APPENDIX A
FURTHER ACTIONS

Further Actions

Our New Mobility Playbook establishes strategic actions to maximize the benefits of new mobility services. The Playbook positions us to leverage emerging mobility innovations to meet our broader community and mobility objectives. Our five "plays" broadly cover the way we want new mobility to work for the city and our residents, the way the Seattle Department of Transportation works, and the way we prepare for rapid, unpredictable change.

Our five plays are to:

PLAY 1	Ensure new mobility delivers a fair and just transportation system for all
PLAY 2	Enable safer, more active, and people-first uses of the public right of way
PLAY 3	Reorganize and retool SDOT to manage innovation and data
PLAY 4	Build new information and data infrastructure so new services can "plug-and-play"
PLAY 5	Anticipate, adapt to, and leverage innovative and disruptive transportation technologies

In the following sections, we list a set of strategies under each play. In addition to the *First Moves*, our immediate (and even current) actions listed in the main Playbook document, this appendix provides details on *Further Actions* we think can achieve our five plays over the next five years - understanding that trends and technologies will continue to rapidly change. This appendix establishes our roles, partnerships, and implementation and regulatory considerations. While our agenda promotes many value-driven policies, we will continue to use pilots and iterative data analysis processes to test new policy and operational ideas at both targeted and citywide scales.

WHAT IS OUR ROLE?

We will assume a central role in advancing policy and investments related to shared mobility and emerging mobility innovations. Each page highlights the type of role we could undertake to deliver each move or action. Our roles may include the following:

Implementer
Write policies, deploy programs and pilots, and drive capital projects to ribbon-cutting

Capacity Builder
Build internal and partner organizational and leadership skills needed to advance shared mobility

Funder
Allocate funding and staff resources to implement programs, pilots, and projects

Advocate
Raise the profile of innovative projects, galvanize support for policy change and implementation, and reinforce accountability

Convener
Establish collaborative networks, cross-pollinate projects with diverse perspectives, and create peer learning networks

Thought Leader
Shape the direction of policy and projects and advance innovation

WHO ARE OUR PARTNERS?

Collaboration and ongoing partnership are required to meet the current and future transportation demands of our bustling city. We will actively collaborate with our public transit and private mobility partners to achieve our principles for new mobility and leverage new mobility services to meet our core values. The strategies, first moves, and further actions that make up our Playbook include partner roles for the following entities. This list represents only a portion of all stakeholders that will be engaged as policies, programs, and projects are formed and deployed.

CBO: Community-Based Organization Partners
DC: Development Community
DCI: Seattle Department of Construction and Inspections
DON: Seattle Department of Neighborhoods
FAS: Seattle Finance and Administrative Services
FP: Foundation/Non-Profit Partners
HSD: Seattle Human Services Department
IP: Infrastructure Providers (private)
IT: Seattle Information Technology
KCL: King County Records and Licensing Services
KCM: King County Metro
ME: Major Employers
MP: Mobility Providers (private/non-profit)
OCR: Seattle Office for Civil Rights
OED: Seattle Office of Economic Development
OEM: Operating Equipment Manufacturers (e.g., automakers)
OIR: Seattle Office of Intergovernmental Relations
OLS: Seattle Office of Labor Standards
OPI: Seattle Office of Policy and Innovation
OSE: Seattle Office of Sustainability and Environment (including Drive Clean Seattle)
PCD: Seattle Office of Planning and Community Development
PSC: Puget Sound Cities and Ports
PSE: Puget Sound Energy
PSRC: Puget Sound Regional Council
RP: Research Partners (e.g., Univ. of Washington)
SCL: Seattle City Light
SOH: Seattle Office of Housing
SPD: Seattle Police Department
SPU: Seattle Public Utilities
SPR: Seattle Parks and Recreation
ST: Sound Transit
TP: Technology Providers (private)
WSDOT: Washington State Department of Transportation

PLAY 1

Ensure new mobility delivers a fair and just transportation system for all

We must ensure that shared mobility services provide dignified, reliable, and affordable transportation options accessible to all. We will make targeted investments and broker partnerships to integrate new technology and ensure seamless connections to and between shared mobility modes. New services should be attentive to the needs of low-income, immigrant, refugee and aging populations, women, families, youth, people of color, LGBTQ, and people with disabilities. New mobility options and technology must fight against the displacement of historically underrepresented communities and develop the living wage transportation workforce of tomorrow.

STRATETGY 1.1: ADVANCE SHARED MOBILITY EQUITY PROGRAMS TARGETING PEOPLE OF COLOR, LOW-INCOME, IMMIGRANT, REFUGEE, YOUTH, AND AGING POPULATIONS, WOMEN, LGBTQ, AND PEOPLE WITH DISABILITIES

We are a city of diverse cultures, races, and economic means. While Seattle is growing in ways that allow people to get around without a car, our historically underrepresented communities and vulnerable populations often do not have access to app-enabled shared mobility services (both due to availability and limited literacy) or are actively discriminated against. We will develop programs that close racial disparities in transportation costs by enacting policies and programs to reduce shared mobility fares for marginalized communities. We will deploy programs that specifically aim to connect immigrant and refugee households to shared mobility options, supported by education and culturally-resonant marketing. Our pilots with shared mobility providers should serve the most vulnerable populations in the city, including late night services for women and intuitive options for aging Seattleites.

First Moves

Move	Partners	SDOT Role
Develop a multi-income level shared mobility subsidy program	KCM, MP	I F T

Further Actions

Further Actions	Partners	SDOT Role
Market the financial benefits for low-income communities to reduce personal car use	DON, SOH, KCM, ST, MP	A C
Work with shared mobility providers to provide services and incentive structures that encourage use by women and families with children	KCM, MP	A C T
Partner with the Seattle Office of Housing and nonprofit organizations to learn from and develop culturally sensitive approaches to socialize and subsidize shared and emerging mobility options	SOH, FP, MP, KCM, DON	A C
Develop a shared mobility ladders of opportunity roadmap for communities of color, women, and all other protected classes	OED, OCR, DON, FP, CBO, OLS, OSE, MP	I A C
Develop age-friendly mobile apps, subsidy programs, and travel training based on a human centered design process	OPI, KCM, HSD	F A
Use various ethnic media to convey benefits of shared mobility	DON, OSE, CBO	A
Partner with workforce development groups to establish a job training program to prepare shared mobility workers for an electric and automated mobility future	OCR, OLS, CBO	I A F T
Work with TNCs to implement platform features and programs that encourage more women to become drivers	OED, OCR, DON, OLS, MP	A C T

Implementation and Regulatory Considerations

- Use the Mobility as a Service platform to disburse low-income shared mobility subsidies
- Funnel shared mobility equity fees into income eligible subsidies, first mile/last mile services, and other digital equity actions
- Consider allowing TNC digital platforms for women-only to ensure women feel comfortable using and operating ridehailing services
- Host a hackathon to expand shared mobility services that cater to the needs of women and families

STRATEGY 1.2: DEPLOY DIGITAL EQUITY SOLUTIONS TO ENSURE EVERYONE HAS ACCESS TO APP-ENABLED MOBILITY OPTIONS

Most app-enabled shared mobility services require access to a digital device and wireless connectivity. To overcome these barriers, the City of Seattle launched a Digital Equity Initiative, where technology is used to equitably empower all residents and communities. We are collaborating with Seattle IT to invest in new avenues to access mobility using digital devices, focusing on devices, infrastructure, connectivity, and Education. Digital kiosks, community tablets, and publicly-available wifi will also provide public access to community information and data visualizations that impact the lives of community members.

First Moves

None

Further Actions

Further Actions	Partners	SDOT Role
Expand and democratize access to new mobility trip planning and booking beyond the smart phone	IT, KCM, ST, TP, IP	I T
Establish a targeted public Wi-Fi hotspot program and provide low cost smart phone devices that are served by free Wi-Fi	IT, TP	I F
Develop a multi-lingual call center service to enable trip planning and booking via cell phone or land line	KCM, ST, TP	A C
Work with Seattle IT to develop a community learning program to increase digital literacy	IT	B A
Support Seattle IT as they distribute smart phones to income-eligible individuals	IT, OED	B A

Implementation and Regulatory Considerations

- **Identify Community Reinvestment Act grant opportunities to fund digital infrastructure projects that both increase digital and financial literacy and provide access to app-based mobility services**
- **Establish flexible procurement rules for digital equity infrastructure investments**

STRATEGY 1.3: ADVANCE AS DIVERSE AN ARRAY OF PAYMENT OPTIONS AS POSSIBLE TO IMPROVE ACCESS TO APP-ENABLED MOBILITY OPTIONS

Many shared mobility providers require users to have a credit or debit card for registration or payment, which hinders many unbanked or underbanked Seattleites from using these services. This effectively disqualifies some residents from a wide range of app-enabled mobility services, excluding them from the individual benefits of affordable and safe door-to-door transportation options. We will advance options for improving access so we can provide the same level of service to all residents, whether the service is publicly or privately provided.

First Moves

None

Further Actions

Further Actions	Partners	SDOT Role
Develop a mobility securitization program with one or more community credit unions to bank the unbanked	IT, OCR, CBO, KCM, ST	A C T
Market to and educate residents about existing and new payment options	DON, KCM, ST, CBO, FP, MP	I A
Partner with web-based third-party payment methods that accept cash	IT, OCR, CBO, KCM, ST, MP, TP	I A C T
Allow cash payments, low-income rates, and direct subsidies as part of the Mobility as a Service platform (see Strategy 4.5)	IT, OCR, CBO, KCM, ST, MP, TP	I A C T
Consider adding permit or operational requirements for alternative payment methods for all shared mobility modes	FAS, IT, OCR, CBO, KCM, ST, MP, TP	I T

Implementation and Regulatory Considerations

- Coordinate with private mobility providers to understand the opportunities and limitations of alternative payment methods

STRATEGY 1.4: ENSURE NEW MOBILITY SERVICES ARE ADA ACCESSIBLE ACROSS THE REGION

Community access transportation, accessible taxis, and Access paratransit services are vital mobility options for people with disabilities and eligible medical issues. Paratransit service is provided at high subsidy levels, costing nearly $53 per trip. Human services, Wheelchair Accessible Taxi (WAT) services, and paratransit transportation is ripe for innovation and enhancements to the customer experience. They typically require advanced booking and cannot offer on-demand mobility, largely due to outdated booking and dispatching technology.

