BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF ADOPTING THE 2018 EMERGING TECHNOLOGY STRATEGY	)))))	RESOLUTION NO. 18-4869 Introduced by Chief Operating Officer Martha Bennett in concurrence with Council President Tom Hughes

WHEREAS, since the Metro Council adopted the Regional Transportation Plan (RTP) in 2014 there has been a proliferation of new transportation technologies and services, including ride-hailing services, car share services, bike and scooter share services, and traveler information services; and

WHEREAS, in 2014 the Metro Council adopted the Climate Smart Strategy via Ordinance No. 14-1346B, which calls for the use of technology to actively manage the transportation system as one of the key strategies for reducing greenhouse gas emissions from light-duty vehicles in the greater Portland region; and

WHEREAS, from 2016 through 2018 Metro staff conducted outreach to stakeholders across the region regarding their perspectives concerning the impacts of emerging technology on transportation and their priorities for implementing new technologies, which formed the basis for a draft set of policies and near-term implementation actions that were further refined based on feedback from the Metro Council, Metro advisory committees, and technology-related stakeholder groups as part of developing a new regional Emerging Technology Strategy (ETS) to be adopted concurrently with the 2018 RTP; and

WHEREAS, Metro released the initial draft of the ETS for public review and comment on June 29, 2018; and

WHEREAS, Metro provided a 45-day public comment period on the draft ETS from June 29 to August 13, 2018, and received comments through September 6, 2018; and

WHEREAS, the Metro Council held a public hearing on August 2, 2018 to accept public testimony and comments regarding the draft ETS; and

WHEREAS, Metro staff invited four Native American Tribes, the Federal Highway Administration, the Federal Transit Administration, the ports of Portland and Vancouver, and other federal, state and local resource, wildlife, land management and regulatory agencies to consult on the public review draft ETS in accordance with 23 CFR 450.316, and convened four separate consultation meetings on August 6, 14 and 21 and September 6, 2018; and

WHEREAS, the Metro Council, the Joint Policy Advisory Committee on Transportation (JPACT), the Metro Policy Advisory Committee (MPAC), the Metro Technical Advisory Committee (MTAC), the Transportation Policy Alternatives Committee (TPAC), the Federal Highway Administration, the Federal Transit Administration, technology companies and stakeholder groups including the University of Oregon Sustainable Cities Initiative, the Regional Smart City Action Planning group convened by Portland State University and the City of Portland, the Technology Association of Oregon, local government elected officials and staff, business and community leaders, public agencies, private and non-profit organizations and the public, assisted in the development of the ETS and provided comment on the ETS throughout the planning process conducted for the 2018 RTP update; and

WHEREAS, JPACT and MPAC have recommended approval of the ETS by the Metro Council; and

WHEREAS, the Metro Council held two additional public hearings on the ETS identified in Exhibit A on November 8, 2018 and December 6, 2018; now therefore,

BE IT RESOLVED that the Metro Council hereby adopts the 2018 Emerging Technology Strategy attached to this Resolution as Exhibit A, as amended by the "Summary of Comments Received and Recommended Actions" in Exhibit B, as a component of the 2018 Regional Transportation Plan.

ADOPTED by the Metro Council this _____ day of _____, 2018.

_____
Tom Hughes, Council President

Approved as to Form:

_____
Nathan A. S. Sykes
Acting Metro Attorney

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Metro

PUBLIC REVIEW DRAFT

2018 Regional Transportation Plan

Emerging Technology Strategy

A strategy for guiding innovation to support the greater Portland region's goals

June 25 2018

oregonmetro.gov/rtp

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Metro is the federally mandated metropolitan planning organization designated by the governor to develop an overall transportation plan and to allocate federal funds for the region.

