



WASHINGTON STATE  
AUTONOMOUS VEHICLE  
WORK GROUP

# Washington State Transportation Commission

## AV Work Group Executive Committee Meeting

June 13, 2023



# Agenda

TIME	DESCRIPTION	PRESENTER
12:00	Welcome, Introductions, & Executive Committee Roll Call	Jim Restucci, Chair, AV Work Group Executive Committee
12:05	2023 AV Work Group Plans	Scott Shogan, Vice President, WSP USA
12:15	AV Roadmap to the Future – Key Component: Safety	Scott Shogan, Vice President, WSP USA
12:35	AV Roadmap to the Future – Key Component: Path to Deployment	Scott Shogan, Vice President, WSP USA
12:55	Seattle Department of Transportation Autonomous Vehicle Program and Mobility Updates	Greg Spotts, Director, City of Seattle, Department of Transportation Armand Shahbazian, Electric and Automated Mobility Policy Advisor, City of Seattle, Department of Transportation
1:40	Expectations for Remaining 2023 Work Group Meetings	Scott Shogan, Vice President, WSP USA
1:50	Executive Committee Member Items	Open forum for members
2:00	ADJOURN	



# 2023 AV Work Group Plans

Scott Shogan, *WSP USA*



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# 2023 AV Work Group Plans

- Finalizing Roadmap legacy deliverable
- Final Work Group Report
- General Expectations for 2023 for Executive Committee and Subcommittees





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WORK GROUP**

**AV Work Group**  
*Roadmap to the Future*

*Scott Shogan, WSP*



# Roadmap to the Future



The “**Roadmap to the Future**” will serve as the Work Group’s Legacy Deliverable and be a resource for law makers to consider future actions

- » Deliver at the end of 2023 (*when the Work Group sunsets*)
- » A plan for the future, how Washington can continue to prepare for AVs

## key components of the “Roadmap”

Agency  
Readiness

Testing /  
Pilots

Public  
Outreach

Safety

Path to  
Deployment

# Roadmap to the Future



Today, we'll focus on the two Roadmap components remaining to be discussed with the Work Group...

## key components of the "Roadmap"

*Agency  
Readiness*

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Safety

Path to  
Deployment

# Roadmap Pillar – Safety: Goals



**In the context of preparing for AVs in Washington State, the following goals drive the Roadmap’s direction to future decision makers for addressing road user safety:**

- » Multimodal approach - engagement with motorists, cyclists, pedestrians, transit, rail, and other partners
- » Regulate AVs and related technologies - Collect data and monitor testing activities to ensure only safe technologies are being tested and deployed
- » Creating a fair and transparent permitting system for allowing AVs to test and deploy among the public



# Roadmap Pillar – Safety: Activities to Date



## Work Group activities completed to date related to addressing AV Safety:

- WTSC ADAS Survey (and developing Education Plan); supported by Safety SC
- Stood up AV Work Group Website
- HB 2676 Section 2 “AV Notifications and Reporting” (implemented Oct 2022)

Agency Readiness

Testing / Pilots

Public Outreach

Safety

Path to Deployment

*Mentimeter polling question...*

*What other AV Safety related activities has the Work Group conducted or considered that seeks to address safety in the context of preparing for AVs in Washington?*

Agency Readiness

Testing / Pilots

Public Outreach

Safety

Path to Deployment

# Looking Ahead: Safety



**Aspects and activities related to addressing safety in preparing for AVs for future decision makers to consider, explore, and develop include:**

- Policy and agency preparedness
- Laws and enforcement
- Road user compliance and understanding
- Licensing education and testing



Examples	Goal	How
<ul style="list-style-type: none"><li>• Policy for deployment and AV operations &amp; testing</li></ul>	<ul style="list-style-type: none"><li>• Ensure only safe technologies are tested and deployed</li></ul>	<ul style="list-style-type: none"><li>• Collecting data and monitoring testing efforts</li><li>• Creating fair and transparent permitting system</li></ul>



# Topic : Laws and Enforcement



Examples	Goal	How
<ul style="list-style-type: none"><li>• Law Enforcement/ First Responders</li></ul>	<ul style="list-style-type: none"><li>• Educate and inform agency procedures for engaging with AVs</li></ul>	<ul style="list-style-type: none"><li>• Interaction plans and protocols</li></ul>

# Topic : Road user compliance and understanding



Examples	Goal	How
<ul style="list-style-type: none"><li>• Motorists, cyclists, pedestrians, transit, rail, and other partners</li></ul>	<ul style="list-style-type: none"><li>• Clear understanding of AV operations by other road users</li><li>• Set expectations of AV behavior</li></ul>	<ul style="list-style-type: none"><li>• Develop communication materials pertaining to interactions between road users</li><li>• Public outreach</li></ul>

# Topic : Licensing Education & Tests



Examples	Goal	How
<ul style="list-style-type: none"><li>• Driver's license education and test</li><li>• Crash Analysis and Reporting</li></ul>	<ul style="list-style-type: none"><li>• Educate and enhance driver / road user awareness (e.g., ADAS vehicle functionality and difference from AVs)</li><li>• Analysis of crashes, including causes and contributing factors</li></ul>	<ul style="list-style-type: none"><li>• Update testing criteria and mandates</li><li>• Train law enforcement</li></ul>