Shared mobility services in Seattle could greatly reduce the cost of these services if they offer accessible ride options in compliance with the Americans with Disabilities Act. We will take proactive steps to ensure new mobility services enhance the customer experience for people with disabilities. We will also invest in new solutions that will reduce the operating costs of WAT services.

First Moves

Moves	Partners	SDOT Role
Develop new solutions for Wheelchair Accessible Taxi (WAT) program to reduce operating costs, meet customer expectations, and work more efficiently across jurisdictional boundaries	FAS, KCM, KCL, MP, TP	I F C T

Further Actions

Tactics	Partners	SDOT Role
Develop a shared mobility Level of Service guarantee for people with disabilities or those needing medical trips (measured as a maximum wait time by geography and time of day)	KCM, ST, MP	I T
Develop collateral materials to educate WAT, TNC, and other for-hire drivers about the varying needs of people with mobility impairments (e.g., people with seeing eye dogs)	FAS, KCL, KCM, MP	I
Work with the disability community to identify appropriate signage and/or audible indicators, as well as street design strategies that facilitate the movement of wheelchair users, blind, or hearing impaired people from the curb to passenger loading zones	FAS, CBO, KCM, KCL, MP, TP	I A C
Promote and support apps that allow users to find ADA accessible routes or minimize transfers and walking distances on their trip	SDOT, King County, KCM, ST	A

Implementation and Regulatory Considerations

- Conduct a needs assessment for the WAS program, prior to making new operational investments
- Evaluate the effectiveness of the current WAS program from the perspective of the private providers and disability advocates, using surveys and in-person interviews
- Align the WAS program with the City's Age-Friendly Initiative

STRATEGY 1.5: ENSURE NEW MOBILITY COMPLEMENTS AND ENHANCES THE PUBLIC TRANSIT SYSTEM

As our city grows, people increasingly expect more frequent and more reliable transit service. We will test new services in underserved geographic areas and times where shared mobility can complement public transit. Our transit system has two key ingredients needed test innovation— a built-in user base and the ability to rapidly scale.

We seek to position shared mobility and other emerging mobility innovations to create a system of seamless, dependable transit travel, regardless of geographic location or time of day. We will leverage shared mobility services to extend the reach of high capacity transit, integrating car share, ridesourcing, shuttles, and more into major transit connections.

First Moves

Moves	Partners	SDOT Role
Partner with King County Metro and Sound Transit to develop a microtransit policy framework and pilot its ability to serve first-/last-mile connections, emerging transit markets, and capacity relief needs	KCM, ST, MP, OEM	I F B A C T

Further Actions

Further Actions	Partners	SDOT Role
Use Mobility as a Service to establish regional guaranteed ride home partnerships with ridehailing and car sharing services	KCM, ST, MP, ME, TP, FP	A C T
Subsidize ridesplitting and car sharing for first- and last-mile trips in low-income neighborhoods, focusing on shift workers and other vulnerable populations	KCM, ST	I F T
Explore subsidy options for passengers who use shared mobility services to or from shared mobility hubs	KCM, ST	I F T
Identify ways to integrate peer-to-peer car share services into Shared Mobility program initiatives, marketing, and outreach	KCM, MP	C T
Test the use of transit only lanes and business and transit access lanes by non-public transit high occupancy vehicles (including microtransit, ridesplitting, and private employer shuttles)	KCM, ST, MP, ME	I A C T

Implementation and Regulatory Considerations

- Think creatively when designing transit integration pilots, but establish a strong data sharing agreement reporting foundation to measure success
- Focus future private bike share integration on physical siting, fare integration, and user experience improvements like messaging and wayfinding

STRATEGY 1.6: DEVELOP INTEGRATED SHARED MOBILITY HUBS TO SEAMLESSLY CONNECT PEOPLE TO AND BETWEEN MOBILITY SERVICES

Navigating connections between Seattle's wide range of public transit and private shared mobility services can be a challenging endeavor. Connections are not always intuitive as customers are met with either multiple layers of information or a lack of information altogether.

Shared mobility hubs are a physical representation of the digital mobility marketplace. Shared mobility hubs aggregate transportation connections and travel information into a seamless, understandable, and on-demand travel experience, often collocated with major transit facilities (e.g., Link Stations, RapidRide Stations, King Street Station, and Colman Dock) and places where frequent transit services intersect. In partnership with transit agencies and private operators, we aim to implement a network of shared mobility hubs throughout the city, providing better mobility and integrated transportation choices for all. Each shared mobility hub will feature amenities that uniquely meet the needs of the immediate community it serves with a strong emphasis on placemaking.

First Moves

Moves	Partners	SDOT Role
Develop a Shared Mobility Hub program with a public-facing brand, actionable Implementation Plan (including a regional definition of shared mobility hubs, a hub typology, access hierarchy, siting plan, financing, phasing, and other implementation considerations), and demonstration sites	KCM, ST, DC, ME, PCD, OPI, SOH, PRSC, OSE, MP, CBO, FP, WSDOT	I F B A C T

Further Actions

Further Actions	Partners	SDOT Role
Integrate shared mobility hub amenities into ongoing Sound Transit 2, Sound Transit 3, and Move Seattle transit projects	PCD, KCM, ST, DC	I F B A T
Work with the Office of Sustainability and Environment and Seattle City Light to develop an electric vehicle roadmap for shared mobility hubs	OSE, SCL	A T
Develop and deliver a community outreach strategy to ensure community ownership in the design and programming of shared mobility hubs	KCM, ST, DC, ME, PCD, OPI, SOH, PRSC, OSE, MP, CBO, FP, WSDOT	A C T
Partner with the Equitable Development Initiative to create a workforce and local economic development strategy for shared mobility hubs to ensure these locations become hubs of job and skills growth	OED, OLS, OCR, PCD, OSE, CBO, FP, DC, DON	B C T
Adopt a Shared Mobility Hub Overlay Zone to implement hub amenities as part of ongoing development projects at major transit transfer locations	PCD, DCI, DC, OPI	I A C
Inventory vacant properties, private development opportunities, and transit properties that could be leveraged for shared mobility hub amenities and placemaking/open space opportunities	PCD, DCI, SOH, KCM, ST, DC	I A

Implementation and Regulatory Considerations

- Develop targeted measures of success for shared mobility hubs
- Integrate concepts related to cultural hubs, emergency management hubs, workforce development, and community information into the Shared Mobility Hub Implementation Plan
- Partner with local parking efficiency app developers to facilitate car share parking at private parking lots near shared mobility hubs
- Work with local public, private, and foundation funding partners to establish an open innovation procurement process, whereby technology applicants propose mobility solutions to be applied and tested at shared mobility hubs
- Complete detailed siting plans for mobility amenities at all future shared mobility hubs
- Conduct focus groups and interviews with developers and land owners to educate them about shared mobility hubs and to formalize implementation partnerships
- Consider flexible zoning requirements at shared mobility hubs to enable multiple uses on private and public land (e.g., retail, transportation, etc.)

PLAY 2

Enable safer, more active, and people-first uses of the public right of way

New mobility services can potentially move more people using fewer vehicles. This would reduce the need for car storage and help us align our street with our right of way priorities: safety, mobility, access for people, and activation first; storage last. We can change the way we use our streets, sidewalks, and curbs. We can provide more space to move people, while accommodating urban goods delivery. Managed appropriately, new mobility services can help us fulfill our Transit, Pedestrian, Bicycle, and Freight Master Plans, as well as achieve the goals of our Move Seattle strategy.

We will harness the efficiency benefits of shared mobility to make way for a future with great pedestrian spaces and community places, zero fatal and serious injury traffic collisions, more reliable transit, and safe places for people to bike. We will also partner with regional logistics leaders and startups to implement innovative policies that facilitate the movement of urban goods movements and e-commerce deliveries.

STRATEGY 2.1: RECOVER STREET SPACE AND EXPAND THE PUBLIC REALM AS DEMANDS FOR ACCESS SHIFT

As new mobility use continues to grow, Seattle's curbspace can be repurposed to accommodate shared vehicle and commercial loading, and less emphasis on personal vehicle storage. We will manage transitioning curb use behavior and evaluate impacts on demand and commercial land use access using pilots and new sensor technologies. We will also capitalize on major corridor projects to strategically advance transit priority and protected bike lane implementation as well as expanded opportunities for commercial and passenger load zones.

As we increase the carrying capacity of our transit network and move into a future with shared and fully automated fleets, we will fundamentally rethink how we manage public space. We have the unique opportunity to incrementally expand the public realm and enhance the quality our streets. While strategically maintaining curbspace for car share storage and commercial loading needs, we seek to shift space from less productive motor vehicle storage toward safe, accessible, and well-designed public spaces.

