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Emerging Technologies in Mid-Size Cities: Managing New Mobility

Becky Steckler, Ph.D., Rebecca Lewis, Ph.D.

What was once purely science fiction is starting to materialize on streets across the country. Advances in emerging technologies – such as autonomous vehicles (AVs), e-commerce, and the sharing economy – are having profound impacts, negative and positive, on how people and goods move around a city and are beginning to have substantial effects on land use, street design, parking, and housing.

In response to these changes, the cities of Gresham and Eugene, Oregon are developing micromobility (e.g. bike share and e-scooter share) and TNC (transportation network company, e.g. Lyft and Uber) policies, regulations, and revenue guidance. To help the cities of Gresham and Eugene navigate these challenges and opportunities, the University of Oregon's Urbanism Next Center partnered with the cities through the university's Sustainable City Year Program (SCYP). Through this work, UO researchers and students helped these communities understand the potential impacts of new mobility technologies and to prepare a policy and programmatic response.

While Gresham and Eugene were case studies for this research, the final report provides useful information for any mid-sized community on how new mobility services could impact their communities and what they can do about it. This work focused on the new mobility and goods delivery services that currently exist, but the framework is also applicable to emerging technologies that haven't yet been introduced, such as autonomous vehicles.

POLICY APPROACHES FOR CITIES

To see the high-level policy recommendations for city staff, download the guidebook "Navigating New Mobility: Policy Approaches for Cities" (see URL at the bottom of this brief). For the nitty gritty on the project's

background, data analysis, specific case studies, and the researchers' framework, approach and methodology, go to the final report. Each offers detailed recommendations for how cities should address the following areas of priority in their new mobility plans:

- Safety
- Social Equity
- Active Transportation
- Environmental Quality
- Reducing Vmt And Congestion
- Adapting Right-of-way Design And Management
- Changes In Land Use And Metropolitan Footprint
- Requiring Information To Make Informed Decisions
- Managing Innovation
- Fiscal Impacts

NEW MOBILITY STRATEGY: BEGIN WITH COMMUNITY VALUES

The most effective strategies begin with well-articulated goals. City staff and leaders should ensure that values – not technology – shape policies. Each city should consider developing a new mobility strategy which clearly describes desired outcomes to guide changes in the transportation system. The Cities of Eugene and Gresham each have an ongoing Transportation System Plan and other plans in place which outline community values and goals. Researchers recommend that new mobility and e-commerce policies address the following areas of value:

Safety (reduced fatalities and serious crashes): A course of action related to safety could mean protecting pedestrians and bicyclists by restricting the use of e-scooters on sidewalks and building protected bike lanes to keep delivery vehicles and automobiles from obstructing bicyclists.

Equity (a fair and just transportation system for all) For example, requiring new mobility services to offer diverse payment options that let people pay without a smart-phone or credit card.

Public Health (low-carbon, active transportation options) In the context of public health and new mobility, there is potential to improve active transportation options by repurposing existing parking for other modes and uses.

Sustainability (reduced GHG emissions) For example, one way that cities are looking to reduce VMT from new mobility services is to encourage the use of shared vehicles over zero- or single-occupancy vehicle.

COORDINATE WITH REGIONAL PARTNERS

Both Gresham and Eugene are part of larger regions – Gresham is a suburb to Portland and Eugene is the anchor city to a number of smaller bedroom communities. The cities should consider regional data analysis and policies that could help all jurisdictions prepare for the deployment of services.

DATA MANAGEMENT

More and more, public agencies are requiring information from transportation service providers to ensure that they understand the impacts of the service. Public agencies have always collected transportation data, but the possibility of new data sources, either from data aggregators like Sidewalk Labs, or the transportation service providers themselves, means that local governments may have access to much more data—and potentially real-time data—that they haven't had before. In order to analyze this data, cities and other public agencies will need to make sure they have the technical expertise to analyze the data (which has staffing implications); and privacy policies in place to ensure that individual privacy can be protected.

TRANSPARENCY

Decision makers and residents should have access to all the information they need to understand how emerging technologies are impacting their cities. City staff should consider how they will introduce these topics and how they will continue to keep elected officials and citizens informed over time.

ABOUT THE AUTHORS

This project was led by Becky Steckler and Rebecca Lewis of the University of Oregon. Research was done by eight University of Oregon classes, with participation by 147 students in the 2018/2019 school year, under the Sustainable City Year Program (SCYP) and Urbanism Next.

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THE FULL REPORT and ONLINE RESOURCES

For more details about the study, download the full report **Emerging Technologies and Cities: Assessing the Impacts of New Mobility on Cities** or the guidebook **Navigating New Mobility: Policy Approaches for Cities** at nitc.trec.pdx.edu/research/project/1249

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