WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

Washington State Transportation Commission

AV Work Group Executive Committee Meeting

November 2, 2023

Washington State Transportation Commission

Agenda

WASHINGTON STATE AUTONOMOUS VEHICLE WORK GROUP

TIME	DESCRIPTION	PRESENTER
9:00	Welcome, Introductions, & Executive Committee Roll Call	**Jim Restucci**, Chair, *AV Work Group Executive Committee*
9:10	A Look Back at the Work Group's Journey	**Markell Moffett**, Transportation Advisory Services, *CDM Smith*
9:25	Passenger Services, Autonomous Vehicles and Digital Policy	**Andrew Glass Hastings**, Executive Director, *Open Mobility Foundation* **Angela Giacchetti**, Director of Partnerships & Development, *Open Mobility Foundation* **Michael Schnuerle**, Director of Open Source Operations, *Open Mobility Foundation*
9:55	Subcommittees' Final Updates	**Allison Drake**, Policy and Stakeholder Engagement Advisor, *Department of Labor and Industries* **Caitlyn Jekel**, Government Relations Director, *Employee Security Department* **Brenda Wiest**, Legislative Director, *Teamsters 117* **Dr. Andrew Dannenberg**, Affiliate Professor, *University of Washington* **Beau Perschbacher**, Legislative and Policy Director, *Department of Licensing* **David Forte**, Senior Policy Advisor, *Office of the Insurance Commissioner*
10:50	BREAK	
11:05	2024 Legislative Session	**Representative Shelley Kloba**, *Washington State House of Representatives*
11:30	AV Roadmap to the Future – Final Walkthrough	**Reema Griffith**, Executive Director, *Transportation Commission* **Markell Moffett**, Transportation Advisory Services, *CDM Smith*
12:40	2023 Annual Report	**Markell Moffett**, Transportation Advisory Services, *CDM Smith*
12:50	Final Work Group Meeting Wrap-Up and Next Steps	**Jim Restucci**, Chair, *AV Work Group Executive Committee* **Reema Griffith**, Executive Director, *Transportation Commission*
1:00	ADJOURN	

WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

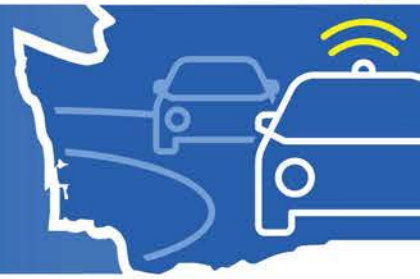
Washington State Transportation Commission

A Look Back at the Work Group's Journey

Markell Moffett, CDM Smith

Washington State Transportation Commission

A Look Back at the Work Group's Journey



First Meeting
Jun 27, 2018

16 Exec Comm Members

5 Subcommittees

Last Meeting
Nov 2, 2023

35 Exec Comm Members

7 Subcommittees

Work Group Accomplishments

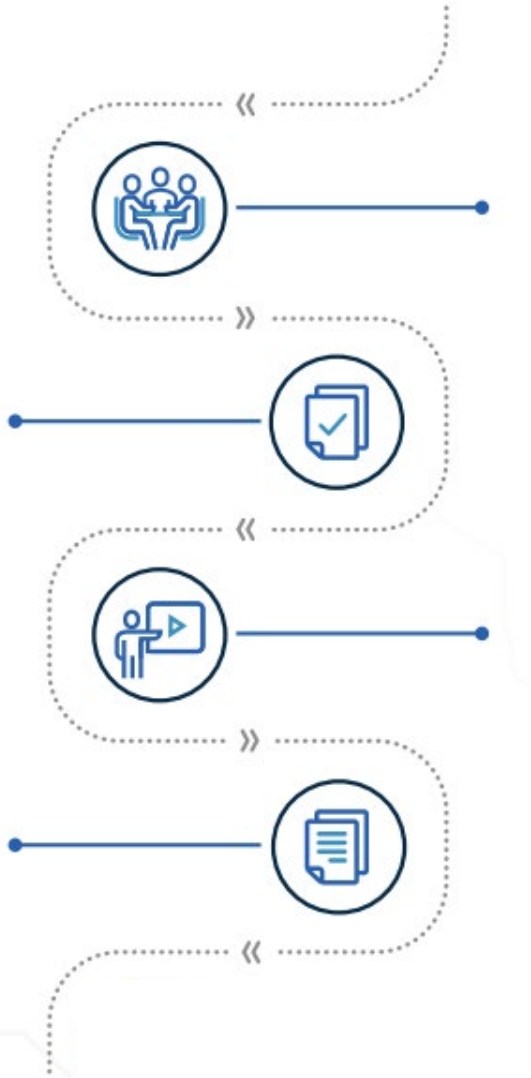
(June 2018 – August 2023)

Recommendations

- 25 Total Recommendations
- 17 Endorsed
- 8 Acted Upon / Legislated

Legislation

- HB 2676 (2020) – *Enacted*
- HB 1731 (2021) – *Superseded*
- SSB 5460 (2021) – *Enacted*
- SB 5594 (2023) – *No action*



Meetings

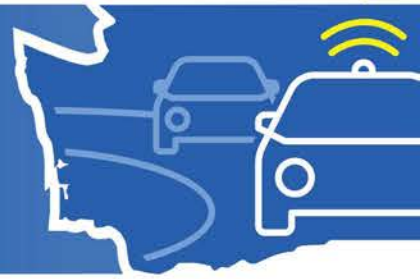
- 13 Executive Committee meetings
- 95 Subcommittee meetings
- Joint Subcommittee meetings
- WSTC / Agency Collaboration

Education and Engagement*

- Gov: NHTSA, AAMVA, States
- Industry: IIHS, AV Companies
- Advocates: DRW, ULC, Reason Foundation
- Academia: UW, Carnegie Mellon

** 100+ total presentations from public & private partners*

A Look Back at the Work Group's Journey



2018
WG Established

2019: Solidify "How an Idea Becomes a Law" through WG process

2019: Adopt CAT policy goals and associated CAT Policy Framework for WA

2020: Establish WG Focus Areas and Priorities

2021: Begin driving towards "Roadmap to the Future" legacy deliverable

2021: Discuss AV Pilot considerations, approaches, and use cases

2022: Develop State-Sponsored Pilot Approach and Plan

2023: Finalize "Roadmap to the Future" as final effort of Work Group

2023
WG Sunsets

PASSENGER SERVICES DIGITAL POLICY AND DATA SHARING

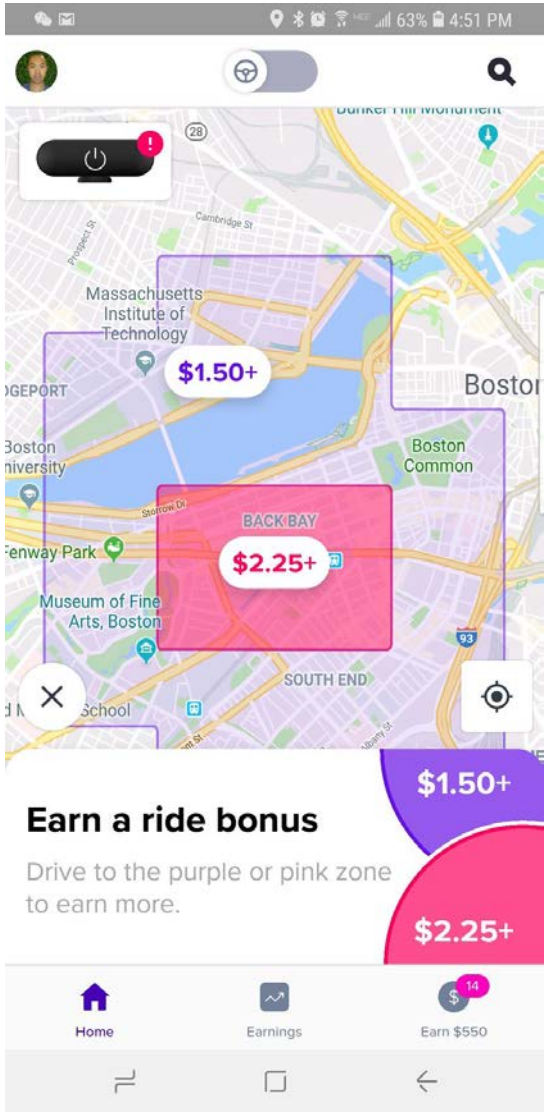
November, 2023

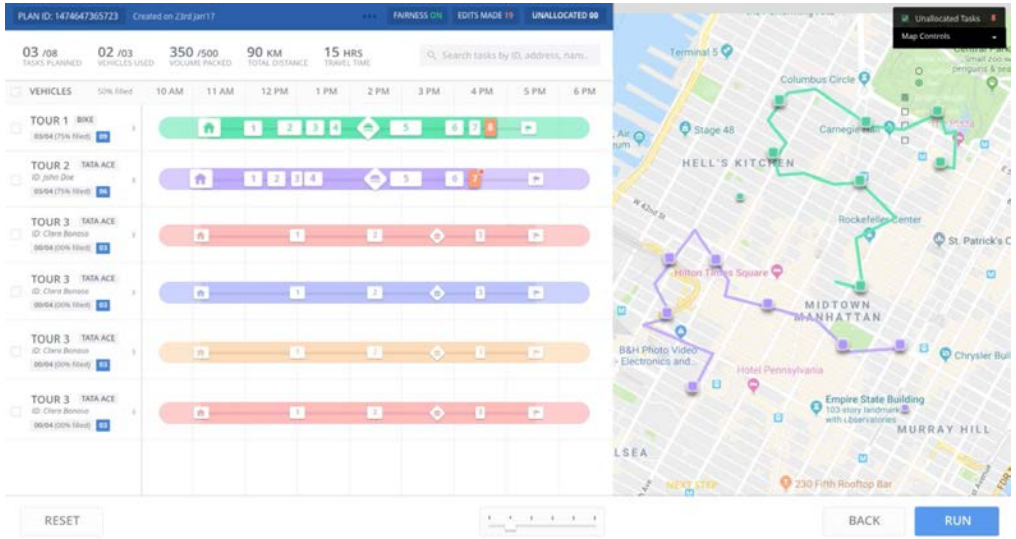
OPEN MOBILITY FOUNDATION

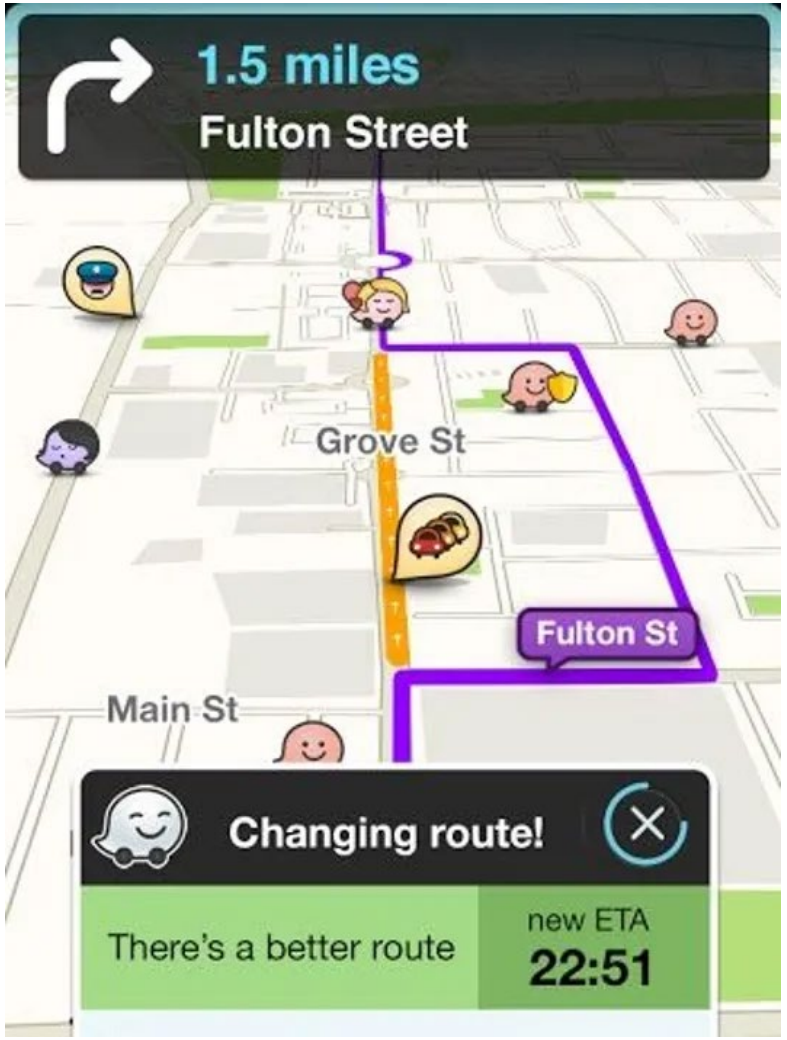
THE OPEN MOBILITY FOUNDATION

1900s-2000s: PHYSICAL INFRASTRUCTURE

2010s - 2020s: ALGORITHMS AND DIGITAL INFRASTRUCTURE







THE OMF VISION

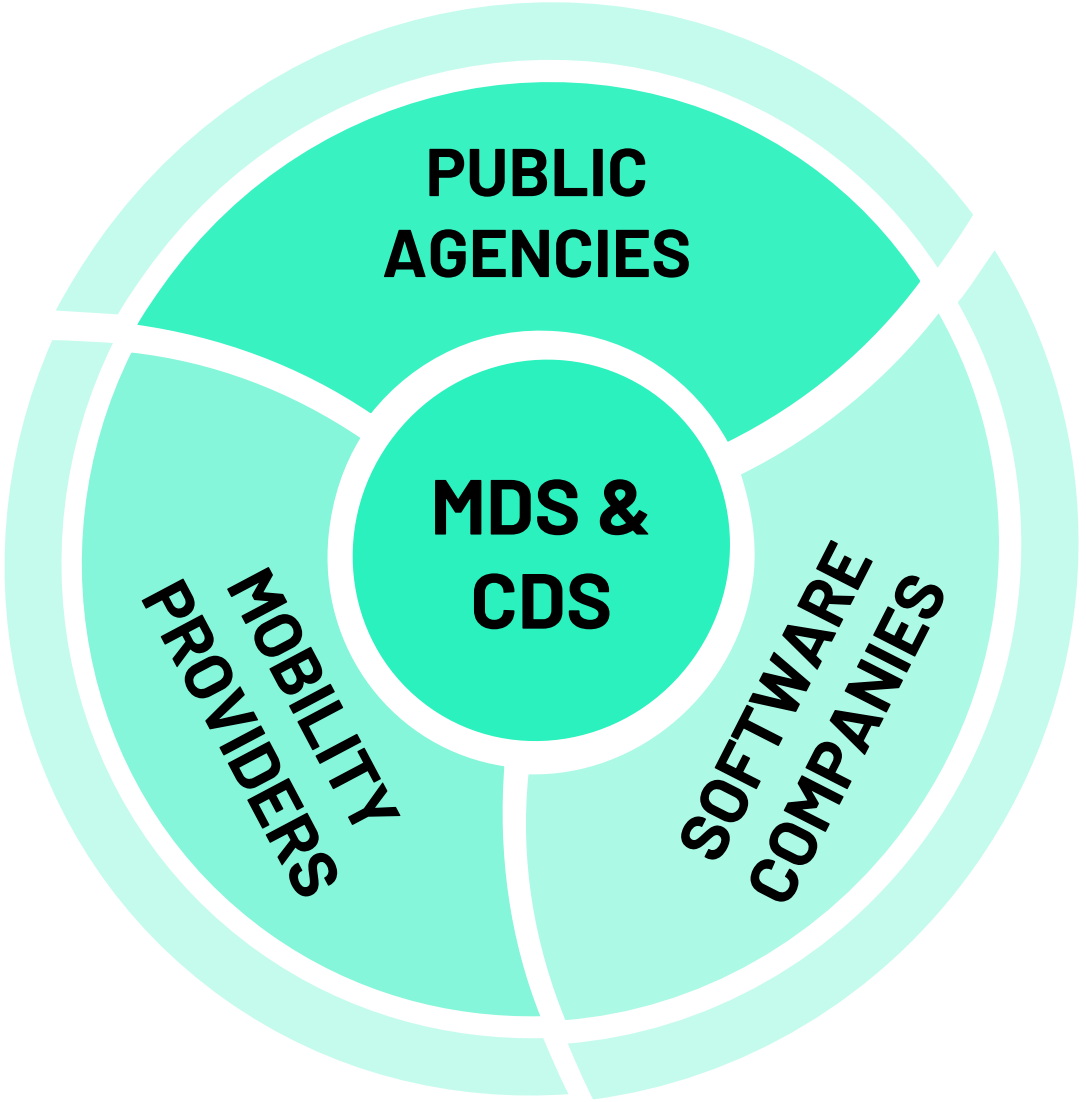
- Digital infrastructure to help cities manage public space for the public good
- Data standards and free open source tools
- Public/private collaboration that encourages responsible growth of new mobility services
- Cross-sector relationships and a shared vision for mobility