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Project web site: oregonmetro.gov/rtp

		ITEMS FOR CONSIDERATION - Comments on Draft Regional Emerging Technology Strategy (by chapter)						
#	Chapter or Appendix	Last name	First name	Affiliation	Date	Method	Proposed change identified in comment (changes shown in ~~strikeout~~ and <u>underscore</u>)	MPAC and JPACT recommendation (changes shown in ~~strikeout~~ and <u>underscore</u>)
362	Emerging Technology Strategy Chapter 3	Hagerbaumer	Chris	Oregon Environmental Council	8/11/18	Letter	(Section 3.2.4.3) Suggestion to specifically state that one way to ensure that emerging technologies are shared is to price them in a way that encourages several passengers, rather than zero passengers." "One principle states: 'Emerging technology companies and users should contribute their fair share of the stewardship cost of operating, maintaining and building the transportation system' OEC agrees."	No change recommended. This is already addressed in the RTP policies and the Emerging Technology Strategy, which goes into greater detail about how these policies can be implemented. Policy 2 in Section 3.2.4.3 commits to "Use emerging technology to improve transit service, provide shared travel options throughout the region and support transit, bicycling and walking." The first implementation action listed under this policy in the ETS is to "Price, manage and design streets to reduce vehicle miles traveled and prioritize transit use and shared travel." Other RTP policies calls for more general pricing of vehicle travel, which would also apply to shared vehicles: - "Expand the use of pricing strategies to manage vehicle congestion and encourage shared trips and use of transit." (RTP Goal 2, Objective 4.6, p. 2-15.) - "In combination with increased transit service, consider use of value pricing to manage congestion and raise revenue when one or more lanes are being added to throughways." (Regional Motor Vehicle Policy 6, p. 3-52.)
363	Regional Emerging Technology Strategy All Chapters and Appendices			Metro staff	8/21/18	n/a	Miscellaneous technical corrections, copy edits, table and figure numbering corrections and add missing information	Amend as requested.
364	*Other comments and recommendations will be added from the RTP document comments and recommendations in Exhibit C to Ordinance No. 18-1421, as appropriate.*							Amend as requested.

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STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 18-4869, FOR THE PURPOSE OF ADOPTING THE 2018 EMERGING TECHNOLOGY STRATEGY

Date: September 26, 2018   Prepared by: Eliot Rose
                                                                     503-797-1825

BACKGROUND

The Portland region is nationally recognized for supporting transportation options and reducing vehicle miles traveled, and the Metro Council has demonstrated leadership in improving access to convenient, affordable, and environmentally sound transportation choices across the region. Innovations in transportation technology are bringing new transportation options to the greater Portland area, sometimes in a way that supports regional goals and sometimes in a way that conflicts with them.

In partnership with the region's cities, counties, ODOT, TriMet, other key stakeholders, Metro developed the 2018 Emerging Technology Strategy ("ETS"), attached as **Exhibit A** to Resolution No. 18-4869, as amended by Exhibit B, in order to guide innovation toward supporting regional goals. The ETS is the region's first "stand alone" plan focused on emerging transportation technologies, which include:

- New vehicle technologies such as autonomous, connected, and electric vehicles;
- New mobility services such as ride-hailing; car, bike, and scooter sharing; and microtransit, which use technologies such as smart phones, online mapping, and global positioning systems to connect travelers with vehicles or rides; and
- The increasing number of informational tools available to both travelers and transportation professional tools that draw on data generated by travelers.

Since Metro last updated the Regional Transportation Plan (RTP) in 2014, the region has seen a proliferation of new travel options and services including:
- **Ride-hailing services** (Uber and Lyft) that use apps to connect passengers with drivers who provide rides in their personal vehicles. These services began operating in cities throughout the region in 2015, and now cover the whole region. In the City of Portland, ride-hailing services now carry more people than taxis do,[1] providing over ten million rides within the city in 2017.[2]
- **Car share services** that allow people to rent a nearby vehicle for short trips and pay only for the time that they use. Car share service models include **stationary car share** (e.g., ZipCar, which has been serving the region for over a decade), under which cars are kept at fixed stations and users pick up cars from and return them to the same station; **free-floating car share** (e.g., Car2Go and ReachNow, which launched in Portland in 2012 and 2016 respectively, and have since expanded to other cities in the region), which allows people to pick up and drop off cars anywhere within a defined service area; and **peer-to-peer car share** (e.g., Getaround and Turo, which launched in 2012 in Portland and recently expanded their offerings), which enables people to rent cars from their neighbors on a short-term basis. There are over 1,000 station-based and