# Diversity of Input



## Range of Infrastructure Users

- Drivers
- Cyclists
- Pedestrians
- Transit riders

## Focus on Equity

- Communities of color
- Immigrant communities
- Low-income
- People with disabilities
- Seniors



*Mentimeter polling question...*

*What other AV Safety related activities should Washington State explore in the future to prepare for the safe deployment of AVs on Washington public roadways?*

Agency Readiness

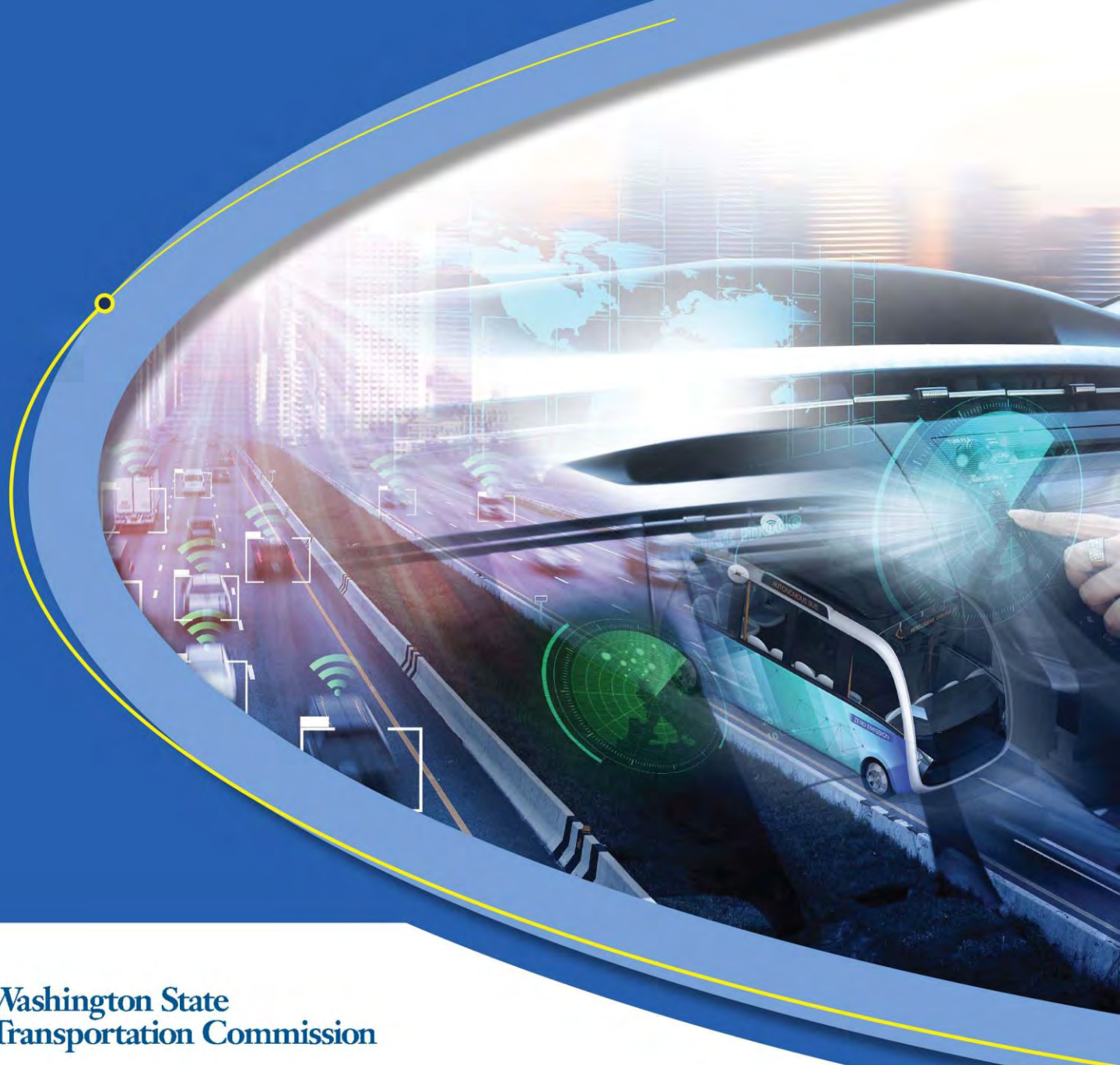
Testing / Pilots

Public Outreach

Safety

Path to Deployment

# Thank You!



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AV Work Group  
*Roadmap to the Future*  
Path to Deployment

*Scott Shogan, WSP*



# Roadmap to the Future



The “**Roadmap to the Future**” will serve as the Work Group’s Legacy Deliverable and be a resource for law makers to consider future actions

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- » A plan for the future, how Washington can continue to prepare for AVs

## key components of the “Roadmap”

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# Roadmap to the Future



Today, we'll focus on the two Roadmap components remaining to be discussed with the Work Group...

