

Seattle Department of Transportation
Community-First Autonomy
Putting People at the Core of Autonomous Transportation

Armand Shahbazian, Electric and Automated Mobility Policy Advisor

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.



27%

of Seattle land area
is public right-of-way





60%

of Seattle's GHG
emissions are from
transportation



At SDOT, our influence over street design, space allocation among travel options, and supportive programs means we play a central role.



*Autonomous vehicles
are a new travel option
arriving in cities*





Autonomous vehicles, also called AVs or self-driving cars, are now providing passenger services in numerous cities across the United States

Examples of Autonomous Vehicles



Examples of Autonomous Vehicles



Examples of Autonomous Vehicles



Examples of Autonomous Vehicles



Examples of Autonomous Vehicles



Waymo

Today:

- San Francisco
- Los Angeles
- Phoenix
- Austin

2026:

- Washington, DC
- Miami
- Atlanta



Zoox

Today*:

- San Francisco
- Foster City
- Las Vegas

*How has Seattle
prepared for
autonomous vehicles?*



Seattle's autonomous vehicle timeline

2017

Governor authorizes
AV testing

SDOT releases New
Mobility Playbook

2019

NVIDIA begins testing
in Seattle

SDOT joins State AV
Work Group Executive
Committee

2021

Zoox begins AV
testing in Seattle

2022

SDOT launches AV
testing permit

2023

Seattle & Bellevue
release AV Strategic
Vision

SDOT issues first AV
testing permits

2024

Seattle
Transportation Plan
released with New &
Emerging Mobility
element

SDOT launches AV
Inclusive Planning



2025

SDOT begins Digital
Conflict Area
Awareness
Management
Program

Concerns and opportunities





There are no available or planned purpose-built autonomous vehicles that are wheelchair accessible.



Some tasks are difficult to automate, such as securing wheelchairs or other mobility devices.



Regulatory preemption prevents cities and counties from requiring discount programs or integration with existing fare systems.



Challenges with curb loading, including double parking and stopping in travel lanes, may result in access and safety issues.



Congestion may increase without local input on fleet size, deployment areas, and routing.

AVs may 'deadhead', or drive without being in service, in similar fashion as TNCs.



AVs may offer safety benefits that include quick reaction times, driving the speed limit, and not driving drunk or drowsy.

