

Washington State **Transportation Commission** 

**AV Work Group Executive Committee** Meeting







#### Agenda



TIME	DESCRIPTION			
9:00	Welcome, Introductions & Officer Election	Jim Restucci, Interim Chair, AV Work Group Executive Committee		
9:10	10 Best Practices for State Automated Vehicle Policy	Marc Scribner, Senior Transportation Policy Analyst, Reason Foundation		
9:50	AAMVA Updated Guidance on Safe Testing of AVs	Brian Ursino, Director, Law Enforcement, AAMVA Bernard Soriano, Deputy Director, California Department of Motor Vehicles & Chair, AAMVA Autonomous Vehicles Subcommittee		
10:30	Panel: Regulation to Safeguard Washington Residents	Phil Koopman, Co-Founder, Edge Case Research  Daniel Malarkey, Senior Fellow, Sightline Institute		
11:30	LUNCH BREAK	30 MINUTES		
12:00	AV Subcommittee Updates & Recommendations	Dr. Andrew Dannenberg, Chair, Health & Equity Subcommittee Mike Ennis (co-chair) & Daniela Bremmer (subcommittee staff), Infrastructure & Systems Subcommittee Harris Clarke, Co-chair, Liability Subcommittee Beau Perschbacher, Co-chair, Licensing Subcommittee Captain Tom Foster & Manuela Papadopol, Co-chairs, Safety Subcommittee Michael Schutzler, Co-chair, System Technology & Data Security Subcommittee Maggie Leland, Co-chair, Workforce Subcommittee		
1:20	AV Work Group Communications Road Map	Kathryn Murdock, Associate, Envirolssues		
1:45	AV Industry Panel	Annabel Chang, Head of State Policy & Government Affairs, Waymo		
2:15	Executive Committee Member Items	Open forum for members		
2:25	Closing Remarks	Jim Restucci, Interim Chair, AV Work Group Executive Committee		
2:30	ADJOURN			

# 10 BEST PRACTICES FOR STATE AUTOMATED VEHICLE POLICY

Marc Scribner
Senior Transportation Policy Analyst
Reason Foundation
marc.scribner@reason.org





#### CONTENTS

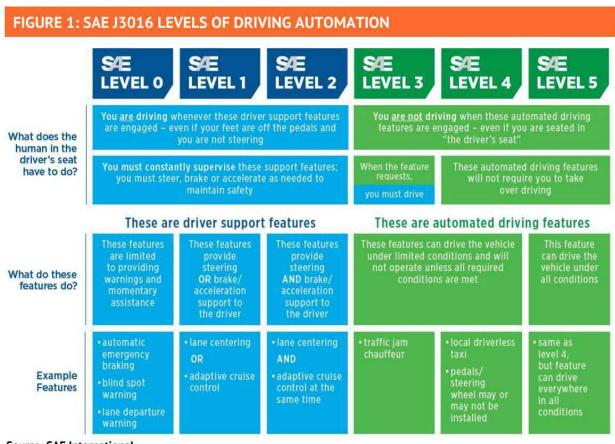
- Defining Automated Vehicles
- Existing State Automated Vehicle Policies
- Recommendations for State Policymakers



# DEFINING AUTOMATED VEHICLES

## Driving Automation Systems and Automated Driving Systems





Source: SAE International

#### Present and Possible Future Use Cases



#### **TABLE 1: DRIVING AUTOMATION SYSTEM USE CASE EXAMPLES**

SAE Level	Example Use Cases	
1	Adaptive cruise control*, lane centering*, platooning (speed/brake coordination only)†	
2	Tesla Autopilot*, hands-free traffic jam assistance*, platooning with lane centering	
3	Highway pilot	
4	Urban taxicab†, last-mile urban delivery†, fixed-route transit†, long-haul freight	
5	Utility vehicles	

Notes: \* presently available to consumers † presently in limited public pilot project operation



# EXISTING STATE AUTOMATED VEHICLE POLICIES

### Legislation



Legislation Type	Number of States with	State	Bill Number (Year)	Summary
	Enacted Legislation	Alabama	SJR 81 (2016)	Creates automated vehicle legislative study committee
Commercial	22	California	SB 1298 (2012)	Creates a comprehensive automated vehicle regulatory framework
Cybersecurity of Vehicle	Vehicle 0 California AB		AB 1184 (2018)	Authorizes San Francisco, subject to voter approval, to enact a fare tax of up to 3.25% on automated vehicle taxi trips originating in
Definitions	22	ta		
Infrastructure and Connected Vehicles	5		CD 747 (7047)	the county
Insurance and Liability	8	Colorado Florida	SB 213 (2017) HB 1207 (2012)	Defines and explicitly authorizes automated vehicle operations  Defines "autonomous technology," recognizes legality of automate vehicle operations
Licensing and Registration	3			
Operation on Public Roads		Florida	HB 311 (2019)	Replaces earlier "autonomous technology" definitions with SAE
Operator Requirements	11	1 101100	J3016 definitions, integrates automated ride-haili	
Other	.8	ride-hailing framework, establishes automate requirements, preempts localities from discri automated driving systems		ride-hailing framework, establishes automated vehicle insurance
Privacy of Collected Vehicle Data	1			
Request for Study	7	Georgia HB 472	HB 472 (2017)	Exempts platoon following vehicles from following-too-closely requirements
Vehicle Inspection Requirements	0		712 12 15 EW	
Vehicle Testing	11	Illinois	HB 791 (2017)	Preempts localities from prohibiting automated driving systems
Source: National Conference of State Legislatures' Autonomous Vehicles State Bill Tracking Database			AB 511 (2011)	Creates automated vehicle driver's license endorsement
		Oklahoma	SB 365 (2019)	Preempts localities from legislating or regulating the use of driving automation systems in a manner different than non-automated vehicles
		Texas	SB 2205 (2017)	Defines automated driving system, preempts local regulation of automated driving systems and vehicles equipped with ADS, explicitly authorizes automated vehicles
		Virginia	HB 454 (2016)	Exempts operators of automated vehicles from the general prohibition against visible displays being visible to vehicle operators
		Washington, D.C.*	DC B 19-0931 (2012)	Defines "autonomous vehicle," requires manual handoff, prohibits aftermarket automation of vehicles manufactured more than four years prior to conversion
				# 3207 Extend on the contraction

\*While a federal district and not a state, Washington, D.C. acts as a state in most contexts under the federal District of Columbia Home Rule Act of 1973.