## key components of the "Roadmap"

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*Public  
Outreach*

Safety

Path to  
Deployment

# Roadmap Pillar – Path to Deployment: Goals



- Provide clear expectations of regulatory agencies, supporting entities, and companies deploying AVs in Washington
- Regulation that does not limit opportunities for innovation
- Focus on State's role in regulating AV deployment in Washington, not preempting what should be / is done at Federal level

*Agency Readiness*

*Testing / Pilots*

*Public Outreach*

*Safety*

**Path to Deployment**

# Roadmap Pillar – Path to Deployment: Activities to Date



- **COMPLETED** – HB 2676: Umbrella Insurance and AV Notifications and Reporting
- **COMPLETED** – SSB 5460: Defines automation levels 4 and 5 subject to AV regulation in WA, repeals outdated RCW banning TV viewers
- **ATTEMPTED** – Regulation (*included in HB1731, succeeded by SSB5460*): Law Enforcement / First Responder Interaction Guide
- **ATTEMPTED** – Regulation (*included in HB1731, succeeded by SSB5460*): Enable rulemaking authority for WA DOL for AV Self-Certification Program

Agency Readiness

Testing / Pilots

Public Outreach

Safety

Path to Deployment

*Mentimeter polling question...*

*Are there other activities the Work Group has conducted or considered that have explored how to create a path to AV deployment in Washington?*

Agency Readiness

Testing / Pilots

Public Outreach

Safety

Path to Deployment

# Looking Ahead: Path to Deployment



Aspects and activities related to creating a path to AV deployment for future decision makers to consider, explore, and develop include:

- » Regulatory changes to transition from AV testing to deployment
- » Review and revise RCW to accommodate advancing technologies
- » Evaluate risk tolerance and standards
- » Identify areas of overlap with or preemption of other regulatory regions or bodies (e.g., NHTSA) and streamline where appropriate

*Agency Readiness*

*Testing / Pilots*

*Public Outreach*

*Safety*

**Path to Deployment**



# Topic: Regulation to Allow AV Deployments



Example	Goal	How
<ul style="list-style-type: none"><li>Revise State legislation and related DOL AV Self-Certification Program to enable AV deployment</li></ul>	<ul style="list-style-type: none"><li>Create a path for AV deployment in WA</li></ul>	<ul style="list-style-type: none"><li>Revise regulation with deployment language, expectations, requirements, etc.</li></ul>

# Topic : Review and Revise RCW



Example	Goal	How
<ul style="list-style-type: none"><li>• “Following too closely” RCW (restricts truck platooning)</li></ul>	<ul style="list-style-type: none"><li>• Refine RCW to allow for AV deployments and does not prohibit AV expectations</li><li>• Enable innovation</li></ul>	<ul style="list-style-type: none"><li>• Review relevant RCW to determine outdated regulations or those not applicable to AV deployments</li></ul>

# Topic : Review and Revise RCW



Example	Goal	How
<ul style="list-style-type: none"><li>• Presence of a human operator in the vehicle</li></ul>	<ul style="list-style-type: none"><li>• Clarify the need for and role of a human operator in an AV</li></ul>	<ul style="list-style-type: none"><li>• Clarifying/modifying terminology referring to driver</li><li>• Setting rules for human operator and requirements for any operation without a human operator</li></ul>

# Topic : Risk Tolerance and Standards



Example	Goal	How
<ul style="list-style-type: none"><li>Minimal risk profiles in varying deployment scenarios</li></ul>	<ul style="list-style-type: none"><li>Standardize State’s tolerance for risk for each AV deployment scenario, so only safe and tested AVs are deployed</li></ul>	<ul style="list-style-type: none"><li>Leverage pilot</li><li>Identify categories of deployment scenarios</li><li>Develop minimal risk profile and related liability requirements for each category / scenario</li></ul>

# Topic : Evaluate Regulatory Overlap



Example	Goal	How
<ul style="list-style-type: none"><li>Federal, such as NHTSA, focus on AV design and related safety</li></ul>	<ul style="list-style-type: none"><li>Remove overlaps or preemptions of other regulatory levels and bodies to reduce confusion and patchwork of regulation</li></ul>	<ul style="list-style-type: none"><li>Clearly define various regulatory level roles</li><li>Remove State regulations conflicting with levels who have defined authority</li></ul>



*Mentimeter polling question...*

*What other activities should Washington State explore in the future to prepare for advancing the path to deployment of AVs on Washington public roadways?*