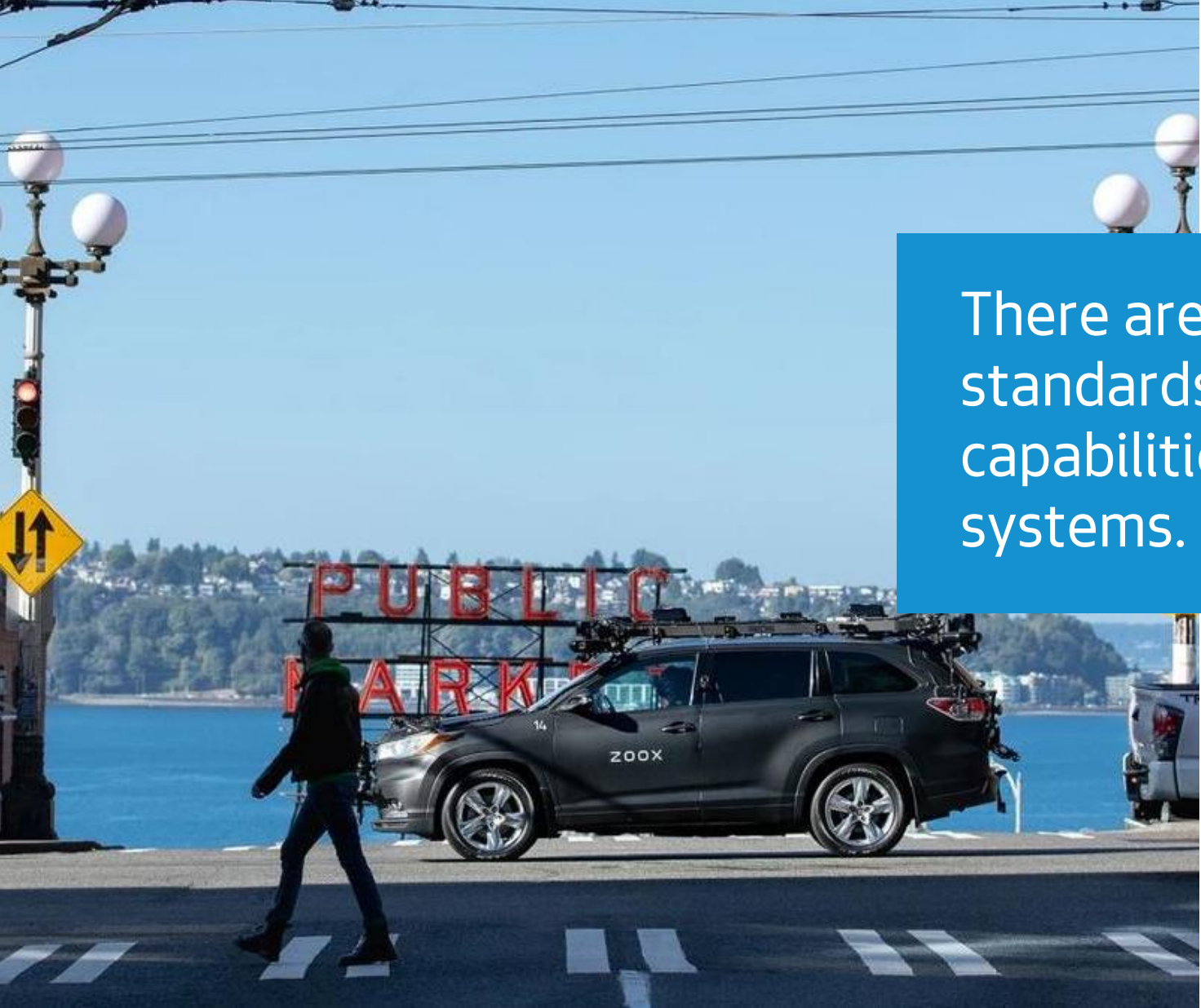




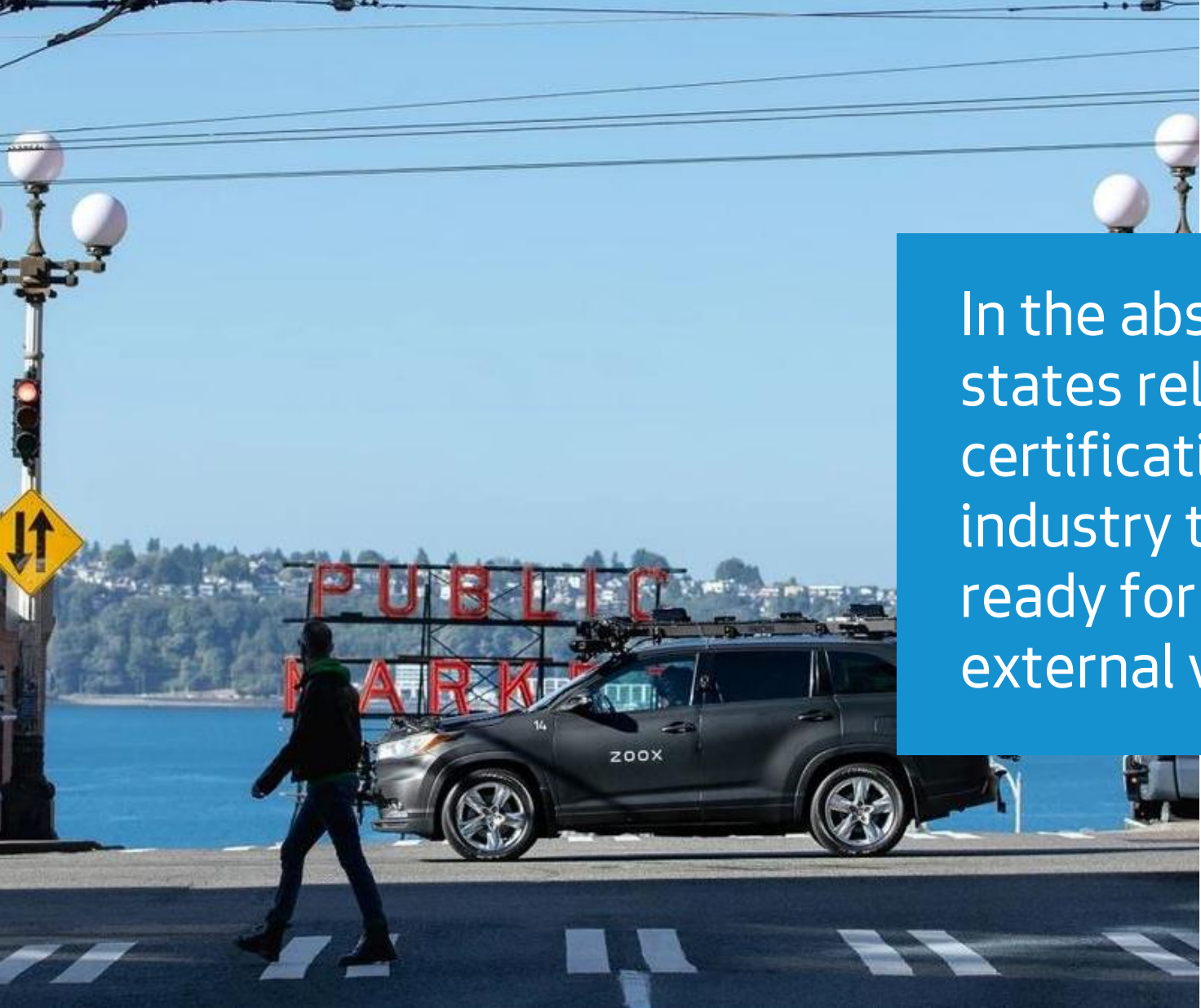
AVs offer a consistent experience, they do not discriminate against passengers who use service animals, and they can offer unique features such as audio and visual cues.

How are AVs regulated in the United States?



