University and Co-Founder of Edge Case Research, who is the principal author of the [ANSI/UL 4600 Standard for Safety for the Evaluation of Autonomous Products](#)<sup>4</sup>.

Mr. Koopman played a [video overview](#)<sup>5</sup> of UL4600, which is a self-driving car safety case assessment. The standard was issued in April 2020 for light vehicles, and a new version as well as a truck version are underway as of Summer 2020. The standard takes a goal-based approach and works with other standards to avoid gaps in the safety approach. The standard includes claims – what does safe mean, arguments – why do we think that, and evidence – where is the data to prove it. The standard also includes feedback loops to diagnose and fix root causes.

Mr. Koopman then opened the floor for discussion. *Questions and responses can be found in the Presentation Questions Log table at the end of this document.*

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## AV SUBCOMMITTEE UPDATES AND RECOMMENDATIONS

### *Subcommittee Representatives*

*Questions and presenter responses can be found in the Presentation Questions Log table at the end of this document.*

### **Health & Equity Subcommittee – Dr. Andrew Dannenberg, Chair**

Dr. Andrew Dannenberg, chair of the Health & Equity Subcommittee, presented on the key AV and equity topics the subcommittee is exploring, including: Access by all income levels, detection for persons of color, disparities in infrastructure quality, racism impacts on shared services, costs of services, equitable distribution of services, access to electronic devices,

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<sup>4</sup> ANSI/UL 4600 Standard for Safety for the Evaluation of Autonomous Products: <https://edge-case-research.com/ul4600/>

<sup>5</sup> UL 4600 Overview Video: <https://youtu.be/rLAdcmou0Wg>

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community needs and priorities, and education and outreach. Dr. Dannenberg then presented two recommendations for consideration by the Executive Committee.

### **Recommendation – Conduct Structured Public Outreach:**

Traditionally marginalized communities, who are underrepresented among AV policy decision makers, may suffer from inequitable impacts when AVs are tested and implemented in Washington. To increase outreach to such communities to better understand their access, mobility, and health needs, the subcommittee recommends conducting a structured public engagement process that includes education, describing AV scenarios, and gathering feedback. The subcommittee would then report findings and recommendations to the Executive Committee and Transportation Commission based on outreach outcomes.

The proposed cost associated with this outreach campaign is \$30,000. Conducting this outreach campaign could prevent or reduce inequitable consequences and help future AV policy setting.

Motion on the floor to adopt the recommendation. Motion seconded.

Discussion:

- No discussion items brought forth on this recommendation.

Vote:

- Aye – 16
- No – 0
- Abstain – 3
- Absent – 16

### **MOTION CARRIES.**

### **Recommendation – Identification of Testing Locations:**

Depending on AV testing locations selected by companies, the testing may have inequitable health and safety impacts on traditionally marginalized communities. To better understand where testing is occurring, the subcommittee recommends amending RCW 46.30 to include a requirement for companies to report planned testing locations at the zip code or Census tract level prior to testing. WSDOT and DOH could then examine the associated demographics and equity considerations of those areas. Dr. Dannenberg noted that this information would not be used to regulate where AV testing should or should not be done.

Motion on the floor to adopt the recommendation. Motion seconded.

Discussion:

- For the industry, it is appreciated that testing location reporting would be no more granular than the zip code or Census tract level, however there are potential a competitiveness question, if other companies could discover where a company is planning to test AVs early in the process.



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- It was assumed that this level of information would need to be provided to law enforcement and possibly others prior to testing anyway.
- A public transit representative noted that as legislators consider recommendations like this that involve items like the level of information available publicly, to try not to create disparities between public and private companies providing similar services, such as public transit and private ride services.