Agency Readiness

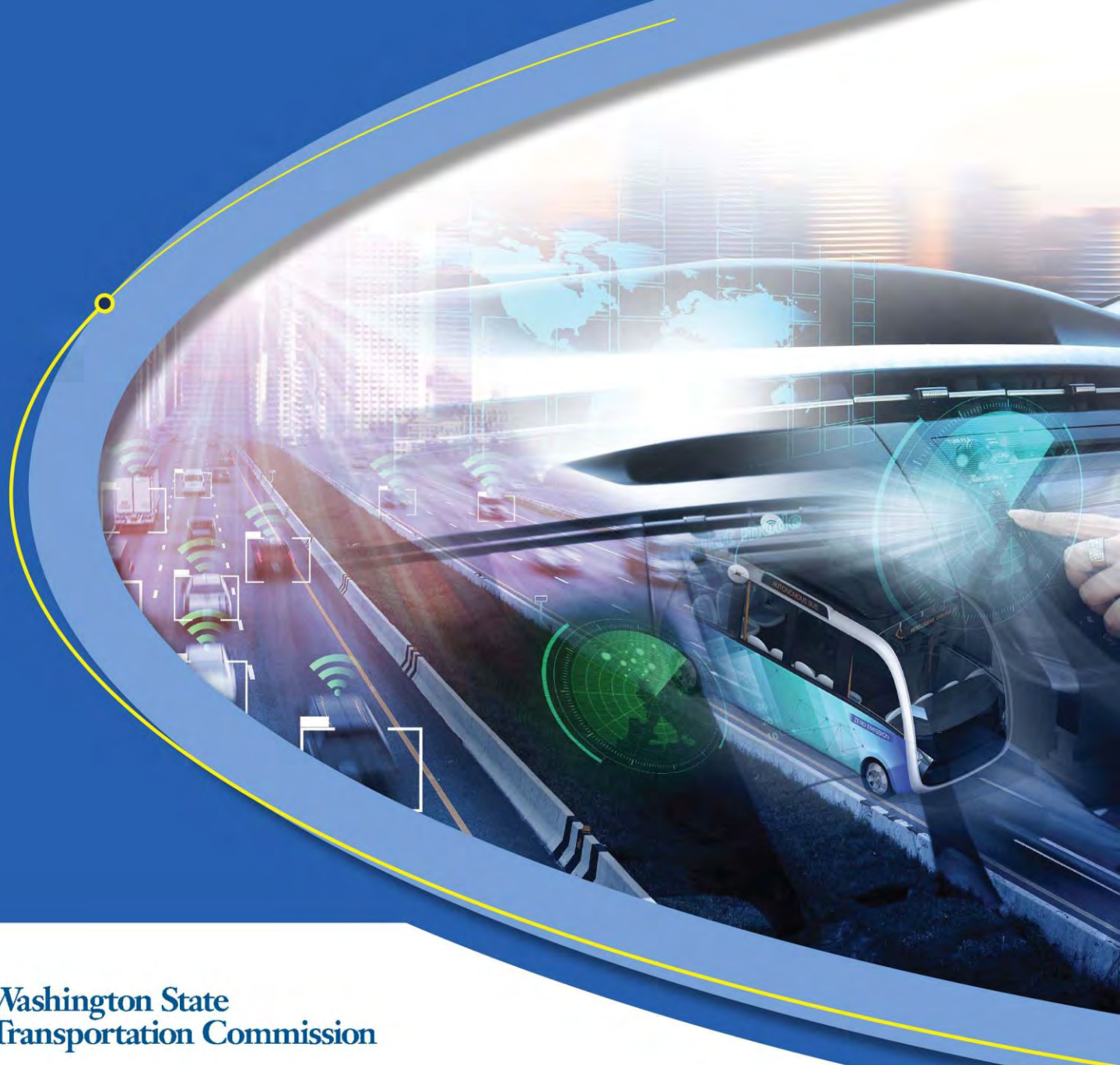
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# Thank You!



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Seattle Department of Transportation  
**Autonomous Vehicle Program  
and Mobility Updates**

Greg Spotts, Director

Armand Shahbazian, Electric and Automated Mobility Policy Advisor

June 13, 2023



# Our Vision, Mission, Values, & Goals

Seattle is a thriving equitable community powered by dependable transportation. We're on a mission to deliver a transportation system that provides safe and affordable access to places and opportunities.

## Core Values & Goals:

Equity, Safety, Mobility, Sustainability, Livability, and Excellence.

# Overview: Mobility, Innovation, & AV

- Vision Zero momentum building actions spotlight: No Turn on Red
- Innovation, Collaboration, & SMART grants
- Seattle's autonomous vehicle permitting program
- What's next?

VISION  
ZERO  
SAFER STREETS FOR SEATTLE

SMART







**2,022,020 steps and counting!**



*"One of the best ways to understand a city and its unique, multi-faceted transportation system is to experience it firsthand—and talk face-to-face with the people who use, build, and maintain it every day."*





# Look Out for Each Other



[seattle.gov/visionzero](http://seattle.gov/visionzero)

VISION  
ZERØ  
SAFER STREETS FOR SEATTLE



Seattle  
Department of  
Transportation

Turning right at red lights is linked to a 60% increase in people being hit by turning cars.