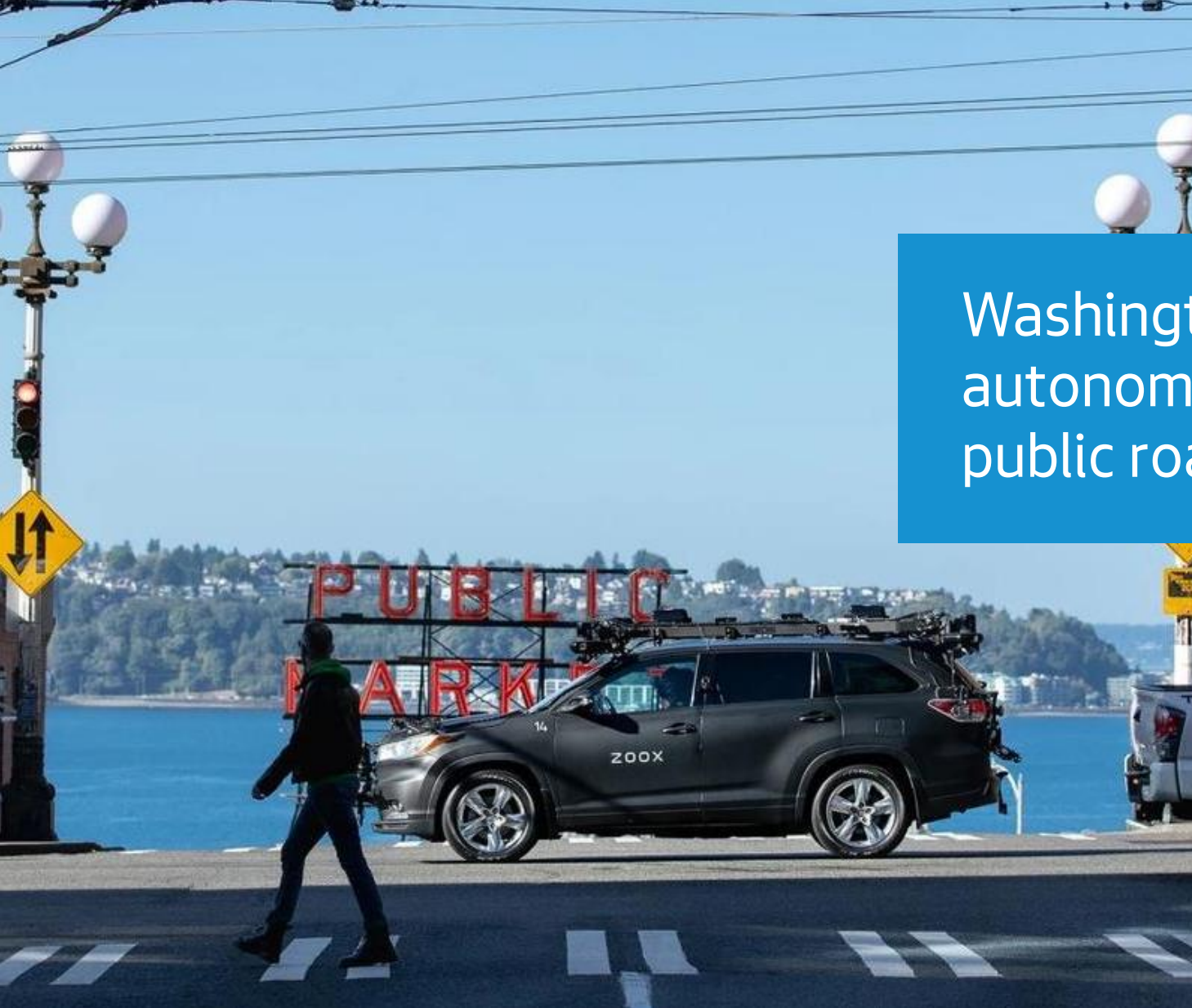


There are no federal safety standards that concern the capabilities of automated driving systems.



In the absence of federal standards, states rely on industry 'self-certification' or assurance from the industry that their technology is ready for public roadways without external vetting.

Washington State allows autonomous vehicles to test on public roads using self-certification.





AV companies are seeking legislation to fully deploy these vehicles for commercial service in Washington State.

Proposed legislation includes preemption of local regulations.

Looking back: Uber, Lyft, and TNCs

A black Town Car at the ready: Uber to bring private driver service to Seattle

BY JOHN COOK on May 2, 2011 at 2:24 pm

Lyft and its pink-mustache ride sharing service is now sniffing around Seattle

BY JOHN COOK on December 30, 2012 at 12:10 am

Uber and Lyft await ruling in suit seeking to block Seattle from releasing ride data

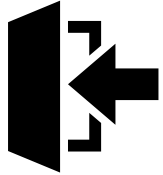
BY MONICA NICKELSBURG on October 28, 2016 at 10:46 am

Transportation Network Companies: New Legislation Addresses Long-Standing Issues

July 27, 2022 by Steve Gross



TNC Playbook: "Move fast and break things"



Rapid scale



Public pressure



Lobbying state governments



Leveraging legal challenges



Implementing regulatory preemption

What happened with TNCs?