A NON-PROFIT, OPEN SOURCE FOUNDATION

Some of OMF's 65+ members and counting. Complete list: openmobilityfoundation.org/members

OMF'S OPEN APPROACH

- Technology built through public and private sector collaboration
- Working group, meetings, and GitHub discussions and code open-to-all
- More competitive markets for mobility services and software tools
- Collaboration with other open projects



GLOBAL OPEN SOURCE STANDARDS

Our work standardizes communication and data-sharing between public agencies and private mobility providers. This gives cities the tools and information they need to improve the safety, equity, and quality of services on their streets. Plus, it provides a consistent playbook for mobility providers.

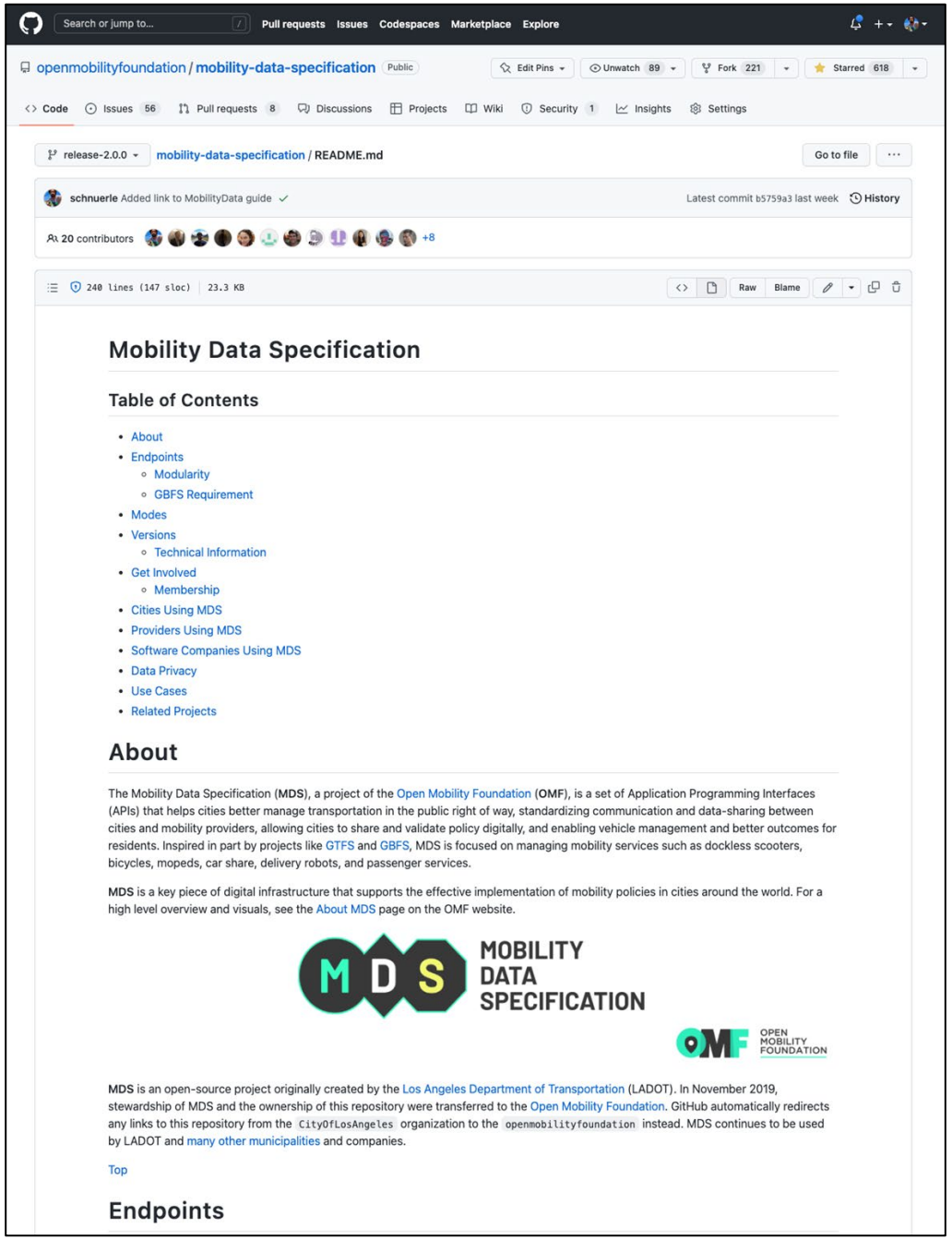
MOBILITY DATA SPECIFICATION

VERSION 2.0

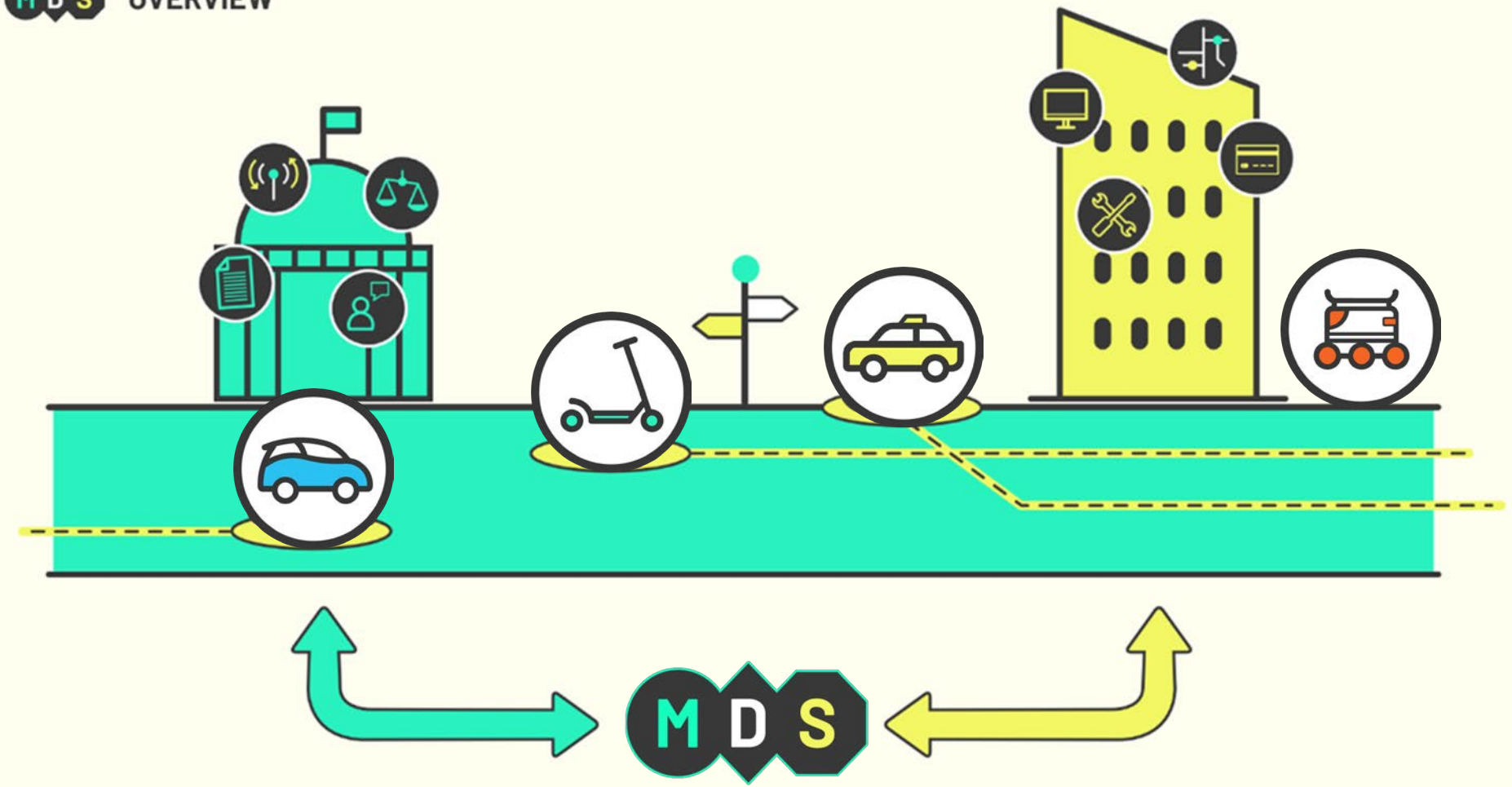
MOBILITY DATA SPECIFICATION

AN API CONNECTING MOBILITY COMPANIES WITH LOCAL GOVERNMENTS

- 180+ cities in 25+ countries
- Ecosystem of tools for cities built on MDS
- Manages shared vehicles in the public right of way
- Scooter, bike, (robo)taxi, TNC, CTA, PHV, ride hail, delivery robot, car share



MDS OVERVIEW



MICROMOBILITY

PASSENGER SERVICES

CAR SHARE

DELIVERY ROBOTS

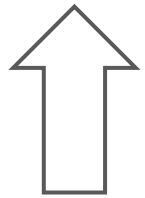
MDS enables two-way communication between public agencies and shared mobility services operating in the right of way

TWO WAY DATA SHARING

MDS is a two-way data standard, made up of multiple APIs, endpoints, and fields.

Data about vehicles comes from operators and is private.

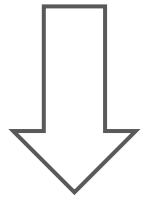
private



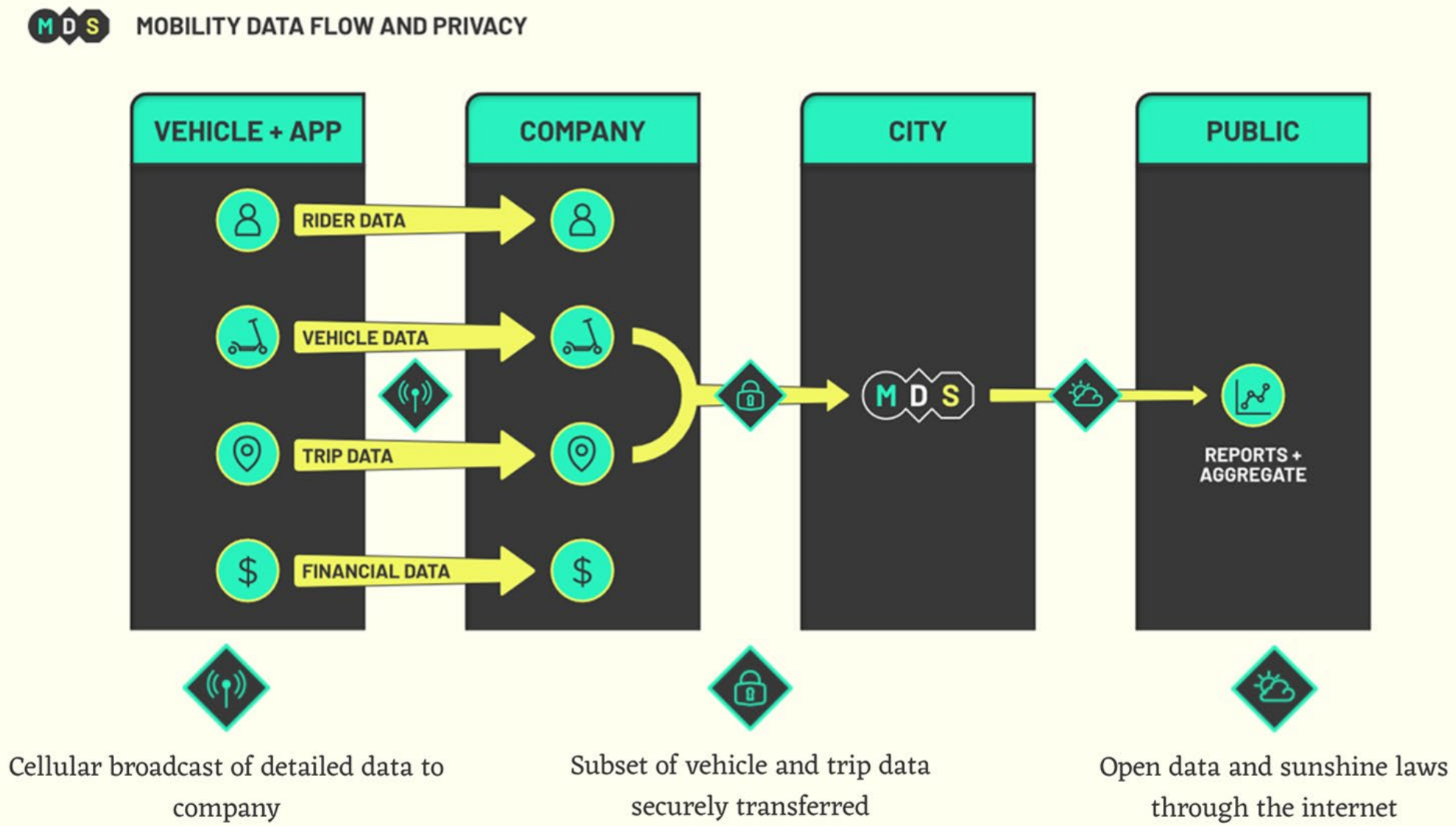
data from **Operators**

Data about policy and rules comes from agencies and is public.