#### Regulation



- Even in states that have enacted AV legislation, most do not impose complex regulatory regimes
  - California imposes detailed permitting and reporting regulations
  - Florida does not, instead largely relying on an insurance requirement to "regulate" AVs through private mechanisms
- California is still the top state for AV developer HQs, but advanced testing and operations have shifted to states with lower regulatory burdens (e.g., Arizona, Texas)

#### **Executive Orders**



State	E.O. Number (Date)	Summary	
Arizona	2015-09 (Aug. 25, 2015)	State agencies should coordinate on testing and operation of automated vehicles on public roads	
Arizona	2018-04 (March 1, 2018)	Requires automated vehicles to be in compliance with federal and state safety regulations	
Arizona	2018-09 (Oct. 11, 2018)	Establishes the Institute of Automated Mobility	
Delaware	14 (Sep. 5, 2017)	Establishes the Advisory Council on Connected and Autonomous Vehicles	
Hawaii	17-07 (Nov. 22, 2017)	Establishes automated and connected vehicle policy point of contact within the governor's office and orde state agencies to facilitate testing	
ldaho	2018-01 (Jan. 2, 2018)	Establishes the Autonomous and Connected Vehicle Testing and Deployment Committee to examine poli best practices as well as barriers to testing and deployment	
Illinois	2018-13 (Oct. 25, 2018)	Establishes automated vehicle testing program within the Illinois Department of Transportation	
Maine	2018-001 (Jan. 17, 2018)	Establishes the Maine Highly Automated Vehicles Advisory Committee	
Massachusetts	572 (Oct. 20, 2016)	Establishes a working group to develop automated vehicle policy recommendations	
Minnesota	18-04 (March 6, 2018)	Establishes the Governor's Advisory Council on Connected and Automated Vehicles	
Ohio	2018-01K (Jan. 18, 2018)	Establishes DriveOhio policy center	
Ohio	2018-04K (March 9, 2018)	Establishes automated vehicle testing and pilot programs and requires registration with DriveOhio	
Washington	17-02 (June 7, 2017)	Establishes interagency working group to develop automated vehicle pilot programs throughout the state	
Wisconsin	245 (May 18, 2017)	Establishes the Governor's Steering Committee on Autonomous and Connected Vehicle Testing and Deployment	



# RECOMMENDATIONS FOR STATE POLICYMAKERS

#### 1) Adopt a Standard Vocabulary



- For better or worse, SAE International's Recommended Practice J3016 has become the dominant consensus standard for defining levels of driving automation
- If states pursue AV policy, they should adopt J3016 rather than crafting their own government-unique definitions

#### 2) Recognize the Legality of Automated Vehicles



- This would be a simple finding of the legislature
- E.g., Florida's 2012 law included a provision that "finds that the state does not prohibit or specifically regulate the testing or operation of autonomous technology in motor vehicles on public roads"
- This statement is (or was) true in virtually every state
- This wouldn't answer most long-term AV policy questions, but it would send a signal to developers that the state is "open for business"

## 3) Respect Competencies at Various Levels of Government



- Federal, state, and local governments all possess specific areas of expertise in the broader landscape of motor vehicle regulation
- The federal government focuses on safety and performance requirements administered by NHTSA and FMCSA, as well as funding and coordinating road infrastructure investments through programs administered by FHWA
- State authorities have expertise in constructing and managing infrastructure, as well as driver licensing, vehicle registration, traffic operations, insurance, and liability determination
- Municipal and county authority expertise overlaps with that of state authorities in constructing and managing infrastructure, and traffic management and enforcement
- No reason to reinvent the wheel: agencies at various levels of government should stay in their policy wheelhouses

#### 4) Audit Motor Vehicle Codes for Existing Barriers



- Existing requirements that may pose barriers to AVs:
  - Driver duties upon striking unattended vehicles
  - Prohibitions on following-too-closely
  - Horn switches must be readily accessible to the operator
  - Inspection requirements related to steering wheels and brake pedals
  - Rearview mirrors
  - Mufflers
  - Safety belts
  - Operational speedometers
  - Steering mechanisms
  - Windshields
  - Windshield wipers
- Once conflicts are identified, lawmakers and regulators can resolve them by explicitly exempting automated vehicles from these provisions

#### 5) Distinguish Between Vehicle Types



- Low-speed, low-mass, geographically restricted passenger shuttles and last-mile delivery vehicles equipped with ADS should not be held to the same standards as ADS-equipped highway vehicles
- The federal government and many states have traditionally made distinctions between low-speed vehicles and highway vehicles
- As new novel vehicle types are developed to serve various automated vehicle business models, policymakers should allow maximum flexibility if these vehicles are able to meet an equivalent level of safety as conventional vehicles operating under the same operational design domains

#### 6) Remain Neutral on Future Business Models



- Example: ULC's Uniform Automated Operation of Vehicles Act
  - Appears to have unintentionally restricted "automated driving providers" to developers
  - Problem: the most experienced vehicle fleet managers are rental car companies, which do not have experience/interest in AV development but would love the opportunity to manage AV fleets
  - To date, only Washington State has considered—but not enacted the Uniform Automated Operation of Vehicles Act

#### 7) Avoid Questionable Legal Frameworks



- Be wary of misuse of executive orders and guidance documents
  - Example: Arizona and Ohio appear to use executive orders to bind private parties on AV matters
  - Another example: PennDOT issued supposedly nonbinding guidance that imposes a number of requirements on testing firms
    - Rather than bypass "hard law," it appears this claimed "soft law" approach merely imposes "hard law" conditions without the requisite procedural protections and accountability that comes from conventional legislation and regulation
- These approaches increase litigation risk for states and may deter developer interest in states using such questionable legal frameworks

#### 8) Focus on Infrastructure State of Good Repair



- AVs and CVs are different
- CV technology is in the middle of a major disruption (DSRC vs. C-V2X and beyond, FCC vote Nov. 18)
- DOTs should not be placing very risky bets on equipment
- ADS sensors perform best on well-maintained, modern roadways
- Instead of pursuing expensive "smart roads," state policymakers should fulfill their traditional duties by focusing on the state of good repair of their existing road infrastructure

#### 9) Designate a Lead Automated Vehicle Policy Office



- It would be wise for states to designate a lead automated vehicle policy office to serve as a clearinghouse and coordinating body for the variety of policy decisions that will be made across a number of agencies
- Such an office could exist within the governor's office, state department of transportation, or department of motor vehicles
- This would be an appropriate use of a governor's executive order powers

#### 10) Prepare for an Extended Period of Uncertainty



- For automated vehicle policymaking, less can be more
- State policymakers should focus on discrete known problems and avoid codifying their predictions about the direction of these technologies or possible use cases
- As these technologies remain highly proprietary and with development largely taking place in an environment of intense secrecy, it may be difficult to determine how quickly testing and deployment milestones will be met to enable wide-scale deployment of automated vehicles
- State policymakers should adopt a general principle for crafting automated vehicle policies in a manner that respects this uncertainty and allows for flexibility to adapt when new information is available
- Locking in hard rules that seem sensible today may prove unwise in the near future

# 10 BEST PRACTICES FOR STATE AUTOMATED VEHICLE POLICY

Marc Scribner
Senior Transportation Policy Analyst
Reason Foundation
marc.scribner@reason.org



## Safe Testing and Deployment of Vehicles Equipped with Automated Driving Systems Guidelines - Edition 2

#### **OUR VISION**

Safe drivers Safe vehicles Secure identities Saving lives!



Established fall 2014 - 20 US and Canadian jurisdictional members and AAMVA staff

with wide range of expertise in:

Vehicle and Driver programs
Law enforcement
Legal and policy

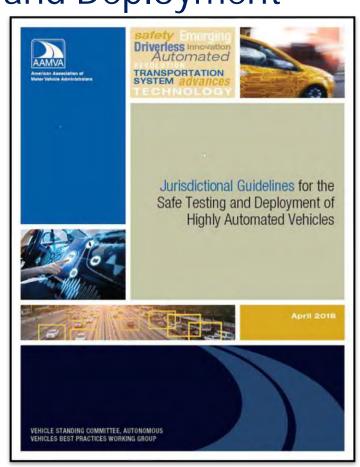


Report: "Jurisdictional Guidelines for the Safe Testing and Deployment

of Highly Automated Vehicles"

Edition 1 Published May 2018

Provides voluntary recommended guidelines.