TNCs will...	Result	AV Passenger Services
Reduce congestion	No. TNCs accounted for approximately 50% of overall increases in congestion.	??
Reduce vehicle miles traveled	No. TNCs are as much as 14% of VMT in core city areas. Dead-heading (no passenger) represents as much as 59% of TNC VMT.	??
Facilitate car-free lifestyle	No. TNCs have had an insignificant change in vehicle ownership rates.	??
Carry more passengers	No. 49 - 61% of TNC trips substitute for transit, walk, or bike travel, or would not have been made at all. TNC passenger occupancy is similar to private vehicles.	??
Expand mobility for non-drivers	Limited. Currently, 4% of adults 65 and older use TNCs. Wheelchair accessible trips required legislative mandates and years of advocacy.	??

TNC Trip Density



What did cities learn?





Seattle was one of the first US cities to experience free-floating bike share in 2017, with scooters arriving in 2020.

Today, the service delivered more than 6 million trips in 2024, with strong growth year over year.

Trip Summary

Trips

Deployment

Equity

Heat Maps

Membership

Info

Vehicle trips are aggregated from data the City receives from each vendor.
Click any chart element to filter; click-again to release the filter.

17.2K
Daily Trips

6.3M
Total Trips

1.1
Avg Distance (miles)

10.6
Avg Duration (min)

1.8
Utilization Ratio

Vehicle Type

- Select all
- bicycle
- car
- scooter
- scooter_seated

Provider

- Select all
- Bird
- Lime
- Link
- VeoRide INC.

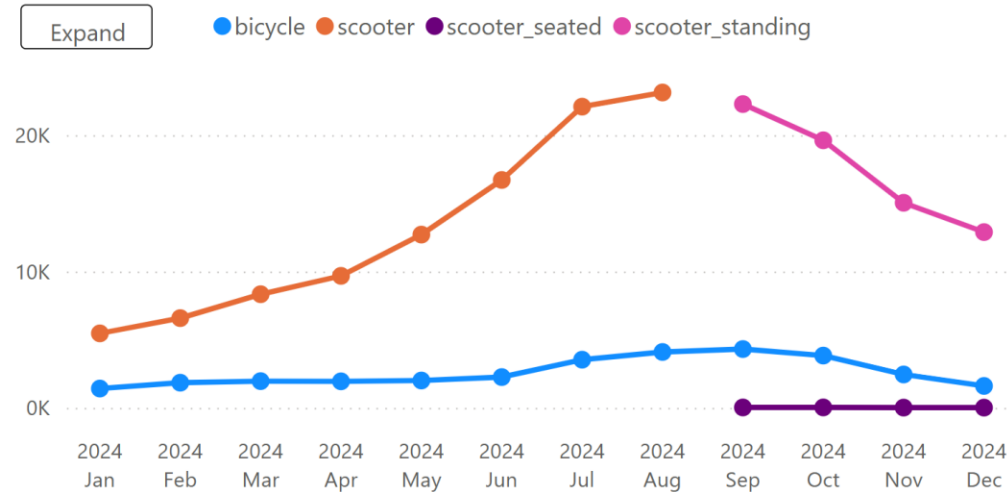
Year

- Select all
- 2024
- 2023
- 2022
- 2021

Date Range

1/1/2019 12/31/2024

Average Daily Trips



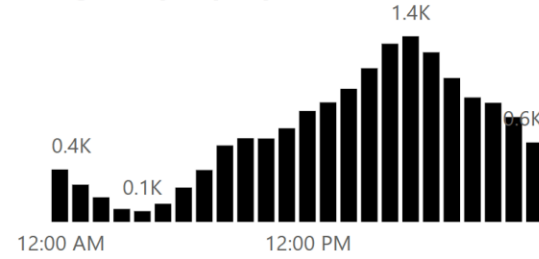
Average Daily Trips by Vehicle

2,603
bike

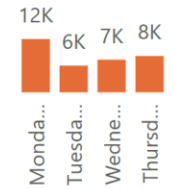
car

8,763
scooter

Average Daily Trips by Hour



by Year



Total Trips by Month

Provider	January	February	March	April	May	June	July	August	September	October	November	December	Total
Bird	27.3K	32.3K	43.3K	40.8K	41.7K	31.9K	45.6K	39.1K	33.4K	24.5K	23.2K	23.0K	406.0K
Lime	175.1K	202.5K	275.4K	307.7K	414.1K	537.0K	748.5K	804.7K	764.8K	703.2K	501.6K	426.5K	5861.1K
VeoRide INC.	10.6K	9.3K	0.0K										20.0K
Total	212.9K	244.1K	318.7K	348.5K	455.8K	568.9K	794.1K	843.8K	798.3K	727.7K	524.8K	449.5K	6287.1K

Equity Area Deployment

- Trips
- Deployment
- Equity**
- Heat Maps
- Membership
- Info

Equity Area Deployment is the percentage of vehicles deployed in the City's three designated equity areas.
 Click any chart element to filter; click-again to release the filter.

9,379 Daily Deployment **210** Daily Northern **885** Daily Central **502** Daily Southern **17.0%** Equity Deployment

Vehicle Type

- Select all
- bicycle
- car
- scooter
- scooter_seated

Provider

- Select all
- Bird
- Lime
- Link
- VeoRide INC.