First Moves

Moves	Partners	SDOT Role
Expand 3-minute passenger loading zones citywide from which ridesourcing and microtransit services can be required to pick-up and drop-off passengers (i.e., "pin drops" are tied to physical passenger loading zones)	KCM, MP, OEM	I, F, B, A, C, T

Further Actions

Further Actions	Partners	SDOT Role
Integrate the concept of public realm transitioning into the One Center City planning process	PCD, FP, CBO	A, C, T
Develop curbspace technology roadmap to identify new capabilities and strategies for future parking, curbspace and transportation needs	IT, TP	I, T
Digitize all curb faces and travel lanes citywide in advance of dynamically managed lanes and curbspaces	PCD, IT, TP, WSDOT, PSRC	I, F
Delineate and prioritize high-activity versus low-activity spaces in SDOT's Right-of-Way Decision Making Framework and Streets Illustrated (i.e. the Right-of-Way Improvements Manual)	N/A	I
As shared mobility use and occupancies increase, dynamically manage high occupancy vehicle only lanes in Urban Centers and Urban Villages throughout the city	OPI, WSDOT, MP, RP	I, A, T
Investigate policies and incentives to increase car share turnover where high car share accumulation and high parking demand overlap (e.g., South Lake Union, Capitol Hill, SODO, etc.)	MP, RP	I, C, T
Partner with technology companies to advance ride matching services for car share users	OED, KCM, ST, MP, TP	A, C, T
Identify near- and long-term Pavement to Parks and parklet opportunities for the Adaptive Streets program	PCD	I, F, C, T

Implementation and Regulatory Considerations

- Determine any regulatory barriers by integrating ride matching and car share digital booking platforms
- Evaluate the efficacy of various optical parking sensor technologies and enumerate the revenue potential of this permit program
- Work with SDOT parking management experts to identify a network of future passenger loading zones on every block face in Urban Centers and Urban Villages, as feasible
- Work with local chambers of commerce and a cross section of the business community to ensure buy-in for curbspace conversion
- Consider using a reverse or Dutch auction approach to selling utility pole rights on optical parking sensor open market
- Coordinate with the Office of Planning and Community Development and Seattle Parks and Recreation as we expand public realm opportunities
- Consider piloting flexible transit lane use by non-public transit high occupancy vehicles

STRATEGY 2.2: ENSURE THAT NEW MOBILITY ADVANCES OUR VISION ZERO GOAL OF ENDING TRAFFIC DEATHS AND SERIOUS INJURIES ON CITY STREETS BY 2030

In 2015, we unveiled our Vision Zero Plan—a commitment to ending traffic deaths and serious injuries by 2030. A data-driven approach grounds our Vision Zero initiative and directs our efforts to invest in and coordinate traffic safety efforts. The plan identifies safety efforts that combine engineering solutions with targeted enforcement and educational outreach to address behavioral issues. We will strike a balance between managing and partnering with shared mobility service providers to ensure passengers are safe and drivers are operating safely. We will also employ shared mobility operational data to expose unsafe behavioral patterns and redirect resources to ensure our streets are safe.

First Moves

None

Further Actions

Further Actions	Partners	SDOT Role
Improve safety and access for transit through signal priority and transit lane enhancements	KCM, ST	I, F
Communicate the safety benefits of shared mobility to the public	DON, KCM, ST, MP	A
Conduct randomized undercover inspections to educate TNC drivers on safe driving behavior	FAS, MP	I
Continue outreach efforts highlighting the impact of SDOT's Vision Zero campaign and how it changes the way people behave on City streets	DON, SPD, KCM, MP	I, B, A
Continue 'safe ride home' partnerships with transit, ridehailing, and microtransit services to deter impaired driving	DON, SPD, KCM, MP	I, A
Partner with TNCs and microtransit services to develop tailored safety push notifications to drivers where pick-ups and drop-offs coincide with bike lanes and transit lanes	FAS, MP	A, C, T

Implementation and Regulatory Considerations

- Work closely with SDOT's Vision Zero and Transportation Operations team as pilots are developed
- Test designated loading zones for TNCs and other for-hire services at stadium and other major events as a way to promote the safe loading, ingress and egress of ridehail passengers
- Consider dedicating funding for "safe-ride home" discounts
- Expand the network of 3-minute passenger load zones citywide so ridehail-based services can safely load and unload passengers
- Update regulations to require shared mobility providers provide safety related data generated from telematics (e.g., illegal u-turns, rapid decelerations, rapid accelerations, etc.)

STRATEGY 2.3: SUPPORT THE DEVELOPMENT OF THE URBAN GOODS DELIVERY AND NEW FREIGHT TECHNOLOGY SOLUTIONS

The economic health of our city depends on the efficient and predictable movement of goods. The retail and urban logistics industries are being reshaped by new digital technologies, creating previously unforeseen impacts on our streets. As people continue to rely on e-commerce websites to purchase goods, we must reconsider how we manage delivery vehicles and their relationship with curbspace and alleys.

In partnership with the University of Washington's Urban Freight Lab and our local logistics innovators, we will support and actively integrate intelligent delivery solutions. We will capitalize on the blurring lines between goods movement and shared mobility and find new ways to accommodate the "Final 50 Feet". Our objective is to reduce unnecessary delivery trips and dwell time by facilitating a range of delivery vehicle and process options.

First Moves

Moves	Partners	SDOT Role
Work with the University of Washington's Urban Freight Lab to understand the impacts and benefits of e-commerce and other emerging shared delivery models in Seattle	PSC, RP, TP, MP	F B A C T

Further Actions

Tactics	Partners	SDOT Role
Test and enable the use of small trucks, delivery bots, aerial drones, and human-powered delivery (e.g. cargo bikes)	PSC, RP, TP, MP	I A C T
Implement Move Seattle corridor improvements to reduce conflicts, increase safety, and enhance freight mobility	PSC, MP	I F
Implement new digital technology for Commercial Vehicle Load Zone Permits to add demand-based pricing and improved eligibility requirements	OED, IP, TP	I
Develop a Goods Trip Reduction program within SDOT to reduce unnecessary urban delivery trips and inefficient delivery movements	RP, ME,	I F T A
Coordinate urban goods movement policies, pilots, and logistical improvements with the Port of Seattle and the Northwest Seaport Alliance	PSC, DC, RP, TP, MP	A C
Use shared mobility hubs as common carrier delivery locker hubs	RP, TP, ME, DC	I A C T
Assess the applications, impacts, and design implications of drone delivery and building integration	PSC, RP, TP, ME, DC	B A C T
Work with digital logistics platforms to build delivery capacity using shared vehicles	PSC, RP, TP, MP	B A C T
Develop a strategy to use parking structures and surface lots as common carrier delivery locker hubs and short-term loading zones to better accommodate loading needs off-street	DC, ME, RP, TP, MP	I A C T
Test the cross-functionality of Mobility as a Service incentives and common carrier delivery locker hubs	RP, TP	I T

Implementation and Regulatory Considerations

- Coordinate policy development and pilot delivery with the Port of Seattle and freight companies to meet our shared objectives
- Consider piloting electric bike delivery services, drone delivery testing, off-hour delivery, and package delivery incentive pilot through the Mobility as a Service platform (see Strategy 4.4)
- Establish appropriate pilot permitting frameworks to test "final 50 feet" automated delivery bots

PLAY 3

Reorganize and retool SDOT to manage innovation and data

We will advance innovative, data-driven policies, services, technologies, and projects that create an abundant mobility marketplace available to all. The Seattle Department of Transportation will be a 21st Century DOT, accommodating changing consumer expectations and leveraging disruption in the mobility industry to meet our desired outcomes. We will pivot to new funding mechanisms as our gas tax and parking revenue sources deplete over time. This will require data-driven, anticipatory governance, and a fresh perspective on organizational structures, staff skills, procurement rules, and partnerships.

STRATETGY 3.1: ADVANCE SHARED MOBILITY EQUITY PROGRAMS TARGETING LOW-INCOME, IMMIGRANT, REFUGEE, YOUTH, AND AGING POPULATIONS, WOMEN, LGBTQ, PEOPLE OF COLOR, AND PEOPLE WITH DISABILITIES

Shared mobility services are vital transportation options for people who want to reduce their reliance on privately-owned cars. While car sharing, bike sharing, ridesourcing, microtransit, and other mobility services continue to innovate, grow, and vie for market share, the long-term viability of these business models are not guaranteed. They could go bankrupt, end operations, or deliver services that do not serve the public's interest. We must find ways to manage public risk, while maximizing citizen value.

To manage risk in the mobility landscape, we will leverage the personal mobility, efficiency, and safety aspects of shared mobility services, while preparing for their potential growth or stagnation. Public transportation by rail, bus, and other new service models will continue to be the common denominator of our transportation system. We will assess and manage the risks associated with overreliance on app-enabled mobility solutions, ensuring that shared mobility complements, rather than supplants, the person-carrying and livability benefits of our public transit investments.

First Moves

Move	Partners	SDOT Role
Conduct a Racial Equity Toolkit for the New Mobility program to ensure shared mobility initiatives promote, rather than roll back, equity	PCD, OSE, DON, OCR, CBO	I A C
Craft a free-floating bike share policy framework to extract the most benefit out of privately funded bike share systems	FAS, KCM, SPD, MP, TP	I C T

Further Actions

Further Actions	Partners	SDOT Role
Continue citywide service and capital investments in and promotion of public transit as the backbone of the transportation system	KCM, ST, DON, CBO, ME, PSC, WSDOT	I A F T
Establish and apply a risk assessment scale (from low risk to high risk) to all investment, program, and policy decisions related to new mobility services and technology deployments	KCM, ST	I C
Develop a core set of performance metrics to be applied to all new mobility pilots	KCM, ST, OSE, OED, PCD	I C T
Support Sound Transit 3 programming and implementation and ensure the needs and strengths of new mobility are factored into investments	KCM, ST, CBO, FP	B A C T

Implementation and Regulatory Considerations

- Consider updating the New Mobility Playbook every 4-6 months to reflect the dynamic nature of the new mobility services industry and rapid changes in technology
- Establish consistent and use case-specific performance metrics for shared mobility pilots
- Continually coordinate and research with shared mobility providers and technology companies to understand risk factors
- Collaborate with the National Association of City Transportation Officials (NACTO) cities to inform SDOT's policy and permitting framework for private free-floating bike share

STRATEGY 3.2: FOSTER A CULTURE OF INNOVATION AND PROFICIENCY IN NEW MOBILITY SOLUTIONS

In our changing mobility landscape, we need to modernize our business practices and change how we manage data, deploy projects, and develop policy. Working with our public and private mobility partners, we will continually strive to understand, anticipate, and leverage changes in the mobility landscape. Shared mobility and other emerging mobility innovations will become a part of our everyday lexicon as we will build-in house capacity to analyze data, generate new ideas, and test their efficacy. We will establish strategic policies to capture the benefits of new technologies and mobility models, while mitigating their unintended consequences. We will operate like a nimble, yet technically rigorous start up, hiring data-driven, collaborative staff, and investing in the analytical tools needed to identify business needs, rapidly prototype solutions, and evaluate their effectiveness

First Moves

Moves	Partners	SDOT Role
Build staff capacity for data analytics, technology investments, pilot delivery, and policy-making	OPI	I F B A C T