data from **Agencies**



public

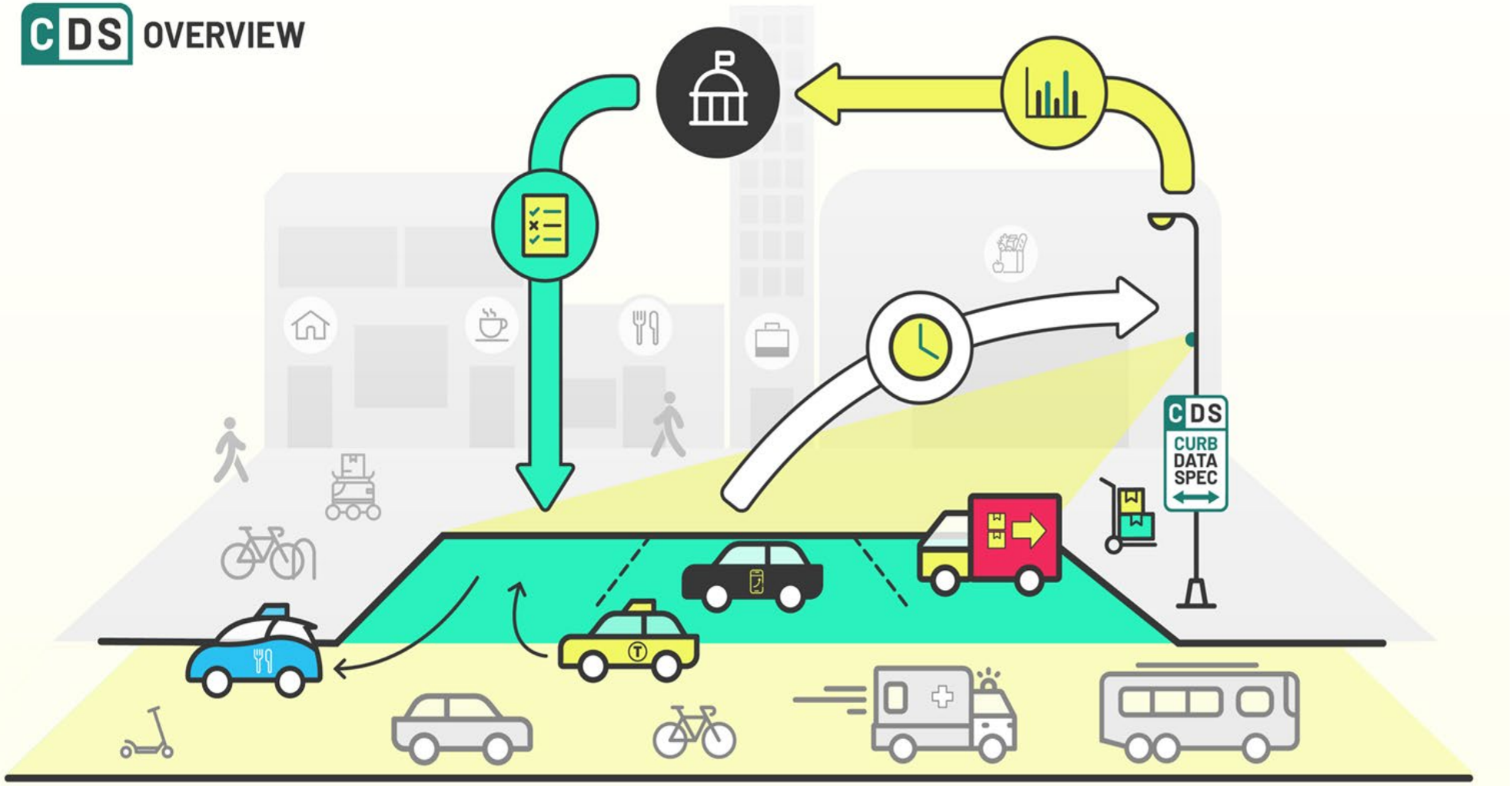


PRIVACY RESOURCES

- MDS Privacy Guide for Cities
- Mobility Data State of Practice
- Using MDS Under GDPR

CURB DATA SPECIFICATION

CDS OVERVIEW



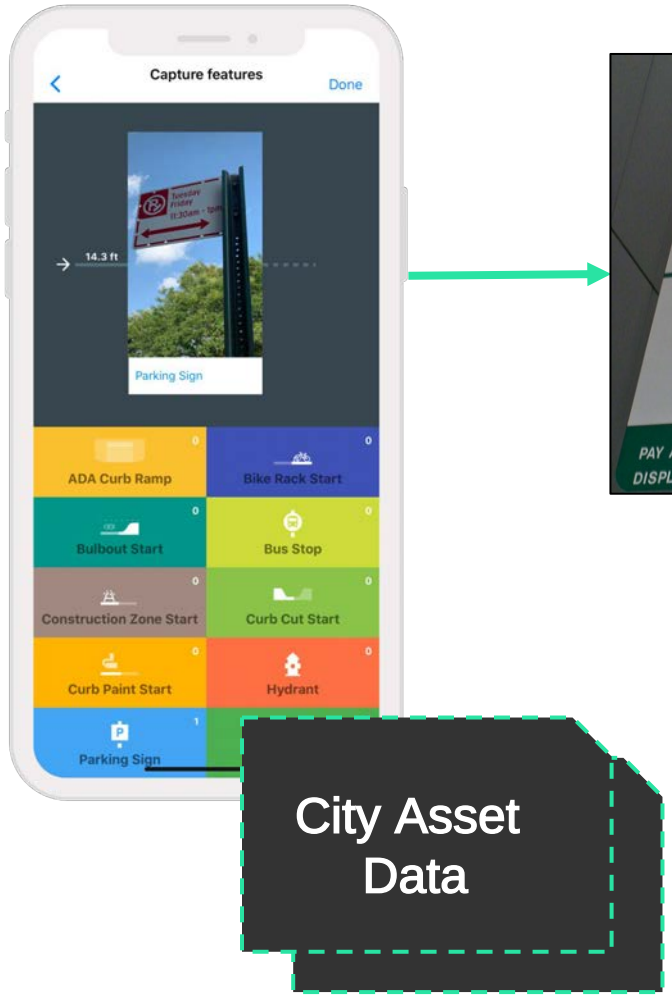
CURBS API

EVENTS API

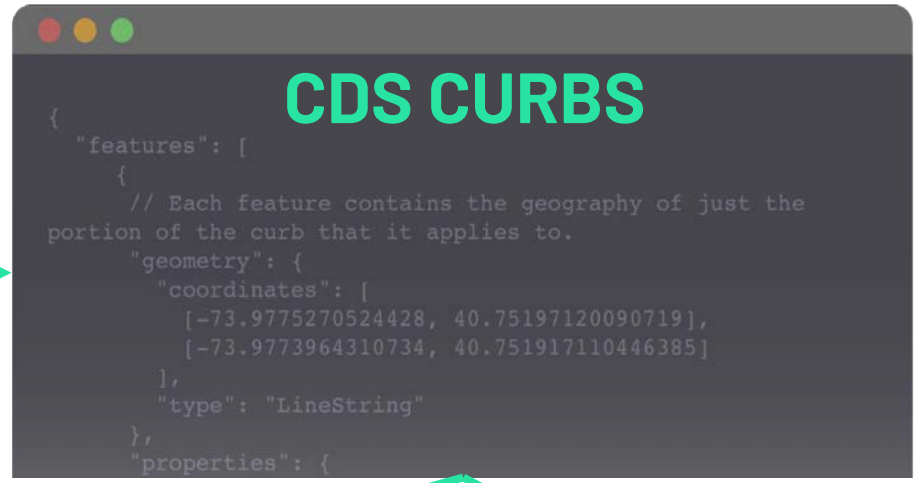
METRICS API

CDS allows cities to digitally represent their physical curb space and policies, communicate activity and events dynamically, and use metrics to improve those curbs.

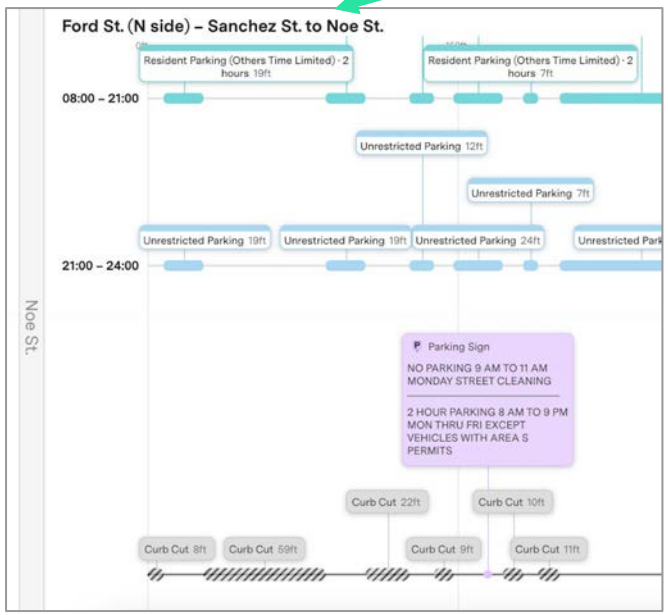
DIGITIZING CURB REGULATIONS

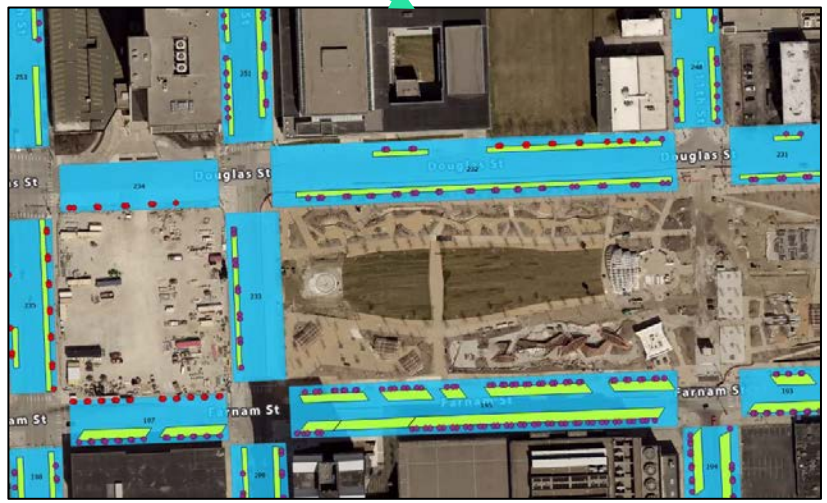


City Asset Data

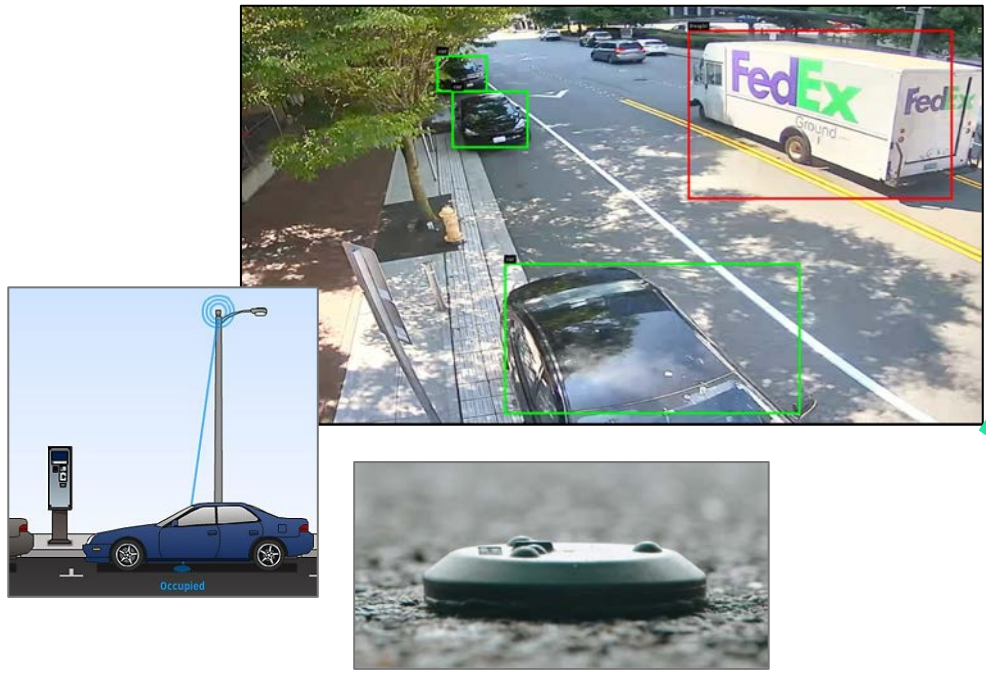


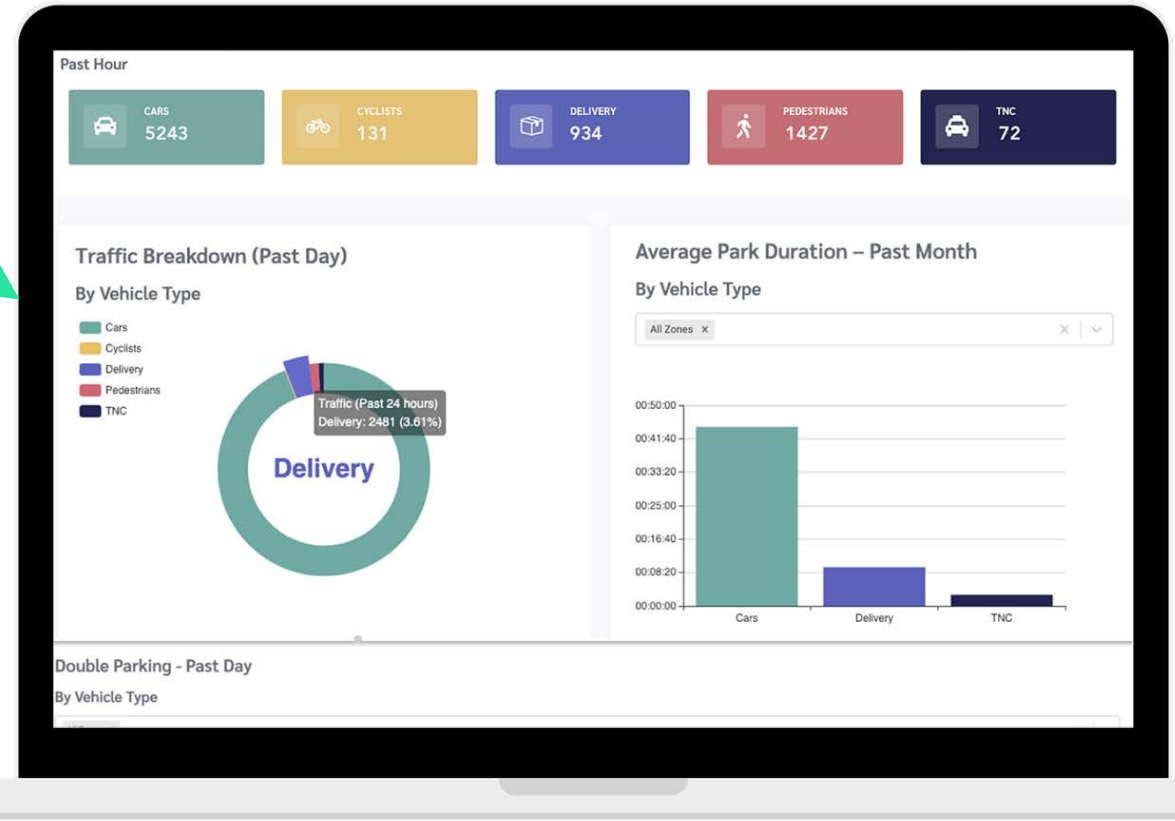
CURBS





MONITORING CURB EVENTS





EVENTS

EVALUATING CURB METRICS

Spec-defined aggregate calculations by the hour at curbs

Total Sessions

`count[sessions]` for a specific time period
Name: `total_sessions`

Turnover

`count[sessions]/hour` for a specific time period
Name: `turnover`

Average Dwell Time

`sum[dwell time] / count[sessions]` for a specific time period
Name: `average_dwell_time`