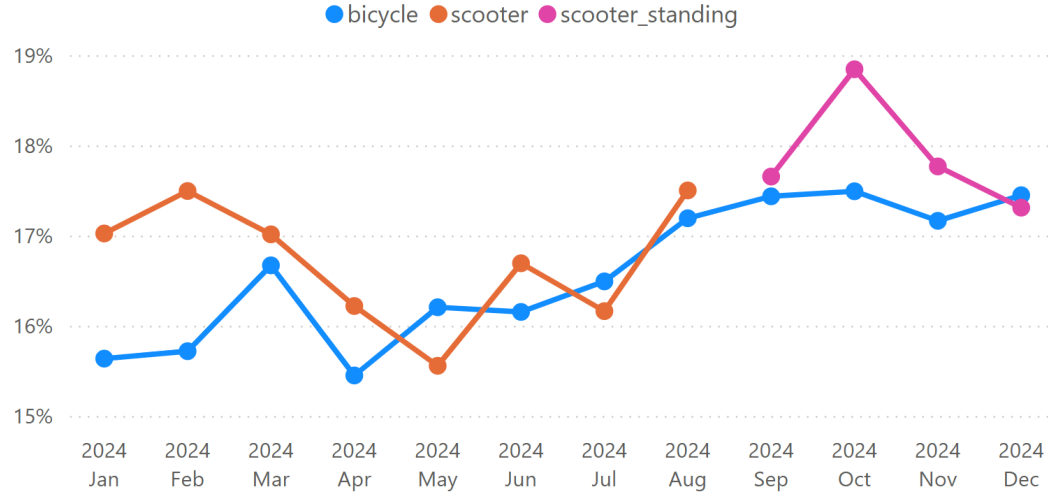
Year

- Select all
- 2024
- 2023
- 2022
- 2021

Date Range

1/1/2019 12/31/2024

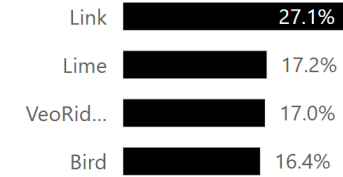
Equity Deployment by Month and Year



By Year



By Provider



Equity Areas

In 2019 and 2020, the City had a goal of 10% deployment in equity areas. These areas have been referred to as "equity focus areas" in the micro-mobility permit applications and represent neighborhoods with limited access to opportunity and low bike share usage during the 2018 bike-share pilot.

Provider	January	February	March	April	May	June	July	August	September	October	November	December	Average
Bird	16.9%	18.0%	16.7%	15.0%	12.5%	12.0%	11.7%	16.6%	17.6%	22.7%	20.5%	18.0%	16.4%
Lime	16.4%	16.1%	16.6%	16.3%	16.7%	17.6%	17.2%	17.6%	17.6%	17.8%	17.0%	17.2%	17.2%
Link	27.4%	26.6%											27.1%
VeoRide INC.	16.0%	16.5%	30.8%										17.0%
Average	16.5%	16.7%	16.9%	16.0%	15.7%	16.6%	16.3%	17.4%	17.6%	18.4%	17.6%	17.3%	17.0%