Further Actions

Further Actions	Partners	SDOT Role
Adopt a demonstration policy to enable rapid testing and deployment of innovative transportation solutions	OPI, FP, MP, TP	I
Organize quarterly new mobility webinars for SDOT and other City of Seattle department staff	PCD, OSE, IT, MP, TP, FP, OEM, ME	A C T
Continue working with national and regional peer learning networks like NACTO to strengthen new mobility and emerging technology policies, projects, planning processes, and pilots	RP, FP	B A C T
Integrate new mobility considerations into modal plans and sub-area plan updates	KCM, ST, CBO	B A C T
Formalize a rapid prototyping and ideation process driven by data science	ME, RP	B T
Produce an annual New Mobility report card to track Playbook implementation progress and standardize shared mobility metrics reporting	IT, FAS, OSE, KCM, ST, RP, MP	I A
Develop shared mobility data dashboards to track key performance indicators and system productivity	FAS	I A

Further Actions	Partners	SDOT Role
Partner with regional partners and local technology companies to train staff in data science and visualization and search for opportunities to pool data and expertise across agencies	IT, KCM, ST, RP, FP, ME	
Rethink procurement processes to unlock creative mobility solutions and remove barriers to public-private partnership	OPI, FAS, CBO, IP, TP, MP, OEM	
Establish a pipeline for all SDOT staff to suggest and discuss pilot ideas	N/A	
Phase in shared mobility options into the City of Seattle employee motor pool	FAS, MP	

Implementation and Regulatory Considerations

- Leverage the knowledge and experience of local technology companies and start-ups as we pivot toward an open innovation/rapid prototyping model
- Conduct a scan of national and international best practices in municipal data science and their organizational structures
- Strategically allocate Shared Mobility or Mobility Innovation staff time on modal and sub-area plan advisory committees, so that resources are not depleted
- Employ SDOT's Transportation Innovation Leadership Team (TILT) program to research the policies, procedures, Title 20 code changes, scoring metrics, and staff capacity necessary to move to an open procurement model

STRATEGY 3.3: UNDERSTAND THE MOBILITY NEEDS OF THE COMMUNITY

Managing new mobility models requires a thorough understanding of people's needs. The community understands their streets, local intersections, and the services that operate on them. We will facilitate a dialogue with community members and community-based organizations about shared mobility and other mobility innovations. We aim to learn about service gaps, solicit ideas for better neighborhood integration, and identify local impacts and considerations related to shared mobility.

First Moves

Moves	Partners	SDOT Role
Host community conversations with transportation advocates, social justice-oriented community-based organizations, and community members to understand broader challenges and opportunities related to new mobility solutions	DON, OSE, CBO, MP	I F B A C T

Further Actions

Further Actions	Partners	SDOT Role
Integrate shared mobility and transportation technology-related questions into City of Seattle surveys to gather more data about customer experience and expectations	N/A	A
Map ongoing issues, preferences, attitudes related to shared mobility by neighborhood	DON, KCM, ST, CBO	A
Develop a paper and web-based survey instrument to establish baseline and ongoing attitudes, preferences, and comprehension levels related to shared mobility	DON, OSE, KCM, ST, CBO	A
Establish a "Find It Fix It"-style reporting mechanism on the New Mobility webpage to identify ridehailing, microtransit, private shuttle, and car share loading and operational issues	IT	A
Create an online calculator to calculate and compare private car expenses with shared mobility expenses (including public transit)	KCM, ST, PSRC, PSC, FP	A

Implementation and Regulatory Considerations

- Ensure the outreach approach with community-based organizations and community members adheres to the Equity and Environment Agenda principles
- Perform a stakeholder analysis as part of the near-term community consultation strategy to determine the appropriate engagement approach
- Conduct shared mobility trainings with community-specific community liaisons

STRATEGY 3.4: CONTINUOUSLY UPDATE SEATTLEITES ABOUT MOBILITY INNOVATIONS

Marketing and educating about new mobility will be critical to ensure Seattleites understand the changes happening in the transportation sector. By serving as a conduit between new concepts and our residents, this new role transcends our conventional responsibility for community outreach and consultation. This strategy requires testing various types of media to keep people informed and provide a feedback loop on policy, program, and project-related issues.

First Moves

None

Further Actions

Tactics	Partners	SDOT Role
Provide information about shared mobility at community events (e.g., project and planning open houses, farmer's markets, etc.)	DON, OPCD, OSE, CBO, FP	F A C
Use ethnic media to convey benefits and 101-level info about shared mobility	DON, CBO, FP	A
Create a new mobility webpage on the SDOT website featuring data dashboards, reports and policy documents, educational materials, and an events calendar	FAS, DON	F T A
Host an ongoing Mobility Innovations Speaker Series to familiarize the public with new mobility concepts	PCD, MP, IP	A C T
Create marketing partnerships with shared mobility companies	DON, KCM, ST, MP	A
Create an online calculator to compare private car expenses with shared mobility expenses (including public transit)	KCM, ST, PSRC, PSC, FP	A

Implementation and Regulatory Considerations

- **Develop targeted outreach and education strategies and materials for immigrant and refugee communities**
- **Develop promotional and educational collateral about shared mobility to be used during community events**
- **Work with SDOT data scientists to establish open data dashboards**

STRATEGY 3.5: PURSUE NIMBLE REGULATIONS THAT MEET THE PUBLIC GOOD WHILE SPURRING INNOVATION

Seattle continually advances a welcoming regulatory environment for shared mobility operators, dating back to the launch of the country's first car sharing service—FlexCar. Altogether, more than a half-dozen app-enabled car share, ridesourcing, and ridematching companies currently operate in our city. However, our current regulatory tools and frameworks are being challenged as disruptive shared mobility services arise and blur the lines between traditionally distinct service models. We will revisit our regulatory approach to ensure innovative mobility services can both thrive and fulfill key policy objectives like equity, accessibility, curb management, and first- and last-mile connections to public transit.

First Moves

Moves	Partners	SDOT Role
Establish and continually update a joint set of regulatory principles to guide ongoing regulatory and legislative efforts (see SDOT's regulatory considerations in Appendix D)	OIR, FAS, KCM, KCL	ACT

Further Actions

Further Actions	Partners	SDOT Role
Collaborate with local and statewide partners to develop an umbrella regulatory framework for new mobility services that maintains core local regulatory and management functions	OIR, FAS, KCM, KCL, PSC, MP, CBO	ACT
Track state and federal legislative activities that impact SDOT's ability to manage and embrace shared mobility, data sharing, and other mobility-related technology	OIR, FAS, KCM, KCL	BAC
Work with King County Metro and King County Records and Licensing Services to develop a regulatory and permitting framework for microtransit services, including fees and service parameters	OIR, FAS, KCM, KCL, MP	ICT
Work with King County Records and Licensing Services and other Puget Sound cities to develop a regional permitting framework for car sharing services	OIR, FAS, KCM, KCL, PSC, MP	ICT

Implementation and Regulatory Considerations

- Maintain a strategic partnership with King County Metro and Records and Licensing Services on all regulatory work, continually revising the joint regulatory principles in response to industry disruption
- Convene focus groups or individual meetings with shared mobility service providers to understand regulatory challenges and opportunities to achieve shared objectives with new regulatory approaches
- Update the Utility and Transportation Commission's Washington Administrative Code to clearly define the role and regulations related to microtransit operations

STRATEGY 3.6: ESTABLISH NEW TRANSPORTATION FUNDING MECHANISMS IN RESPONSE TO THE CHANGING FINANCING LANDSCAPE

Increasing use of electric and other fuel-efficient vehicles, ridesourcing services, and the coming wave of automated vehicles signals the decline and eventual demise of gas tax, Commercial Parking Tax, and on-street parking revenues (including fines). Political changes at the federal level can also challenge our commonly-held funding assumptions. The changing transportation funding landscape will impact how we pay for the services and infrastructure that keep our citizens moving and jeopardize financing for future transportation capital improvements. The future will revolve around creative revenue and partnership models.

We see this disruptive climate as an opportunity, rather than a threat, as new revenue streams are created. Morgan Stanley's 2016 Autonomous Vehicles & Municipal Bonds report estimates that the revenue models associated with automated vehicles will generate a half trillion dollars for city budgets across the nation. We will advance new funding models like road and curb use pricing, commodifying data as a service, and leveraging innovative partnerships to fund major capital projects.

First Moves

None

Further Actions

Further Actions	Partners	SDOT Role
Develop variable fee mechanisms for TNC and car share services that increase vehicle occupancy and manage congested corridors during the peak commute hours	FAS, OPI, KCM, KCL	I A T
Conduct a funding partner analysis to understand the universe of potential local and regional partners	OED, FP, CBO, KCM, ST	I B C
Investigate the feasibility, process, and implementation considerations related to congestion pricing (e.g., gantry-less cordon tolling)	OIR, FAS, OPI, OCR, DON, WSDOT, KCM, ST, CBO, FP, TP, IP, RP	I F A C T
Begin lobbying to enable statewide vehicle miles traveled road use fees	OIR, KCM, ST, WSDOT, CBO	A C T
Develop an equity strategy and low-income eligibility program for congestion pricing and vehicle miles traveled road use fees	OPI, OCR, DON, WSDOT, KCM, ST, CBO, FP, TP, IP, RP	I A C T
Monetize and commodify real-time data for sale to private roadway users, shared mobility services, and infrastructure providers	IT, FAS, MP, IP, TP, RP	I B T
Revise the sign code to capitalize on advertising revenue opportunities with digital kiosks and other smartscaping features	OPI, FAS, IT	I A T
Establish demand-based curb use pricing for fleet services tied to appropriate data sharing and auditing agreements	FAS, OPI, KCM, KCL	I A T
Monetize the use of City parking facilities for public and private electric fleet vehicle charging	FAS, MP, IP	I F B T

Implementation and Regulatory Considerations

- Consider the use of fee discounts for mobility services that provide detailed historic and real-time data
- Establish a strategic community outreach and public relations campaign to advance pay-as-you-go and congestion charging revenue models
- Obtain authorization from the Washington State Legislature to pursue pay-as-you-go and congestion charging revenue models (toll rates and exemptions will be determined by the Washington State Transportation Commission

As more people use ridesourcing and ridesplitting services, our $64 million in annual parking revenue and fines will steadily decline and demand for passenger loading zones will increase.