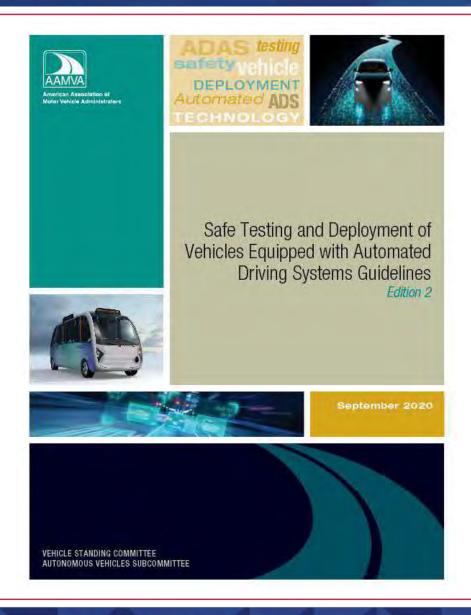
https://www.aamva.org/GuidelinesTestingDeploymentHAVs-May2018/



#### Purpose:

Provide recommendations to jurisdictions that facilitate a consistent regulatory framework to balance current public safety with the advancement of vehicle innovations, to reduce crashes, fatalities, injuries, and property damage.





# Developed Edition 2 over the last 2 years

Published October 2020 Replaces Edition 1



#### Global Changes In Edition 2:

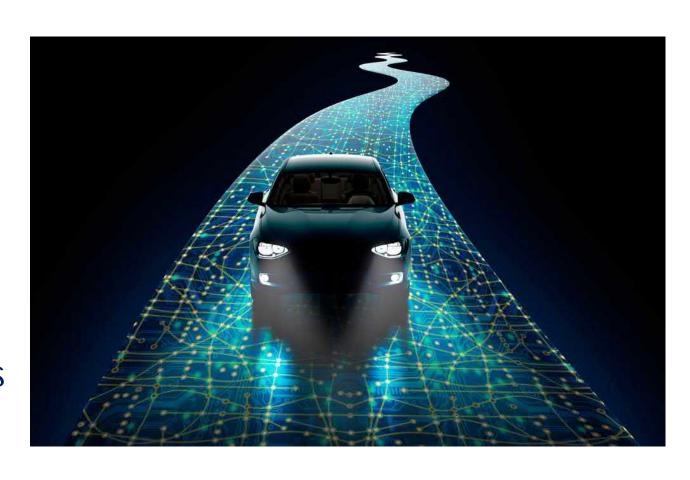
 The term "Highly Automated Vehicles" been retired and replaced by the term "ADS-equipped vehicles"

 Several chapters now include information related to Advanced Driver-Assistance Systems (ADAS)



#### 8 Chapters

- 1. Executive Summary
- 2. Definitions and Acronyms
- 3. Administrative Considerations
- 4. Vehicle Considerations
- 5. Driver Licensing Considerations
- 6. Law Enforcement Considerations
- 7. Other Considerations
- 8. Next Steps

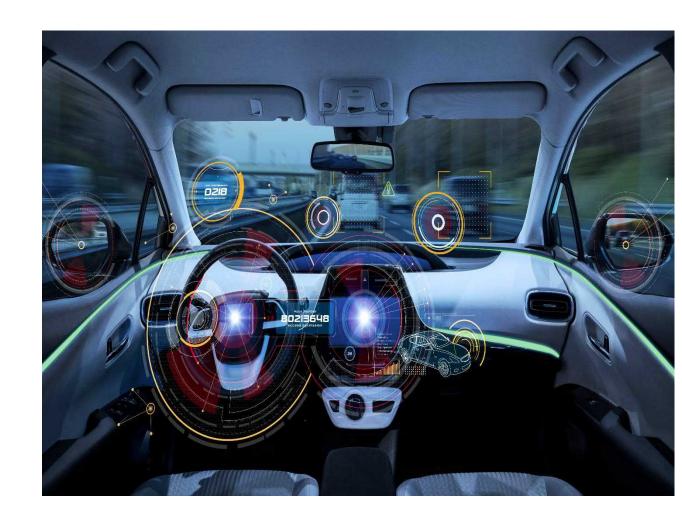




#### Chapter 3. Administrative Considerations

Contains a total of 11 recommendations directed to jurisdictions and 2 directed to Manufacturers and Other Entities (MOEs), also adds 1 new subsection\*

\*3.2 Advanced Driver-Assistance Systems (ADAS)





### Chapter 4. Vehicle Considerations

Chapter 4 contains 36 recommendations in 10 subsections (some new); 33 recommendations directed to jurisdictions and 3 directed to MOEs.

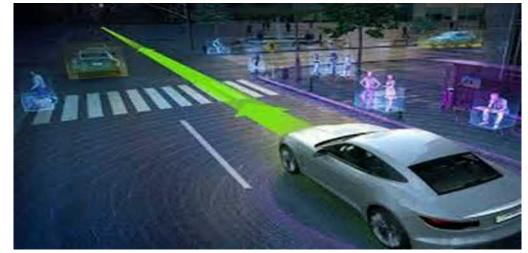
- 4.1 Application and Permit for Manufacturers or Other Entities
- to Test Vehicles on Public Roadways
- 4.2 Actions on Permit Process
- 4.3 Information on the Manufacturer's Certificate of Origin (MCO) and New Vehicle Information Statements (NVIS)
- 4.4 Titling and Branding for New and Aftermarket ADS-
- **Equipped Vehicles**
- 4.5 Vehicle Registration





### Chapter 4. Vehicle Considerations

- 4.6 License Plates
- 4.7 Financial Responsibility also known as Mandatory Liability Insurance
- 4.8 Jurisdictional Approval of the ADS as the Driver New section
- 4.9 Federal Motor Vehicle Safety Standards (FMVSS) and Canadian Motor
- Vehicle Safety Standards (CMVSS) rewritten and updated
- 4.10 Periodic Motor Vehicle Inspections New section





### Chapter 5. Driver Licensing Considerations

- Chapter 5 contains 61 recommendations in 10 subsections (some new); 57 recommendations directed to jurisdictions and 4 directed to MOEs.
- 5.1 Driver and Passenger Roles Defined
- 5.2 Driver License Requirements for Testing by Manufacturers and Other Entities
- 5.3 Remote Driver New section
- 5.4 Endorsements and Restrictions for Deployed Vehicles
- 5.5 Driver Training for Drivers on Vehicle Technologies





## Chapter 5. Driver Licensing Considerations

- 5.6 Training for Driver Educators and Considerations for Driver Education and Driver Training Programs5.7 Driver License Skills testing with Vehicle Technologies
- 5.8 Training Motor Vehicle Agency Examiners on Vehicle Technologies
- 5.9 Training Motor Vehicle Agency Staff on Vehicle Technologies New section
- 5.10 Commercial Driver Licensing (CDL) New section





#### Chapter 6. Law Enforcement Considerations

Chapter 6 includes 36 recommendations in 11 subsections (some new); 16 recommendations directed to jurisdictions and 20 to MOEs.