### Vote:

- Aye – 12
- No – 6
- Abstain – 2
- Absent – 15

### MOTION CARRIES.

#### Infrastructure & Systems Subcommittee – Mike Ennis, Co-Chair & Daniela Bremmer, Subcommittee Staff

Mike Ennis, private sector co-chair of the Infrastructure & Systems Subcommittee, and Daniela Bremmer, subcommittee staff, provided an overview of the subcommittee's accomplishments through 2020. The subcommittee's adopted 2020 work plan consisted of three major activities:

- Activity 1 – Develop a cooperative automated transportation (CAT) policy framework: Eight policy goals were adopted in 2019, a strategies and actions development workshop was held in April 2020, and the subcommittee continues to refine the CAT policy framework and encourage other subcommittees to develop their own goals, strategies, and actions.
- Activity 2 – Grant programs: The subcommittee evaluated grant criteria from existing Federal, State, and WSDOT grant programs, and developed a grant funding sources inventory as a resource for entities looking to pursue CAT initiatives.
- Activity 3 – Collaborative discussions with self-certified AV companies: The subcommittee developed an open dialogue survey template, used to conduct open, collaborative discussions with companies self-certified to test AVs in Washington. This activity is being transitioned to the Licensing Subcommittee, who oversees the self-certification program.

Mr. Ennis then presented two recommendations for Executive Committee consideration.

#### **Recommendation – Pavement Markings:**

To support AV testing and future deployments, and to potentially significantly reduce crashes and associated societal costs, the subcommittee recommends the Legislature consider increased ongoing investment in enhanced roadway pavement markings as part of new revenue discussions. These enhanced roadway pavement markings would support increased traveler safety and support advanced driver assistive systems (ADAS) deployed on Washington roads

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today (SAE levels 0-2) as well as automated driving systems (ADS) (SAE levels 3-5) technologies being tested.

Motion on the floor to adopt the recommendation. Motion seconded.

Discussion:

- No discussion items brought forth on this recommendation.

Vote:

- Aye – 19
- No – 0
- Abstain – 2
- Absent – 13

### MOTION CARRIES.

#### **Recommendation – Real Time Work Zone Data:**

Work zones can change the direction of traffic, increase or change signage, and temporarily adjust lane striping and pavement markings that would not normally be reported through mapping and navigation software and apps. These work zone changes often change multiple times, quickly, as the work progresses. Communicating real time work zone data out to these apps and software would enhance both traveler and work zone worker safety. The subcommittee recommends the Legislature support WSDOT's work zone data initiative and to consider increased, ongoing investments to enhance WSDOT's capacity to develop a comprehensive, real time work zone database as part of new revenue discussions.

Motion on the floor to adopt the recommendation. Motion seconded.

Discussion:

- Real time work zone data would be made freely available.
- As Washington increases funding for new technologies and initiatives like this, need to ensure that funding is not diverting funding away from existing initiatives that funding is already committed to.
- Data privacy protection needs to be considered in this initiative.

Vote:

- Aye – 18
- No – 0
- Abstain – 3
- Absent – 14

### MOTION CARRIES.



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Ms. Bremmer also described the subcommittee's next steps moving into 2021. The subcommittee will be meeting in December 2020 and looking at the Future Path inventory provided by the Transportation Commission and Executive Committee for subcommittees to consider pursuing, which will help inform the subcommittee's 2021 work plan. Ms. Bremmer noted that the subcommittee requested more education and information sharing opportunities, which has already proven fruitful, as both recommendations brought forth today were based on education presentations given to the subcommittee at the September meeting.

### Liability Subcommittee – Harris Clarke, Co-Chair

Harris Clarke, private sector co-chair for the Liability Subcommittee, presented an overview of the subcommittee's 2020 activities. The subcommittee has 22 active subcommittee members representing diverse interests and different levels of engagement. During 2020, the subcommittee held educational sessions and discussions on advanced driver assistance systems (ADAS), comments on the Uniform Law Commission (ULC) draft model legislation, and a panel exploring tort liability.

Mr. Harris highlighted next steps for the subcommittee, including continued discovery, exploring liability issues with adjusters and claims managers, criminal liability, and developing recommendations around data requirements for determining liability and the definition of a driver as it relates to liability.

### Licensing Subcommittee – Beau Perschbacher, Co-Chair

Beau Perschbacher, public sector co-chair for the Licensing Subcommittee, presented two recommendations for the Executive Committee to consider.