Adapting to new transportation technologies



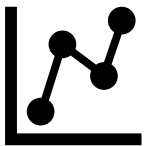
Cities learned from TNC Playbook



Cities were more aggressive with micromobility



Cities implemented permits and other regulations quickly



Data sharing and digital tools were created and implemented



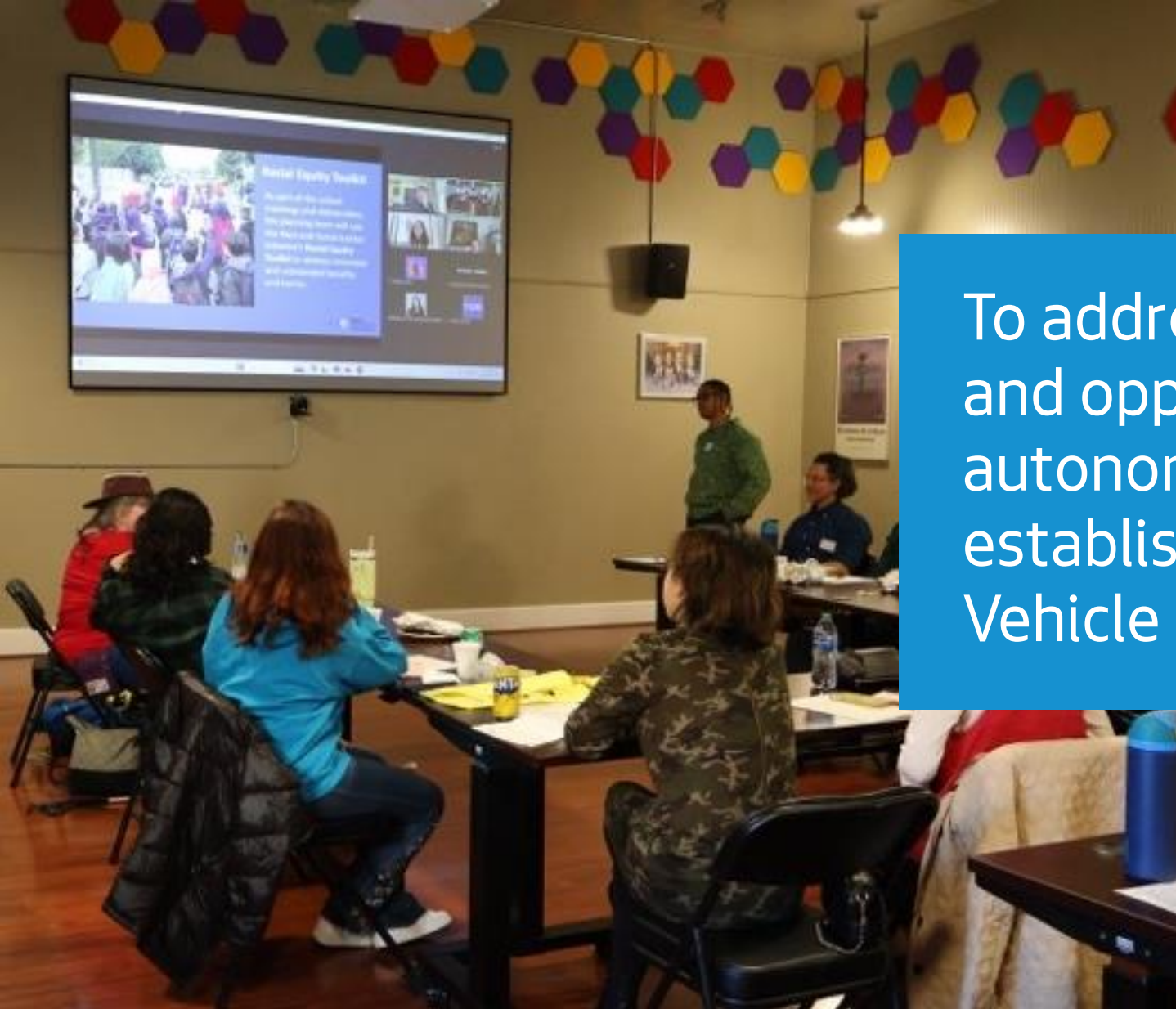
Active management and coordination was an expectation