- 6.1 Vehicle Identification
- 6.2 Crash/Incident Reporting
- 6.3 Criminal Activity
- 6.4 Distracted Driving\* (Expanded White Paper on ADAS Implications to Distracted Driving Laws to be Published in comings months)
- 6.5 Establishing Operational Responsibility and Law Enforcement Implications
- 6.6 Law Enforcement/First Responder Interaction Plans (LEIP) New Section



#### Chapter 6. Law Enforcement Considerations

- 6.7 Law Enforcement Protocols for Level 4 and 5 Vehicles New section
- 6.8 Law Enforcement/First Responder Safety and Training
- 6.9 Adherence to Traffic Laws
- 6.10 Vehicle Response to Emergency Vehicles, Manual Traffic Controls and Atypical Road Conditions
- 6.11 System Misuse and Abuse



#### Chapter 7. Other Considerations

- Chapter 7 is a New chapter that includes 41 recommendations in 5 subsections; 38 recommendations directed to jurisdictions and 3 directed to MOEs.
- 7.1 Cybersecurity for Vehicles with Automated Driving Systems
- 7.2 Data Collection
- 7.3 Low-Speed Automated Shuttles
- 7.4 Connected Vehicles
- 7.5 Platooning







#### Next Steps

The subcommittee will be developing whitepapers over the coming

months on:

Automated Delivery Vehicles





ADAS Implications on & updating Distracted Driving Laws





#### **Questions?**

**Contact Information:** 

Cathie Curtis <u>ccurtis@aamva.org</u> Brian Ursino bursino@aamva.org

#### Panel: Regulation to Safeguard Washington Residents

Phil Koopman, Edge Case Research Daniel Malarkey, Sightline Institute



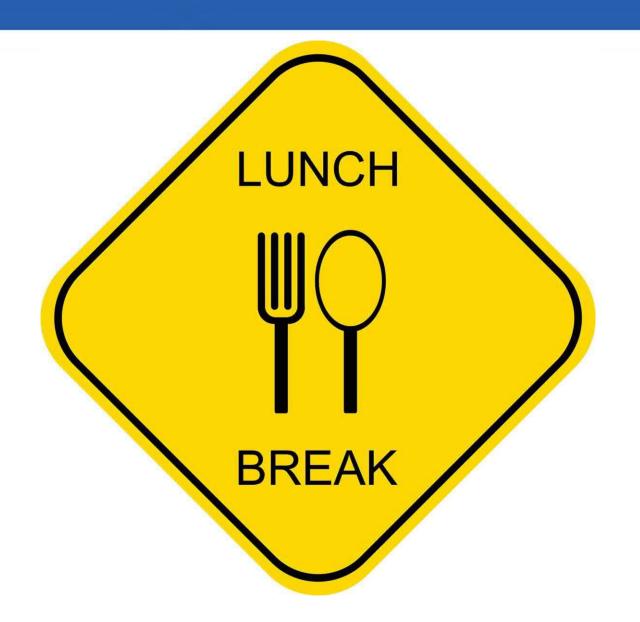




#### Social Mechanisms to Ensure Safety

Mechanism	Example	Ex ante standard	Third party reviewer	Relevance to autonomous vehicles		
Reputation & Tort Law	Surgery	No	Patient, plaintiff's counsel & experts	Existing approach. AV potential threat to others than the customer.		
Graduated Testing	Vaccines	Yes	Federal government	Necessary but not sufficient to prove AV safety		
Prescriptive Standards	Elevators	Yes	State government	Technology advancing rapidly, difficult to standardize		
Written argument	Municipal bonds	Yes	Rating agencies in some cases	Approach embodied in UL 4600		





Be back at...
12:00 p.m. PT

### Subcommittee Updates











### AUTONOMOUS VEHICLE – HEALTH AND EQUITY SUBCOMMITTEE

PRESENTED AT AUTONOMOUS VEHICLE EXECUTIVE COMMITTEE NOVEMBER 12, 2020

Dr. Andrew Dannenberg, UW School of Public Health

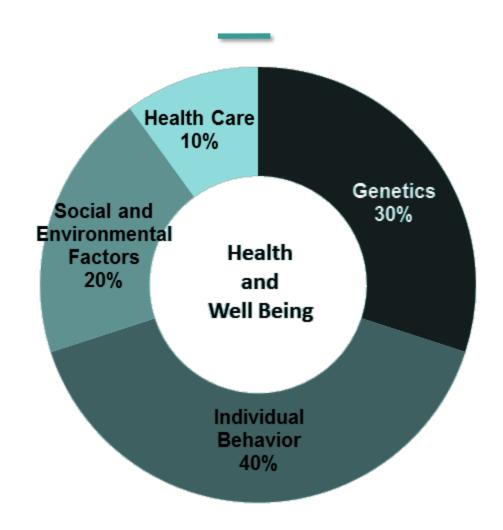
#### AV Health & Equity Subcommittee Update

Goal: Ensure the health benefits of automated mobility are equitably distributed and that negative impacts are not disproportionately borne by traditionally marginalized communities.

Established by WSTC on July 2019

Holding Monthly Microsoft Teams Meetings & Work Group Meetings

#### Determinants of Health





#### Key Topics to Address – AVs & Equity

- Access by All Income Levels If low-income areas have less AV service, high income populations would receive the benefits while low-income populations may be harmed by reduced access to goods, services, and jobs
- Detection for Persons of Color Current pedestrian detection systems in AVs perform less well for people of color, subjecting them to higher risk of injury as pedestrians
- Disparities in Infrastructure Quality Disadvantaged areas may have poorer infrastructure, such as more potholes or faded lane markers, so AVs may avoid such areas or function less safely in those areas
- Shared Services Acceptance of shared services may be reduced by racism in some areas
- Cost of Services Persons in low-income areas may be less able to afford to use AVs unless subsidized

#### Key Topics to Address – AVs & Equity (cont.)

- Equitable Distribution of Services Travel times for high- and low-income persons may be inequitable, depending on the geographic areas served by AVs and the locations of electric charging stations
- Access to Electronic Devices Some low-income persons lack smart phones and credit cards needed to access AVs
- Community Needs & Priorities Disadvantaged populations may prefer and would benefit from different transportation infrastructure investments than those that facilitate AV use
- Education & Outreach For disadvantaged populations, education about AV use needs to be conducted at an appropriate level of reading comprehension and in multiple languages

### Health and Equity Subcommittee Recommendations #1 Conduct Structured Public Outreach

#### **Background**

- Traditionally marginalized communities including people of color and people in disinvested areas may suffer from inequitable impacts when AVs are tested and implemented in Washington
- Such communities are not well represented among decision-makers who are setting AV policies
- Outreach to such communities is essential to better understand their access, mobility, and health needs

## Health and Equity Subcommittee Recommendations #1 Conduct Structured Public Outreach

#### Proposal #1

- Conduct a structured public engagement process to better understand the health, equity, and access needs of traditionally marginalized communities in relation to AVs
- Outreach would include education about AVs, presentation of scenarios involving AV use, and feedback from community participants
- Report findings and recommendations would be provided to WSTC to inform decisions
- Estimated cost: \$30,000

### Health and Equity Subcommittee Recommendations #1 Conduct Structured Public Outreach

#### <u>Impact</u>

- With robust public engagement, it may be possible to prevent or reduce inequitable consequences that may be associated with the testing and deployment of AVs
- Results would assist policy makers and industry to meet the mobility and access needs of traditionally marginalized communities

## Health and Equity Subcommittee Recommendations #2 Identification of Testing Locations

#### **Background**

- Current law RCW 46.30 requires only provision of (a) AV company contact info, (b) name of city/county where testing to be done, (c) vehicle ID numbers, and (d) proof of insurance, prior to pilot testing AVs on Washington streets and highways
- Depending on locations selected, pilot testing may have inequitable health and safety impacts on traditionally marginalized communities

