

WASHINGTON STATE AUTONOMOUS VEHICLE WORK GROUP

## Washington State Transportation Commission

AV Work Group Executive Committee Meeting

May 6, 2020





TIME	DESCRIPTION	
9:00	Welcome, Introductions & Overview of Virtual Meeting Operations	Jim Restucci, Interim Chair, AV Work Group Executive Committee Kathryn Murdock & Ara Swanson, Envirolssues Markell Moffett, WSP USA
9:15	AV Law National Scan	<b>University of Washington Law School</b> Bill Covington, Professor Students: Dylan Harlow, Robin Lustig, Jake Ragen, Janet Kang, Emily Kawahigashi, & Tim Wolfe
9:50	California's Autonomous Vehicles Testing Program	<b>Bernard Soriano</b> , Deputy Director, California Department of Motor Vehicles
10:45	Work Group Direction and Priorities	Scott Shogan, Vice President, WSP USA
11:00	Executive Committee Member Items	Open forum for members
11:15	Closing Remarks	Jim Restucci, Interim Chair, AV Work Group Executive Committee

# Overview of Virtual Meeting Operations



WASHINGTON STATE AUTONOMOUS VEHICLE WORK GROUP





## Virtual Meeting Operations – GoTo Meeting Webinar





## Virtual Meeting Operations – GoTo Meeting Webinar



## **QUESTIONS/CHAT BOX**

- Attendees can type questions to meeting organizers.
- Organizers will read questions aloud during the Q&A period of each presentation.
- Organizers may also answer questions directly in Questions/Chat box. Drag and expand the box to see additional questions and responses.



## Virtual Meeting Operations – GoTo Meeting Webinar



## CALL-IN PARTICIPANTS

- Call-in participants can still access audio controls and the Questions/Chat box if viewing the presentation online.
- For those who are not viewing the presentation online, phone lines can be muted and unmuted by pressing \*6
- When not speaking, please ensure phone line is muted





## University of Washington Technology Law and Public Policy Clinic

Connected and Autonomous Vehicles Team William Covington Dylan Harlow, Tim Wolfe, Emily Kawahigashi, Jake Ragen, Robin Lustig, Janet Kang





#### **Our Team**



(Back) Jake, Dylan, Tim, Professor Covington, Ted Bailey (Front) Janet, Emily, Robin





To provide the Washington legislature with unbiased findings and analysis on the current state of autonomous vehicle legislation throughout the country.

## Who are we talking to?

SCHOOL OF LAW





### Areas of Research

We have been gathering data on all 50 states, in 13 different categories

- Contact Information
- Legislation/Executive
  Order
- Ongoing Testing
- Pre-emption of Municipalities
- Oversight Department (DOT, DMV?)

- Infrastructure
  Developments
- Safety Incidents
- Data/Privacy Concerns
- Public Education for CAVs
- Liability/Insurance
- Health/Equity Concerns



## **Questions We've Been Asking**

#### Testing requirements (examination, selfcertification, other approach?)

a. Required Information From Companies

**b.** Differing requirements for different vehicles

**c.** Government investigations/auditing of self-driving car programs

#### Deployment and Transportation Network Companies

- a. Deployment of vehicles
- **b.** Autonomous ride sharing services (Uber, Lyft)

**c.** Company interest in testing/deployment within the state

#### Liability

- a. Financial Responsibility Requirements
- b. Liability designation (driver)
- c. Insurance requirements

#### Definitions

**a.** Source of Definitions**b.** ULC Model legislation? Other sources?



## How will COVID-19 Shape AV?

#### National Narrative Pre-COVID-19 Outbreak

In a survey conducted by AAA, 1,301 U.S. adults in January of this year...

- 12% of drivers reported they would feel safe riding in a car that drives itself
- 28% remain neutral about CAV technology
- 57% reported they would like to have clear understanding of liability
- 49% are curious about data privacy in CAVs and if they are susceptible to hacking
- 51% reported interest in laws to ensure CAVs are safe

-https://newsroom.aaa.com/2020/03/self-driving-cars-stuck-in-neutral-on-the-road-to-acceptance/

We predict the COVID-19 Outbreak will change these perceptions...