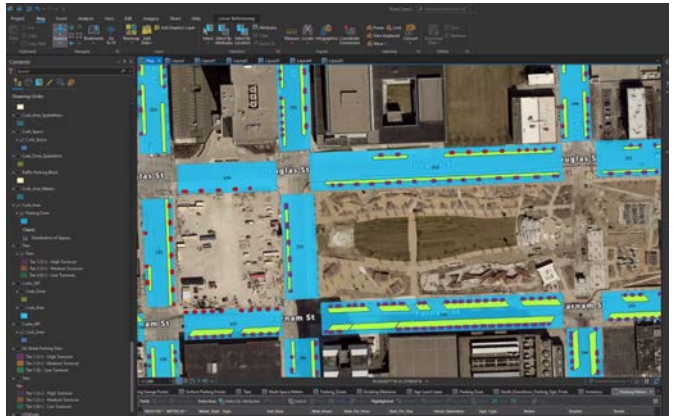
Occupancy Percent

`sum[dwell time] / total duration` for a specific time period
Name: `occupancy_percent`

AM Loading Zone Productivity - August 2021

WHO IS USING CDS?

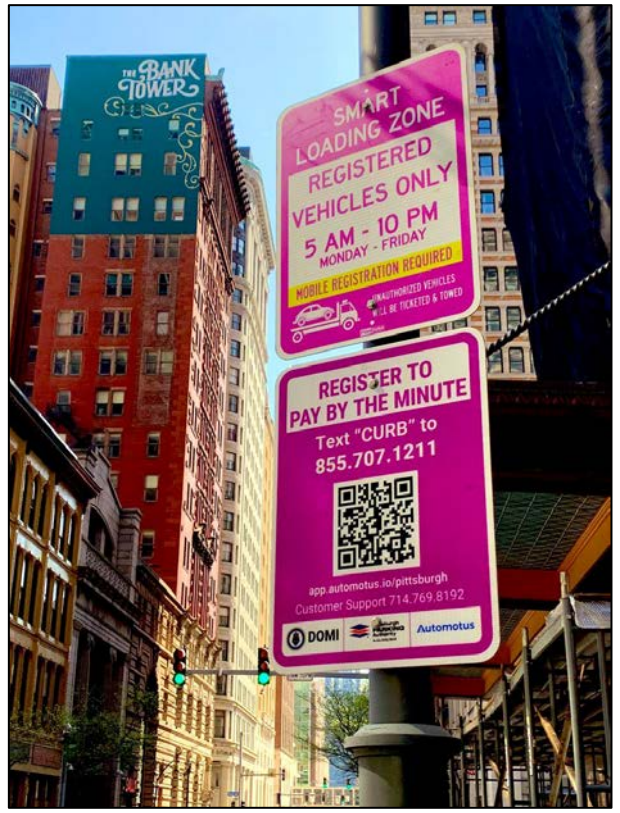
See the "CDS Users" section of our public Working Group page.
14 public agencies and 22 companies across 7 countries.



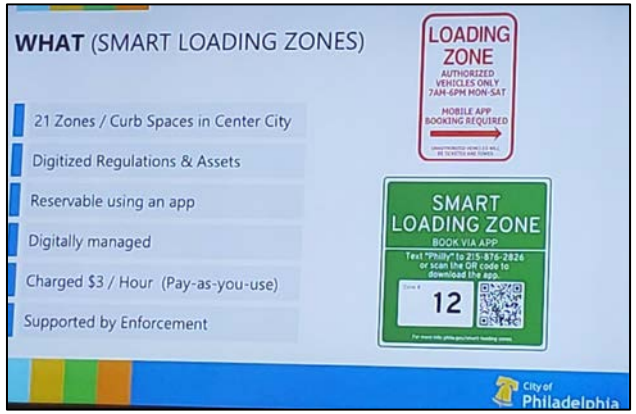
CDS in Omaha w/ ESRI

CDS in Dublin w/ CurbIQ

CDS in Seattle w/ Populus



CDS in Pittsburgh w/ Automotus

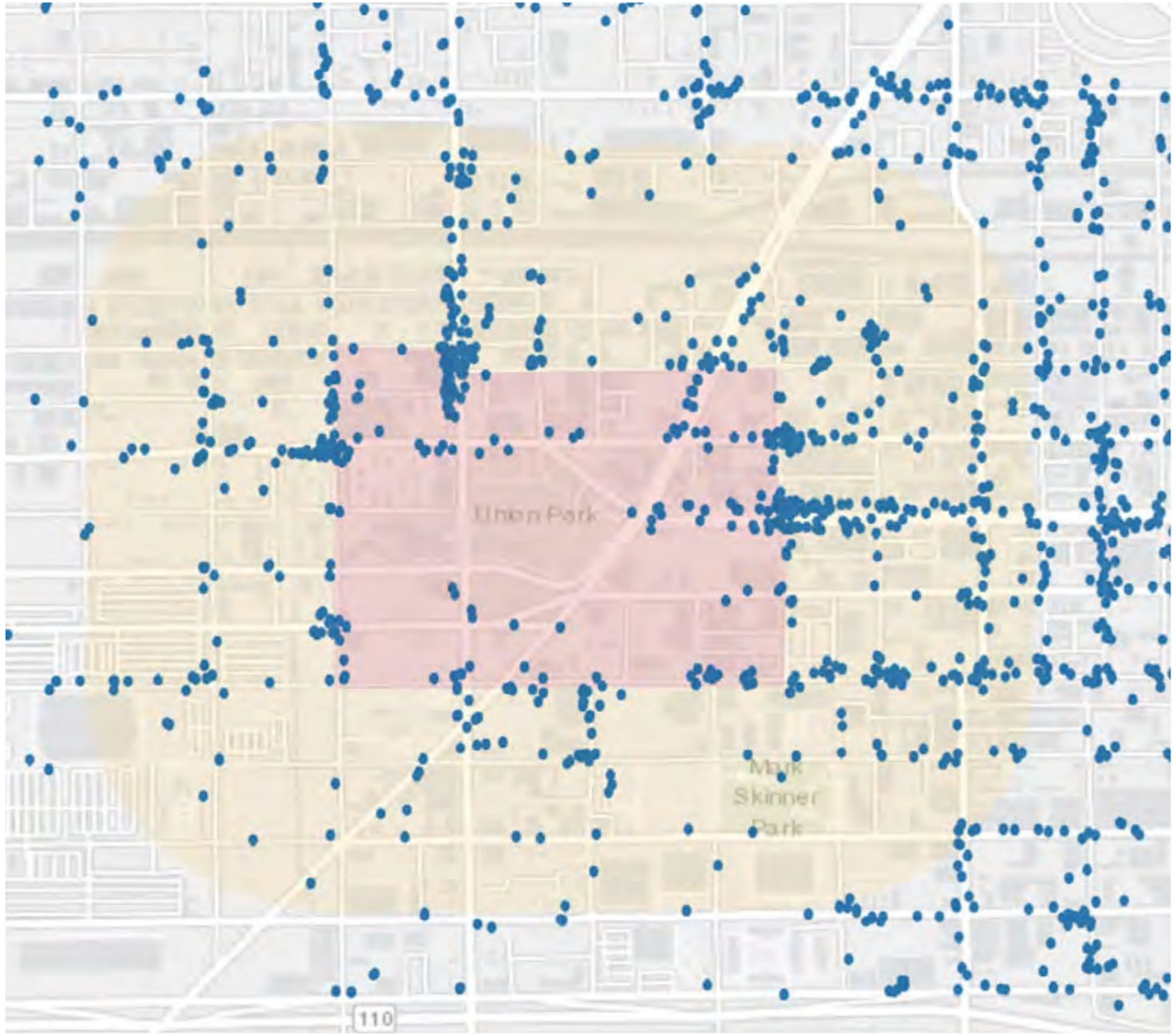


CDS in Philadelphia w/ Pebble

Let us know if you are using CDS!

DATA STANDARD USE CASES & BENEFITS

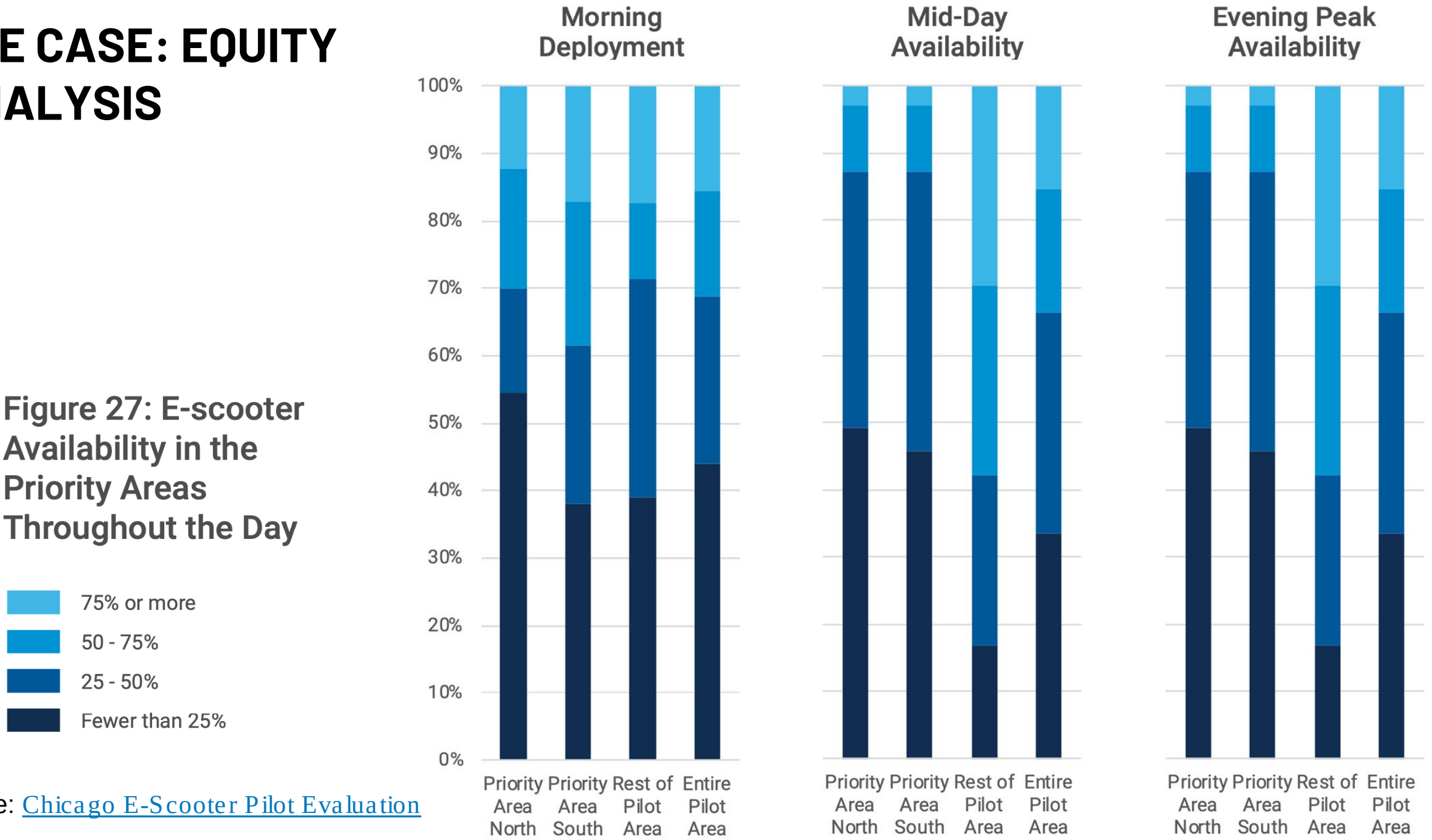
USE CASE: OPERATOR COMPLIANCE



Source: [Chicago E-Scooter Pilot Evaluation]