## Health and Equity Subcommittee Recommendations #2 Identification of Testing Locations

#### Proposal #2

- Amend RCW 46.30 to require that planned testing locations at the Zip code or Census tract level be provided to the state prior to pilot testing on Washington roads
- This information would be used by WSDOT and DOH to examine the demographics and equity considerations of areas where testing is planned

## Health and Equity Subcommittee Recommendations #2 Identification of Testing Locations

#### <u>Impact</u>

- Identification of testing locations at Zip code or Census tract level would help facilitate equitable distribution of benefits to all populations and reduce potential adverse impacts of AV testing in marginalized communities
- Results would be used to inform future decision-making about state AV policies
- Information would <u>not</u> be used to regulate where AV testing should or should not be done

#### **Questions?**

Andrew L. Dannenberg, MD, MPH

**Affiliate Professor** 

Dept. of Environmental and Occupational Health

Sciences, School of Public Health, and

Dept. of Urban Design and Planning,

College of Built Environments

**University of Washington** 

adannen@uw.edu

Cell: 404-272-3978 I

Paula Reeves, AICP CTP Environmental Planner Environmental Public Health Division Washington State Dept. of Health Paula.Reeves@doh.wa.gov 360-236-3357 I www.doh.wa.gov



Washington State Department of Health is committed to providing customers with forms and publications in appropriate alternate formats. Requests can be made by calling 800-525-0127 or by email at civil.rights@doh.wa.gov. TTY users dial 711.



Infrastructure and Systems
Subcommittee Report &
Recommendations

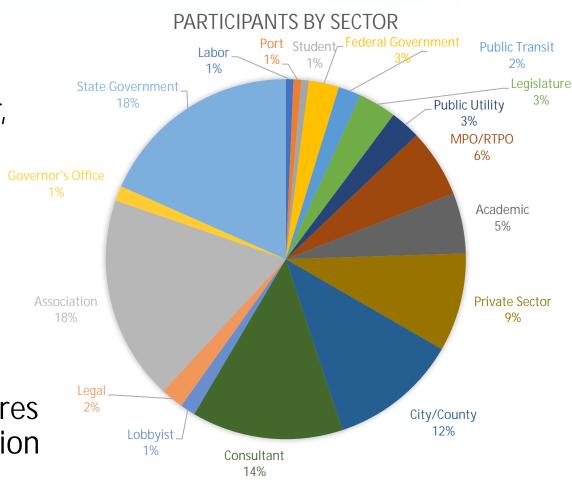
Michael Ennis, Government Affairs Director, AWB, co-chair Daniela Bremmer, CAT Development Manager, WSDOT (on behalf of Roger Millar, Secretary, WSDOT, co-chair)



#### Subcommittee Structure and Membership



- Subcommittee Co-Chairs:
  - » Roger Millar, Secretary, WSDOT
  - » Michael Ennis, Government Affairs Director, AWB
- Membership (147 participants)
  - » 77 working members, representing 58 organizations
  - » In addition, 70 interested parties
  - » Open membership structure
  - » Following the Operating Policies & Procedures established by the Transportation Commission through the Feb 27<sup>th</sup>, 2019 memo



#### 2020 Meetings to Date



- Special Workshop, April 1, 2020
- Meeting #8, April 22, 2020
- Meeting #9, July 13, 2020
- Meeting #10, September 11, 2020
- Planned Meeting #11, December 11, 2020

All meeting materials, results documents and minutes available online

https://wstc.wa.gov/Meetings/AVAgenda/Documents/InfrastructureSystemsSubcommittee.htm

#### Subcommittee Accomplishments 2020: Overview



The Subcommittee's adopted 2020 work plan consist of three, major activities:

Work Plan Activity 1: Develop CAT Policy Framework with policy goals, strategies, and illustrative actions based on local, regional, and national "best practice" policy examples

Status: Activity completed

Work Plan Activity 2: Develop project selection criteria and identify potential funding options to enable the selection of near-term pilot deployment proposals and projects

 Status: Activity completed, updates to the grant funding list will be provided as new information becomes available

Work Plan Activity #3 -Collaboration Discussions with Private Sector Companies Certified for Testing in WA

 Status: Activity completed, task lead transferred to Licensing Subcommittee and, moving forward, will be jointly conducted with currently certified companies

### Activity #1: CAT Policy Goals as Adopted by the Executive Committee and WSTC



- #1 Organize for Innovation: Enable organizational change that empowers officials to be flexible, accelerate decision-making, and adapt to changing technology.
- #2 Shared Mobility: Encourage and incentivize shared mobility, including an emphasis on high occupancy and shared modes for moving people and goods.
- #3 Economic Vitality and Livability: Create resilient and efficient regional networks and empower local agencies to create resilient, multimodal local networks.
- #4 Infrastructure and Context Sensitive Street Design: Promote durable, physical and digital networks that accommodate the movement of people and goods in ways that are appropriate for the context.
- #5 Land Use: Encourage land use development patterns that support multimodal connectivity to efficient local and regional networks.
- #6 Equity: Work with marginalized communities to increase access to desirable mobility options.
- #7 Safety: Increase the safety of transportation systems and infrastructure to support the safe movement of people and goods.
- #8 Environment: Reduce the local and cumulative environmental impacts of mobility to improve air and water quality, energy conservation and mitigate climate change.

#### Accomplishments: Activity #1-CAT Policy Framework



2019

2019 – April 2020

**April – May 2020** 

**June - Dec 2020** 

#### INITIATE

National scan of "best practices" and policy examples

Initial discussions and input toward development of a Draft CAT Policy Framework

8 Policy Goal statements adopted



#### **ENGAGE**

Illustrative strategies & actions drafted

Circulation for comment and additional input

Public/private partners engaged for additional input and informational ranking



#### **REFINE**

Host workshop - Apr 1

Discuss informational pre-workshop ranking of existing actions

Gather input on new/modified strategies & actions

Integrate results into comprehensive list of strategies & actions



Complete Post Workshop Strategies and Actions Document

Present to I&S SC

Continue to encourage other subcommittees to develop own goals, strategies and actions

Develop Recommendations





#### Goal:

Develop project selection criteria and identify potential funding approaches and grant opportunities to enable the selection of near-term pilot deployment proposals and projects.

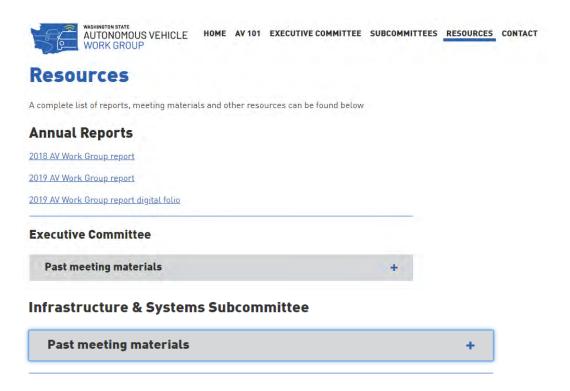
#### Actions and Products include:

- Evaluate and build upon the Pilot Evaluation scorecard criteria developed by others
- Evaluate grant criteria from existing Federal, State and WSDOT grant programs
- Other State Funding Requirement Criteria Summary product
- State and Federal Funding Sources- Grants Inventory product

#### Accomplishments: Activity 2-Grant Programs

Washington State AV Work Group Resources Page - https://avworkgroupwa.