#### **Recommendation – Amendment to RCW 46.37.480 – Television viewers:**

In an effort to clean up obsolete aspects of Washington statute appropriate to support AVs, RCW 46.37.480 section 1 was identified as no longer appropriate. RCW 46.37.480(1) reads:

*No person shall drive any motor vehicle equipped with any television viewer, screen, or other means of visually receiving a television broadcast when the moving images are visible to the driver while operating the motor vehicle on a public road, except for live video of the motor vehicle backing up. This subsection does not apply to law enforcement vehicles communicating with mobile computer networks.*

Two newer RCWs have superseded this RCW to address distracted driving:

- RCW 46.61.672 – Use of electronic devices in vehicles
- RCW 46.61.673 – Dangerously distracted driving

Law enforcement has acknowledged they no longer refer to RCW 46.37.480(1), in light of the newer RCWs, and repealing this section potentially eliminates a barrier for AVs, such as for truck platooning.

Motion on the floor to adopt the recommendation. Motion seconded.

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### Discussion:

- The Executive Committee discussed the potential to reword this RCW section instead of repealing it, to acknowledge other potential needs for this section, such as preventing drivers from viewing streaming services on mobile devices in a vehicle.
  - Mr. Perschbacher noted that the two newer RCWs, 46.61.672 and 46.61.673 specifically address the use of electronic devices in vehicles and distracted driving laws, which adequately address this concern.
  - It was acknowledged that further refinement of this language could be done further in the process, as this recommendation will go to the Transportation Commission, then to the Legislature, and further refinements can occur later in the multi-tiered process.

### Vote:

- Aye – 18
- No – 0
- Abstain – 3
- Absent – 14

### MOTION CARRIES.

#### **Recommendation – Amendment to RCW 46.92.010 Testing – Self-certification pilot program:**

It is unclear in the statute that created the AV self-certification pilot program what level of SAE automation is subject to the self-certification process. The Department of Licensing (DOL) could clarify the issue through rulemaking, if given the authority by the Legislature. Giving the DOL rulemaking authority also provides flexibility to address future items related to the self-certification pilot program, as the AV space continues to evolve, rather than having to go through the full legislative process each time.

Motion on the floor to adopt the recommendation. Motion seconded.

### Discussion:

- The Executive Committee discussed the potential vagueness of the scope and scale of granting the DOL rulemaking authority for the self-certification pilot program.
  - There are no clear guidelines on when an item is appropriate for rulemaking vs. going through the legislative process.
  - Granting the DOL rulemaking authority could present a balance of powers issue.
  - Legislature can put specific parameters around the rulemaking authority granted to the DOL to mitigate potential issues on scale and scope.
  - Legislature is only around once a year, whereas the DOL is a year-round operating agency and can react quickly to AV technology changes as they evolve.

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Vote:

- Aye – 16
- No – 2
- Abstain – 3
- Absent – 14

### MOTION CARRIES.

#### **Safety Subcommittee – Manuela Papadopol, Co-Chair & Debi Besser, Subcommittee Staff**

Manuela Papadopol, private sector co-chair of the Safety Subcommittee, and Debi Besser, subcommittee staff, presented an overview of the subcommittee's 2020 activities. Following the pandemic, the Safety subcommittee moved to meeting monthly in a virtual session, bringing subject matter experts as guest speakers to provide educational sessions. The subcommittee discussed House Bill (HB) 2470 based on the ULC model AV Act and gathered input from subcommittee members. Ms. Besser highlighted that this feedback was not filtered, capturing all perspectives, so some points of feedback conflict with each other. The subcommittee prepared a HB2470 feedback document, provided with the subcommittee's meeting materials.

Ms. Papadopol and Ms. Besser then presented three recommendations for Executive Committee consideration.

#### **Recommendation – Repeal portion of RCW on TV Screens:**

This recommendation mirrors the recommendation brought forth by the Licensing Subcommittee to repeal RCW 46.37.480(1).

Motion on the floor to adopt the recommendation. Motion seconded.

Discussion:

- No discussion items brought forth on this recommendation.