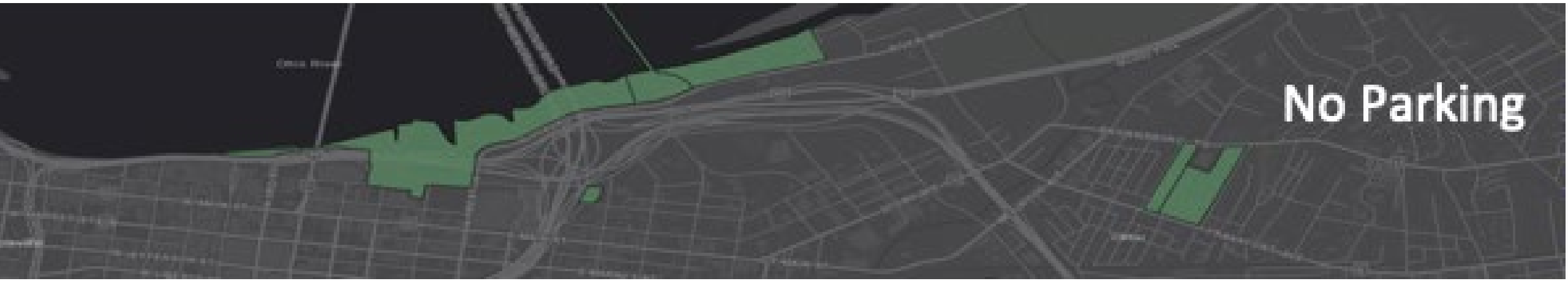
USE CASE: EQUITY ANALYSIS

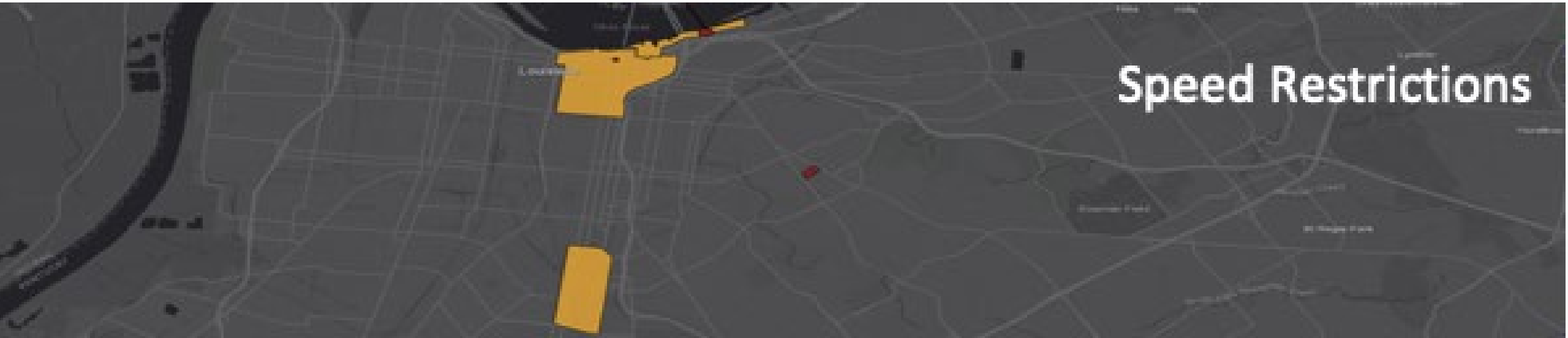
Figure 27: E-scooter Availability in the Priority Areas Throughout the Day



Source: [Chicago E-Scooter Pilot Evaluation]

USE CASE: “DIGITAL NATIVE” REGULATIONS





HOW STANDARDS BENEFIT PUBLIC AGENCIES

- Allows real-time policy changes to be made to **adapt to planned events and emergencies**
- Supports policies that enable dynamic pricing, **equitable access** , and **safety** initiatives
- Accurate and timely data allow **better planning and program management**
- Digital management greatly **reduces operating costs** and staff time spent monitoring mobility programs and service providers

HOW STANDARDS BENEFIT MOBILITY PROVIDERS

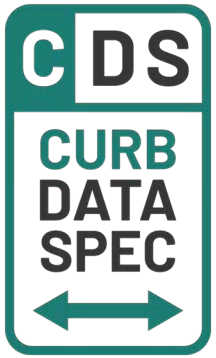
- Streamlines communication between cities and mobility providers, making it easier to **collaboratively solve problems** with data or assets
- Provides a **single reporting standard** , eliminating the need for redundant data formatting and processing
- Helps providers **scale** by offering a platform and best practices that providers can offer to new city markets

THANK YOU

openmobilityfoundation.org

@openmobilityfnd

github.com/openmobilityfoundation



ADDITIONAL RESOURCES

SNAPSHOT

THE OPEN MOBILITY FOUNDATION

- A **non-profit open-source foundation** with a mission to transform the way cities manage transportation in the modern era using open-source data standards
- Serves as a **public-private partnership** that brings together cities, mobility companies, and software vendors to co-create tools and resources
- **Governance** designed to emphasize transparency, consensus, and formal approval. Led by a Board of Directors comprised of **public agency transportation officials**
- **Not a data clearing house** and does not have access to data feeds unless they are made publicly available (i.e. open data)

OUR DATA STANDARDS: MDS & CDS

- Developed to facilitate digital-savvy approaches to regulation, scalable deployment of new mobility, and the **management of public space** for the public good
- Standards **define a blueprint for data sharing**, they're not a tool or system
- Data from MDS or CDS can be **real time and/or historic**, updated as frequently as the public agency needs
- Each standard is **highly flexible**, built as a kit-of-parts
- Updated to **meet evolving needs** through contributions made in working group meetings open to all

PASSENGER SERVICES

USING MDS FOR PASSENGER SERVICES

- **Permitting** : require the latest version of MDS for both publishing digital policy and collecting vehicle data
- **Policy** : publish your rules around road closures, events, speed limiting, no parking, and other geofencing using MDS
- **Data Requirements** : use the MDS Requirements to digitally list the data you need and don't need from MDS
- **Data Collection** : create a system or hire a vendor to ingest MDS vehicle data and analyze for reports, billing, compliance, maps, network analysis, issue resolution and other use cases

MDS VERSION 2.0

THE DEVELOPMENT PROCESS

PASSENGER SERVICES

Mapped existing city data fields **already being collected** for taxis or rideshare/TNCs into well-defined new MDS fields based on feedback from cities including:

- San Francisco
- Chicago
- Portland
- Los Angeles
- Washington DC
- New York TLC
- SANDAG (San Diego)
- Toronto

MDS is flexible – almost all new data fields are optional and can be tailored to each agency's specific needs.

MDS Data Area	Proposed MDS field/value name	*San Francisco (Alex Demisch)*	*Portland (Jacob Sherman)*	*Chicago (Nick Lucius)*	*DC (Stephanie Dock)*	*NYC TLC (Philip Wong)*
MDS Base	provider _id	ProviderID				
Trip Attribute	journey_id			Shared Trip ID		
Trip Type	Values: Private, shared			Requested mode: private/shared, Shared Trip Authorized	Whether a private or shared service was requested, and if a shared service was requested	
Trip attribute	Hail_type: street_hail, phone, text, or name of app used (3rd party or native app	HailType				
Trip attribute	App_name	HailType - app name				
Trip attribute	passenger_count	PassengerCount		Number of Passengers		The total number of passengers picked up and dropped off
Trip Attribute	payment_type	PaymentType				
Trip Attribute	fare_type	FareType				
MDS Base	start_time	StartTimeMilliseconds			The date and time of pick-up	The date and time of the passenger pick-up
MDS Base	end_time	EndTimeMilliseconds			The date and time of the drop-off	The date and time of the passenger drop-off
Trip Attribute	quoted_trip_start_time				The date and time of the requested pick-up	The date and time the Passenger requested the trip
Trip Attribute		PickupLocationAddress				
Trip Attribute	reservation_method			Method column in trips csv		
MDS Base	standard_cost in Provider, quoted_cost in Agency	TotalFare		Trip Price Quote Private Ride, Trip Price Quote Shared Ride		
MDS Base	actual_cost	MeterFare			Average fare	
Trip Attribute	fare properties	FareType / Tolls / SFOExitFee / FlagDropAmount / OtherFees / Tip / ExtraAmount / PaymentType / Rate_code_id		Tip, Taxes and fees, Other charges, Tolls, Government Taxes and Fees, TNP Fees		The itemized fare for the trip including the amount of the fare, any toll, surcharge, commission rate, other deduction and any gratuity and a breakdown of the amount such passenger paid for the trip

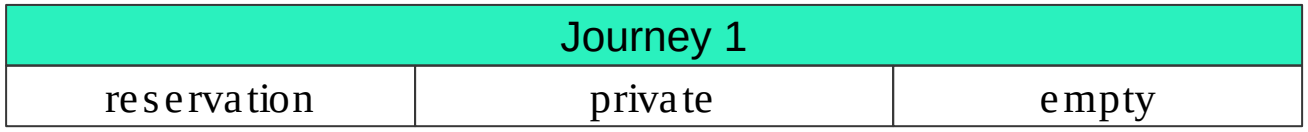
DEFINING JOURNEYS + TRIPS

PASSENGER SERVICES

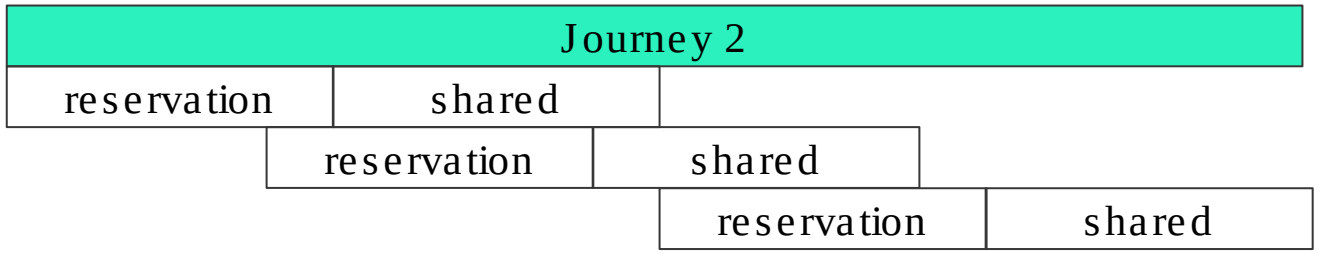
Journey and Trip Examples

Journeys can connect multiple trips

Example 1

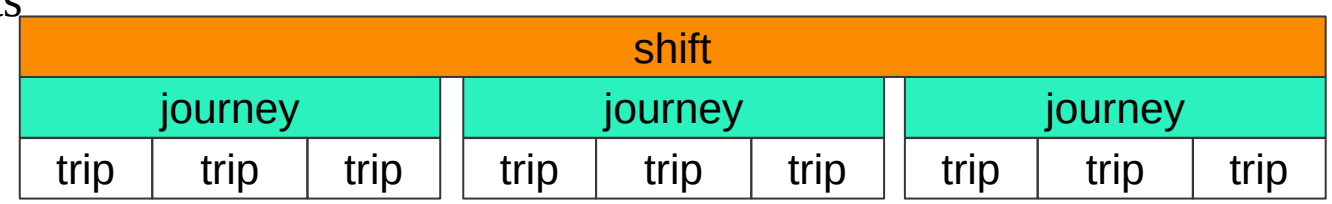


Example 2



Shifts

Journeys can be connected across driver shifts



Note about Driver Data

MDS does not include detailed information about drivers, beyond a *driver_id* and a *shift_id.*

However if needed these ids can be cross referenced with other datasets obtained from operators outside of MDS.

CUSTOM FIELDS

TRIP ATTRIBUTES

- hail_type
- app_name
- passenger_count
- request_time
- trip_wait_time
- trip_fare_time
- pickup_address
- dropoff_address
- permit_licence_number
- driver_id
- wheelchair_transported
- wheelchair_accessible

Common fields for all modes

- provider_id
- data_provider_id
- device_id
- journey_id
- journey_attributes
- trip_id
- trip_type
- trip_attributes
- fare_attributes
- start_time
- end_time
- stop_id (curb)
- location_type
- start_location
- end_location
- duration
- distance
- publication_time
- accessibility_attributes
- parking_verification_url
- parking_category
- standard_cost
- actual_cost
- currency
- battery/fuel_percent
- associated_ticket

Note: all fields can be optional

VEHICLE ATTRIBUTES

- year
- make
- model
- color
- wheelchair_accessible
- vin
- placard_number
- license_plate
- inspection_date

Common fields for all modes

- device_id
- provider_id
- data_provider_id
- vehicle_id
- vehicle_type
- vehicle_attributes
- propulsion_types
- accessibility_attributes
- battery_capacity
- fuel_capacity
- maximum_speed

FARE ATTRIBUTES

- payment_type
- fare_type
- meter_fare_amount
- tolls
- base_rate
- exit_fee
- other_fees
- tip
- extra_amount
- taxes
- surcharge
- commission
- driver_trip_pay
- rate_code_id

MDS POLICY LANGUAGE & VERSION GUIDANCE

- Sample policy language and guidance for cities that wish to write MDS 2.0 and CDS into their operating policy, permits, tenders, or RFPs

- Guidance for contributors, cities, providers, and technology companies on how and when to upgrade MDS or CDS as new versions become available

STAYING CURRENT WITH MDS

Whether you're currently using the Mobility Data Specification (MDS) or looking to get started, staying up-to-date with the most current versions has multiple benefits, including more accurate data, access to improved features and support, and a more effective data standard overall. As the governing body for MDS, the Open Mobility Foundation (OMF) is here to keep the community informed of version guidance, upgrade schedules, and other information that promotes a well-functioning ecosystem for MDS.

MDS

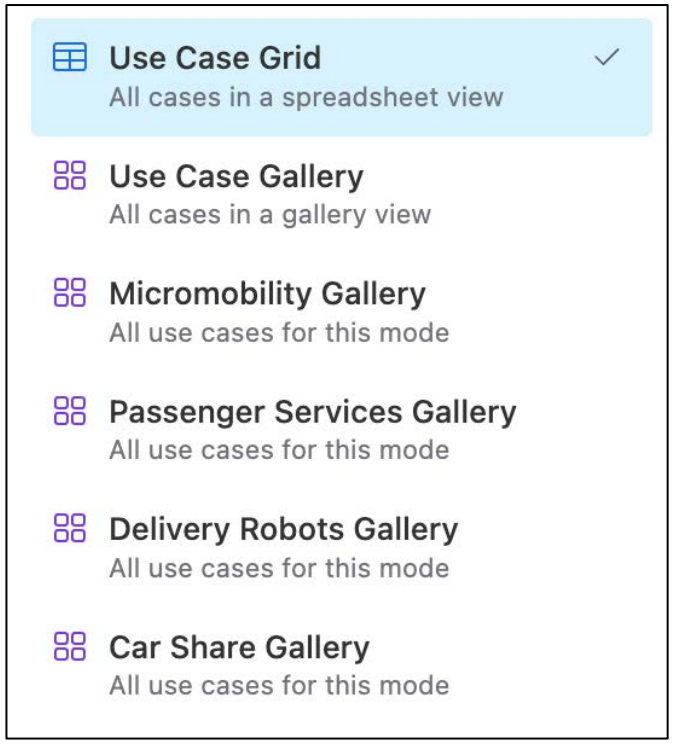
WHEN TO UPGRADE

MDS is a dynamic standard, designed to evolve through the contributions of our community. The OMF strongly recommends adopting the latest release of MDS into production within **six months for major releases**, and **four months for minor releases**. To help with upgrading, new version candidates are made available prior to release, allowing time for implementation and initial testing to begin.