# SMART Grant: Rainier Valley Safe



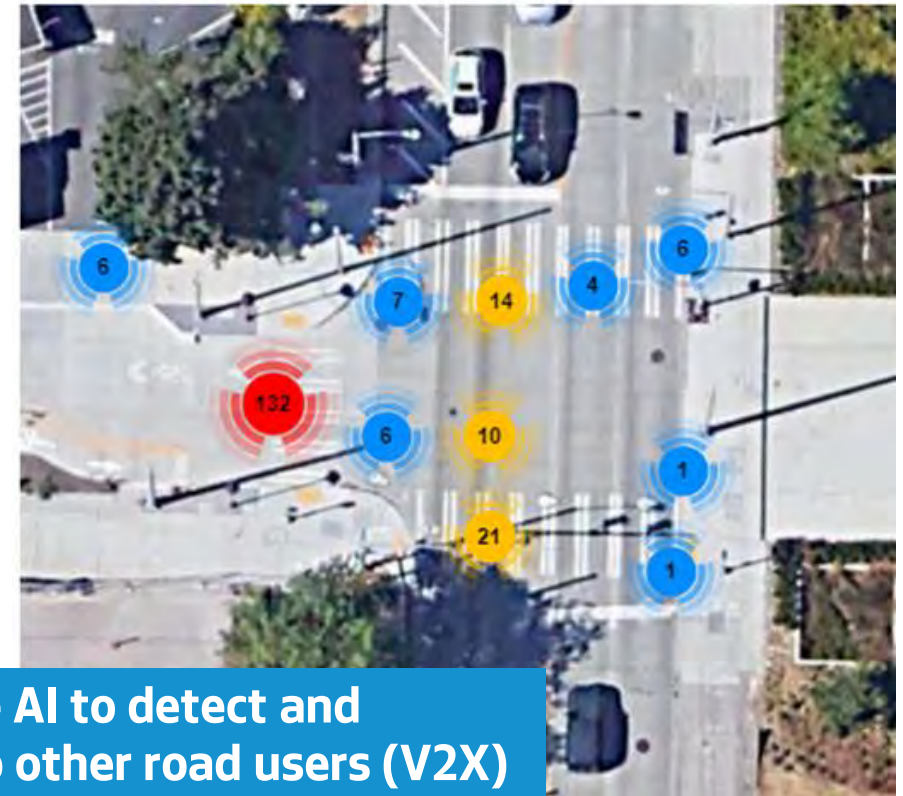
Smart traffic cameras in the University District are classifying road users and documenting near misses

## NEAR MISS HEATMAP

DISPLAY AS

DENSITY

CLUSTER



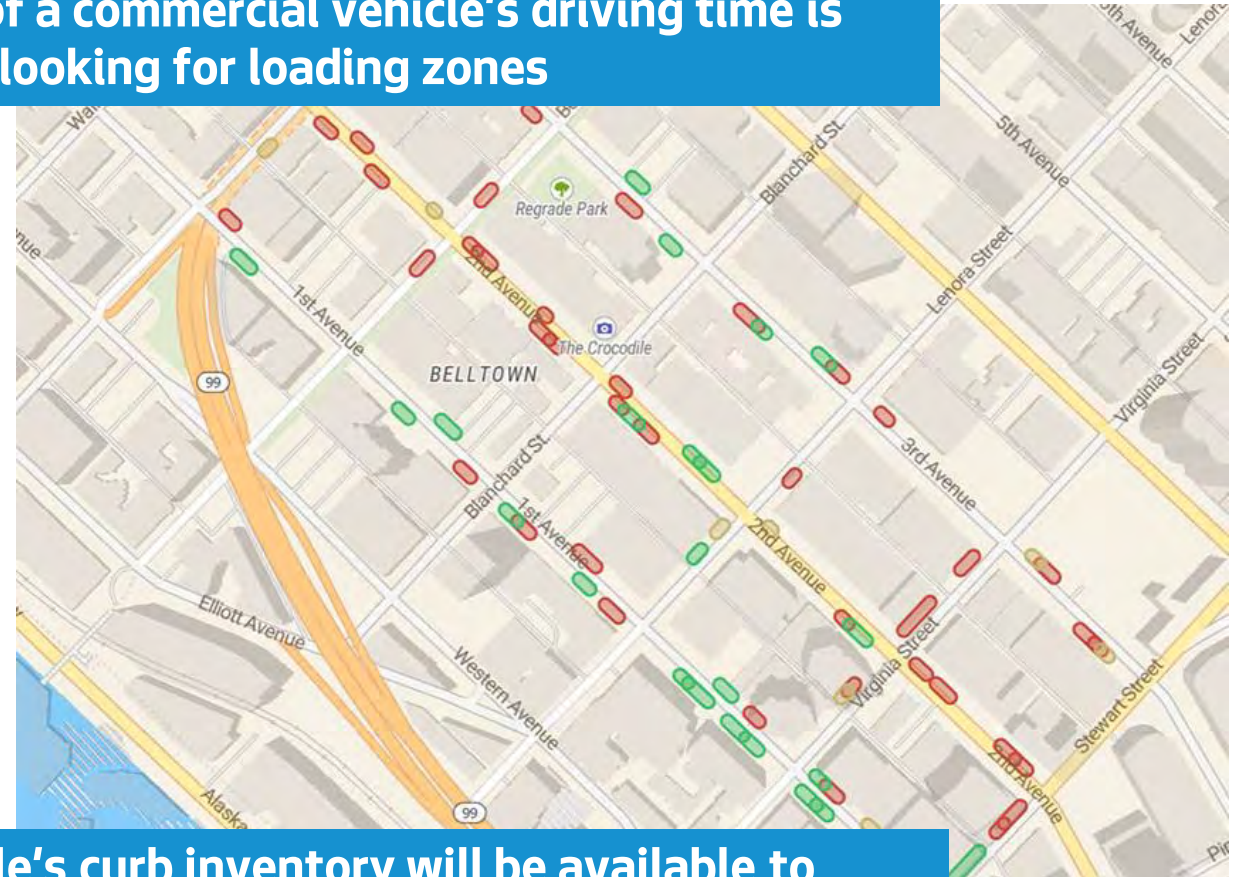
Smart signals will use AI to detect and broadcast conflicts to other road users (V2X)



# SMART Grant: Digital Curb & Freight Loading



30% of a commercial vehicle's driving time is spent looking for loading zones



270 electromagnetic sensors were installed in the curb lanes in Belltown to provide real time loading information to commercial vehicle drivers



Seattle's curb inventory will be available to anyone via the Curb Data Specification (CDS)

# Autonomous Vehicle Strategic Vision



# City of Seattle



# Puget Sound Regional Goals

"Managing the advancement and utilization of technologies such as AVs ... requires a **cohesive vision**, **collaborative partnerships**, and **conscientious decision-making** about what regional priorities are supported by policy."