Vote:

*The Executive Committee agreed to adopt the same votes as captured for the Licensing Subcommittee's recommendation to repeal RCW 46.37.480(1).*

- Aye – 18
- No – 0
- Abstain – 3
- Absent – 14

### MOTION CARRIES.

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### **Recommendation – Autonomous Vehicle Definition:**

Executive Order (EO) 17-02 and HB 2676 both reference the term “autonomous vehicles”, but neither provide a clear definition of the term, or what SAE automation levels the term applies to. The Safety Subcommittee recommends clearly defining the term “autonomous vehicles” by clearly delineating automated vs. autonomous, referencing SAE J3016-2018 for automation level definitions, and clarifying that EO 17-02 and HB 2676 apply to SAE level 4 and level 5 autonomous vehicles only. Ms. Besser noted that this recommendation is similar to that brought forth by the Licensing Subcommittee, but differs slightly in that this recommendation specifies how “autonomous vehicles” should be defined, but not the method it should be done in (legislation, rulemaking, etc.).

Motion on the floor to adopt the recommendation. Motion seconded.

Discussion:

- The Executive Committee requested that if this recommendation and that brought forth by the Licensing Subcommittee move forward, they are harmonized to understand and reconcile any differences.

Vote:

- Aye – 19
- No – 0
- Abstain – 2
- Absent – 14

### **MOTION CARRIES.**

### **Recommendation – Law Enforcement / First Responder Interaction Guide:**

If law enforcement / first responders encounter a driverless vehicle, they currently have no information about how to handle the situation. The Safety Subcommittee recommends companies conducting driverless testing to provide a law enforcement/first responder interaction guide prior to conducting testing. This plan will provide information on how to communicate with remote drivers/support, where to find information in the vehicle (e.g. proof of insurance, contact phone number), and how to safely move, immobilize, and tow the vehicle if needed. This interaction guide is consistent with those required in both California and Arizona.

Motion on the floor to adopt the recommendation. Motion seconded.

Discussion:

- No discussion items brought forth on this recommendation.

Vote:

- Aye – 18
- No – 0

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- Abstain – 2
- Absent – 15

### MOTION CARRIES.

#### System Technology & Data Security Subcommittee

The System Technology & Data Security Subcommittee representative was unable to attend the meeting during the subcommittee's update period.

The subcommittee has no formal recommendations to bring forth to the Executive Committee this year. The subcommittee has a final 2020 meeting scheduled for December 2<sup>nd</sup>.

#### Workforce Subcommittee – Maggie Leland, Co-Chair

Maggie Leland, Workforce Subcommittee public co-chair, provided an overview of the subcommittee's progress over 2020. The subcommittee held its first meeting in October 2019, and had planned to hold its second meeting in April 2020. The two public agencies supporting this subcommittee – Employment Security Department & Department of Labor and Industries – as well as engaged private sector organizations had to shift focus to COVID-19 response and put subcommittee efforts on pause. There is currently no date scheduled for a second subcommittee meeting.

Brenda Wiest, private co-chair, noted that she has been monitoring other subcommittees' activities and how they interact, and that much of the Workforce Subcommittee's work will ramp up as other subcommittees' work ramps down, as AVs complete testing and start entering deployments. Ms. Wiest has been interacting with labor partners offline to continue work in the background in preparation of the Workforce Subcommittee spinning up in the future.

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## AV WORK GROUP COMMUNICATIONS ROAD MAP

### *Kathryn Murdock, Associate, EnviroIssues*

Kathryn Murdock, Associate with EnviroIssues, provided an overview of the AV Work Group Communications Plan that will be provided to Executive Committee members following the meeting. The Communications Road Map provides milestone-driven recommendations for the Work Group to communicate in a comprehensive, transparent, and equitable way with interested stakeholders and the general public.

Ms. Murdock walked through the outline of the Communications Road Map, which includes the Work Group's policy goals and objectives, communication-specific goals and objectives, an overview of potential stakeholders to communicate with, a communications toolkit, and next steps.

The toolkit is the road map, focusing on recommended milestones for how to best engage with and communicate to stakeholders. Ms. Murdock highlighted that these milestones describe

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ways to engage the public to inform developing recommendations before they are brought to the Legislature, as well as how to keep stakeholders informed on AV Work Group activities and developing recommendations before, during, and following legislative sessions each year.