Information relative to state and federal grants will be updated and posted to the AV WG website's resource page and updated quarterly





Activity #2: Funding Sources - State and Federal Grants											
SECTION	FUNDING MECHAMISM	SHORI DESCRIPTION	AWARDEE 1995	FUNDING MATCH	MARCHIN	MAXAWARU	CHICHA	Wetorta			
Public Transportation Delcion	frames Tra because	The community is indicated in Program Required to Improving an interfer, another confer consistent and Reproduct from interfer place for the experience of the program filter from an interfer to develop a many time from a large or to the program filter required in classify and information and provide or of other angle statement, which is community to the or of other angle statement, which is community to the or of other angle angular power or many or or other and provided and an annual following property and or other community.	Most					https://www.mood.na.com/varial. fr/horms			
	Printing from Control Holtzan	The Consecutability and truspent help appears against truspentiating attack and between one of conventions, provide managements may be about an one of conventions, part and man a majorated, provide public planguagement plants for the about purposes with disabilitied, and improved provide sending propagations to give a trained annualitie.	, mad					http://www.ipsich as pro/must instructionalistes/floors			
	Speciment Attitudes Description	The Regional Androny broad gragosin supports have affects to improve traves havings and hadred collection as near most framely translate combines.	Asset	Reflui	2399	Assistan		https://www.wade.ora.com/transi ranka/mathifica			
	Provid South Transit Towns with a Stylen C	The program encourages sum planting unificial histories on the part of culture Daylet Swinst transit systems in order to interest that user appetitude, increase publishing and make the more into their	Samme					https://www.wador.wa.co//trongl ranta/framesystems.			
	Personal Section 1 Transcription	is costs in minica at a second to design agreement the purpose of the minica of costs to costs and special managements where.	Saymun					https://www.wolof.eu.co/troop/ ratio/ar at a tief-proper freeby formula-streets			
	ors naskasnat (america) ister	The Circle responsible great purgues is seemed to response the Opphysical great of all an advistability by Theel more yielder (1990), perspectively.	auccei	Mot	1	,53e(00)	In place to make propose to it in the act instructions by additional compact factors are seen, and though the compact powers and compact factors are received, provided to the control for the control factors and or respect to the control factors and or respect to the control factors and or respect to the control factors and or respective. Other active power factors and desired and control factors are respective, and the control factors are respective, and the control factors are respective. Such control factors are respective, and a series, and a series propriet provided provided to the control factors are respective, and a series of the control factors are respective, and a series are respective, and a	Mins, And America, and America Handball, Composition Res. and a 20 miles consolities, carefu			
	Manifester (1984) (EDNO) Assessed	The footening programs provided threat intercomparity presentants beyong and according of special and must represent additional and beyond the special particular programs are the second and approved as product threat potential populations of the provided areas.	anguar)					atto://www.woot wa.co/pron			
	Bassa Promportocon Capital Drawd February	the presides of the grant program is to an any trade (without yield loading contesting tapinal projects to reclaim the cartism strengty or one accordage in transportation in teach.	Scormont					arto://www.wodor.ea.co//tiper carti/ erees.transportation.cast			
	Vargos (introllerant Propper *	The veriposit ritine Projects for the profess country entered Agreem Agreems Authorizing and make 2 more appearing to commend to	Samuel					into://www.votot.ea.cov/more anta/viospod-creatment			
	Single Filesian	The purpose of the beams from allower original into present our register the condition of food agency bridge outcomes against an what features, preference and expensive provincial and reservance of their report bridges on and off the feature of the province of their report bridges on and off the feature of the provincial of the provincial or the pr	South	manual .	and one pattle	Sizhlim	Trappip tions to be at time 25 ft. in single	https://www.wwdor/wa.gm//uses grans/fr/dec/Gal/htm			
	UNIVERSITY PROGRAM	Commanda of Anthonomy Commander (Anthonomy Commander)  Only to a commander of Commander (Anthonomy Commander)	command	esitiv	But over reserve statuted over partial reservation phase	incl	can't missioners in creat legron store can begin App Scotter with the programs famed on these offices has the programs in sectional theory extension that and rescute one or gradues.	https://www.veiler.wa.po//loca gares/1000k/ppackby/affeitro. pulme			

#### Accomplishments: Activity 3-Partnership and Collaboration Discussions with Private Sector Companies Certified for Testing in WA

- 2019-2020 subcommittee efforts focused on interviewing companies self-certified with the WA DOL for AV testing.
- The products of this work: the Open Dialogue Survey Template and the Open Dialogue Survey Results are posted to the AV WG website.
- Moving forward, DOL will reach out to each newly certified companies and schedule joint webinars with the subcommittee's Activity 3 work group, along with staff from all seven subcommittees to conduct the open dialogue discussion, which include:
  - What they are looking to accomplish by testing AVs in WA?
  - What policies, regulations, opportunities and barriers should be evaluated to create a supportive environment?

### 2020 Infrastructure & Systems Subcommittee Recommendations



#### **Voting Organizations**

- 1. AAA Washington
- 2. ACES NW Network
- 3. Association of Washington Business
- 4. Bellevue Chamber of Commerce
- 5. Chelan County
- 6. City of Auburn
- 7. City of Vancouver
- 8. Fair Cape Consulting LLC
- 9. Fehr & Peers/ITS WA
- 10. First Transit, Inc.
- 11.HDR Engineering
- 12. Modern Traffic Consultants
- 13. Northwest Seaport Alliance

- 14.Peloton Technology
- 15.Seattle DOT
- 16. Sightline Institute
- 17. Spokane Regional Transportation Council
- 18.TechNet
- 19. Thurston Regional Planning Council
- 20. University of Washington
- 21.Urbanova
- 22.UW Mobility Innovation Center
- 23. Washington Policy Center
- 24. Washington State Department of Transportation
- 25. Washington Traffic Safety Commission
- 26. Washington Trucking Association

### 2020 Infrastructure & Systems Recommendation #1: Pavement Markings



Request for the Legislature to consider increased ongoing investment in enhanced roadway pavement markings during future, new revenue discussions to increase traveler safety and support Advanced Driver Assistive Systems deployed on Washington's roads today (SAE Levels 0-2) and Automated Driving Systems (SAE Levels 3-5) Technologies that are currently being tested on public roads.

These enhanced markings have the potential for significant crash reductions and reduced societal costs.



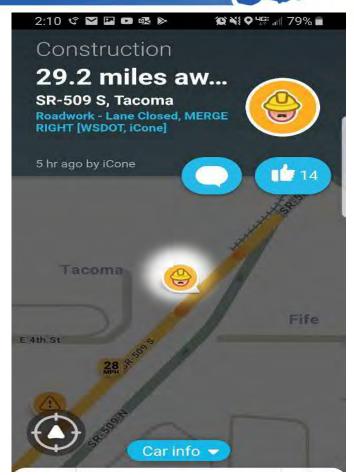
Yes = 24 Votes, No = 1 Vote, Abstain/Neutral = 1 Vote

#### 2020 Infrastructure & Systems Recommendation #2: Real Time Work Zone Data



Request for the Legislature to support WSDOT's work zone data initiative and to consider increased, ongoing investments during future, new revenue discussions to enhance WSDOTs capacity to develop a comprehensive, real time work zone data base.