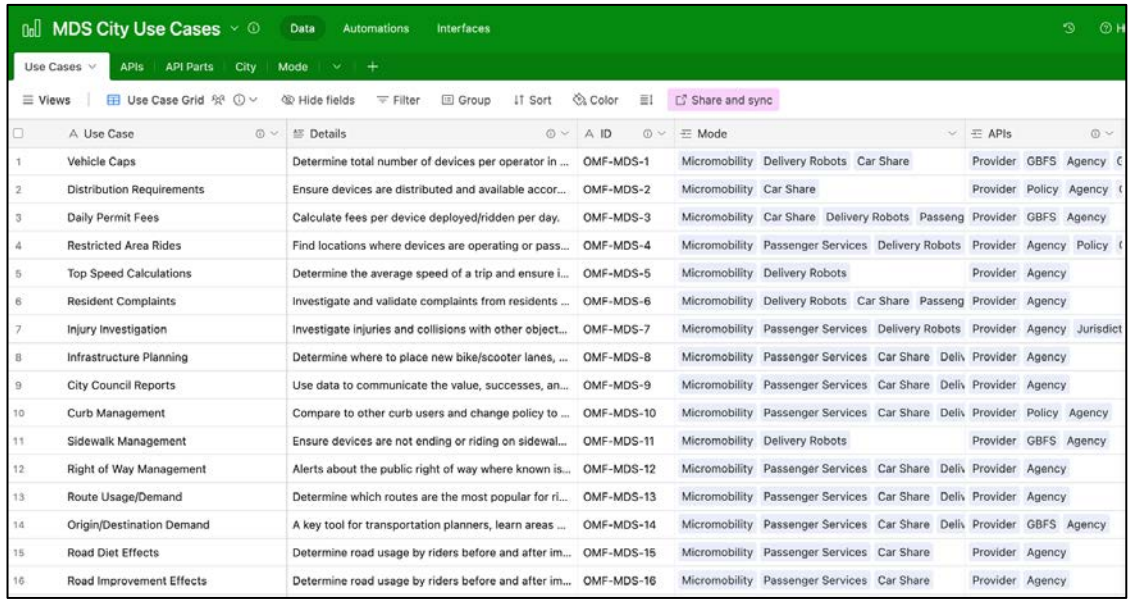
MDS USE CASE DATABASE

61 use cases filerable by mode and purpose.

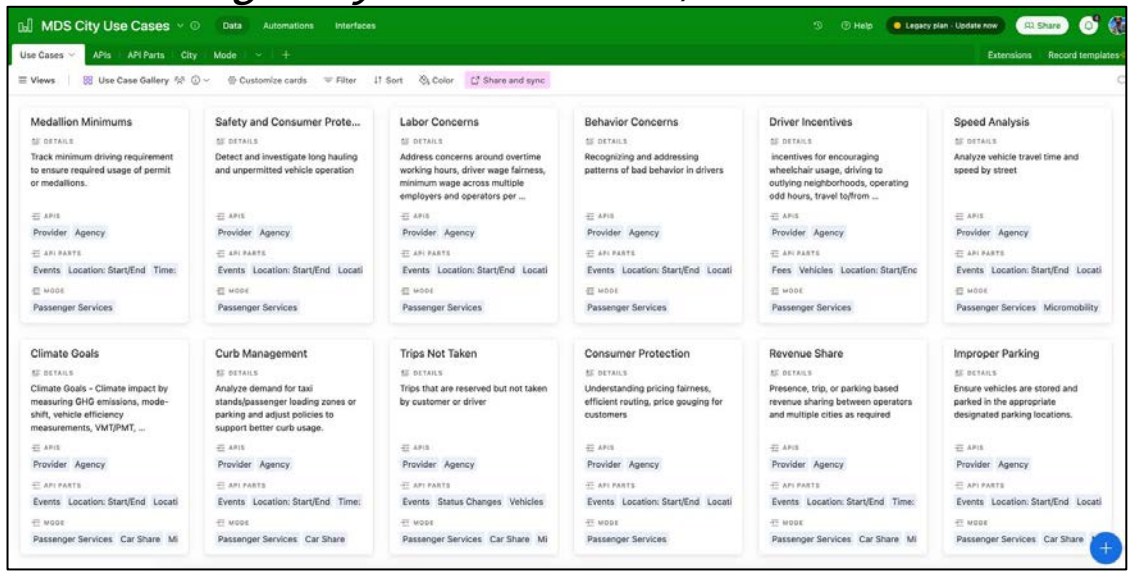
Includes 51 use cases for passenger services.



Filterable grid for all modes



Filterable gallery for all modes, and each mode

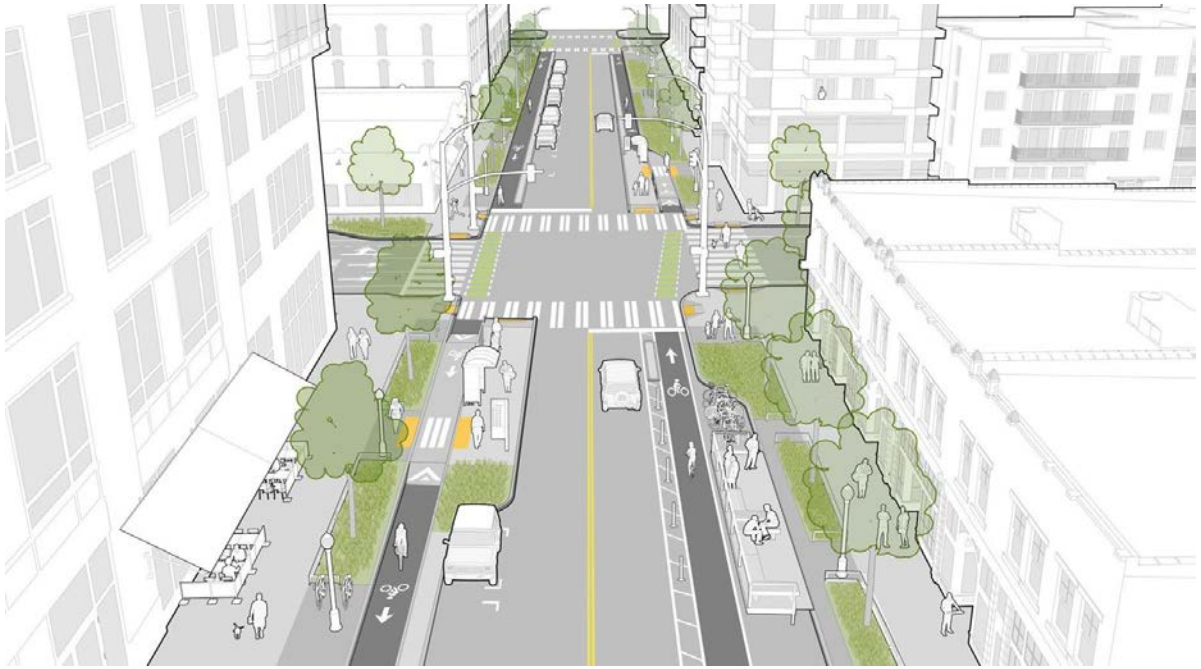


USING CDS FOR PASSENGER SERVICES

- **Permitting** : require the latest version of CDS for both publishing curb loading zone info and collecting curb activity
- **Policy** : publish your curb loading locations with their rules, policies, and costs in a public feed
- **Data Requirements** : use the MDS Requirements to digitally list the data you need and don't need from CDS
- **Activity** : install sensors or request data directly from operators to know what is happening at your curb, and ingest using your own or vendor systems to convert to metrics, reports, compliance, and billing

CDS

CDS IN PRACTICE: ADDITIONAL USE CASES



CDS' flexibility means it can be used in many scenarios, including:

- Digitally sharing regulations, including loading zone rules and locations
- Determining real-time curb status
- Tracking and analyzing curb usage
- Responding to curb violations and improving curb enforcement
- Optimizing curb usage and access to meet policy goals
- Identifying issues around curb approach routes, access, double parking

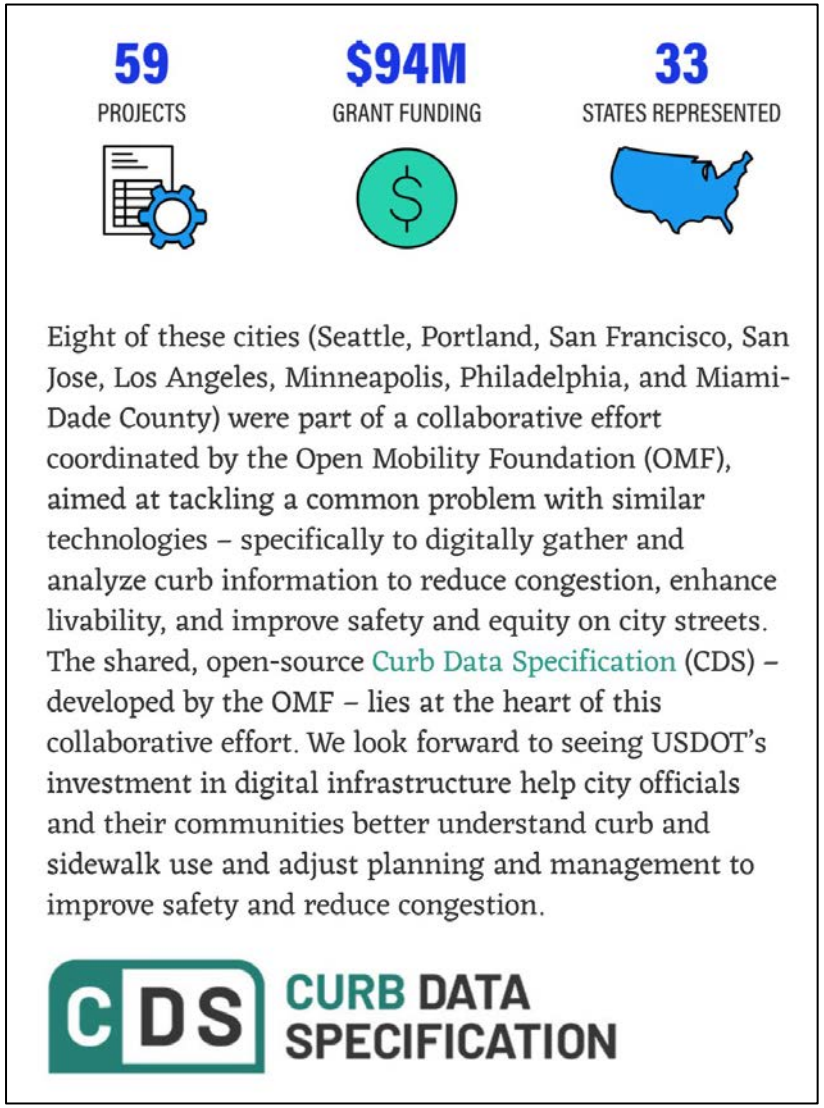
See more use cases here

USDOT SMART GRANTS

A collaborative effort coordinated by the OMF, Los Angeles, Miami-Dade, Minneapolis, Philadelphia, Portland, San Francisco, San José, and Seattle received funding for infrastructure projects through USDOT's Strengthening Mobility and Revolutionizing Transportation (SMART) grant program.

We will be working to improve CDS with learnings over the next year.

Blog Post



WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

Subcommittee Final Updates

Subcommittee Representatives

- Health & Equity: Dr. Andrew Dannenberg
- Liability: David Forte
- Licensing: Beau Perschbacher
- Workforce: Allison Drake, Caitlyn Jekel, Brenda Wiest

Washington State Transportation Commission

Autonomous Vehicles: Health and Equity Considerations

Andrew L. Dannenberg, MD, MPH
Affiliate Professor
Dept. of Environmental and Occupational Health Sciences
and Dept. of Urban Design and Planning
University of Washington
adannen@uw.edu

Health and Equity Subcommittee
Washington State Autonomous Vehicle Working Group
Executive Committee
November 2, 2023

Autonomous Vehicle Health and Equity Subcommittee

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

- Activities: Identify health and equity issues associated with AV use and propose actions to address these issues

AVs and Equity

- Health equity is the state in which everyone has a fair opportunity to attain their highest level of health
- Requires societal efforts to address historical and current injustices and overcome obstacles to health and health care
- Access to transportation is a determinant of health

AVs and Equity Issues

1. Assess community mobility priorities among vulnerable populations

   - Some populations may prioritize sidewalk and transit improvements over infrastructure that benefits AV users

2. Conduct education and outreach before gathering community opinions

   - Some populations may know little about AVs

3. Ensure access to AV services in all neighborhoods

   - Review service areas and use of training data from all areas

AVs and Equity Issues (cont.)

4. Ensure access to AV services for persons with low income and/or lacking smartphones or credit cards
   - Provide AV service subsidies and incentivize shared AVs

5. Examine disparities in infrastructure investments
   - Fixing potholes and lane markings help all road users; AV mapping and road-to-vehicle communication technology help only AV users

6. Address barriers for shared AV use, especially safety for women
   - Explore emergency call methods and selecting ride share partners without discrimination

AVs and Equity Issues (cont.)

7. Address barriers to AV use by persons with disabilities

   - Require some AVs to accommodate wheelchairs and exceed ADA minimum standards

8. Explore potential disruption of existing transportation jobs

   - Develop job retraining for workers who may lose jobs (bus and truck drivers, taxis, ride-hailing)

Recommendation: Conduct 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

Recommendation: Conduct Public Outreach

Proposal

- 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

Recommendation: Conduct Public Outreach

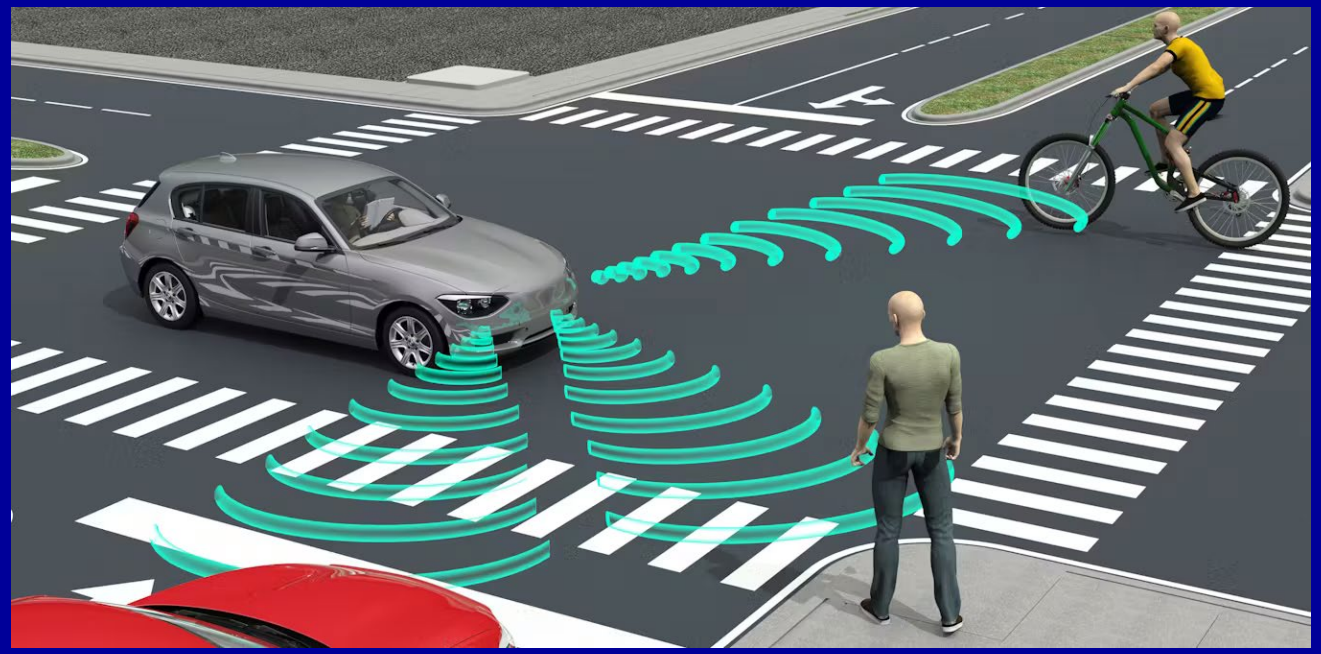
Impact

- 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

Questions?