Ms. Murdock also noted that this Communications Road Map is set to align with the current purpose and direction of the Work Group, and it will evolve as the Work Group itself evolves.

*Questions and presenter responses can be found in the Presentation Questions Log table at the end of this document.*

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### AV INDUSTRY PANEL

Industry representatives shared their insights and experience testing in other states, offered input into Washington State's current law on AV's, and provided overviews of their work, products, and future plans.

*Questions and presenter responses can be found in the Presentation Questions Log table at the end of this document.*

#### *Waymo – Annabel Chang, Head of State Policy & Government Affairs*

Cesar Diaz, Government Relations Senior Manager for Aurora, presented Aurora's goals, experience and guidance for Washington AV policy. Aurora is a self-driving technology company based in California, looking to deploy AV technology safely, quickly, and broadly. Aurora's goals are to increase safety, expand access, improve lives, and revitalize cities.

Mr. Diaz presented the concept of the Aurora Driver, the 'brains' powering vehicles, a combination of hardware, software, and data services serving as a platform for passenger services, logistics, fleet management, and other vehicle and use case types.

Mr. Diaz discussed Aurora's experience in California, Pennsylvania and Texas, and the differences in regulatory frameworks and approaches each state took that impacted how Aurora was able to engage and deploy within each state. Mr. Diaz highlighted the importance of regulatory certainty for industry to test and deploy within a state.

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### EXECUTIVE COMMITTEE MEMBER ITEMS

#### *Open forum*

All Executive Committee members in attendance were given the opportunity to offer thoughts, insights, and observations.

- No members brought forth a topic for discussion.
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### CLOSING REMARKS

Acting Chair Jim Restucci thanked the presenters, organizers, and Executive Committee members, and asked if there was any other business to come before the committee. No other business identified.

*MEETING ADJOURNED.*

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### Important Dates:

- **December 15<sup>th</sup> & 16<sup>th</sup>, 2020** – Transportation Commission meeting
- **January 8<sup>th</sup>, 2021** – Annual Report to the Legislature due



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### PRESENTATION QUESTIONS LOG

Presentation	Participant	Question / Comment	Presenter Response
10 Best Practices for State Automated Vehicle Policy	Dr. Yin Hai Wang	Regarding the upcoming FCC vote, many agencies already have DSRC installed. What happens if DSRC is voted out and is no longer an available communications channel?	The FCC vote is scheduled for November 18 <sup>th</sup> . The draft order will be to reallocate the 5.9GHz band, giving the lower 45MHz to wi-fi, and keeping the upper 30MHz for C-V2X. The timeline proposed will have the order take effect one year after the vote. ITS devices will have to exit the lower 45MHz by that time. The draft order does not directly address what happens to DSRC. This is recognized as a potentially huge impact to the industry.
10 Best Practices for State Automated Vehicle Policy	Laura Johnson	Recommendation 10 to prepare for an extended period of uncertainty, given concern based on past technology/transportation rollouts and the impacts they had on communities, are there recommendations for considering equity in the frame of this uncertainty?	There are many equity considerations that can be evaluated during this time of uncertainty, such as disproportionate safety impacts, how and where infrastructure is built, economic disparities, job and opportunity access, etc.
AAMVA Updated Guidance on Safe Testing of AVs	Justin Leighton	If you have an employee working in CA but performing the work in WA, which state and local taxes does the employee pay? Employer?	That is a great question, and not necessarily one we can answer right now. As we continue to develop in this space, questions like these come to light.





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Presentation	Participant	Question / Comment	Presenter Response
AAMVA Updated Guidance on Safe Testing of AVs	Representative Shelley Kloba	What if I rob a bank and use a Waymo AV as my getaway car, is Waymo an accomplice? Do they have a use policy that absolves them of responsibility if the car is used in the commission of a crime?	<p>AVs have monitoring systems on where their vehicles are and how they are being used, such as in ridehailing/ridesharing AVs who need to monitor what riders are doing in the vehicle, as well as make sure they are clean and being used safely.</p> <p>The technology is in place. How it is used varies based on a jurisdiction's laws, such as case law and how they handle things in court.</p> <p>One benefit to highlight is that through law enforcement interaction plans, law enforcement can contact a AV representative 24/7 which could support pursuits and reduce the number of dangerous police pursuits.</p>
Panel: Regulation to Safeguard Washington Residents		What is an ex ante standard?	An ex ante standard is having the standard in place that one must comply with <i>before</i> putting it out into the world. Elevator standards are a good example. You either meet the standard or you don't.