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[1] http://www.oregonlive.com/commuting/index.ssf/2015/10/uber_lyft_now_dominate_portlan.html
[2] Conversations with Portland Bureau of Transportation staff and commissioners.

free-floating car share vehicles located throughout the region, primarily near transit stations and regional centers,[3] as well as hundreds of vehicles that are shared through peer-to-peer apps.

- **Bike and scooter share services** that offer bikes or electric scooters for short-term rentals within a defined service area, typically using apps to manage access to the system. The City of Portland launched its own bike share system, Biketown, in 2016, which carried over 300,000 rides in its first year. In 2018 Portland started a four-month scooter pilot program under which three companies, Bird, Skip, and Lime, carried close to 50,000 rides in the first two weeks.[4] Some large employers in the region operate bike share systems, and companies have reached out to cities outside of Portland within the region about launching bike share service.
- **Traveler information and payment services** that allow people to learn about and pay for their travel options online. These services can help people compare different ways of getting around (moovel, Google Maps), get detailed information on their mode of choice (TransitApp, Ride Report, Waze), track and share their trips (Strava, MapMyWalk) and pay for trips (TriMet's Tickets app, Uber/Lyft). According to surveys conducted by Metro, more people now get travel information from online services than from any other medium.

The rapid growth of these services has implications for the region's adopted Six Desired Outcomes[5] and RTP goals, both of which include outcomes related to safe and reliable transportation choices, environmental leadership and stewardship, and equitable growth. Most new mobility services are privately operated, which means that Metro does not have direct access to data with which to evaluate how these services are affecting progress toward regional goals (this lack of data in and of itself poses a challenge to the RTP goals of increasing transparency and accountability).

Research and data from other cities, most of which has focused on ride-hailing, which is the most widely-used new mobility service, suggests both opportunities and challenges. Studies from multiple cities have found that ride-hailing often draws more people away from transit, walking, bicycling and carpooling than from driving alone,[6] increasing congestion and emissions and competing with other options in a zero-sum game rather than increasing transportation options overall. Other studies have found that ride-hailing complements transit because most trips occur during evenings and weekends, when transit runs infrequently or not at all,[7] and ride-hailing companies claim that their services help people reduce car ownership and drive less over the long term, but no research has yet validated this claim.

With respect to equity, some studies have found that people with African-American sounding names are more likely to have their ride-hailing requests canceled by drivers[8] and that communities of color experience longer wait times;[9] while others have found that ride-hailing improves transportation options in communities that are underserved by transit, including communities of color.[10] The bulk of the available research focuses on ride-hailing, which is the most widely-used service, but researchers have examined other services as well. Though impacts vary across services to a certain extent (for example, car

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[3] http://www.oregonlive.com/commuting/index.ssf/2016/09/car-sharing_in_portland_driver.html; https://www.zipcar.com/portland

[4] https://twitter.com/PBOTinfo/status/1027623455158501377

[5] Adopted 2010. 1. Vibrant Communities; 2. Economic competiveness and prosperity; 3. Safe and reliable transportation choices; 4. Leader in climate change; 5. Clean air, water and healthy ecosystems; 6. Equity.

[6] Shaheen, Susan; presentation at the Urbanism Next conference, March 5, 2018.

[7] https://www.apta.com/resources/reportsandpublications/Documents/APTA-Shared-Mobility.pdf

[8] http://www.nber.org/papers/w22776

[9] https://www.washingtonpost.com/news/wonk/wp/2016/03/10/uber-seems-to-offer-better-service-in-areas-with-more-white-people-that-raises-some-tough-questions/?utm_term=.54c36af0ad49

[10] https://escholarship.org/uc/item/4r22m57k

sharing has been shown to decrease vehicle trips and emissions[11]), many of the challenges and opportunities are common across services. Table 1 summarizes how emerging technology could impact each of Metro's 2018 RTP goals.

