Planning for an automated tomorrow, beginning today

Urbanism Next, March 6 2018
How can regional planning agencies, cities and counties, and transit agencies work in parallel to deliver on the promise of automated vehicles, shared mobility, and other emerging technologies?
The Portland Region

[Map of the Portland Region with numbered regions and cities labeled.]
Emerging technologies

- Automated vehicles (AVs)
- Connected vehicles (CVs) and infrastructure
- Electric vehicles (EVs)
- Transportation network companies (TNCs)
- AV/EV transit vehicles
- Microtransit
- Car share
- Bike share
- Travel information and payment
- New data sources
How might technology develop?

Next 5 years: AV pilot testing and continued growth in shared mobility

5-10 years: Shared AVs mixed with conventional vehicles

10-25 years: AV ownership increases, majority of vehicles on the road are AVs, some changes to streets and traffic

25+ years: Our streets and communities change dramatically

Graphic: RPA
How could it affect the region?

- More new choices, but they don’t work for everyone / everywhere
- Competition with transit
- Decreasing accountability

- Increasing congestion
- Transportation jobs are threatened

- Congestion might increase or decline
- AVs increase safety
- Vehicles emit less pollution, but drive more miles
- Transportation revenues decline

- Communities have more space for people instead of vehicles, but sprawl increases

Graphic: RPA
Transportation agency partners and roles

**Oregon Department of Transportation**
- Build, operate, and maintain state highway system
- Administer vehicle registration and AV testing
- Coordinate transportation planning

**Metro**
- Develop regional plans and policies
- Fund technology pilots and projects
- Research, modeling, and convening

**PBOT**
- Build, operate, and maintain local streets and roads
- Regulate new mobility services
- Implement technology pilots and projects

**TriMet**
- Operate public transportation service
- Implement technology pilots and projects
- Provide data on transit and multimodal options
Other partners

**Academics** conduct research, convene partners, and pilot new technologies on their campuses.

**Advocates and community organizations** conduct outreach, education, and research; advocate for policies and projects that meet communities’ needs; and collaborate on pilot projects.

**Companies and trade organizations** operate new mobility services, develop technologies, and collaborate on pilot projects.
How can an agency that no one understands respond to a vast and incomprehensible challenge?
Transportation planning at Metro

Cities, counties, and transit agencies figure out what transportation projects they want to build and estimate how much money they have to spend on them.

Metro convenes people to decide on priorities, analyzes impacts on regional goals and available funding, and sets policies.

Metro allocates certain state and federal funds to our partner agencies to implement the projects that work best for our region. We set aside some funding to run Metro grant programs.
Technology changes everything!

Some things

- ↓ certainty about how people travel
- ↓ cost of trying something new
- ↑ transportation revenues are imperiled
- ↑ importance of data
- ↑ role of private sector
Other things don’t change

= our goals

= the importance and cost of good streets

= our responsibility to be good stewards
Metro’s approach to planning for emerging technologies

• Start preparing for tomorrow by working with the technologies that are available today.

• Be specific about how to make technologies work for our goals.

• Be clear about what we know (and don’t know).

• Start walking while filling in the map.
How we’re developing the Emerging Technology Strategy

- Reviewing technology strategies from cities and regional agencies
- Research on trends in technology and impacts
- Surveys of regional technology use
- Feedback from county and regional committees
- One-on-one conversations with stakeholders
How are Portland-area residents currently using technology?

- One-third of us occasionally take TNCs.
- More of us use apps to get travel information than any other medium.
- Regular TNC riders are more likely to be wealthy, male, young, and urban.
- Transit is the most relied-upon option when people don’t have a car available, especially for low-income people and POCs.
Technology strategy framework

- **Aspirational**, apply to all transportation providers
- Outline a **broad, long-term** vision to achieve our regional goals

- Apply to **public agencies**
- Focus on key areas where we need to act in the **next decade**

- Apply to **Metro**
- Describe critical steps we need to take in the **next two years**
- To be developed based on policies
The next ten five two years

Shared AVs will hit our streets.

People will use TNCs more—and there will be more TNCs.

Technology will advance without much public participation...

Congestion will get worse as new choices conflict with current ones...

Marginalized people and workers will fall farther behind...