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Panel: Regulation to Safeguard Washington Residents	Representative Shelley Kloba	<p>What is the best way to understand each manufacturer and what the process has been? Asking them to show their work without showing their work? How do we know a company done what needs to be done to have reassurance to the public the AV technology is safe?</p> <p>Is this something used in regular software development or other industries, such as when FAA licenses a new technology?</p>	<p>The safety case approach has been around for about 20 years, it is popular in the United Kingdom and the U.S. Federal Drug Administration is starting to go down this path.</p> <p>This approach is not currently as prevalent in other industries, as those are all well-known entities, easier to provide more prescriptive regulatory approaches around.</p> <p>For AVs, when you take the human out of the loop, everything changes as they cannot act as the 'general cleanup' entity to resolve open issues. No one can predict all scenarios an AV may run into, so it is difficult to put parameters around it.</p> <p>UL 4600 does include an extensive catalog of potential scenarios and things for vendors to think about.</p> <p>A big component of UL 4600 is that if something occurs even once, it needs to be fixed. That is where the feedback loops are really important.</p>



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Panel: Regulation to Safeguard Washington Residents	Daniel Malarkey	Who is the audience for the standard? Where is the industry at in looking at this?	<p>Most automotive standards today were developed by automotive companies, suppliers, technical representatives. Underwriters Laboratory has a quote that you cannot have too many technical representatives, so that standards consider and are designed to serve all stakeholders.</p> <p>Rather than thinking in terms of positive risk balance, UL 4600 asks you to have positive trust balance, which requires four things: Testing, good engineering, field feedback, and safety culture. More information on positive trust balance <a href="#">can be found here</a><sup>6</sup>.</p>
Panel: Regulation to Safeguard Washington Residents	Daniel Malarkey	Can you provide more information on the independent review that UL 4600 requires?	<p>The independent reviewer does not have to be an entity outside the company, but it does have to be someone who is not directly tied to the technology, is not incentivized to deploy on time, and can pass objective judgement that the safety case meets the standard.</p> <p>There are also companies certified to do just this, and do this very well.</p> <p>Companies can choose to disclose the top levels of their safety case without publishing actual code, in an effort to be transparent and give assurances the technology is safe and has been adequately assessed. It can start to reflect the Voluntary Safety Self-Assessments (VSSA) that the US Department of Transportation defines.</p>

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<sup>6</sup> Positive Trust Balance Article: <https://pr-97195.medium.com/positive-trust-balance-for-self-driving-car-deployment-ff3f04a7ef93>



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Panel: Regulation to Safeguard Washington Residents	Rose Feliciano	Do these get standardized by a federal agency? What is the process for meeting these goal-based standards, and certifying that?	<p>Right now, the US DOT does not require meeting any standards other than the Federal Motor Vehicle Safety Standards (FMVSS), which focus on basic functions such as do your windshield wipers work.</p> <p>There are really no hoops to jump through in existing standards that would prevent an unsafe AV from being put on the roadways.</p>
Panel: Regulation to Safeguard Washington Residents	Chair Jim Restucci	What is the state's role in evaluating, implementing, and enforcing something like UL 4600?	<p>Do not want to make a statement on behalf of the state as to what their role is.</p> <p>There is the issue of the driver vs. the vehicle, the vehicle is federal and the driver is state regulated. When the AV has both the driver and vehicle role, what the state's role is a difficult question.</p> <p>For testing, the state could use UL 4600 to evaluate companies' testing safety. A company could use the same framework to build both their testing program and deployment safety cases.</p> <p>An example of a safety case for road testing <a href="#">can be found here</a><sup>7</sup>.</p>

<sup>7</sup> Example of a Safety Case for Road Testing: [http://users.ece.cmu.edu/~koopman/pubs/koopman19\\_TestingSafetyCase\\_SAEWCX.pdf](http://users.ece.cmu.edu/~koopman/pubs/koopman19_TestingSafetyCase_SAEWCX.pdf)