STRATEGY 3.7: BUILD STRATEGIC MOBILITY PARTNERSHIPS WITH KING COUNTY METRO, SOUND TRANSIT, AND OTHER PUBLIC AND PRIVATE ENTITIES

We cannot achieve the vision of ubiquitous mobility for all without the contributions, innovation, and buy-in of our diverse regional partners. Disruption in the transportation sector has regional impacts and require local and regional solutions. We will foster a collaborative ethos with our public and private mobility partners to:

- Exchange ideas and lessons learned on processes, pilots, and policies
- Uncover technology and transit integration opportunities
- Grow the transit market
- Research ongoing problems related to equity and right of way use
- Pursue grant and foundation funding opportunities
- Engage with influential change-makers like Challenge Seattle to help drive policy change and generate momentum on key initiatives

First Moves

None

Further Actions

Further Actions	Partners	SDOT Role
Work with regional partners to update transportation planning processes and develop analytical tools that reflect the new mobility paradigm	KCM, ST, PSRC, WSDOT, PSC, MP	A C T
Meet regularly with private mobility providers to advance research and pilot, innovative service partnerships	OED, KCM, ST	I C
Convene a regional innovative mobility working group to advance regional shared mobility initiatives, ensure ongoing coordination and partnership, and evaluate new technologies	KCM, ST, PSRC, WSDOT, PSC	B A C T
Establish a Seattle transportation technology industry mixer with regular meet ups to exchange ideas and build partnerships	KCM, ST, MP, ME, FP	C
Connect SDOT's New Mobility Playbook with the work of Challenge Seattle and the University of Washington's various mobility research teams (e.g., Mobility Innovation Center)	FP, RP	B C

Implementation and Regulatory Considerations

- Identify the key policymakers and implementers at local public agencies to engage in the regional innovative mobility working group
- Catalogue mobility-related or supportive companies, services, and apps in the Puget Sound region to keep abreast of partnership and ideation opportunities
- Advance multi-agency data sharing pilots (including the trusted data and Mobility as a Service platforms)
- Use the research capabilities of the University of Washington's research centers (i.e., CoMotion/Mobility Innovations Center and PacTrans) during pilot and rapid prototyping projects

STRATEGY 3.8: ATTRACT MOBILITY COMPANIES, SERVICES, AND JOBS TO SEATTLE'S BURGEONING MOBILITY INDUSTRY CLUSTER

Successful and economically resilient cities have a common thread: they reinvent themselves and stay relevant by nurturing the growth of new industries. Companies and talent tend to cluster in cities that strategically grow new industry. This cycle of clustering and reinvestment is occurring in Seattle today in the mobility industry. Over the past five years, Seattle has seen an influx in mobility-related companies like ReachNow, Uber, and Lyft, and mobility industry jobs are growing. Homegrown mobility services like Moovn, Motor, and Luum are also injecting new ideas and fresh perspectives on how to deliver and manage mobility in our city. We will continue to nurture our burgeoning mobility industry cluster.

First Moves

None

Further Actions

Tactics	Partners	SDOT Role
Develop a "pitch book" showcasing our vision for new mobility and innovation as a way to attract talent and companies to Seattle	OED	I A
Inventory mobility-related or supportive companies, services, and apps located in Seattle, including number of employees, number of patents, and economic influence	OED, MP, IP, TP	A C
Develop a shared and automated mobility workforce development strategy	OED, OCR, OLS, DON, OSE, KCM, ST	A C T
Investigate the feasibility, constraints, and permitting options of a private scooter share system	OPI, KCM, ST, ME, OEM, TP	I F
Leverage the Seattle Office of Economic Development's expertise to conduct a scan of established and emerging transportation technology and OEM companies that are candidates to move to Seattle	OED	C
Work with the Seattle Office of Economic Development to lure an automated vehicle technology company or OEM to Seattle	OED, OPI, KCM	A C

Implementation and Regulatory Considerations

- Work with the University of Washington to conduct a scooter share feasibility study
- Use internal marketing and communications resources to promote new services and mobility industry cluster growth

STRATEGY 3.9: ENCOURAGE TRAVEL BEHAVIOR THAT ENSURES SAFE AND EFFICIENT PEOPLE MOVEMENT

Establishing a Mobility as a Service culture requires much more than digital tools and shared mobility services. As service-based transportation solutions continue to enter the Seattle market, we need to modify our approach to transportation demand management (TDM) and broaden our suite of solutions. Our TDM programming must adapt to new data, analytical tools, and frameworks like Mobility as a Service to achieve even greater reductions in SOV travel.

Building on the successes of our Commute Trip Reduction (CTR) and travel options programs like NavSeattle, we will leverage the behavioral change functions of Mobility as a Service to understand how people make their transportation decisions and nudge people to use the current infrastructure we have in place for walking, biking, transit, and other shared transportation modes. We will partner with shared mobility services and use a variety of incentives and regulatory tools to achieve a future of ubiquitous mobility options.

First Moves

None

Further Actions

Further Actions	Partners	SDOT Role
Adopt a citywide TDM ordinance for new development and major renovation projects that includes a menu of shared mobility amenities (including requirements for one-way car share vehicles and dedicated stalls in major residential developments), subsidies, real-time information to tenants and employees, and sensor deployment	PCD, DCI, KCM, DC, MP, ME	I B A C T
Promote shared mobility services to CTR- and non-CTR-affected work sites as a complement to public transit and an option for emergency trips home	KCM, ST, FP, MP, ME	I B A
Subsidize (or partially subsidize) ridesplitting trips and ridematching for pooled free-floating car share trips through the Mobility as a Service platform	KCM, MP, TP, ME	I F C T
Require transportation management plans and major institution master plans to analyze shared mobility demand and supply needs, promote supporting policies, programs, and capital investments (e.g., shared mobility hubs, loading zones, etc.), and include shared mobility and emerging mobility innovations as mitigating actions to major institution growth	ME, RP	A C T

Implementation and Regulatory Considerations

- Use future TDM ordinances to relax or completely remove parking requirements and encourage low parking construction in areas with parking maximums. This provision would occur in exchange for ongoing non-SOV mobility subsidies and a menu of travel option amenities like passenger loading zones, dedicated car share stalls, digital kiosks and wayfinding, and sensor installation to expand the connected infrastructure network and real-time data analytics platform.
- Leverage Commute Trip Reduction Program to provide incentives through employers
- Collect and analyze data that is generated from MaaS platforms to tailor TDM strategy and programming
- Deploy branded and effective marketing and outreach campaigns to promote shared mobility and increase adoption rates

PLAY 4

Build new information and data infrastructure so new services can "plug-and-play"

Our streets flow with a rich stream of data generated by traffic sensors, on-vehicle sensors, and mobile data from ridehailing, car share, and other services. This flow of data could give us more insights into the emerging travel patterns and the effects of new mobility services on the way people use transportation. But, the flow of data is currently unstructured and our community has concerns over their privacy. We will advance solutions that protect publicly identifiable information, while expanding our data infrastructure.

Approaching data not just as information, but also as infrastructure, could help us build a better platform for delivering mobility as a service: abundant shared mobility options, digital mobility marketplaces, seamless fare payment solutions, incentives and subsidies, and access to real-time mobility data. This data infrastructure could also help us develop clear rules so startups can roll out their prototypes and pilot services in Seattle.

STRATETGY 4.1: ACCESS RELEVANT DATA TO ENSURE THE PUBLIC GOOD IS SERVED

Effective management of a complex transportation network is built on a foundation of accurate and reliable data. Emerging Internet of Things sensor and data flow capabilities will unlock new ways to collect and collaboratively use data. As digitally-enabled mobility services transform how Seattleites travel, they generate tremendous amounts of historical and real-time data. However, we are unable to ascertain, analyze, or plan for these shifts in travel behavior in the absence of cooperative data sharing agreements. This information gap is creating drastic consequences for the transportation system. We must balance concerns over private mobility providers' sensitive business data with the need to make policy and investments informed by the best data available. We will employ a need-based approach to collecting mobility service and sensor data.

First Moves

Move	Partners	SDOT Role
Develop a digital data master plan to take stock of our data, establish data sharing standards, and create data handling and privacy standards for the trusted data platform, Mobility as a Service platforms, and connected infrastructure	IT,OPCD, PSRC, KCM, ST, RP, MP, TP, OEM	I B A C

Further Actions

Further Actions	Partners	SDOT Role
Expand our data collection tools including optical sensors, Bluetooth sensors, roadside units, and Array of Things functionality	IT, TP, IP, WSDOT	I F
Establish an open data protocol for shared mobility services and transportation technology, balancing objectives related to citizen-led innovation and private service provider protections	IT, KCM, ST, MP	I A T
Create a data cube or other multidimensional data matrix to organize and analyze complex new mobility data sets	IT	I B
Work with digitally-enabled mobility services to leverage telematics to assess roadway infrastructure quality	MP, OEM, RP	B C
Formalize a transportation happiness metric to continually track progress towards making our customers happy	DON, KCM, ST, RP, MP	B C T

Implementation and Regulatory Considerations

- Ensure that data agreements meet the requirements for transportation planning functions, including information by time of day, origin-destination, number of passengers per trip, connecting trip origin-destination, and other elements
- Ensure that data collected by SDOT and mobility providers protect citizen privacy
- Update TNC Ordinance to require more detailed historic and real-time data

STRATEGY 4.2: FACILITATE TRUSTED DATA FLOWS BETWEEN CONNECTED VEHICLES, SENSOR INFRASTRUCTURE, PERSONAL DEVICES, AND COMMUNITY DIGITAL DEVICES

The future of urban, data-driven mobility depends on government, private mobility companies, and the public having confidence that their data is being used in the way it's intended. Automated vehicles (AVs) will expose new real-time data connections between vehicles, infrastructure, connected devices, and third party data repositories. In a future of constant data flows, we will need to separate petabytes of data noise from data that is necessary to manage the right of way.

We are taking a proactive approach to gather, store, and unlock the value of AV-generated data. Data collection, storage, and privacy controls will be central to our work. New sensor systems will continue to collect vital data for City street management. We will establish robust requirements around data security and cybersecurity to ensure individual privacy is maintained and critical systems are not compromised. We will collaborate with our regional partners to build the data storage capacity needed to store, process, and analyze large data sets. We will also increase our broadband capabilities to ensure data flows are in real-time and latency is limited.