# SCHOOL

## How will COVID-19 Shape AV?

#### **Predictions:**

- Increased pressure from stakeholders to get testing done and legislation grounded - potential risk
- Company focus will shift to CAV delivery-based services
- Change in American perspective: trust, reliability, information

#### National Narrative Post-COVID-19 Outbreak:

"The COVID-19 crisis has accelerated the need for an opportunity for automation in every industry, including autonomous driving." - Anysys CTO, Prith Banjeree

"We don't want any human interaction. These types of services will be more and more in need." - Tactile Mobility VP of Business Development, Eitan Grosbard

"Autonomous vehicle companies are positioned to come out of COVID-19 much stronger." - Optimus Ride CEO, Ryan Chin

"Removing the human driver holds great promise not only for making our roads safer, but for helping our riders stay healthy in these uncertain times." - Waymo CEO, John Krafcik



## **Sources of Definitions**



- Generally, we are seeing states selectively pulling portions of the ULC's model legislation and implementing them within their own bills.
- Many legislators we contacted said that the definitions and language in their bills were lifted from other states' legislation that had already been passed. When digging deeper into the original source, the ULC legislation's original language is often present.
- Bills passed within the last few years tend to assemble task forces, create definitions, and set general requirements for testing.

## **ULC Definitions Usage**

SCHOOL OF LAW



## SCHOOL OF LAW

## **ULC Model Legislation**



Positives of Model Legislation:

- Creates definitions so that everyone is on the same page across the industry, and these definitions are based on accepted industry standards from places like the SAE.
- Resolves the passenger licensing issue by making the legal operator of the vehicle the creator of the vehicle.
- Shields all non-driver passengers from liability
- Easily integrated into existing states' motor vehicles state statutes

Improvement Areas of Model Legislation:

- Does not explicitly preempt municipalities from regulating AVs
- Limits liability to only one party when multiple may be responsible
- Doesn't address owner modifications
- The act does not create definitions for level 1 and 2 (nor differentiate between level 2 and level 3) autonomous vehicles, of which the bulk of vehicles currently on the road containing autonomous technology fall under

## SCHOOL OFLAW

## **ULC Model Legislation**



- An example of legislation defining a level three vehicle:
  - "(3) "Level three vehicle" means any motor vehicle equipped with an automated driving  $\cap$ system that has been integrated into that vehicle, where the automated driving system performs all driving tasks and monitors the driving environment with the expectation that a human driver will be available to respond appropriately to a request to intervene. A level three vehicle does not include a vehicle that merely is equipped with one or more collision avoidance systems, including, but not limited to, electronic blind spot assistance, automated emergency braking systems, park assist, adaptive cruise control, lane keep assist, lane departure warning, traffic jam and queuing assist, or other similar systems that enhance safety or provide driver assistance, but are not capable, collectively or singularly, of driving the vehicle without the active control or monitoring of a human driver. The term "level three vehicle" consists of all vehicles with driving automation at Level 3 as defined by SAE International as of the effective date of this legislation." (Massachusetts)



## **Liability Generally**

- Existing liability law
  - Statutory considerations
  - o Common law considerations
    - Comparative/contributory liability
    - Product liability (most, if not all, suits will fall under this category of law)
- Complications created by AVs
  - Statutory law may conflict with software as a driver
  - Common law should be able to address complexities
- How states are addressing
  - o Altering statutory laws
  - Defining terms for application in courts



### Liability Breakdown





#### Insurance Breakdown





## **Insurance Minimums**

- \$5 million umbrella policy on top of existing coverage requirements
  - Recommended by WA Autonomous Vehicle Workgroup
  - Most states allow a bond in place of the insurance requirement
  - Some states only require existing coverage requirements
  - Many yet to act
- Reasonable? National Safety Council Figures:
  - Comprehensive cost of a death: \$4,100,000
  - Comprehensive cost of an incapacitating injury: \$208,500
  - Comprehensive cost of a non-incapacitating evident injury: \$53,200
  - Comprehensive cost of a possible injury: \$25,300
  - Comprehensive cost of no injury: \$2,300
- Different requirements for larger vehicles not addressed in most states
- Consumer protection laws written for driver-owner-carrier protection



