

Portland State University

PDXScholar

TREC Project Briefs

Transportation Research and Education Center
(TREC)

5-2019

Preparing Cities for an Automated Future

Benjamin Y. Clark

University of Oregon, bclark2@uoregon.edu

Follow this and additional works at: https://pdxscholar.library.pdx.edu/trec_briefs



Part of the [Transportation Commons](#), [Urban Studies Commons](#), and the [Urban Studies and Planning Commons](#)

Let us know how access to this document benefits you.

Recommended Citation

Clark, Benjamin Y. Preparing Cities for an Automated Future. Project Brief. NITC-SS-1174. Portland, OR: Transportation Research and Education Center (TREC), 2019.

This Report is brought to you for free and open access. It has been accepted for inclusion in TREC Project Briefs by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.



PREPARING CITIES FOR AN AUTOMATED FUTURE

The challenges that Autonomous Vehicles (AVs) will impose upon cities are both difficult to fully envision and critical to begin to address. This report makes an incremental step toward quantifying the impacts that AVs will have and provides insight on how cities might adjust policies to avoid mistakes made with changes to transportation modalities in earlier eras. This report examines parking, curb zones, and government service changes in the context of AVs.

The report uses a mix of econometric modeling, cost accounting, and case studies to illustrate these projections. This study looks at the effects of transportation network companies (TNCs)— Uber and Lyft in particular—on on parking revenue in the city of Seattle. TNCs are viewed by many as a clear precursor to AVs because in many ways they operate as AVs will—it is just that right now TNCs have drivers, but will not in the future. Thus we can make some assumptions that how people use TNCs will mimic AVs in many ways.

The report also examines curb space use and on-street parking occupancy levels. On-street parking occupancy, like parking revenue, is going to be negatively impacted by increased use of TNCs. It is expected that with no policy changes that occupancy will decline by about 12 percent for each additional one thousand trips.

Finally, researchers used cost accounting as a foundation for examining how the cost of government services may change over time when AVs replace drivers of government-owned vehicles. The specific case this section looks at is trash collection, using data from a number of North Carolina cities as the starting point of the analysis. The results from this section of the report suggest that the cities that currently employ very little automation for trash collection because of street design (lots of on-street parking, for example) will likely see the greatest benefits to AV advances. Automation is not new to refuse collection, but AVs have the potential to create flexibility in operations in ways that current technology does not afford.

This study was funded by the **National Institute for Transportation and Communities (NITC)**. NITC is one of five U.S. Department of Transportation national university transportation centers. Housed at Portland State University, NITC is a program of the Transportation Research and Education Center (TREC). This Portland State-led research partnership includes the University of Oregon, Oregon Institute of Technology, University of Utah and new partners University of Arizona and University of Texas at Arlington.

Automated Vehicles (AVs) are bringing changes to transportation and land use which will affect local government budgeting and finance. Rather than reacting to these changes, city officials have the option of proactively planning for them.

How Will Autonomous Vehicles Change Local Government Budgeting and Finance? A Case Study of Solid Waste, Drop-off/Pick-up Zones, and Parking (#2019-1174)

Benjamin Clark, University of Oregon

Download Final Report: <http://nitc.trec.pdx.edu/research/project/1174>