Our public transit investments have the most to gain from emerging mobility innovations and Internet of Things data flows. Coupled with our Move Seattle-funded transit speed and reliability corridor investments, real-time data can reduce transit travel times and significantly improve the passenger experience. We will leverage our data and right of way resources to ensure transit is reliable, and responsive to customer demands. Real-time routing, vehicle tracking, transit loads, and shared mobility availability will vastly improve how we operate the public right of way, and enhance the consumer experience navigating our transportation network.

First Moves

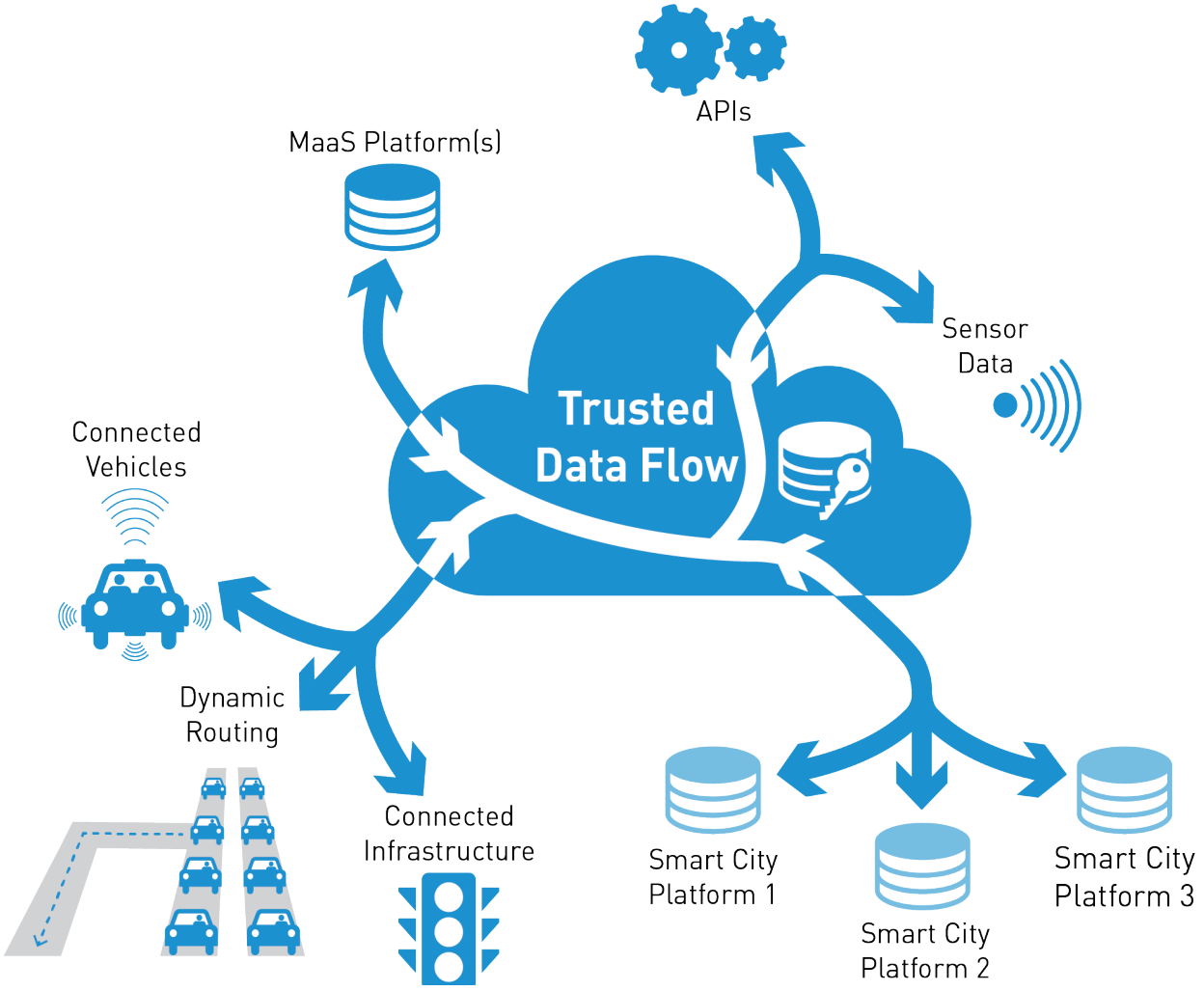
Move	Partners	SDOT Role
Work with regional and national partners to establish a neutral trusted data platform that houses data from new mobility service providers, sensors, and other data sources, automates data analytics, and enables predictive analytics	IT, KCM, ST, RP, PSRC, WSDOT, PSC, MP, TP, OEM	I B A C T
Establish a permit process that allows sensor infrastructure providers to expand the network of sensors at intersections and multiply vehicle-to-infrastructure (V2I) communications citywide	IT, IP, SCL, WSDOT	I T

Further Actions

Further Actions	Partners	SDOT Role
Work with Seattle IT and the University of Washington to establish data handling and privacy standards for all automated vehicles and service models to access the trusted data platform (Strategy 2.1), Mobility as a Service platforms (Strategy 4.4), and connected infrastructure	IT, OEM, PSRC, RP, KCM, ST, MP	A C T
Work with regional partners to share and integrate real-time data feeds, data analytics, and other data sets into the trusted data platform	IT, OEM, PSRC, RP, KCM, ST, MP, IP, TP, ME	A C T
Push parking information into trip planning apps so that people see parking costs and availability before they drive	DC, MP, TP	A C T

Implementation and Regulatory Considerations

- Integrate sensors into smartscaping and other coordinated street furniture elements
- Establish base memoranda of agreements to establish the trusted partnership with the University of Washington's Transportation Data Collaborative
- Determine data sharing standards for the data SDOT collects and requires of mobility services
- Ensure individual privacy is protected through proper encryptions and data privacy and handling policies
- Consider the needs of AV data collection and flow rates as 5G or better broadband implementation is deployed



STRATEGY 4.3: DEVELOP ANALYTICAL TOOLS THAT MODEL THE EVOLVING STATE OF MOBILITY

The impacts and opportunities of shared mobility have yet to be widely incorporated into citywide and regional planning processes. Our planning processes do not currently measure the existing or future market for non-transit shared mobility services, nor do they acknowledge the opportunities and potential pitfalls of automated mobility. State of the art analytical tools are just as important as reliable data sources. We will update our existing transportation planning methods and advance data analytics using in-house staff, research partners, and the civic tech community.

First Moves

None

Further Actions

Further Actions	Partners	SDOT Role
Leverage Bluetooth sensors to understand the level and impact of TNC, taxi, and for-hire vehicle cruising and risky driving behavior	FAS, IT	T
Develop a methodology to determine appropriate levels of shared mobility subsidies for different income levels	RP	B C T
Work with local and national research institutions and private foundations to prototype new analytical tools and services	KCM, ST, PSRC, WSDOT, RP	B C T
Partner with King County Metro, University of Washington, and other regional partners to train staff in data analysis and visualization and search for opportunities to pool data and expertise across agencies	KCM, ST, PSRC, WSDOT, RP, ME	B C
Create analytical methods that monitor inequities in shared and other new mobility services	KCM, ST, PSRC, RP	B C T
Develop a shared mobility hub access demand forecasting tool	KCM, ST, PSRC, RP	C T
Create ridesourcing and car share loading demand methodologies for Urban Villages and Urban Centers to determine block-level loading supply needs	MP, KCM, RP	B C T
Integrate assumptions related to shared mobility supply and demand into trip generation and passenger loading rates used in traffic impact analyses and development review	PCD, PSRC, WSDOT, RP, ME	I T
Work with PSRC and other local cities to update the base assumptions in the activity-based regional travel demand model to reflect Mobility as a Service and other emerging mobility trends	PCD, KCM, PSRC, WSDOT, RP	A C T

Implementation and Regulatory Considerations

- Adopt a "building blocks" approach for analytical tools that will evolve into a solid foundation for reporting.
- Host biannual Hackathon events involving local and national research partners and the civic tech community to develop analytical tools and real-time monitoring dashboards

STRATEGY 4.4: ESTABLISH AN OPEN MARKETPLACE FOR MOBILITY AS A SERVICE

Imagine being able to see all your transportation options for every trip, weigh the time, cost, and environmental tradeoffs of these options side-by-side, and purchase your fare with one app. This is Mobility as a Service (MaaS) and it allows you to purchase mobility services like transit, car sharing, ridehailing, bike share, and microtransit based on consumer preferences and real-time availability instead of buying the means of transportation. Customers can pay-as-they-go or purchase mobility packages based on their individual or their family's monthly needs. Beyond the basic trip planning function of the platform, MaaS provides seamlessly integrated fare payment across modes and "gamified" incentive programs that nudge people to use high-occupancy modes and travel during off-peak times.

We will partner with various public and private sector partners to create a competitive marketplace for Mobility as a Service retailers to develop mobility aggregation apps. This marketplace could enable endless levels of customization and innovation, while the consumer experience is maximized. Our role is not to own a MaaS platform, but rather to establish the operating parameters and performance metrics that governs a MaaS operator's access to mobility provider APIs, real-time data made available through trusted data collaboratives (see Strategy 2.1), subsidies and incentives, and even managed lanes.

First Moves

Moves	Partners	SDOT Role
Develop a Mobility as a Service platform that enables an open marketplace for mobility aggregation apps to compete and meet customer needs	IT, RP, KCM, ST, MP, TP	I F B A C T

Further Actions

Tactics	Partners	SDOT Role
Develop a Mobility as a Service concept of operations, including functional requirements, service parameters, and data privacy/handling policies	IT, RP, KCM, ST, MP, TP	I F B A C T
Develop a Mobility as a Service branding, marketing, and outreach strategy prior to platform launch to ensure the concept is socialized and accepted by the community	DON, CBO	I F B A
Help secure seed funding for the base Mobility as a Service platform with public and private partners	KCM, ST, RP, MP, TP, ME, FP	F A C
Tether the base Mobility as a Service platform to the Trusted Data Platform to ensure mobility providers can securely integrate their APIs and customers are routed efficiently with real-time data[2]	IT, RP, KCM, ST, MP, TP	I F B A C T
Integrate behavioral economics functionality to test incentives like mobility lottery, high-occupant vehicle and off-peak nudges, and rewards programs	RP, KCM, ST, MP, ME, FP	A F T
Ensure interoperability between Mobility as a Service mobility bundle payments and Next Generation ORCA fare payments	KCM, ST, RP, MP	A C T

[2] Data aggregation, participation from all shared mobility providers, and robust data sharing/API integration agreements will be challenging if a trusted data network is not implemented.