-AV Strategic Vision, pg. 26



# Seattle AV Milestones

New Mobility  
Playbook: "Manage  
the technological and  
cultural shift to  
automated  
technology."



NVIDIA publishes  
video of AV  
perception in Seattle;  
SDOT joins AVWG  
Executive Committee

ZOOX

Seattle & Bellevue  
release AV Strategic  
Vision; SDOT issues  
first AV testing  
permit

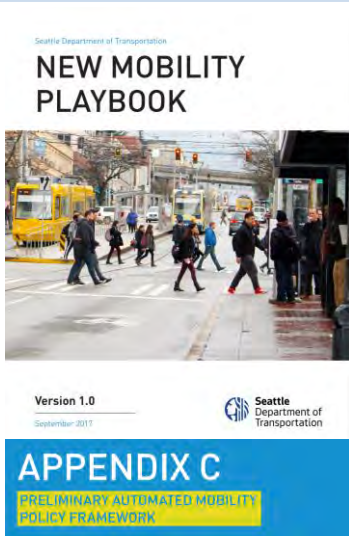
2017

2018

2019

2021

2023



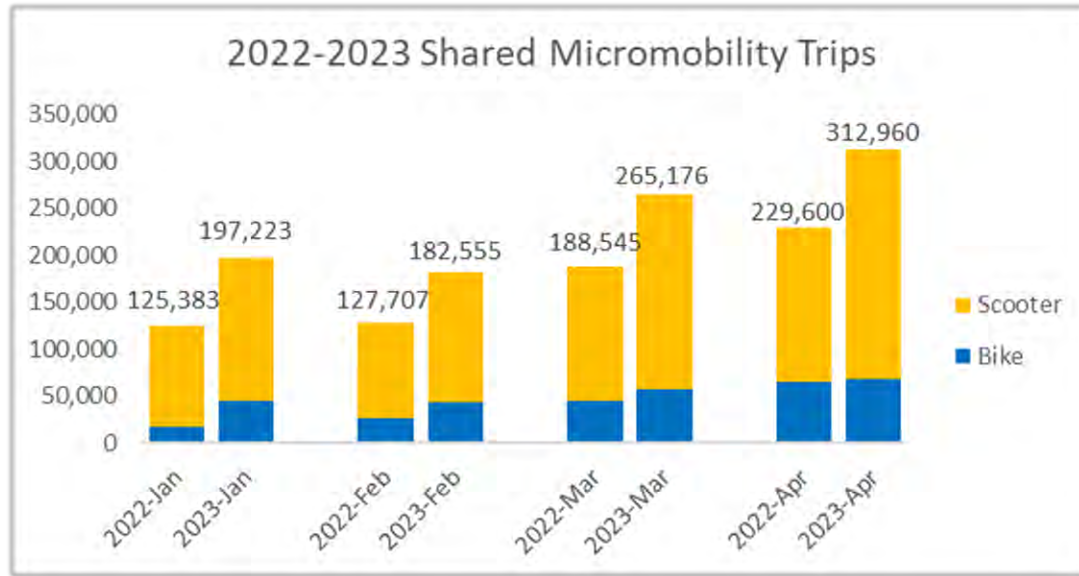
Washington State  
Transportation  
Commission (WSTC)  
AV Work Group  
(AVWG) Kick Off