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Panel: Regulation to Safeguard Washington Residents	Chair Jim Restucci	What are some examples from other industries, such as in the air and rail industries where technologies are automated, on how making a safety case makes the most sense, rather than having specific standards, tests and specs?	<p>That is still immature. In aviation, you still have a pilot. In rail, you still have the train engineer. There are completely automated rails in Australia for mining, but their safety argument is that no one lives within 1,000 kilometers so they are simply not worried about it. In aviation, they are taking UL 4600 and modifying it for unmanned drones.</p> <p>A safety case is simple for something like airport trains, which are highly regulated environments. As soon as you operate in the open world, you cannot prescribe what is going to happen, which is when you really need a safety case.</p>
Panel: Regulation to Safeguard Washington Residents	Chair Jim Restucci	What are some lessons learned in the process of getting public and private sector to collaborate on AV-related regulation (UL4600)?	<p>Several companies have committed publicly that they are going to follow UL 4600.</p> <p>In terms of a public/private dialogue, a lot of AV companies are using safety as a competitive thing. The airline industry cannot do that – an airplane crash is still an airplane crash regardless of whose company is on the side. The vehicle industry has not gotten their yet.</p> <p>UL 4600 is an interesting way for companies to exchange ideas of how to approach safety. If everyone has the same checklist for safety, it is going to set a pretty rigorous bar for safety.</p> <p>Most companies are still trying to get their technology to work the right way, safety is not on fire. As they get closer to deployment, they'll start focusing on safety. When they get there, they have to have something, and UL 4600 may be that something.</p>



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Panel: Regulation to Safeguard Washington Residents	Daniel Malarkey	What is the right role for the State in regards to this standard?	Washington is focused on testing now. UL 4600 is not about testing.  Step 1 is to make sure companies are testing safely now.  Step 2 is, when companies are ready to deploy without a safety driver, there should be a technical basis to say 'yes, we're safe'. What was the decision criteria used to determine safe and ready? Is the State comfortable with that, or do you want more transparency?
Panel: Regulation to Safeguard Washington Residents	Reema Griffith	Where do you think the federal government is heading next in terms of AV regulations? Do you see any laws emerging from Congress that may set the tone for the country around the advancement to provide some firmer borders to operate in?	Change in federal regulation may be coming. The best thing is for industry to get together and define minimum levels of safety before regulations come.
Panel: Regulation to Safeguard Washington Residents	Rose Feliciano	Is the idea that companies will get a stamp of approval of meeting UL 4600?	Companies do not have to. There is no regulation that requires it. Companies can get an external certifying agency to give you a stamp for conforming to UL 4600, if they want.



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Panel: Regulation to Safeguard Washington Residents	Rose Feliciano	Is there an example of meeting a UL standard to demonstrate safety?	<p>It is unlikely there will be a stamp on the car. It does not prove the car itself is safe. It proves the company has designed something to be safe, the company still needs to execute the design safely.</p> <p>The expectation is that UL 4600 will go along with other standards to fully cover safety of AVs.</p>
Panel: Regulation to Safeguard Washington Residents	Francesca Maier	Would it be easier to develop safe AVs if we had a safe systems approach to all of our mobility infrastructure?	<p>The safer the rest of the mobility is, the easier it is going to be. The way to look at it is if you have a mobility infrastructure that provides guarantees to the vehicle, you've offloaded the responsibility of the safety of the vehicle on to the infrastructure. That is a tough ask, to guarantee something like never having a burned-out traffic light.</p> <p>It would be better for the infrastructure to make promises that things will almost always be right, and the car to count on the infrastructure to usually be right, but still have to pay attention for one-offs.</p>