### **Insurance Minimums Effects**

- Traditional coverage was reviewed and considered to be too low for an emerging testing environment
- Based on trends from other states
- Umbrella policy determined to be the least expensive way to add additional coverage
- \$3,000-5,000 per year cost for most companies
- Concerns over harmed person's access to bond

David Forte Senior Policy Analyst, Property & Casualty CPCU, AIC Policy and Legislative Affairs Division Washington State Office of the Insurance Commissioner



#### Infrastructure Breakdown





### Infrastructure Developments

- Creation of New Infrastructure
  - Laying of Fiber-optic Cables
  - Dedicated Short Range Communications (DSRC)
  - o 5G Technology
- Modifications
  - Upgrading Signals
  - o Modifying Striping
- Creation of Testing Infrastructure and Facilities

## Data/Privacy: What States Are Doing

- States are generally not concerned with the data privacy implications of CAVs at this time
  - Most of the states simply are not discussing or publicizing their data privacy plans
  - The responses that we got from most states are that they are aware of concerns, but have not yet determined how best to address them
  - Their concerns focus primarily on what data they should be collecting about or from vehicle testers
- What data states are considering collecting
  - Data about the tester Most states which allow testing collect data about the tester and the nature of the tests being performed
  - Data about the vehicle itself Most states appear unsure about what data they want to collect about the vehicles themselves (miles driven, number of CAVs on the road, crash information, etc)

## SCHOOL OF LAW

## Data/Privacy: Impact of the CCPA

- The only statewide, comprehensive data privacy law is the California Consumer Privacy Act (CCPA)
  - Other states interested in a comprehensive law have been looking to the CCPA as a model.
- Applicability
  - The CCPA imposes obligations on private (for profit) businesses, not governmental entities (§1798.140(e)(1))
  - The CCPA protects "Personal Information" which is explicitly defined to include geolocation data (§1798.140(o)(1)(G))
- The steps required to comply with the CCPA are too numerous to list, but include:
  - Development of procedures to process Data Subject Rights (§1798.100-120)
  - Revision of privacy policy to include the required disclosures (§§1798.130(a)(5), 1798.135(a))
- Consequences of non-compliance
  - The California AG can bring suit (\$2,500-\$7,500 per breach) (§1789.155(b))
  - Limited Private Right of Action for Data Breaches (§1798.150)



#### **Preemption Breakdown**





### **Preemption Generally**

- Federal Preemption of State Regulation
  - As of March 2020, Congress considered a bill (HR 3388) that would have preempted certain state regulation but did not enact it.
  - This was in response to the National Automobile Dealers Association's suggestion, urging Congress to ensure that AV legislation preserve the state's traditional role in licensing and regulation vehicle commerce
  - HR 3388 would have barred states from regulation the design, construction or performance of AVs unless they're identical to federal law
- Texas
  - Senate Bill 2205 passed- provides that state *alone* will regulate AVs
    - Cities, counties and other political subdivisions may not pass or amend the regulations.
- Nebraska
  - O LB-989: preempts local government regulation
- North Carolina
  - HB 469- State law preempts local regulation

## SCHOOL OF LAW

## **Preemption Generally**

- Advantages of federal preemption
  - Corporate/ AV industry prefers federal regulation with preemptive effect because it leads to uniformity across the States.
- Disadvantages of federal preemption
  - Each State and industry associations prefer to have its own local regulation to preserve state's traditional role.
  - There has been suggestions by the National Highway Traffic Safety Administration (NHTSA) that there will be federal preemption in some areas and not in others
    - For instance, state regulation surrounding testing of Autonomous Vehicles will not be preempted
    - There will likely be federal preemption surrounding safety standard and possibly state common law tort liability
- Boston City
  - O Boston city allows AV companies to test in limited geographical areas during a limited circumstance/ Boston is currently not preempted/
  - O Require companies to enter into Memorandum of Understanding covering certain issues



## **Testing Requirements for CAV Companies**

Levels	Definition
No requirements	No state oversight.
Basic requirements	Must meet state/federal vehicle traffic laws. Generally human driver must be in the vehicle unless fully autonomous. Insurance requirement (usually 2 or 5 million)
Advanced requirements	Often requires that companies obtain state permission via a permitting process. Often includes follow-up meetings with state regulating authorities and check- ins. Includes planning with state officials about how and where testing will take place. Often requires annual reporting.
Strong government oversight	California