Autonomous Vehicle Health and Equity Subcommittee

Andrew Dannenberg, MD, MPH
University of Washington School of Public Health
adannen@uw.edu



Liability Subcommittee

Recap of subcommittee efforts

November 1, 2023

OFFICE of the
INSURANCE
COMMISSIONER
WASHINGTON STATE

Review of activity

Initial task was to consider appropriate liability requirements for testing vehicles.

Insurance Institute for Highway Safety, Highway Loss Data Institute discussion on Advanced Driver Assistance Systems and Available Data.

Met with Uniform Law Commission drafters of their Uniform Automated Operation of Vehicles model act.

Review of activity

Met with legal practitioners of WA vehicle liability laws.

Discussions with state leading auto insurer and American Property and Casualty Association on data needed to assign liability.

Researched terminology and definitions currently used by states to define “driver.”

Review of activity

Discussed federal policy and future legislative action prospects relating to liability coverage with the National Association of Insurance Commissioners.

Met with WA's leading domestic auto insurance company to discuss difficulties of acquiring claim data involving automated vehicles.

Considerations

- Moving from auto liability structure to a product liability structure to process vehicle claims would be harmful to consumers.

- Law enforcement and insurance companies require timely, and inexpensive, access to vehicle data for the period immediately preceding an incident to accurately assign liability.

Questions?

David Forte

Senior Policy Advisor, Property & Casualty

david.forte@oic.wa.gov / 360-725-7268

Connect with us!

- Facebook: https://www.facebook.com/WSOIC
- Twitter: https://twitter.com/WA_OIC
- www.insurance.wa.gov

Licensing Subcommittee Update

November 2023

Beau Perschbacher, Policy and Legislative Director, DOL

Overview

Accomplishments:

- Amendment to RCW 46.37.480

Outstanding recommendations:

- Law enforcement interaction plan
- Rulemaking authority for Department of Licensing

Accomplishments

- Amendment to RCW 46.37.480 (Television screens in vehicles)
  - Recommended by multiple AV subcommittees and approved by Executive Committee
  - Repealed the language regarding screens in vehicles in RCW 46.37.480 (Senate Bill 5460; 2021 Legislative Session)

Outstanding recommendations

➢ Law enforcement interaction plan

- The Licensing Subcommittee (as well as others) continues to recommend that self-certified companies be required to complete and submit a law enforcement interaction plan.

- This is required in many other states with AV testing/deployment programs including California and Arizona.

Outstanding recommendations (continued)

- Rulemaking authority for Department of Licensing
  - This will allow the agency to provide more guidance to existing and potential AV companies about the self-certification testing program.

Recommendations to the AV Work Group (2023 Annual Report)

Literature Review

- Considerations for AV development include:
  - Employment impacts, across various industries
  - Unique challenges associated with trucking, such as troubleshooting, load monitoring, etc.
  - Public and school transportation settings
  - Limitations in data necessary to assess the scale of workforce impacts

Proposed Recommendations

- Data Needs
  - Existing data is limited to understand the scope and scale AV adoption will have on Washington's workforce
  - Recommend that the legislature fund a comprehensive analysis of the industry and workforce, to include worker surveys, to supplement available data

Proposed Recommendations

- Exploration of policies to provide support for worker transition
  - Training
  - Reemployment services
  - Enhancement of job seeker supports
  - Expand safety net programs

Questions?

15-minute Break

Be back at 11:05am

WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

2024 Legislative Session

Representative Shelley Kloba

Washington State Transportation Commission

Autonomous Vehicle Liability Standards

11/2/2023

Problem Statement

- Current tort system is unworkable in practice for automated vehicle technology. Why?
  - Burden of proof of defective product is on the victim
  - Access to information
  - Cost to pursue a claim

Proposed Solution

Create the “legal fiction of a ‘Computer Driver’ and allow a court or jury to attribute ordinary negligence liability to the Computer Driver anytime a court or jury determines that the Computer Driver’s behavior failed to imitate or exceed the level of care we would expect of an attentive and unimpaired Human Driver in similar circumstances.”

- This idea comes from the work of Philip Koopman koopman@cmu.edu and William H. Widen wwiden@law.miami.edu Specifically, the quote is from their Miami School of Law Research Paper entitled “Liability Rules For Automated Vehicles: Definitions and Details”

Benefits

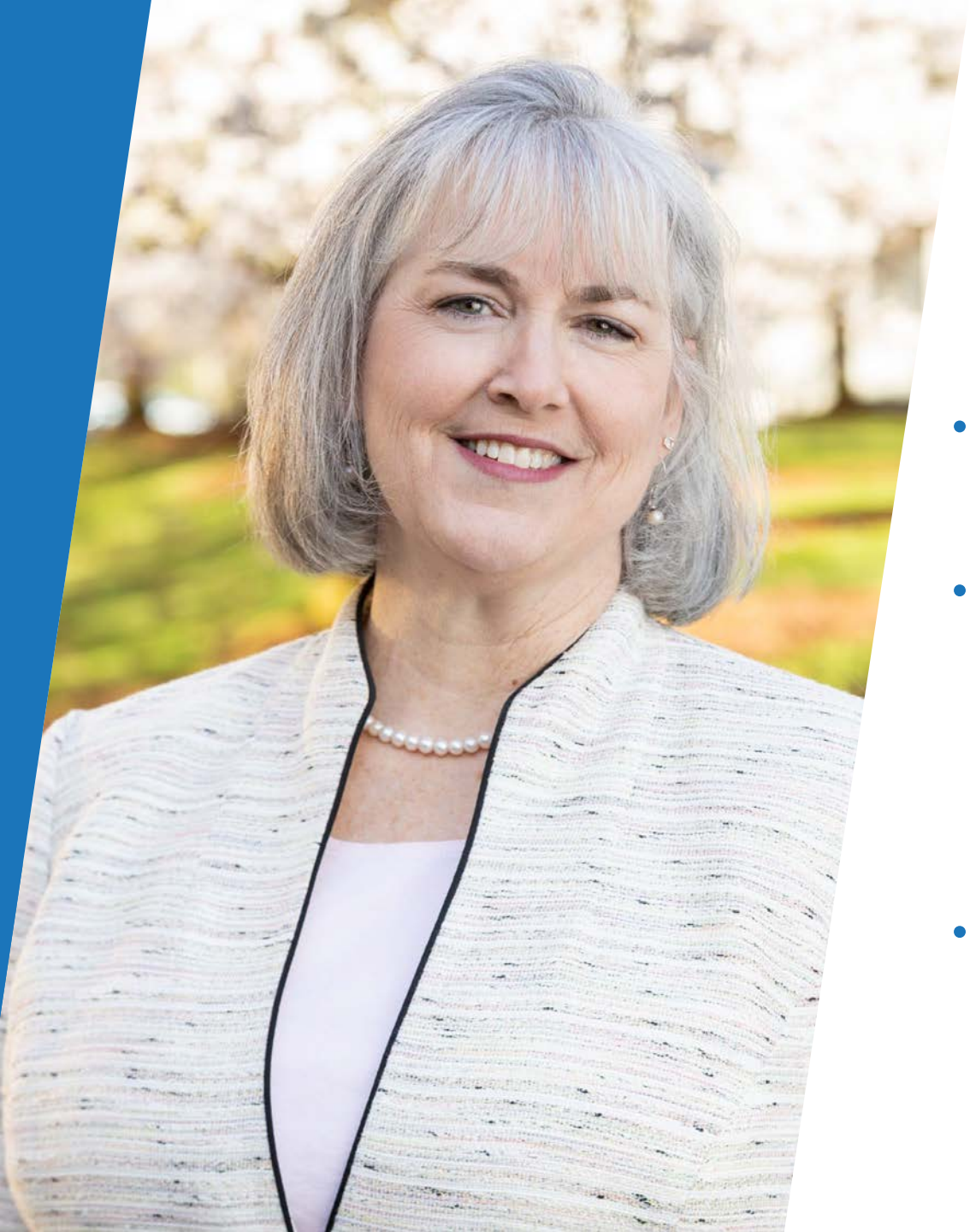
- Assigns liability to the entity that controls the vehicle operations
- Expectation for safe performance sets the bar at AS SAFE AS an unimpaired human
- Operates on a case by case basis
- Keeps AV liability in the auto insurance framework

How?

- Adds new sections to Chapter 49.92 RCW :
  - creates definitions
  - explains duty of care and what would constitute a breach
  - holds manufacturer financially responsible for losses caused by ordinary or gross negligence of computer driver
  - assigns liability to manufacturer for losses sustained when AV is in testing mode
  - assigns liability for negligence when shifting from computer control back to human driver control

Next Steps

- Continue to get input from stakeholders
- Refine the draft based on feedback



Contact Me

- shelley.kloba@leg.wa.gov
- For ease of scheduling, please cc my Legislative Assistant brian.haifley@leg.wa.gov
- I am happy to meet in person or virtually to discuss this or anything else AV

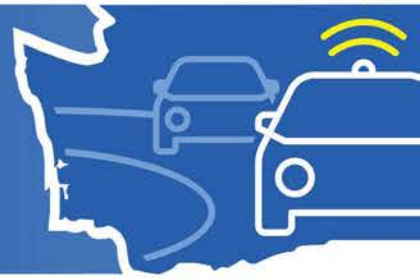
WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

Roadmap to the Future
Final Walkthrough

Reema Griffith, Transportation Commission
Markell Moffett, CDM Smith

Washington State Transportation Commission

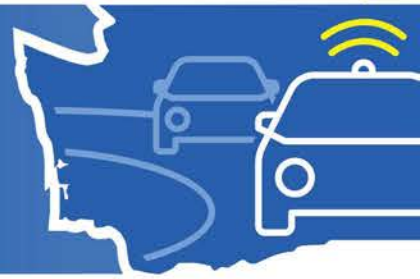
Roadmap to the Future



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

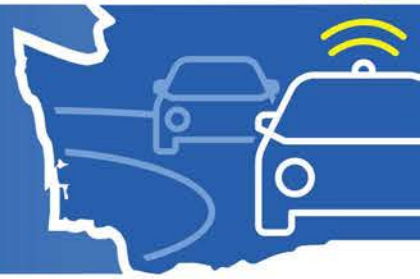
Roadmap to the Future



Five **key components** serve as building blocks for the Roadmap – areas necessary to research, understand, develop, and refine.

- Agency Readiness
- Public Outreach
- Safety
- Testing & Pilots
- Path to Deployment

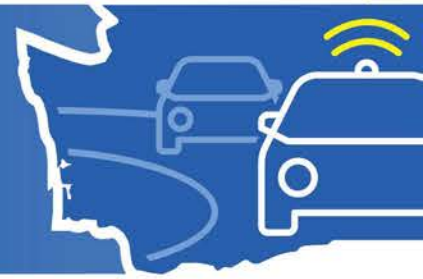
Roadmap to the Future



Each key area identifies **future considerations** for further evaluation and action by decision makers as they deliberate what AV policies are needed to guide AV testing and deployment in Washington.

- These considerations aim to offer guidance and options to decision makers
- *These are not regulatory recommendations*

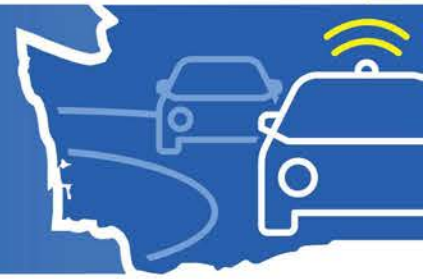
Roadmap to the Future – Agency Readiness



Feedback Session on these considerations will be conducted live during meeting

Future Consideration	Objective	Action
Permitting	Refine the state's existing permitting and notification program for AV use on public roadways.	Resource agencies with dedicated staff and resources to holistically manage an AV permitting program, from assessing on-road testing applications and operations, to compliance, to deployment (the current small-scale program is operated by the Department of Licensing). Determine what other agencies, if any, play a role in the permitting process, and provide resources and authorization for those agencies to engage.
Infrastructure	Identify and prioritize infrastructure investment needs to support efficient and safe AV operation in the near- and long-term.	Prepare an AV strategic plan which identifies needed investments statewide, and organizational needs to implement identified actions. An AV strategic plan should address the level of need for physical and digital infrastructure investments, as well as funding, resources, and partnerships needed to implement investments. The AV strategic plan should include evaluation equity opportunities and impacts in infrastructure needs and improvements. Appoint a State AV lead agency to lead the strategic planning effort, as well as coordinate activities across the various state agencies who play a role the testing and deployment of AVs.
Multi-State Coordination	Coordinate with neighboring states to ensure common approaches for travel and interstate commerce.	Create a standing forum for coordination with representatives from Oregon and Idaho and/or the WASHTO area.

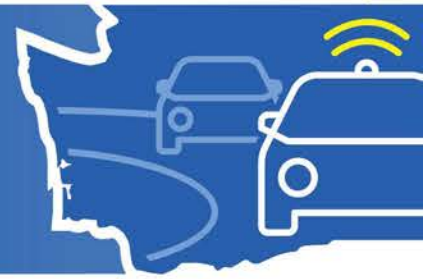
Roadmap to the Future – Agency Readiness



Feedback Session on these considerations will be conducted live during meeting

Future Consideration	Objective	Action
Agency Preparedness through Training	Develop skillsets within state agencies to understand AV industry developments, regulatory requirements, and partnerships.	Develop training resources for state agencies which support their ability to remain current on technology and AV industry advancements.
Infrastructure Planning & Safety	As infrastructure investments continue to be made, begin to consider the needs of AVs and other emerging technologies.	Identify opportunities for complimentary investments that support AV accommodation and also result in increasing safety for the general motoring public to ensure AVs – and all road users – can be safely supported by infrastructure. Examples of infrastructure enhancements that could be invested in now for current road user safety as well as AV preparedness includes: • Updating pavement markings with consistent and clearer markings and reflectivity for AV technologies (e.g., LiDAR, cameras) to identify pavement markings and traverse roadways appropriately • Managed curb space: Cities can define curb spaces within their jurisdiction, including applicable usage for various curb space areas. One AV use case managed curb space assists with is city-approved robotaxi pick-up/drop-off locations that reduces or removes potential road user safety for both the road user in the robotaxi as well as other road users that may traverse the defined area.
Partnerships	Develop and further cultivate partnerships with the private sector for strategic AV testing and investment in the state.	Create a state-level office focused on developing strategic private sector partnerships within the AV and technology space to support the advancement of a methodical process of preparation for AVs. Partnership cultivation should include identifying opportunities to address a variety of AV impacts, such as workforce, infrastructure, equity, and safety.