Implementation and Regulatory Considerations

- Leverage SDOT assets (e.g., curbspace, managed lanes, access to data, etc.) and funding (e.g., subsidies and incentives, etc.) to strengthen Mobility as a Service policy parameters
- Integrate travel costs, travel time, environmental impact, health impact, transfer penalty, and other mode choice tradeoffs into the Mobility as a Service platform's integrated trip planning feature
- Develop a traveler incentive pilot with local retailers to reward low-impact mode choice and off-peak travel
- Develop a menu of digital equity, community education, and outreach solutions to ensure adoption in underserved neighborhoods and immigrant communities
- Envision long-term features with local technology companies that will enhance the customer experience (e.g., augmented reality, machine learning, etc.)
- Use the expertise of local app developers, technology company partners, and the civic technology community to optimize the user interface design of MaaS apps

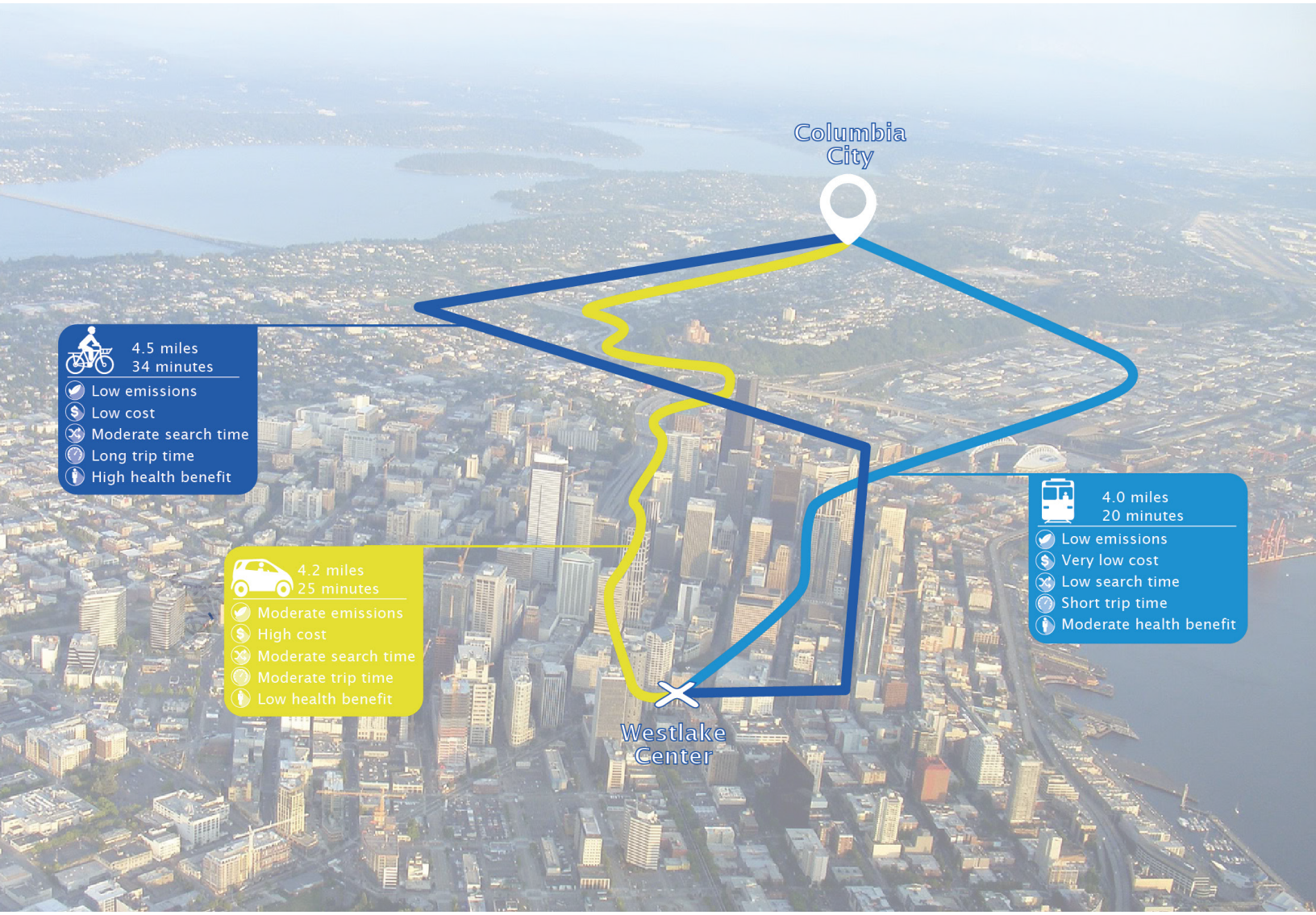


Image from Seattle Department of Transportation

STRATEGY 4.5: SIMPLIFY AND ENHANCE THE FARE PAYMENT EXPERIENCE

Fare payment systems that are intuitive and function across various shared mobility modes could be an important determinant of reducing drive alone trips in the future. The Puget Sound's One Regional Card for All (ORCA) fare card system is nearing its end of life, providing a unique opportunity for account-based and multimodal fare payments in Seattle. While SDOT is not currently an ORCA Joint Board member, we seek to streamline the fare payment experience when using shared mobility services using your preferred form of fare payment (e.g., tap card, mobile payment, cash, etc.). Ultimately, a customer should be able to seamlessly pay for a trip using a Next Generation ORCA account through the Mobility as a Service platform.

First Moves

None

Further Actions

Further Actions	Partners	SDOT Role
Collaborate with the current ORCA technology contractor to integrate the current fare card with other shared mobility services and parking management systems	KCM, ST, RP, MP, TP	A T
Consider joining the ORCA Joint Board to provide more direct policy influence	OPI	A T
Work with the ORCA Joint Board to ensure the Next Gen ORCA is designed as an open architecture platform and seamlessly integrates multimodal fares	KCM, ST, MP, TP, MP	A T
Explore options to introduce special fares targeted for shared mobility trips that feed public transit	KCM, ST, MP, TP, MP	A T
Integrate the Next Generation ORCA e-purse into Mobility as a Service platforms	KCM, ST, MP, TP, MP	A T

Implementation and Regulatory Considerations

- **Work with shared mobility providers to understand the technical needs and challenges of integrating their APIs into Next Gen ORCA**

STRATEGY 4.6: UNLOCK NEW OPPORTUNITIES FOR TRIP PLANNING

While our residents enjoy a high rate of access to personal digital devices (roughly 85%), not all Seattleites are willing or able to purchase a smart phone, tablet, or personal computer. As Seattle's menu of transportation options are increasingly more reliant on digital, app-based technology, we need to ensure that all Seattleites can enjoy the benefits these new mobility services.

We will provide multiple avenues for Seattle residents and visitors to access real-time mobility information and plan trips. Whether your mobile device is out of battery or you do not have access to a phone, we aim to offer the same customer service as someone with the latest smart phone technology. We will work with the private sector to "smartscape" our public spaces with digital displays and interactive kiosks accessible to all in the community. These digital engagement features will connect people to trip planning tools as well other community applications and information sources. We will also expand access to digital devices in retail shops, community centers and other public institutions.

First Moves

Moves	Partners	SDOT Role
Democratize and test technology in the public right of way such as interactive digital kiosks and other information interfaces	PCD, DCI, DC, MP	I F T A

Further Actions

Further Actions	Partners	SDOT Role
Provide community accessible tablets for people to access trip planning services, Mobility as a Service, and other community services	IT, KCM, ST, DC, IP, TP	I F T A
Work with regional transit partners to develop a concierge-trip planning and booking service	KCM, ST, CBO, FP	A T
Ensure MaaS platforms are available to all by integrating into community digital kiosks and tablets displays	IT, KCM, ST, DC, IP, TP	I F T A

Implementation and Regulatory Considerations

- Develop a phasing strategy to make community digital kiosks and tablets available citywide
- Ensure trip planning tools are translated into multiple languages
- Develop public private partnerships with private infrastructure providers to expand the number of public digital tools available in public spaces

PLAY 5

Anticipate, adapt to, and leverage innovative transportation technologies

We are establishing a policy framework that anticipates new, potentially disruptive technologies and ensures they help us meet our broader community goals. Our vision for automated mobility focuses on shared transportation, connected movement, and clean vehicle technology. We will pursue these technologies to complement our robust investments in transit. We will manage the negative impacts of single-occupant and zero occupant vehicles. We will also advance innovations in electric mobility and other clean fuels. We are setting the goal of making sure that, by 2030, at least 30 percent of all light duty vehicles registered in Seattle will be electric.

STRATEGY 5.1: ESTABLISH A COMPREHENSIVE SET OF PEOPLE-FIRST POLICY PARAMETERS TO INTRODUCE AND MANAGE FULLY SHARED, ELECTRIC, CONNECTED, AND AUTOMATED VEHICLES

Automated vehicles (AVs) have the potential to dramatically reduce traffic deaths and serious injuries, helping us achieve our Vision Zero safety goals. Shared automated fleets could also strengthen connections to and from public transit, and dramatically reduce the personal costs of mobility. How do we transition to a future with connected and automated vehicles without exacerbating congestion and land use impacts? Our vision for automated mobility focuses on shared, connected, and electric mobility, managing the negative impacts of single-occupant and zero occupant vehicles, while leveraging this eminent tool to feed into our robust transit investments.

Automated mobility in Seattle will be human-centered in its design. Like any other emerging technology, we must shape how automated mobility impacts and benefits our citizens even as the details of the technology are in flux. We will plan for the inevitable emergence of connected and fully automated vehicles with a historical lens. We have a century's worth of experience understanding and managing the impacts of motor vehicles. As automated vehicles arrive in Seattle, we must ask: What do we want our city to look like? To what extent should we use these new technologies to ensure our citizens are included, happier, healthier, safer, and more financially secure?