...or we help shape how the transportation system evolves

...or we ensure that new technologies complement our current options

...or we use technology to create a more fair and just transportation system
Key policy areas

Equity

Prosperity

Innovation

Choices

Information
## Regional agencies’ role

<table>
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<tr>
<th>Action</th>
<th>Cities &amp; counties</th>
<th>Transit agencies</th>
<th>Regions</th>
<th>States</th>
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<td>Convening &amp; education</td>
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</table>

✓ = lead  
✓ = coordinate
Focusing on how

Local / regional influence on deployment

Maturity of technology

Less

Pilot

Transit AVs / CVs

Micro-transit

Freight AVs / CVs

Support & learn

ITS

Bike share

Conventional carshare

Policy and forecasting

Passenger AVs / CVs

TNCs

EVs

One-way / P2P carshare

Travel info / payment

Expand access

More

Travel info / payment

One-way / P2P carshare

Local / regional influence on deployment

Support & learn

Pilot

Transit AVs / CVs

Micro-transit

Freight AVs / CVs

ITs

Bike share

Conventional carshare
Planning for an Automated Tomorrow, Beginning Today

March 6, 2018
Urbanism Next Conference
University of Oregon

Jeff Owen
Senior Planner
TriMet Planning & Policy
Portland, Oregon

owenj@trimet.org
503-962-5854
TriMet: At-a-Glance

- **Service Area:** 533 Square Miles
- **Population:** 1.5 million
- **Ridership:** 101 + million trips are taken each year
  - Bus: 77 lines (12 Frequent), 6,591 bus stops, 683 buses
  - MAX Light Rail: 5 lines, 97 stations, 60 service miles, 145 vehicles
  - WES Commuter Rail: 5 stations, 14.7 miles of track, 3 DMU’s + 1 trailer
  - LIFT Paratransit: door-to-door, 253 LIFT buses, 15 LIFT vans
- **77% of riders could drive but choose TriMet instead**
- **39% of adults in the region ride TriMet at least twice a month**
- **Operating Budget:** $507.4 million
- **Funding:** 59% from employer payroll tax; 24% from passenger fares; 10% from fed/state/local grants, 7% other
How to Approach New Mobility?

- **Sample TriMet Efforts in Place to Guide Us:**
  - GTFS (General Transit Feed Specification and OpenTripPlanner (2005-2013)
  - Pedestrian Network Analysis (2011)
  - Service Guidelines Framework (2014)
  - Bike Plan (2016)
  - Business Plan (2017)

- **Underway/Forthcoming:**
  - New Mobility Strategy (2018)
  - FTA MOD Sandbox (2019)
How to Approach New Mobility?

- **Peer Transit Agency Approaches**
  - King County Metro Transit: Innovative Mobility Program
  - LA Metro: Office of Extraordinary Innovation
  - Pennsylvania SEPTA: Office of Innovation
  - Boston MBTA: Transportation Innovation

- Learning about other agency pilot projects and partnerships
- Peer exchanges, conferences, workgroups
- Research, best practices, innovation
How to Approach New Mobility?

• **Emerging Practices:**
  - Partner to reinforce transit’s strengths
  - Leverage agency-controlled assets
  - Plan for a streamlined user experience
  - Be open to new ways of providing useful transit
How to Approach New Mobility?

- **Sample Statements:**
  - “This Blueprint envisions a future where cities and transit agencies leverage new technology as a tool to enhance the public realm and improve the lives of all urban residents.”
  - “This future is not guaranteed”
  - “Inequitable mobility could supplant transit.”
How to Approach New Mobility?

• **Driverless Buses Currently in Development and Testing**
  - We need to work together with our labor teams to figure out what this could mean for us.
  - Some current positions might need to be transitioned into new roles, utilizing their current depth of experience, knowledge, skills, and abilities.

Yutong completes world's first trial operation of unmanned bus

China’s Henan Province
Yutong (manufacturer) 2015 test

No hands! (or feet)
How to Approach New Mobility?

- **Leverage Agency Controlled Assets**
  - Could we more effectively leverage our agency resources to achieve our goals, while supporting emerging mobility?
    - Value capture for potential re-investment in our services?
    - Transit-oriented development at station areas?
    - Local improvement districts?
    - Creative use of excess/remnant agency properties?
    - Leasing out portions of our right-of-way when not in use?
    - Best use of car parking spaces/garages at Park & Rides?
    - Open data, standards, agreements, sharing, use of data?
How to Approach New Mobility?

- **TriMet New Mobility Strategy:**
  - Still developing this new effort
  - Use a strategic business review to evaluate opportunities and risks
  - Examine potential roles for TriMet across multiple options, categories, and scenarios
  - Aim to be ready for potential pilot projects or partnerships that align with our Vision, Mission, and Values

Potential Partners? Or Competitors?

Others?
How to Approach New Mobility?

- **Agency Vision:**
  - To do our part in making our community the best place to live in the country

- **Agency Mission:**
  - To provide valued transit service that is safe, dependable and easy to use

- **Agency Values:**
  - Do the right thing, by being responsive, inclusive and accountable