#### Nationwide Testing Requirements





## California v. Pennsylvania

#### California (strong government oversight)

- Autonomous Vehicle Testing (ATV) Manufacturing/Manufacturer's Testing Permit
- \$3,600 biennial renewal fee
- Enrollment in Employer Pull Notice Program
- Significant additional driver qualifications

#### Pennsylvania (advanced requirements)

- Create account with PennDOT
- Fill out Notice of Testing Form (basic driver information, location of testing, self-assessment).
- Semi-annual reporting required (miles traveled, type of roadway, locations, etc.)
- Accident reporting within 6 hours of incident.



## Health and Equity

- Current transportation problems AVs could help with in WA:
  - Provide an adaptable transportation system that can evolve according to the continuance of gentrification.
  - Support in first mile/last mile transit for areas the lightrail or bus doesn't reach.
  - Provide transit services for folks with disabilities, who are low-income, or those who face other difficulties with transportation.
  - Delivery of basic necessities (e.g. groceries).
  - Create a H&E framework for AV companies to understand what WA is prioritizing.
- Problems that may arise because of increased use of AVs:
  - o Job loss
  - Potential of increased road use
  - Accessibility of technology



# Q & A

# Please type questions into the "Questions/Chat" box in the presentation window.

If invited to speak, unmute yourself:











## Manufacturers



	AV1001	Volkswagen
	AVT002	Mercedes Benz
	AVT003	Waymo
	AVT004	Aptiv Solutions
	AVT005	Tesla Motors
	AVT006	Bosch
	AVT007	Nissan
	AVT008	GM Cruise
	AVT009	BMW
	AVT010	Honda
	AVT011	Ford
	AVT012	Zoox, Inc
-	AVT013	Drive.Al
	AVT014	Faraday & Future
	AVT015	Baidu
7	AVT016	Wheego Electric
	AVT017	Valeo
	AVT018	NIO USA
	AVT019	Telenav

AVT020	NVIDIA Corp
AVT021	Auto X
AVT022	Subaru
AVT023	Udacity, Inc
AVT024	Navya, Inc
AVT025	Renovo
AVT026	UATC, LLC (Uber)
AVT027	Plus AI, Inc
AVT028	Nuro, Inc
AVT027	Plus AI, Inc
AVT028	Nuro, Inc
AVT029	Udelv
AVT030	Apple, Inc
AVT031	Bauer's Intelligent
AVT032	Pony.Al
AVT033	TuSimple
AVT034	WeRide Corp
AVT035	SAIC Innovation
AVT036	Aimotive. Inc

AVT037	Aurora Innovation
AVT038	Nullmax
AVT039	Samsung
AVT040	Continental
AVT041	Voyage
AVT042	Cyngyn
AVT043	Roadstar.Al
AVT044	Changan
AVT043	Roadstar.Al
AVT044	Changan 💿
AVT045	Lyft, Inc
AVT046	PhantomAl
AVT047	Qualcomm
AVT048	aiPod, Inc.
AVT049	SF Motors
AVT050	Toyota RI
AVT051	Apex.Al
AVT052	Intel
AVT053	Ambarella

n	AVT054	Gatik Al
	AVT055	DiDi
	AVT056	TORC Robotics
	AVT057	BoxBot, Inc
	AVT058	EasyMile
	AVT059	Mando
	AVT060	Xmotors.ai
	AVT061	Imagry Inc
	AVT062	Ridecell
	AVT063	AAA NCU
	AVT064	ThorDrive
	AVT065	Helm.Al
	AVT066	Argo Al
	AVT067	Qcraft.ai
	AVT068	Altas Robotics
	AVT069	Deeproute.ai
	AVT070	Kaizr, Inc
	AVT071	Leonis Tech

## Autonomous Testing Permits—by the numbers





## **Autonomous Testing**

Collisions—by the numbers

**Geographic concentration volumes** 



## Driverless Testing and Deployment Regulations Summary



Safe Operation

NHTSA's Federal Automated Policy

Motor vehicle safety responsibility

	) (h )
	U   )