This data base will provide real-time communication to vehicles on the road to enhance both traveler and work zone worker safety.



Yes = 23 Votes, No = 1 Vote, Abstain/Neutral = 2 Votes

#### WASHINGTON STATE AUTONOMOUS VEHICLE WORK GROUP

### 2020 Infrastructure & Systems Subcommittee Recommendations: Sampling of Member Comments

"ACES was pleased to enthusiastically support the pavement marking enhancement and work zone data base recommendations. We appreciate the good technical work and outreach ....... We are happy to work with you to press the case to the Governor and legislative committees." (ACES Northwest)

Full support for this initiative by the trucking industry for potential to enhance highway safety. However, its my understanding AV's are engineered to operate safety and efficiently despite "perfect" conditions such as roadway markings. (Washington Trucking Association)

This (pavement markings) is the single greatest action that WA can take to enhance safety with current technology and to prepare for future AV deployment. (Fair Scape Consulting LCC)

We would consider voting to approve this proposal if there were provisions for the funding to pay for all roads in the state, not State Roads only. We have a concern about local roads not meeting AV needs, and not having funding for it marking. (City of Auburn)

As a past participating organization in the WS AV Work Group Infrastructure and Systems Subcommittee, we support this modest proposal in support of necessary roadway infrastructure testing. (Bellevue Chamber of Commerce)

This makes sense for human drivers now and for autonomous vehicles when they are ready (Sightline Institute)

This investment would help improve safety for all road users, and should be prioritized based on the opportunities to provide the largest improvements in public safety with the added benefit of improved conditions for AV technologies, City of Seattle.



#### Requesting Approval of Recommendations

- Questions
- Discussion
- Vote

#### Moving Forward-Next Steps:



- Next scheduled subcommittee meeting: December 11th, 2020
- The subcommittee is evaluating the Future Path results received from the AV Executive Committee WG (AV Workgroup Polling Report and Results Matrix)
- Subcommittee members expressed interest in building more education and information sharing opportunities into upcoming meeting agendas
- Based on input received from the AV Executive Committee WG and subcommittee members, staff will develop a draft 2021 work plan for member consideration

# Liability Subcommittee Update

November 12th, 2020

### Introduction

- Co-chairs
  - David Forte OIC
  - Harris Clarke PEMCO Mutual Insurance Company
- 22 Subcommittee Members representing diverse interests

### 2020

- Presentation from Matt Moore, SVP of the Highway Data Loss Institute Current advanced driver assistance systems (ADAS)
  - Experiences with driving automation
  - Shortcomings of VINs
  - Event Data Recorders
  - On-board diagnostics
  - Collision Avoidance Systems (front autobrake systems)
- Discussion with Michele Radosevich and ULC draft comments
- Conversation with Judge Erlick (retired), Roy Umlauf, James Rodgers, and Michael Wampold

## Key Issues

- Assigning liability
  - Access to data
  - Who's in control of the car?
- Challenges now
  - Assisted Driving System present?
  - Assisted Driving System in use at time of incident?

## Next Steps

- Continued Discovery
  - Tracking other jurisdictions determine liability for AV
  - Other implications relative to liability
- Explore insurance liability issues (hear from adjusters, claims managers)
- Explore criminal liability (hear from prosecutors)
- Develop recommendations around:
  - Data requirements for liability determination
  - Definition of driver

## Questions?

# Appendix

## Liability Subcommittee Members

- Brady Horenstein, Administrative Office of the Courts
- Brenda Weist, Teamsters
- Brian Hockaday, Lyft
- Drew Wilder, University of Washington
- Harris Clarke, PEMCO
- Jean Leonard, Association of Washington Business (AWB)
- Kenton Brine, Northwest Insurance Council (NWIC)
- Lonnie Johns-Brown, OIC
- Logan Bahr, Association of Washington Cities (AWC)
- Melanie Smith, Liberty Mutual
- Paul Feenstra, PACCAR

- Patrick Conner, National Federation of Independent Business (NFIB)
- Veronica Van Slyke, Progressive & USAA
- Armikka Bryant, Dolly
- Luke Simon, General Motors
- Christian Rataj, National Association of Mutual Insurance Companies
- Joe Kendo, Washington State Labor Council
- Larry Shannon, Washington State Association for Justice
- Steve Marshall, City of Bellevue
- Steven Boyd, Peloton
- Melissa Crawford, Nationwide
- Michael Transue, Global Automaker



Did the

operator

conduct - or conduct that

should have

assumed -

(steering,

braking,

acceleration)

cause or

contribute to

the crash?

Contribute

to the

Crash\*\*\*



POST-CRASH ADS RESPONSIBILITY
ASSESSMENT STANDARDS –
Data/Information Insurers Will Want

\*\*\* Was vehicle properly maintained and kept up?

vehicle
control
driving
operations
(steering,
braking,
acceleration)

Can the

Were the vehicle driving operation controls engaged?

vehicle allow/ require occupant control?

Did the vehicle control?

Driver

Did a

Was the occupant required or notified\* to take control?

Was the occupant made aware of all operational domains and constraints \*\*?

Was it reasonable for the occupant to take control?

Cause

the Crash

Vehicle Responsible

CRASH operat (steer braki

\* For example: by law, regulation, contract, warrantee or by vehicle wanting/alert

\*\* Was the occupant informed of and agree to automated limits and restrictions?

# Autonomous Vehicles Licensing Subcommittee

Beau Perschbacher, Policy and Legislative Director, DOL



## Overview of presentation

Subcommittee Recommendations

- Amendment to RCW 46.37.480 Television viewers
- Rulemaking authority for self-certification program

Upcoming subcommittee activities



### Recommendation #1

#### Amendment to RCW 46.37.480 - Television viewers

- Referred to the Licensing Subcommittee by the Safety Subcommittee
- Voted on at April 2020 meeting (26 yay, 0 nay, 1 abstain)

### Recommendation:

- Repeal Section (1) of RCW 46.37.480:
- (1) 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.
- This RCW language is obsolete and out of date.
- This citation by law enforcement is not widely used as the use of electronic devices in vehicles is already addressed in RCW 46.61.672 and RCW 46.61.673.
- Repealing this may also eliminate a potential barrier to advancing autonomous vehicle technology that may be posed by this RCW, including but not limited to, truck platooning.



### Recommendation #2

Amendment to RCW 46.92.010 Testing—Self-certification pilot program

- Recommendation is supported by various other subcommittees, including the Safety Subcommittee.
- Voted on at October 2020 meeting (12 yay, 0 nay, 2 abstain)

#### Recommendation:

- Propose language amendment to RCW 46.92.010 Testing—Self-certification pilot program
- (8) The department may develop rules for the purpose of administering and maintaining the self-certification pilot program.
- It is unclear what SAE level of autonomous vehicle the self-certification process is intended to apply to. The Department of Licensing could clarify the issue through rulemaking, if given the authority from the Legislature.
- > Granting the Department of Licensing general rulemaking authority over the self-certification program would provide the flexibility to address future items that need clarification.



## Upcoming Subcommittee Activities

- Continue to study and explore methods of AV deployment and commercialization.
- ➤ Continue to review model legislation proposals and regulatory structures in other states.