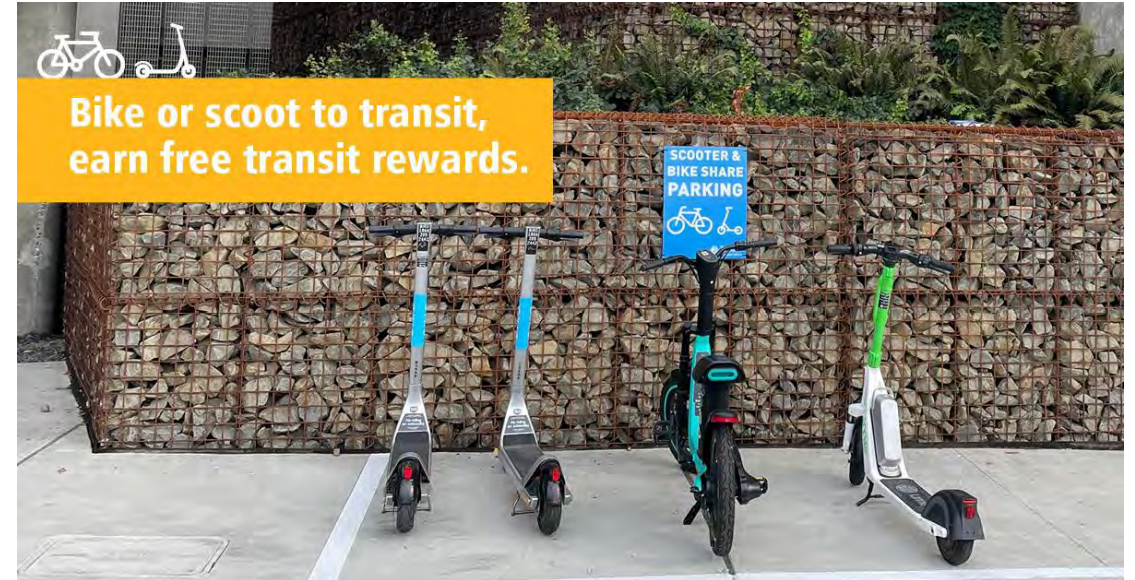
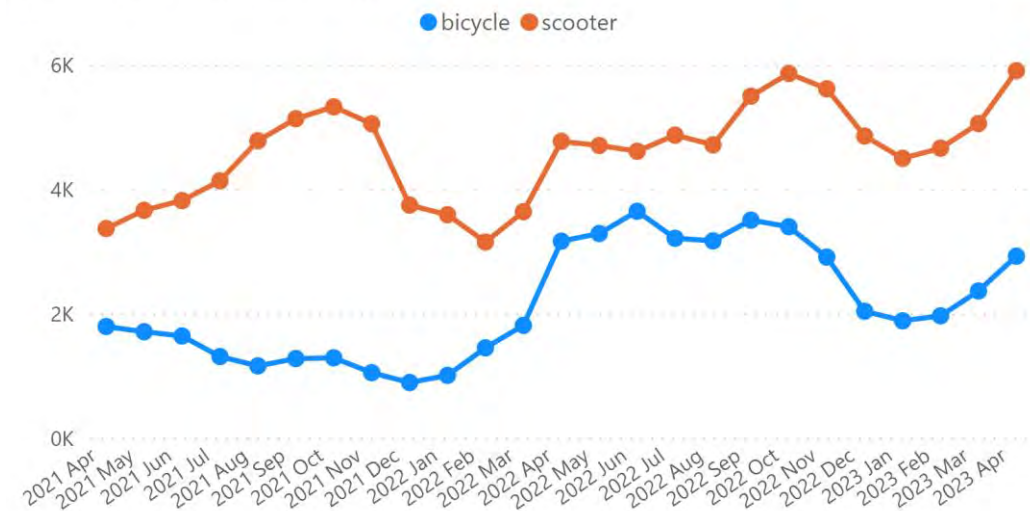
Zoox begins AV  
testing in Seattle



# City & Industry Partnership in Practice



Average Daily Deployment by Month and Year



**4 million+ trips taken in 2022-23 permit year**

**Seattle uses tools such as permits to manage the right of way and to ensure vendors meet transportation goals**

**Average ~15% deployment in equity areas**



# SDOT AV Testing Permit

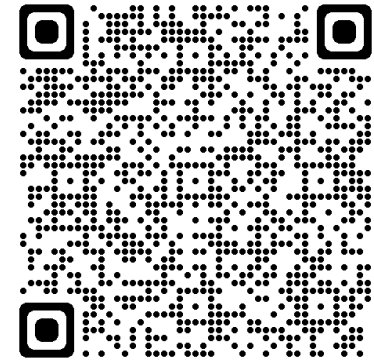
## Supplementary to state self-certification

- Coverage of Level 3 vehicles
- Test Driver requirement and driver training program
- First Responder Interaction and Disengagement plan
- First Responder Demonstration event
- Public outreach
- Insurance
- Indemnification

Seattle Department of Transportation

## AUTONOMOUS VEHICLE TESTING PERMIT REQUIREMENTS

Version 1.0 (November 2022)  
All Requirements Subject to Change



# SDOT Goals & AV Testing

**Safety:** Everyone should be able to move safely throughout the City

- How can we prioritize mobility and safety for the public while driving systems are being developed and tested in complex urban environments?

**Mobility:** Transportation choices are critical to accessing opportunities

- What data standards and best practices can be used to ensure AVs provide transportation choices and benefits for the public?

**Excellence:** Exceeding the expectations of the communities we serve

- How can we build public trust and engage with communities with the least access to transportation?





# Permit Process

1

Applicant submits Initial Application Form



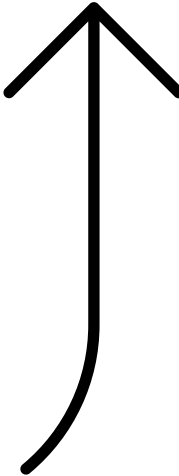
2

City of Seattle staff review



3

Applicant applies for SDOT Street Use Permit



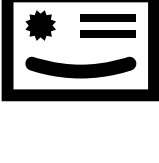
4

City verifies insurance, indemnification, & other docs



5

SDOT issues permit



6

Delivery of first responder and public outreach events



# Spotlight: AV Permittees in Seattle



## **Zoox, Inc.** (Testing Level 3)

*Zoox aims to provide mobility-as-a-service ride-hailing for users.*



## **NVIDIA Corporation** (Testing Level 3)

*NVIDIA DRIVE aims to provide an end-to-end platform for the transportation industry to develop autonomous vehicles.*