Table 1: How emerging technology could impact Metro's 2018 Regional Transportation Plan goals

Goal	Promise	Peril
Vibrant communities	We have more space for people instead of vehicles, particularly in regional centers, because vehicles no longer need parking and use less space on the road.	We prioritize moving automated vehicles efficiently over creating space for people. The increased convenience of driving creates less development in regional centers and more in communities outside of the metropolitan area.
Prosperity	New mobility companies bring new jobs to the region, and people are able to spend more time working or at home with friends and family instead of sitting in traffic.	Automation eliminates thousands of jobs, and productivity only increases for people who can do their work from a vehicle.
Choices	Transit becomes more efficient and new mobility services make carpooling the norm.	Driving alone becomes more convenient and new services draw riders away from transit, walking and bicycling.
Reliability	Technology helps to reduce congestion as automated vehicles use roadway space more efficiently, carpooling becomes easier and transit becomes more efficient.	Technoloy increases congestion as driving becomes more convenient, vehicles travel more to move fewer people, there are more conflicts in high-demand areas and delivery vehicles clog local streets.
Safety and security	Automated vehicles eliminate crashes due to human error.	More pickups and drop-offs create curbside conflicts and the transportation system is vulnerable to cyberattacks.
Environment	Vehicles become cleaner and more efficient.	Vehicle miles traveled increase, offsetting the benefits of cleaner vehicles, and increased sprawl places development pressure on farmland and natural areas.
Health	Cleaner vehicles mean less pollution and better air quality, and bike share provides another active transportation option.	People live more sedentary lifestyles as driving becomes more convenient.
Equity	People who cannot or do not drive have more choices, and new options become more affordable as technology advances.	New services focus on affluent customers, while others face barriers to accessing new technology and services.
Fiscal stewardship	Technology enables more cost-effective pricing, management and operation of the transportation system.	The gas tax and other sources of transportation revenue dwindle.
Transparency	Collecting transportation data becomes more efficient.	Private companies withhold data from public agencies and resist oversight.

The impact of technology is likely to grow stronger as new technologies like automated vehicles continue to mature. The ETS includes policies and implementation actions that outline a path for Metro and its partners to influence the deployment of emerging technology so that it supports the RTP goals instead of undermining them.

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[11] http://innovativemobility.org/wp-content/uploads/2015/07/Zipcar_Corporate_Final_v6.pdf, http://innovativemobility.org/wp-content/uploads/2016/07/Impactsofcar2go_FiveCities_2016.pdf

The rapid development of new transportation technologies also heralds a shift in transportation planning. Over the past several decades, public agencies have been largely responsible for operating transportation services and have led the conversation about transportation investments. Now a growing number of private companies are launching new services and investing significant capital in the transportation system. In addition to identifying policies that support the RTP goals, the ETS identifies tools and practices that public agencies can use to maintain responsible stewardship of the transportation system in an era of increasing private sector influence and disruption.

Though several new mobility services were operating in the region prior to the development of the ETS, public agency oversight of and planning for these technologies was limited to plans or regulations that focused on individual technologies (typically car sharing, bike sharing, electric vehicles, ride-hailing, or travel information) among the few jurisdictions that had seen extensive deployment of these technologies and had the capacity to plan for them. The ETS is the first planning document to take a comprehensive look at these technologies and a regional approach to planning for them.

ETS updates to the 2014 Regional Transportation Plan
The ETS is proposed for adoption as a new "stand alone" modal plan supporting the RTP. Other modal plans are the adopted Regional Travel Options Strategy, Regional Transit Strategy, Regional Freight Strategy and Regional Transportation Safety Strategy. The ETS is intended to serve as a guiding policy document, and does not create binding obligations on local governments. Instead, the ETS includes advisory policies to guide Metro partners in planning efforts related to emerging technology, which are included as new policies in Chapter 3 of the 2018 RTP. It also describes implementation actions that Metro will undertake over the next two years to advance Metro and its partners' work on emerging technology. These actions are included in Chapter 8 of the 2018 RTP. Emerging technology touches on a variety of the other topics and policies considered in the RTP, as well as in the regional strategies for transit and freight, which have been updated to align with the policies in the Emerging Technology Strategy.