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Panel: Regulation to Safeguard Washington Residents	Daniel Malarkey	Where do we go from here? I suggest the System Technology and Data Security Subcommittee take on the task of tracking the progression of UL 4600. How the standard is evolving, how states are relating to it, and at what point should state policy reinforce these evolving standards to help move the industry in a helpful direction.	One thing the state might way is a dashboard of metrics. If a company has a safety case, they can put numbers on the top levels of the safety case and show the state the numbers are lining up with what they are supposed to be, as a concrete way to show they have their act together.
Panel: AV Industry – Waymo	Tom Alberg	Regarding Waymo testing trucking on I-10, are you testing just between two rest stops/points on I-10, or trying to go from an off-interstate terminal to another one?	We are testing point to point. All autonomous trucking companies currently have test drivers. No one has reached the technological point to be fully automated.  Waymo’s model is to go from point to point. We may work with OEMs and other fleets that would prefer warehouse to warehouse, not going on surface streets, however the technology we are aspiring to is for point to point.





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Panel: AV Industry – Waymo	Representative Shelley Kloba	What are requirements for cleaning and ensuring physical distance in the Phoenix program now?	<p>The Arizona program is fully driverless, completely automated, the rider is the only human in the car. We do not have shared rides right now, it is assumed only one household is in the car at any given time.</p> <p>We have secured plexiglass barriers in case we do need them with test drivers at some point. COVID protocols are labeled throughout the car.</p> <p>We also monitor the rides, and can make sure riders are buckled in, wearing their masks, etc.</p>
Panel: AV Industry – Waymo	Reema Griffith	What is your experience with disability, picking up pedestrians in wheelchairs, other races...what is your system experiencing there, and how do you approach that from a safety standpoint?	<p>Something for the group here to consider that has popped up around the country at the municipal level is the prohibition of facial detection. There may be unintended consequences, as it is challenging for AV companies detecting faces (not identifying them) for road safety purposes.</p> <p>We are gathering huge amounts of information in early mapping phases and in simulation to make sure we process information that takes in to account all races, ages, disabilities, etc.</p> <p>For accessibility of the ride itself, we just submitted an application to the US DOT's inclusivity challenge in October 2020. We pulled together all of the accessibility tools baked into the program, such as the minimize walking setting, ability to remotely honk the horn to confirm the vehicle pulling up is the one you hailed, live rider support, post-trip walking directions, etc.</p>



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Panel: AV Industry – Waymo	Chair Jim Restucci	What about California and/or Arizona’s AV regulatory approaches would you appreciate seeing reflected in Washington’s framework?	Waymo is currently comfortable with the Washington testing framework has in place. The Washington framework has allowed us to do our annual testing in Kirkland. We are a current, active testing permit holder.
Panel: AV Industry – Waymo	Chair Jim Restucci	Jim – What about California or Arizona’s approaches would you recommend against implementing?	<p>California has multiple regulatory agencies, the Public Utilities Commission (PUC) and the Department of Motor Vehicles (DMV), which proves challenging. They do not report up to the same head, so they sometimes have conflicting perspectives and processes. Arizona is very streamlined, with the DOT as the single point of contact.</p> <p>California has no path to commercialization. Recently, the California PUC offered its proposed decision to suggest they will open that up. Until that is final, the prohibition stands.</p> <p>In California, companies cannot do testing or a path to commercialization for Level 3 and above technologies for trucking.</p>
Panel: AV Industry – Waymo	Francesca Maier	What do you think the privacy issues are with allowing a private organization to use facial recognition software of the public without the public’s consent?	<p>Facial recognition is a broad term. There are really two things happening – facial detection and facial identification.</p> <p>Waymo won’t speak to facial identification, as we do not use that technology.</p> <p>Waymo does use facial detection, to know it is a human in the crosswalk, it is very important for the safety of the technology. There is no identity involved.</p>



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Panel: AV Industry – Waymo	Representative Shelley Kloba	With the testing Waymo is doing in Kirkland, is that testing with or without a test driver?	Arizona is the only place Waymo has fully automated driving, everywhere else has a test driver.
Panel: AV Industry – Waymo	Chair Jim Restucci	Are there laws, regulations, or policies in place in Washington that are preventing you from testing/deploying in Washington?  Example: “Following too closely” statute (RCW 46.61.145) that prevents efficient platooning of trucks, shuttles, or other automated vehicles	The example of following too closely law is not applicable to Waymo technology.  The current testing regime in Washington is something Waymo welcomes.