Our strategy to successfully deploy automated mobility boils down to four elements: Policy Framework, Platforms for Data Flows, Pilot Testing, and Promotion within the community. We will develop and continually update policy parameters that directs us toward a future with fully automated, shared, connected, and electric mobility. But first and foremost, Seattle will be a walkable, bikeable, transit-oriented, and innovation-friendly city. Our approach balances innovation with setting clear expectations for management and operating parameters. We aim to:

1. Continue **prioritizing the needs of people** walking, biking, and taking transit and leveraging the growth of our robust transit network

2. Support the **development and testing** of automated mobility technology, learning from the **pilots and partnerships** with local and national technology and operating equipment manufacturers (OEMs)

3. Establish clear **policy parameters** that ensure automated vehicles help achieve the Mayor's five core values and our shared and emerging mobility principles —not counteract them

First Moves

Moves	Partners	SDOT Role
Democratize and test technology in the public right of way such as interactive digital kiosks and other information interfaces	PCD, DCI, DC, MP	I A F T

Further Actions

Further Actions	Partners	SDOT Role
Adopt the Automated Mobility Policy Framework as an ordinance and require annual updates to reflect changes within the automated mobility industry[3]	OPI, PCD, OEM, MP, TP	
Integrate automated mobility concepts and policy direction into SDOT's pedestrian, transit, bicycle, and freight master plans	OPI, PCD	
Develop an automated mobility modal plan to establish Seattle's first functional classification system for automated vehicles and a network of peak period smart lanes dedicated to Level 4 and 5 automated vehicles	OPI, PCD, OEM, MP, TP, FP, ME, CBO, WSDOT	
Evaluate signal operations and traffic control warrants under an automated mobility paradigm	WSDOT, FP	
Develop a Transition to Full Automated Mobility Phasing Plan to seamlessly shift between human-driven vehicles to fully-automated vehicles	OPI, PCD, OEM, MP, TP, FP, ME, CBO, WSDOT	
Update minimum street design standards in Seattle's public ROW improvements manual, Streets Illustrated, to reflect changes in automated vehicle form factors		

Implementation and Regulatory Considerations

- While the State of Washington does not prohibit the use of automated vehicles with human drivers at the wheel, additional legislation will be needed to further define the rules surrounding licensing, piloting, and use of higher levels of automation
- Develop a lobbying strategy at the state and federal level to ensure that Seattle's policy framework and regulations for automated mobility are not preempted
- Develop an interim AV technology pilot permitting framework
- Study the regulatory needs for aquatic or aerial-based automated vehicles (e.g., delivery drones)

[3] See Appendix C for Seattle's Preliminary Automated Mobility Policy Framework.

STRATEGY 5.2: USE PILOTS AND PROMOTIONS, TO MANAGE THE TECHNOLOGICAL AND CULTURAL SHIFT TO AUTOMATED TECHNOLOGY

The public perception surrounding automated vehicles with mixed reviews. A recent national survey found that 60% of people surveyed have limited to no understanding about automated vehicles. We are concerned that senior, low-income, and immigrant/refugee populations are unprepared for a world where most if not all vehicles are fully automated. Pilots, education, and public outreach will be critical to ensure the public can shape how automated vehicle roll out onto our streets.

We will develop pilot partnerships with operating equipment manufacturers (OEMs) and technology companies to test this nascent technology in Seattle's complex operating environment for all to observe. We are also committed to understanding and being transparent about the potential positive and negative implications of automated mobility. We will conduct market research, focus groups, and community forums to educate the community about AV technology and gather the community's ideas and concerns. Working with the Office of Economic Development, Office of Labor Standards, and the Office of Civil Rights, and the Office of Sustainability and Environment, we also aim to identify and pilot new labor models that could serve as a blueprint for other cities in the State of Washington and across the nation.

First Moves

Moves	Partners	SDOT Role
Analyze the labor implications of automated and electric mobility strategies to mitigate job loss, identify new growth areas for people of color, low-income, immigrant, and refugee communities, and pinpoint workforce development and training needs	OPI, DON, OCR, OLS, RP, KCM, ST, CBO, FP	I F B C T

Further Actions

Further Actions	Partners	SDOT Role
Work with regional partners to pass State legislation or an Executive Order that enables Level 4/5 automated vehicle testing in Washington	OIR, OPI, FAS, KCM, KCL, RP, ST	A C T
Develop partnerships with automated vehicle technology companies and OEMs to begin testing on City streets	OPI, KCM, OEM, MP, TP	I F B C T
Establish clear outreach milestones, community action triggers, and public communication protocols as part of the Transition to Full Automated Mobility Phasing Plan (see Strategy 5.1)	OPI, DON, OCR, OLS, RP, FP, CBO	I B C T

Implementation and Regulatory Considerations

- Work with the State to minimize regulatory barriers to testing Level 4 and 5 automated private vehicles, shared vehicles, and freight that operate on City streets
- Integrate SDOT's Transportation Equity program into automated mobility piloting, community research, public education, and promotional work
- Establish a behavioral economics pilot to understand price elasticities of automated mobility and incentivize shared rides through the Mobility as a Service platform(s)
- Consider delivering the following pilots: Automated first/last-mile and late night service shuttle with public transit partners; SAE Level 4 and 5 automated vehicle and V2I data flow pilots with permitted technology companies and OEMs; and Automated "Final 50 Feet" delivery solution pilots in partnership with the University of Washington's Urban Freight Lab

STRATEGY 5.3: PROMOTE THE SHIFT TOWARD ELECTRIC SHARED MOBILITY SERVICES

Seattle asserts itself as one of the nation's preeminent EV hubs. Thanks to carbon-neutral electricity from Seattle City Light, each gallon of oil which is replaced with electricity equates to a 100% reduction in carbon pollution. According to the Electric Power Research Institute, 4,784 vehicles in Seattle are registered as plug-in EVs, representing roughly 22% of all plug-in EVs in the State of Washington. As of the end of 2015, Seattle ranked 7th of the 50 largest US cities in both highest electric vehicle sales share (2nd highest outside of California) and most extensive public electric charging infrastructure (3rd highest outside of California).

Shared mobility fleet vehicles typically drive many more miles per year than the average vehicle. This necessitates a shift towards electrification to maximize the economic and environmental returns on investment. Shared electric vehicles (EV) present an opportunity to reduce emissions and ensure a cleaner and healthier future for the region. As electric vehicles become more affordable, these Further Actions will encourage new electric shared mobility models to emerge and support the rapid adoption of shared electric fleets by car share companies and TNCs.

First Moves

Moves	Partners	SDOT Role
Adopt a policy framework and permit program that enables electric vehicle charging in the public right of way	OSE, DCI, SCL, MP, TP, DC, FP	I, B, A, C, T
Strategically site electric vehicle fast charging infrastructure at shared mobility hubs to facilitate electric shared mobility	OSE, DCI, SCL, ST, KCM, MP, DC, ME	I, A, C, T

Further Actions

Further Actions	Partners	SDOT Role
Reduce permit fees for fully electric car share vehicles	OPI, OSE, MP	I
Support free-floating electric bike share with charging infrastructure	OSE, MP, TP, IP, OEM	I, F, C, T
Develop an off-street electric vehicle charging master plan to promote vehicle charging for households without a private driveway	OSE, PCD, DC, ME, FP	I, F, B, A, C, T
Allow neighborhood electric vehicles (NEVs) on all streets with a speed limit 25mph or below	OPI, OSE	I, T
Revise the zoning code to allow shared EV parking at single-family residential properties (i.e., on private driveways) or at multi-family housing (i.e., within private parking structures)	DCI, PCD, SCL, OSE, MP, DC, ME	I, A, C, T
Revise the zoning code to require all or a percentage of new parking stalls to be furnished with Level 2 EVSE infrastructure	DCI, PCD, SCL, OSE, MP, DC, ME	I, A, C, T
Advance the idea of an electric vehicle parking brokerage for neighborhoods	OSE, CBO, FP, MP, DC, ME	I, A, C, T

Further Actions	Partners	SDOT Role
Reduce the licensing fees for electric TNC vehicles	OPI, FAS, KCM, KCL, MP	I
Provide Wheelchair Accessible Services funding to electrify the WAT fleet	KCM, KCL, FAS, MP, TP	I, F, B, A, C, T
Develop a shared mobility fleet fueling program and business plan at the Seattle Municipal Tower and SeaPark parking structures as a way to encourage electric shared mobility	FAS, SCL, OSE, MP	I, B, T

Implementation and Regulatory Considerations

- Allowing widespread electric vehicle charging stations in the public right-of-way will require City Council approval and coordination with utility companies
- Permitting neighborhood electric vehicles to operate on City streets will require a City Council adopted ordinance

Image from Ecomento

STRATEGY 5.4: SUPPORT KING COUNTY METRO IN THEIR EFFORT TO ACHIEVE A ZERO-EMISSIONS FLEET BY 2034

The 2015 King County Strategic Climate Action Plan includes goals to double transit ridership by 2040, increase usage percentage of alternative fuels and expansion of transit service through 2020 with no increase in greenhouse gas emissions. Currently, Metro Transit operates one of only five electric trolley systems in the United States and nearly 70% of Metro's fleet is comprised of either all-electric or hybrid-electric vehicles. Considering Metro has one of the largest transit vehicle fleets and the largest public vanpool programs in the nation, transitioning to an electric fleet would not only reduce greenhouse gas emissions within the region, but also influence the worldwide market for electric transit vehicles. We will work with King County Metro to advance their fleet electrification initiatives and provide fleet charging infrastructure.

First Moves

None

Further Actions

Further Actions	Partners	SDOT Role
Support and actively coordinate with King County Metro's process to site electric bus and van charging stations on publicly owned or on-street locations	KCM, DCI, SLC, OSE, PSE	B C
Coordinate with King County Metro and utility companies to ensure sufficient power can be provided to meet charging station needs	KCM, DCI, SLC, OSE, PSE	B C
Educate the public on the benefits of an electric fleet and its important role in reducing greenhouse gas emissions	KCM, OSE	I F C
Continue to market and promote the Metro VanPool program in all communities	KCM	I F C

Implementation and Regulatory Considerations

- Manage technology and manufacturing risks for scaling up electric bus fleet
- Collaborate with King County Mero to test vanpool fueling at the Seattle Municipal Tower and SeaPark parking structures as well as layover charging using DC fast charge infrastructure at select shared mobility hubs
- Support expanded procurement of electric buses
- Partner with King County Metro on vehicle technology grants