Recommendations of the ETS
The ETS identifies a vision, policies, recommended implementation actions for Metro and its partners, and two-year next steps for Metro. The four policies in the ETS describe how Metro and its public agency partners can address pressing technology-related issues over the next decade and stay on track to meet the RTP goals as technology and mobility continue to evolve. They both identify how technology can support regional outcomes and how Metro and partners should can effectively plan and manage the transportation system in an era of accelerating innovation:
1. Equity: Make emerging technology accessible, available and affordable to all, and use technology to create more equitable communities.
2. Choices: Use emerging technology to improve transit service, provide shared travel options throughout the region and support transit, bicycling and walking.
3. Information: Use the best data available to empower travelers to make travel choices and to plan and manage the transportation system.
4. Innovation: Advance the public interest by anticipating, learning from and adapting to new developments in technology.

Development of the ETS
In outreach conducted during 2015 and 2016 to identify key trends and challenges to be considered in the RTP, the Metro Council and stakeholders identified a need for the RTP to address the transformative impacts that emerging technology is having on the transportation system. Metro staff reviewed available research on the impacts of emerging technology, forecasts of when different technologies are expected to reach maturity, and technology plans and policies from peer agencies across the United States. Staff also held one-on-one conversations with over 40 stakeholders across the region – including representatives of

public agencies, technology companies and advocacy and community organizations – about their priorities for emerging technology. This research and these conversations formed the basis for a draft set of policies, which Metro staff refined based on feedback from Metro Council and Metro technical and policy advisory committees; technology-related stakeholder groups including the University of Oregon Sustainable Cities Initiative, the Regional Smart City Action Planning group convened by Portland State University and the City of Portland and the Technology Association of Oregon; and a working group convened at Metro consisting of public agency staff that met four times as the ETS was being developed. **Attachment 1** to this staff report lists the working group members. Metro staff incorporated research and policies in a draft version of the ETS, and finalized the public comment draft based on feedback from Metro committees.

A draft ETS was released for the 45-day public comment period on June 29, 2018. The ETS will be finalized to reflect recommended changes from the public comment period, as shown in **Exhibit B** to this resolution. Refer to Appendix D of the 2018 Regional Transportation Plan for more information about the regional planning and decision-making process and related public participation and engagement activities that also informed development of the ETS.

Implementation of the ETS
The ETS provides a starting point and policy direction. Many partners, including city and county governments, public agencies, the Metro Council, advocacy and community organizations, and technology companies will play a role in its implementation. Opportunities and actions for Metro and its public agency partners to implement the ETS are contained in the Policies and Actions section of the ETS. The Next Steps section of the ETS identifies four next steps for Metro to undertake in order to support the partners in implementing the ETS policies, and these next steps are included in Chapter 8 of the 2018 RTP:

1. Fund technology pilot projects
2. Convene stakeholders to establish consistent new mobility policies across the region
3. Develop better data and tools to plan for emerging technology
4. Advocate for state and federal technology policy that supports our regional goals

Because pilot projects offer a way to collect better information on how the new mobility services that currently operate in the Portland region can support RTP goals, and additional information is needed to develop and advocate for more comprehensive policies, Metro has moved ahead with the first of the actions listed above. Funding has been allocated for a program to support emerging technology pilot projects that involve cross-sector partnerships between public agencies, non-profits, and technology companies and evaluate impacts on regional goals. Staff have developed a proposal for a funding program that will support short-term implementation projects and develop the information and partnerships that will support broader action on emerging technology. The Metro Council provided feedback on and endorsement of the funding program proposal at its July 24, 2018 work session.