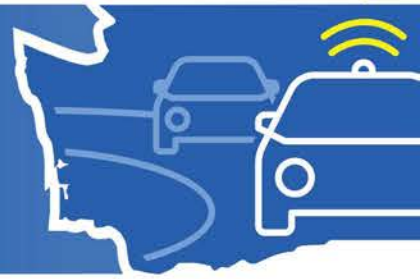
Roadmap to the Future – Public Outreach



Feedback Session on these considerations will be conducted live during meeting

Future Consideration	Objective	Action
Public Education	Provide public education and outreach to advance understanding around the benefits and limitations of AV technologies, to encourage safe and effective deployment.	Assign a lead state agency and authorize and resource them to develop a public AV outreach plan that could include statewide focus groups, surveys, etc. The AV outreach plan should include an equity strategy that identifies approaches and processes for engaging under-represented communities.
Collaboration	Collaborate with partner states, peer agencies, and technology developers to identify best practices, and identify consensus approaches to managing the operation of AVs.	State agencies and policy makers should actively engage in dialogues with industry organizations and representatives through working groups, conference attendance, conversations, and more. Actively engage with other states/jurisdictions and AV representatives to stay informed on what's happening around the country and what WA can replicate as it works to prepare for AV operations.

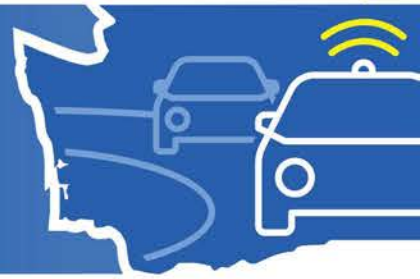
Roadmap to the Future – Safety



Feedback Session on these considerations will be conducted live during meeting

Future Consideration	Objective	Action
Law Enforcement / First Responders	Ensure that AV companies understand LE/FR needs before deploying. Ensure that LE/FRs understand how to interact with AVs.	Require a LE/FR Interaction Guide that either engages with the LE/ FR in each jurisdiction where AV testing and/or deployment is occurring OR is centrally provided at the state-level, with state agency(ies) disseminating to localities.
AV Incident Reporting & Analysis	Monitor AV testing and deployment activities to enable the informed regulatory decision making and advance public safety.	Develop requirements and a framework for incident reporting and incident analysis at the state level. Start with requiring the collection of information that is currently collected by NHTSA and determine whether state-level reporting is needed to supplement. Use incident reporting information to develop and shape minimal risk and liability profiles and liability requirements for various deployment scenarios. For example, a low-speed, fixed-route AV shuttle that operates in a private campus will likely have a different risk profile and potentially different liability requirements than an AV that operates freely at varying speeds across multiple public roadway types (city street, rural road, state highway). Determine any potential legal, operational, and/or financial penalties to assess an AV company operating in Washington if one of its AVs is responsible for the cause of a safety incident (e.g., collision with other vehicle).

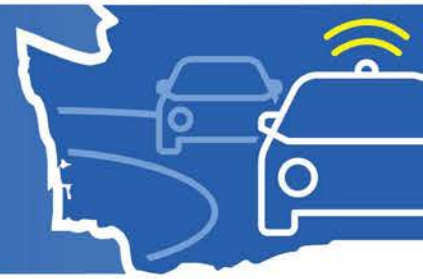
Roadmap to the Future – Safety



Feedback Session on these considerations will be conducted live during meeting

Future Consideration	Objective	Action
Vulnerable Road User Safety	Set expectations and requirements for AV operational performance and ensure there is a clear understanding of AV operations by all road users.	Conduct public outreach on any AV testing, pilot, or deployment. Identify road safety related information, such as road signage, that will require improvements to clearly communicate presence of AVs and expectations of how road users may interact with an AV.
Data and Cybersecurity	Safeguard the security and privacy of data and communications related to AVs, especially in safety-critical situations.	Invest resources to execute or support initiatives that focus on data management, data security, data privacy, and cybersecurity, including network security for remote operations and policies related to personally identifiable information. Direct agencies executing or supporting these initiatives to leverage industry best practices, and fill in with gaps as needed, for data privacy and data sharing standards for any data collected by or shared with the State.

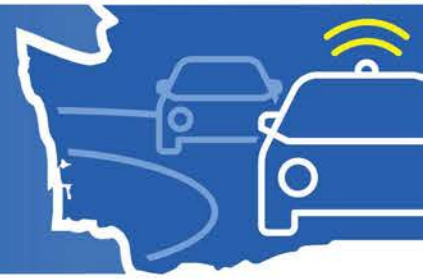
Roadmap to the Future – Testing & Pilots



Feedback Session on these considerations will be conducted live during meeting

Future Consideration	Objective	Action
Pilots	Provide the public first-hand experience with AVs, enable the exploration of possible operational considerations unique to Washington in preparation for future AV deployment, and identify approaches to harnessing AV opportunities that increase equity and access.	Conduct a state-sponsored and managed AV pilot project in multiple locations statewide. Create a state-led grant program to encourage local municipalities and/or companies to manage their own AV projects. Integrate public engagement as a core component of a pilot.
AV Testing Lessons Learned	Document learnings from testing activities in-state to inform policy making and future AV deployment. Stay informed of lessons learned from other jurisdictions' testing and pilot activities to further inform decision makers.	Direct the State Transportation Commission to develop a lessons learned inventory from other jurisdictions' AV testing efforts and activities. Direct the state agency(ies) responsible for leading any AV pilots in Washington, or monitoring AV testing activities, to document and share lessons learned from AV testing and pilots with peer agencies, lawmakers, and other states to continue building on AV lessons learned across the country.

Roadmap to the Future – Path to Deployment



Feedback Session on these considerations will be conducted live during meeting

Future Consideration	Objective	Action
Define a Clear Path to Deployment	Provide clear expectations of regulatory agencies, supporting entities, and companies deploying AVs in Washington.	Assign and resource a lead state agency to coordinate across decision makers, peer agencies, community partners, and AV industry partners to define what a "clear path to deployment" means in Washington State. This effort should leverage other states' AV policies to align where applicable to reduce a patchwork of policy.
Monitor and Address Changes at the Federal Level	Monitor AV policy activity happening at the federal level and take action as needed when AV policies shift nationally.	Assign and resource a state agency to monitor activity happening at the federal level for AV policy, regulation, and operational approaches. Direct the assigned lead agency to keep apprised of and communicate with decision makers and peer agencies federal shifts in AV policies and approach.
Local Regulation	Actively collaborate with and support local-level AV policy, regulation, and testing and deployment activities.	Assign and resource a lead agency to maintain ongoing coordination and collaboration with cities in Washington to act in concert with cities conducting AV research, policymaking, and/or testing and deployments. This coordination includes identifying consistent approaches across cities, where applicable, coordinating public communication and messaging, leveraging lessons learned from other localities, etc.

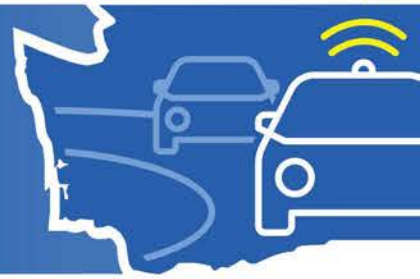
WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

2023 Annual Report Overview

Markell Moffett, CDM Smith

Washington State Transportation Commission

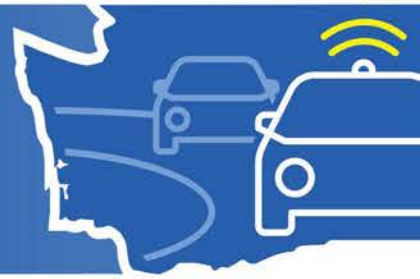
2023 Annual Report Overview



RCW 47.01.510 requires the Transportation Commission to submit **an annual report to the Governor and Legislature** describing the progress of the AV Work Group and the Commission's recommendations

FINAL Annual Report due to the Governor and Legislature **January 2, 2024.**

2023 Annual Report Overview



Chapters

1. *Introduction*
2. *Work Group Overview*
3. 2018-2023 Work Group In Review
4. Recommendations
5. Roadmap to the Future
6. Work Group Conclusion

Work Group Accomplishments

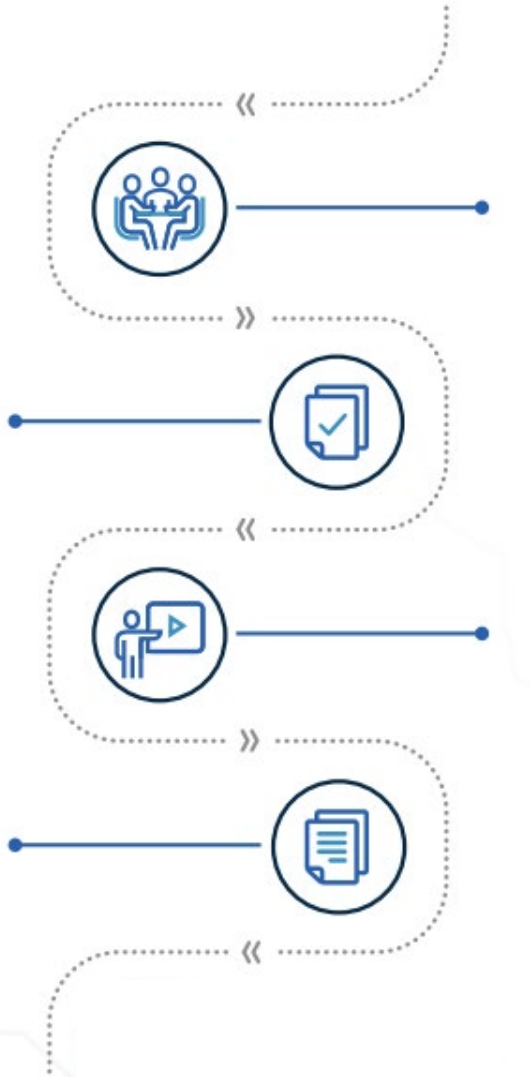
(June 2018 – August 2023)

Recommendations

- 25 Total Recommendations
- 17 Endorsed
- 8 Acted Upon / Legislated

Legislation

- HB 2676 (2020) – *Enacted*
- HB 1731 (2021) – *Superseded*
- SSB 5460 (2021) – *Enacted*
- SB 5594 (2023) – *No action*



Meetings

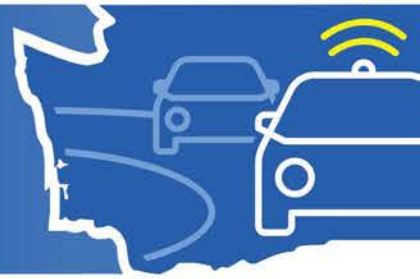
- 13 Executive Committee meetings
- 95 Subcommittee meetings
- Joint Subcommittee meetings
- WSTC / Agency Collaboration

Education and Engagement*

- Gov: NHTSA, AAMVA, States
- Industry: IIHS, AV Companies
- Advocates: DRW, ULC, Reason Foundation
- Academia: UW, Carnegie Mellon

** 100+ total presentations from public & private partners*

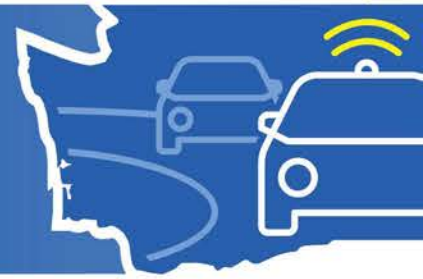
2023 Annual Report Overview



Chapter 3: 2018-2023 Work Group in Review

- Executive Committee met 3 times in 2023
- Refined and Finalized Roadmap legacy deliverable
- Presentations on Seattle DOT's AV Program, Industry Updates, AV Regulatory Needs, Open Mobility Specifications, and 2024 Legislative Approach
- Heard Final Reports Out from Subcommittees

2023 Annual Report Overview



Chapter 4: Recommendations

- **"Roadmap to the Future" legacy deliverable –** review and consider the topics and suggested actions to support preparation around policies that will support AV testing and deployment

Previous years' recommendations to consider further action

- Carry out a state-sponsored AV pilot
- Require a Law Enforcement / First Responder Interaction Guide
- Enable rulemaking by DOL for the AV Self-Certification Program
- Conduct Structured Public Outreach
- Identification of Testing Locations
- Increased Investment on Enhanced Roadway Pavement Markings
- Support WSDOT's Work Zone Data Initiative

Chapter 5: Roadmap to the Future

The Work Group developed the "**Roadmap to the Future**" to serve as a legacy deliverable and be a resource for law makers to consider future actions.

Final Annual Report will provide summary of the Roadmap and link to the separate Roadmap document

Agency Readiness

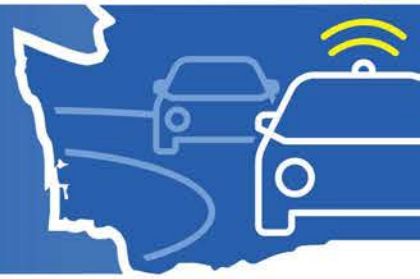
Public Outreach

Safety

Testing & Pilots

Path to Deployment

2023 Annual Report Overview



Chapter 6: Work Group Conclusion

- Work Group Sunsets December 31, 2023
- “Roadmap” sets the stage for next steps
- Encourage continued active collaboration, exploration, and communication around AVs in-state and nationally

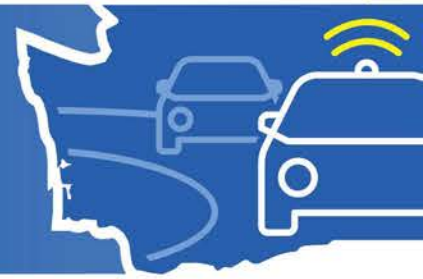
WASHINGTON STATE
AUTONOMOUS VEHICLE
WORK GROUP

Final Work Group Meeting Wrap Up and Next Steps

Jim Restucci, AV Work Group Chair
Reema Griffith, Transportation Commission

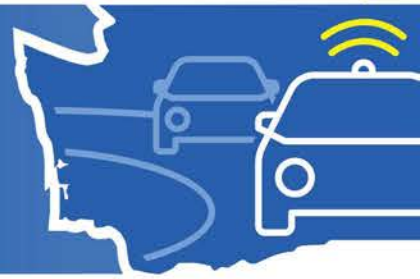
Washington State Transportation Commission

Final Work Group Meeting Wrap Up and Next Steps



Work Group Final Steps:

- November 2023 – Written Update to Transportation Commission
- December 12/13, 2023 – Presentation to Transportation Commission
  - » Request to Endorse Roadmap to the Future legacy deliverable recommendation
  - » Request to endorse final Annual Report (2023) to the Governor & Legislature
- January 2, 2024 – "Roadmap to the Future" deliverable and Final AV Work Group Report to Governor & Legislature



THANK YOU for your unrelenting service that made this process possible!