\*Next subcommittee meeting: Spring 2021



## **AV Safety** Subcommittee

Co-Chairs: Captain Tom Foster Manuela Papadopol









## Subcommittee Report

- Safety Subcommittee status update
- Discussion: Feedback on HB2470 language
- Recommendations
  - » Repeal portion of RCW on TV Screens
  - » AV Definition
  - » Interaction guide

## Safety Subcommittee status update



- Meetings
  - » Virtual monthly meetings
  - » Re-design format
  - » Subject Matter Experts as guest speakers
    - Waymo and Chandler PD
- Membership
  - » Initiative to increase members
  - » Voting

## Discussion: Feedback on HB2470 language





# Feedback, not recommendation

## Washington State Autonomous Vehicle Work Group Subcommittee Discussion

Subcommittee	AV Safety Subcommittee
Date of Meetings	June 4 and July 23, 2020

### 1) NOTEWORTHY TOPICS OF DISCUSSION, SUMMARY OF DISCUSSION, AND OUTCOME OF DISCUSSION

The AV Work group Executive Committee asked all of the subcommittees to provide feedback on the language proposed in HB 2470. The feedback is organized by HB2470 sections and represents the various viewpoints of representatives on the AV Safety Subcommittee. It is a collection of feedback only and is not intended to be a recommendation of any specific action. Because the AV Safety Subcommittee has diverse membership and perspectives, some points of feedback may seem to conflict with others. The feedback is documented below.

## Recommendation: Repeal portion of RCW on TV Screens

- Joint effort with Licensing Subcommittee
- Recommend that the first section only of RCW 46.37.480 should be repealed

(1) 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.

### Recommendation: Autonomous Vehicles Definition



- Executive Order (EO) 17-02 and HB 2676
- Define Autonomous Vehicles (AV)
  - » Automated vs. Autonomous
  - » SAE J 3016-2018
  - » Levels 4 and 5
- Similar to Licensing Subcommittee recommendation



#### SAE J3016™LEVELS OF DRIVING AUTOMATION



Source: SAE

### Recommendation: Interaction Guide



- Law enforcement/first responder interaction plan
- Provided by the AV testing entity prior to <u>driverless</u> testing
- Consistent with requirements in other states: California and Arizona



# Thank you!







## Workforce Subcommittee







## Subcommittee Structure and Membership



- Lead agencies
  - » Employment Security Department (ESD) and Department of Labor & Industries (L&I)
- Membership
  - Interested parties have signed up for email update list
  - Soliciting interested parties to serve as subcommittee members
    - » Private Sector Co-Chair: Brenda Wiest, teamsters Local 117, Legislative Director
    - Other members to include Labor, auto manufacturers, commercial vehicle manufacturers, transportation network companies, for hire transportation/drivers, transit operators and agencies, cities and counties (urban and rural), freight drivers, ports, business, and community & technical colleges



## Meetings and Next Steps

- First subcommittee meeting was held on October 28, 2019.
- The plan was to have the second meeting in April, 2020. However, the meeting was delayed due to response work for the COVID-19 pandemic.
- Next steps: focus on data and research to effectively determine the impact of AV on workforce and the project timing of the impacts.
- Next meeting: TBD

## COMMUNICATIONS PLAN UPDATE

Led by Envirolssues







## Purpose



- Roadmap to provide milestone-driven recommendations for the work group to communicate in a comprehensive, transparent and equitable way with interested stakeholder and the general public
- Legislation language
  - » Disseminate information, as appropriate, to all interested stakeholders; and
  - » At the direction of the legislature, engage the public through surveys, focus groups, and other such means, in order to inform policymakers for the purposes of policy development.



### Outline of the Communications Roadmap

- Overview
- AV Policy goals and objectives
- Communications goals and objectives
- Overview of potential stakeholders
- Communications toolkit
- Next steps



Roadmap from 2019 AV Workgroup Report



## **AV Policy Goals and Objectives**

- Organize for Innovation
- Shared Mobility
- Economic Vitality and Livability
- Infrastructure and Context Sensitive Street Design
- Land Use
- Equity
- Safety
- Environment





## **Communication Goals and Objectives**

Goals	Objectives
Audiences understand the significance of future AV policies in Washington	<ul> <li>Follow the policy goals which identify best practices for strategic policy development.</li> </ul>
Audiences are informed and educated about the AV policymaking process in Washington	<ul> <li>Engage the general public and stakeholders at key points in policy development to ensure awareness and encourage input.</li> </ul>
Communications will be developed using a racial, health, and socioeconomic equity lens to ensure holistic access across communities	<ul> <li>Support collaboration with community-based organizations (CBOs) to generate interest and promote equitable and broad-based information sharing.</li> <li>Seek CBOs' input and guidance on how to ensure ongoing input and access at key points.</li> </ul>
Media coverage is balanced and informed	<ul> <li>Build and maintain proactive relationships with various media outlets.</li> <li>Engage media outlets at key milestones</li> </ul>
Foster trust with audiences in the development of these potential public policies	<ul> <li>Maintain consistent communication with audiences to ensure that they are informed of any policy development throughout the process.</li> </ul>



## Overview of potential stakeholders

Policymakers & implementers	Impacted by / may benefit from policies	Policy influencers	Info sharing
<ul> <li>Elected officials</li> <li>Key agencies and departments responsible for making and implementing policy</li> <li>Work Group (Executive Committee and Subcommittees)</li> </ul>	<ul> <li>Law enforcement</li> <li>Local cities and counties</li> <li>Other states</li> <li>Drivers</li> <li>Pedestrians</li> <li>Cyclists</li> <li>Other roadway users including transit and TNCs</li> <li>General public</li> <li>Historically disproportionately impacted by policies: <ul> <li>Communities of color</li> <li>Immigrant communities</li> <li>Low-income drivers</li> <li>People with disabilities</li> <li>Seniors</li> </ul> </li> </ul>	<ul> <li>Private companies</li> <li>Advocacy groups</li> <li>Academia &amp; Policy think tanks</li> </ul>	• Media



## **Communications toolkit**

Milestone	Communication tools
<ul> <li>March - September</li> <li>Work Group and stakeholder engagement prior to legislative session</li> <li>Development of public policy recommendations</li> <li>Progress of Work Group</li> </ul>	<ul> <li>Stakeholder interviews</li> <li>Survey research and polling</li> <li>Public workshops</li> <li>Work group workshops</li> <li>Q1 and Q3 newsletters</li> </ul>
December Prior to legislative session	<ul> <li>Annual report</li> <li>Updated website</li> <li>Share Q4 newsletter</li> </ul>
January Start of legislative session	Earned media engagement
January – March/May Legislative session • Policy evaluation and adoption	Fact sheets/folios for legislators
March/May End of legislative session: • Policy implementation	<ul> <li>Share results of policy recommendations and next steps through:         <ul> <li>Website updates</li> <li>Q2 newsletter</li> <li>Earned media</li> <li>Digital/online engagement</li> <li>Factsheet/folio development</li> </ul> </li> </ul>



## Next steps

- Aligns with current purpose of Work Group and phase of policy exploration
- Will continue to evolve as work group continues to evolve



## Questions?







# **AV Industry Panel**









Waymo's presentation materials will be presented live during the November 12<sup>th</sup> Executive Committee meeting only.

## **Executive Committee** Member Items

Open Forum







## **Closing Remarks**







### Closing Remarks



### Recap Today's Meeting:

- » Action Items
- » Agreements / Decisions

### Important Dates:

- » December 15 & 16, 2020 Transportation Commission meeting
- » January 8, 2021 Annual Report to the Legislature due

# Thank You!