**Manufacturers Certify** 

AV has been tested under controlled conditions and is safe to operate

Vehicle meets **FMVSS** and complies with state traffic laws



**Application Requirements** 

Notification to local authorities

Defines communication link with remote operator

Law Enforcement & First Responder Interaction Plan





## **Driverless Autonomous Vehicles**



## **Driverless Autonomous Vehicles**



## **Driverless Autonomous Vehicles**









## Statements of Policy California & NHTSA

## 2013 PRELIMNARY

concerning automated vehicles

- Levels of automation
- Recommendations testing autonomous vehicles

• Recommend states do not authorize operation of autonomous vehicles

# 2014 COLLABORATED

Federal Automated Vehicles Policy

- Vehicle Performance
  Guidance for
  Automated Vehicles
- Model State Policy





## Statements of Policy Federal & International





CHANG cars. Because of your presentation, 1 have decided to acome a Lavyer.

## For more information CONTACT





# Q&A

# Please type questions into the "Questions/Chat" box in the presentation window.

If invited to speak, unmute yourself:



## Work Session

## Alignment of Policy Goals and Work Group Initiatives

Scott Shogan, WSP



WASHINGTON STATE AUTONOMOUS VEHICLE WORK GROUP



24

## September Preview: AV in the COVID-19 Era

- Wide speculation on impact of COVID-19 on AV development
  - » Could automation remove people from harms way?
  - » Shared CAVs: social distancing and maintenance/cleaning challenges?
  - » Changes to mobility needs/travel patterns in post-COVID world?
  - » Will this change us permanently in some ways, or be a more temporary disruption?
- September meeting will feature discussion on AV in the COVID-19 Era

## CAT Policy Goals



#### Policy framework developed by Infrastructure & Systems subcommittee

» Extensive input and feedback over the course of 2019

#### Recommendation to the Executive Committee:

- » Adopt the 8 policy goals developed by the subcommittee
- » Encourage development of a statewide CAT policy framework that encompasses input from other subcommittees

#### Recommendations endorsed by both the EC and WSTC in late 2019

## Adopted CAT Policy Goals

- #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.



## *(continued)* Adopted CAT Policy Goals

#### (continued)

- #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.

## Infrastructure & Systems Subcommittee Efforts

## April 1 Workshop

- » Considered gaps in current activities
- » Reviewed draft strategies and action items for each goal (WSDOT and partner-led)
- » Identified additional strategies, actions, and ideas

## Use of the Policy Framework



- **PROPOSAL:** Use the adopted policy goals as a lens through which to evaluate overall Work Group activities
  - » Identify gaps in activities needed to achieve policy goals
  - » Identify missing goals to align with existing subcommittee actions and priorities
- To aid this, subcommittee initiatives to date were mapped against policy goals to test alignment

## Alignment of Subcommittee Initiatives and Policy Goals

	Organize for Innovation	Shared Mobility	Economic Vitality	Infrastructure & CSD	Land Use	Equity	Safety	Environment
Health & Equity						х		
Infrastructure & Systems	х	х	х					
Liability							х	
Licensing								
Safety							х	
System Tech & Data Security								
Workforce								

## **Questions and Next Steps**

## Given that the EC adopted the policy goals:

- » Is this the right framework to consider Work Group initiatives and gaps?
- » Is every policy goal adopted the domain of this Work Group to address? Who would own areas such as land use and environment?
- » Does this help to identify additional policy goals from other subcommittees

## • Next Steps:

- » Further discussion at June 24<sup>th</sup> Executive Committee meeting
- » Reflect key topics in September meeting agenda and update roadmap



# Q & A

# Please type questions into the "Questions/Chat" box in the presentation window.

If invited to speak, unmute yourself:



## Executive Committee Member Items

## **Open Forum**







## Executive Committee Member Items – Open Forum

Please type questions/comments into the "Questions/Chat" box in the presentation window.

If invited to speak, unmute yourself:



# **Closing Remarks**



Washington State Transportation Commission

## **Closing Remarks**

#### • Recap Today's Meeting:

- » Action Items
- » Agreements / Decisions

#### • Next Meeting:

- » June 24<sup>th</sup> Executive Committee Meeting
- » September 24<sup>th</sup> Executive Committee meeting

# Thank You!