*What can our region do
to prepare for AVs?*

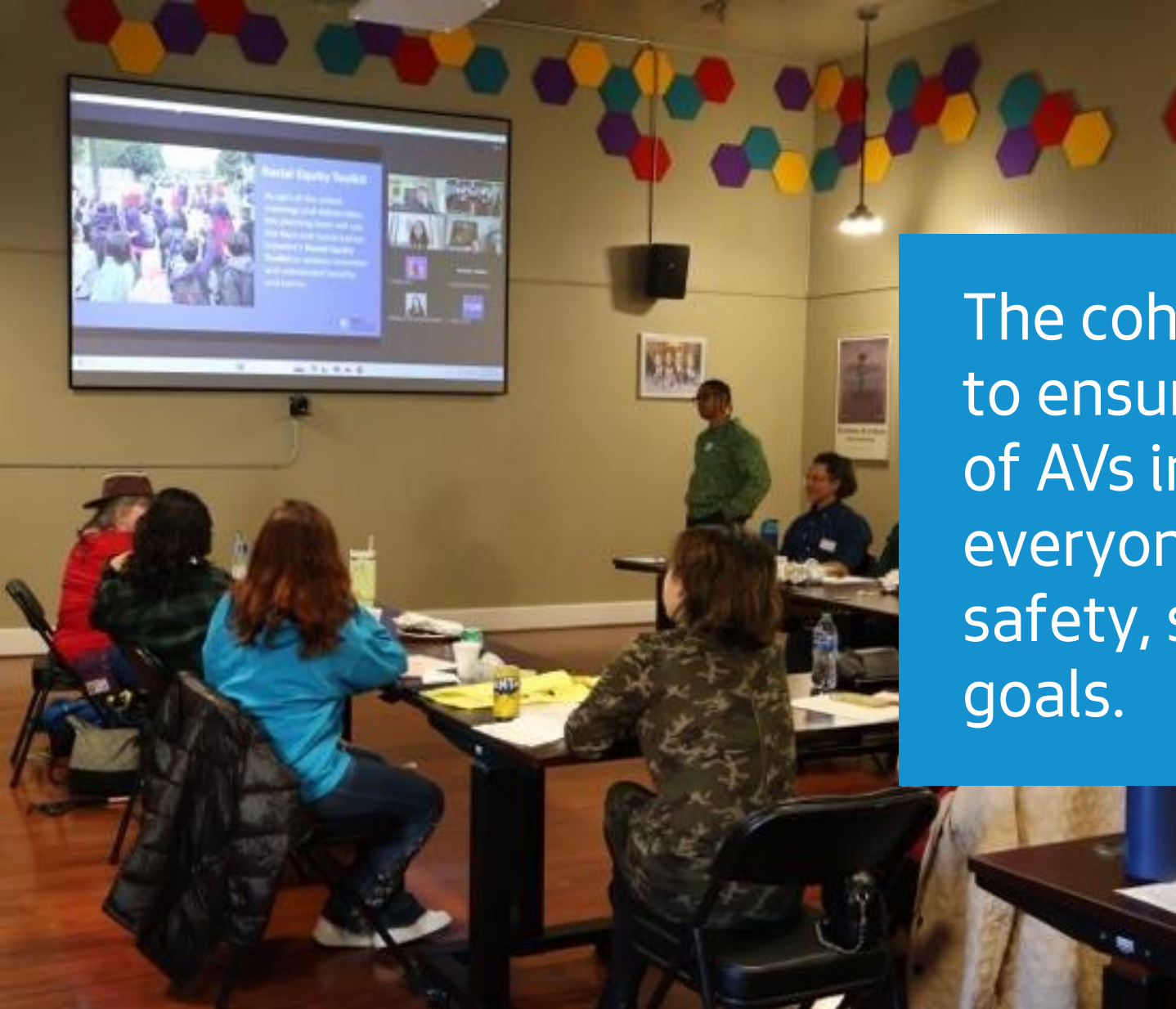


Community-led engagement





To address the specific challenges and opportunities that come with autonomous vehicles, we established the Autonomous Vehicle Inclusive Planning Cohort.



The cohort was a group dedicated to ensuring that the introduction of AVs in Seattle benefits everyone and aligns with our safety, sustainability, and equity goals.

The AV Inclusive Planning Process is an opportunity to demonstrate what it looks like when those most affected by potential impacts lead in setting community priorities for local and state government responses.



Who is the AV Inclusive Planning Cohort?



Community members with personal and professional expertise; and those who represent local community-based organizations, coalitions, and networks.



What did the cohort do?



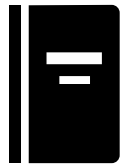
6-month series of facilitated discussion. Partners include Uncommon Bridges, an experienced facilitation consultant, and the University of Oregon's Urbanism Next Center, an academic leader in emerging mobility.



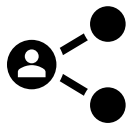
Cohort was compensated for sharing their lived experiences and time.



Cohort arrived at seven priorities to guide discussions and recommendations.



SDOT developed a Racial Equity Toolkit (RET). The City uses the RET to lay out a process and a set of questions to guide the development implementation, and evaluation of policies, initiatives, and program to address the impacts on racial equity.



SDOT actively provides regular updates and opportunities for cohort participation.



APRIL 2025

OPERATIONAL REPORT

URBANISM NEXT | SEATTLE DEPARTMENT OF TRANSPORTATION





APRIL 2025

OPERATIONAL REPORT

URBANISM NEXT | SEATTLE DEPARTMENT OF TRANSPORTATION



KEY FINDINGS

Community-Centered Governance: The cohort emphasizes that effective AV policies must be rooted in community engagement—ensuring that local voices help shape standards for management, accountability, and operational transparency.

Equitable Workforce Transition: The report highlights the need for adaptive strategies to address job displacement in traditional driving roles, recommending robust retraining and local job creation initiatives to prepare communities for emerging roles in fleet management, maintenance, cybersecurity, and beyond.

Inclusive Accessibility & Safety Standards: It underlines the importance of designing AV services that are affordable and accessible, with safety benchmarks that exceed current norms. The report advocates for clear legal frameworks and partnership models that both guide and hold AV operators accountable, while also addressing the intersectional challenges faced by vulnerable communities.

Data-Driven Decision Making: Transparent data sharing is crucial. This report calls for comprehensive, publicly accessible operational data to build public trust and empower communities, thereby ensuring that AV deployments align with urban sustainability, livability, and equity goals.

Community priorities



Management and Accountability

Community voices are at the forefront of the City's expectations of AV industry deployment standards and ongoing decisions about program evaluations and investments.



Management and Accountability

For Cities:

- Advocate for transparent, adaptable regulatory frameworks tailored to local needs.
- Create accountability structures and enforce data-sharing agreements for operational transparency.
- Develop mechanisms for community feedback to guide AV program goals.

For Industry:

- Collaborate on clear operational standards, including safety benchmarks and community engagement processes.
- Ensure transparency in revenues, pricing models, and program outcomes.

"[AV company] Reps should come with their A-game [when engaging with underserved communities]. They are asking questions of people who may never benefit from their services."



Workforce Protection and Development

Worker benefits are prioritized in the implementation and evaluation of AV deployment strategies, particularly for [historically marginalized groups].

Job displacement is counteracted by job creation and opportunities for displaced and at-risk workers.



Management and Accountability

For Cities:

- Engage local labor representatives to prioritize hiring displaced workers for new roles (e.g., fleet management, vehicle maintenance).
- Address equity in workforce transitions, focusing on underserved communities.

For States:

- Design and fund large-scale retraining programs for displaced workers (e.g., drivers), prioritizing locally based workers.
- Develop certification standards and ensure retraining aligns with emerging industries like cybersecurity.

For Industry:

- Lead job creation efforts, emphasizing emerging roles in maintenance, technology, and safety.
- Partner with local educational institutions to develop workforce pipelines.



"Should the AV companies have a responsibility or hand in retraining or workforce development? Can this be required?"



"Creating job training is fine, but it might not be the same skillset you are interested in doing, or same needs from your body, or same pay... jobs aren't just transferable... they are not all the same..."