# Zoox First Responder Event: May 2023



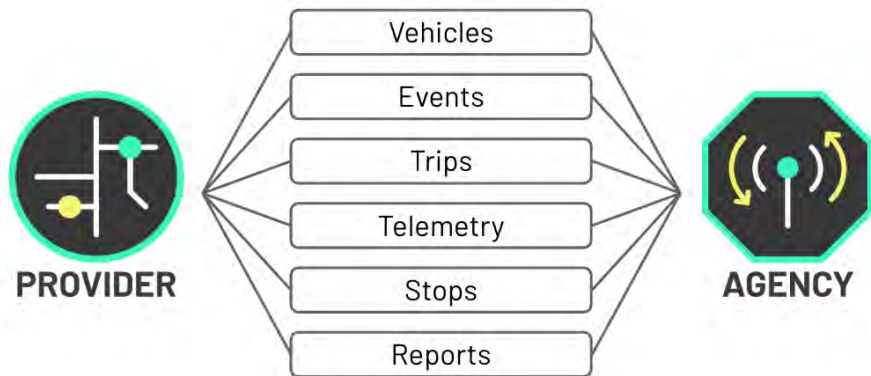
Seattle Police, Fire, and Transportation staff learned more about Zoox's testing methodology, including how Zoox vehicles react to first responder vehicles and other scenarios.



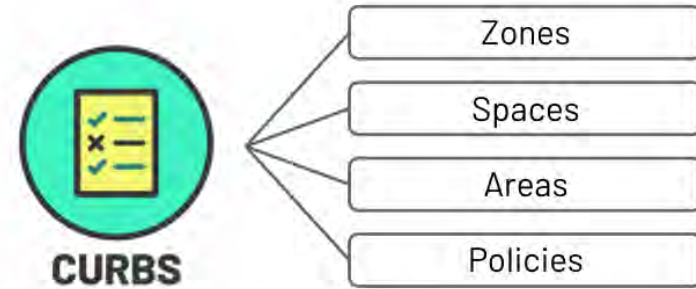
Seattle Police, Fire, and Transportation staff had hands-on time with the Zoox test vehicle to learn more about its sensors and how to interact with the vehicle in the case of a collision.

# On the Horizon

## MDS MOBILITY DATA SPECIFICATION



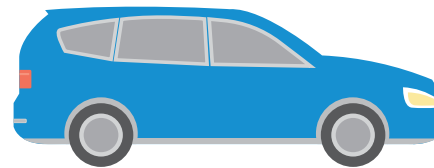
## CDS CURB DATA SPECIFICATION



# What's Next?



*"Deliver a transportation system that provides safe and affordable access to places and opportunities."*





# Thank you!

**Seattle Department of Transportation**

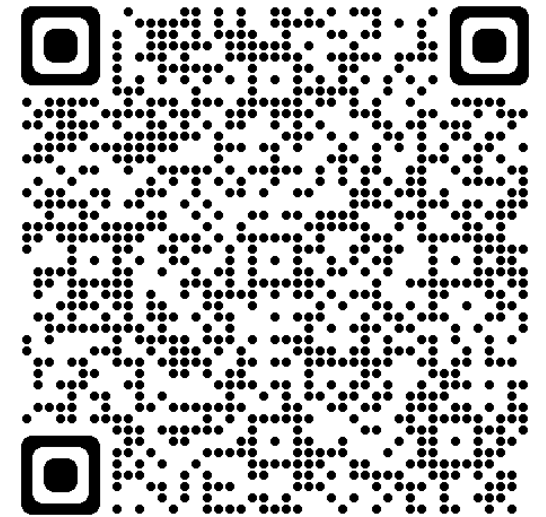
**Transit and Mobility Division - New Mobility Team**



[DOT\\_AutomatedMobility@seattle.gov](mailto:DOT_AutomatedMobility@seattle.gov)



[www.seattle.gov/transportation/projects-and-programs/programs/new-mobility-program](http://www.seattle.gov/transportation/projects-and-programs/programs/new-mobility-program)



# Expectations for Remaining 2023 Work Group Meetings

Scott Shogan, *WSP USA*



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# Expectations for Remaining 2023 Work Group Meetings

- **August 22nd 9am – 12pm Pacific Time**
  - » Virtual working session for Roadmap
  - » Virtual working session for Final Report
- **October 4th 9am – 12pm Pacific Time**
  - » Review Finalized Roadmap
  - » Review Work Group Final Report Outline
  - » **Voting Action**: Finalized Roadmap deliverable and Work Group Final Report Outline



# Executive Committee Member Items

*Open Forum*



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# Closing Remarks



- **Recap Today's Meeting:**

- » Action Items
- » Agreements / Decisions

- **Important Dates:**

- » July 19, 2023 – AV Work Group presentation to Transportation Commission
- » August 22, 2023 – AV Work Group meeting
- » October 4, 2023 – AV Work Group meeting (***voting action***)
- » December 31, 2023 – Final AV Work Group Report due to Governor & Legislature

# Thank You!



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