ANALYSIS/INFORMATION

- **Known Opposition:** None.

- **Legal Antecedents:**

  State laws and actions:
  - Oregon House Bill 4063 (Relating to Autonomous Vehicles; and Declaring an Emergency), adopted on April 10, 2018.

- Oregon Executive Order No. 17-21 (Accelerating Zero Emission Vehicle Adoption in Oregon to Reduce Greenhouse Gas Emissions and Address Climate Change), adopted on November 6, 2017.
- OAR 660, Division 12 Oregon Administrative Rules for Transportation Planning
- Oregon Transportation Plan, last amended on May 17, 2018.

Metro Council actions:
- Metro Resolution No. 15-4662 (For the Purpose of Approving a Work Plan and Public Engagement Plan for the 2018 Regional Transportation Plan update), adopted by the Metro Council on Dec. 3, 2015.
- Metro Ordinance No. 16-1371 (For the Purpose of Adopting the Distribution of the Population and Employment Growth to Year 2040 to Local Governments in the Region Consistent with the Forecast Adopted by Ordinance No. 15-1361 in Fulfillment of Metro's Population Coordination Responsibility under ORS 195.036), adopted by the Metro Council on Oct. 13, 2016.
- Metro Resolution No. 18-4886 (For the Purpose of Adopting the 2018 Regional Travel Options Strategy), adopted by the Metro Council on May 24, 2018.
- Metro Resolution No. 14-1346B (For the Purpose of Adopting A Climate Smart Strategy and Amending the Regional Framework Plan to Comply with State Law), adopted by the Metro Council on December 18, 2014.
- Ordinance No. 18-1421 (For the Purpose of Amending the 2014 Regional Transportation Plan to Comply with Federal and State Law and Amending the Regional Framework Plan), adopted by the Metro Council on December 6, 2018.

Related local government actions
- City of Portland Resolution No. 37296 (Support Smart Autonomous Vehicle Implementation), adopted on June 14, 2017.

- **Anticipated Effects:** The ETS adds new policies and updates policies related to transit and freight in the 2018 RTP, proposed for adoption on December 6, 2018. Local transportation system plans (TSP) are updated to be consistent with the 2018 RTP. The ETS is used as a guidance document in RTP and TSP updates, and as funding is sought, projects are developed and programs are implemented. The ETS will be implemented through a funding program to support technology pilot projects.

- **Budget Impacts:** None beyond the funding already dedicated to implementation of the strategy. Funding is dedicated through June 2019 by the Metro FY 2018-19 adopted budget to support a new funding program for technology pilot projects and the purchase of additional data and tools on the impacts of emerging technology develop additional data and analysis. Funding beyond June 2019 is not identified at this time to continue these efforts, nor for future updates of the ETS.

RECOMMENDED ACTION

Staff recommends the Metro Council adopt Resolution No. 18-4869.

Attachment 1 to Staff Report to Resolution No. 18-4869
EMERGING TECHNOLOGY WORKING GROUP MEMBERS

The Emerging Technology Working Group met monthly, beginning in 2018, to help refine the Emerging Technology Strategy and coordinate among public agencies in the greater Portland region on technology-related initiatives. Due to a late start in staffing and developing the Emerging Technology Strategy the working group is less formal than the other working groups involved in developing the 2018 Regional Transportation Plan. Agendas were not posted to the Metro website, and the group continues to add members and meet to discuss implementation of the Emerging Technology Strategy.

Below is the current list of working group members as of May 2018.

Member	Organization
Todd Juhasz	City of Beaverton
Katherine Kelly and Carly Rice	City of Gresham
Taylor Eidt and Peter Brandom	City of Hillsboro
Charlie Tso	City of Wilsonville
Peter Hurley and Ingrid Fish	City of Portland
Erin Wardell	Washington County
Jessica Berry	Multnomah County
Joe Marek	Clackamas County
Jeff Owen	TriMet
Andrew Dick	ODOT
Becky Steckler	University of Oregon
John MacArthur	Portland State University