"Be conscious of the timelines for communities and opportunities... there is evidence that by the time people have caught up, the job market might be oversaturated, moving on, etc."



Accessibility and Affordability

All communities achieve equal access to these services through SDOT prioritizing vulnerable communities with the greatest barriers and needs and holistically addressing their accessibility and affordability barriers.



Accessibility and Affordability

For Cities:

- Ensure AV services align with local equity goals by prioritizing vulnerable communities and underserved areas.
- Set affordability guidelines, monitor pricing, assess impact to transit, and evaluate subsidies for low-income users if deployment outcomes align with community goals.

For Industry:

- Provide ADA-compliant service and integrate accessible features.
- Create multilingual user interfaces and services tailored to community needs.

"Accessibility is such a multi-dimensional topic. I want to be open to experimentation, but as far as subsidizing things that don't live up to ADA, oh heck no!"



Safety

AV operators surpass safety benchmarks that have been created using community insights and reflect public safety concerns.

AV operators and SDOT work to build and evaluate trust at all stages of testing, deployment, and operation.



Safety

For Cities and States:

- Define safety standards and hold companies accountable for meeting benchmarks.
- Address liability concerns by creating clear legal frameworks for incidents involving AVs.

For Industry:

- Lead innovation in safety technology and incident prevention measures.
- Ensure safety operators are available during testing and deployment phases.
- Share frequent and detailed safety data to improve transparency and public trust.

"Who is liable in incident scenarios? It should be realistic for people to pursue claims - particularly with the power imbalance between an individual and a large AV company."



"Vehicles need to follow all traffic laws. There should be less leniency for AV companies than human drivers... they should do better and follow rules better."



Environmental Impacts

The deployment of AVs in Seattle has a positive environmental impact by helping the City achieve One Seattle Climate Justice Agenda and Green New Deal objectives, which include intersectional health and equity criteria.



Environmental Impacts

For Cities and States:

- Ensure AV deployment supports climate action strategies such as reducing congestion, emissions, and deadhead miles.
- Regulate land use to prevent AV storage facilities from concentrating in underserved neighborhoods.

For Industry:

- Prioritize electric AV development to accelerate decarbonization.
- Ensure sustainable sourcing of materials for AV production to minimize global environmental impacts.

"I feel the AV movement will accelerate the electrification of cars in this country, since electric cars are better to be used as AV. This has a big environment impact."



"[It is important to] address the oppression from gathering the materials needed for these technologies."



Intersectional Equity

Future AV deployment is planned through an intersectional equity lens, holistically considering social identities and impacts.

AV deployment corrects past discrimination, serves underserved community members, and mitigates future harm to historically vulnerable groups.



Intersectional Equity

For Cities:

- Use tools, such as SDOT's AV Racial Equity Toolkit to guide AV policy decisions and mitigate harm to vulnerable communities.
- Facilitate partnerships between industry and underserved communities for inclusive outcomes.

For Industry:

- Directly engage with community to understand unintended impacts of AV deployment and ensure deployment supports community goals.
- Address embedded biases in AV technology and ensure inclusive design and data practices.

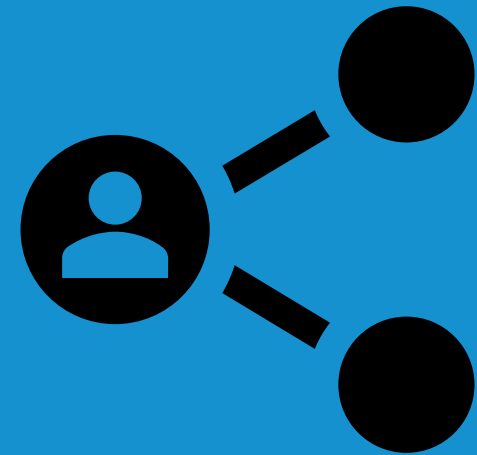


"The City needs to motivate or require AV vendors to answer key inclusivity and racial equity questions. This would help communities feel good about the future and opportunities of AVs."



Education to Community

While it might not be predictable or linear, communities and SDOT are able to build trust and collaboration through a process that includes proactive educational touchpoints aimed at workforce development and welcoming all communities into the AV space.



Education to Community

For Cities:

- Lead outreach and education efforts, ensuring community members understand benefits and challenges with AV integration.
- Use community ambassadors to promote diverse participation in planning and decision-making at the state and local levels.

For Industry:

- Partner with local jurisdictions on public engagement, providing funding and resources for educational events and materials.
- Share clear, accessible data on AV operations to build trust and foster collaboration.

"Seattle residents make decisions off of affordability, access, and company ethic... they care about environmental impacts, vehicle life cycle, and company values."





Autonomous Vehicles are coming.

Cities need to have a seat at the table to uplift what we hear and need for our communities.



If we wait for AVs to come rather than prepare for them now, we lose the opportunity to shape AV applications to the benefit of the region.





If we shape it, we can guide the deployment of AVs to provide safe and affordable access to places and opportunities.



Thank you!

Seattle Department of Transportation

Mobility Solutions Team



DOT_AutomatedMobility@seattle.gov



<https://seattle.gov/transportation/projects-and-programs/programs/autonomous-vehicles>

