## Literature Review

There is a growing body of research exploring the potential benefits and synergies of public transit agencies partnering with these technology enabled mobility companies. Research shows that technology enabled mobility options can augment and improve existing transit service, reduce car dependency, and improve overall mobility.

In spring 2016, the American Public Transportation Association (APTA) and the Shared Use Mobility Center (SUMC) published a paper that found that shared modes complement public transit. SUMC found that "ridesourcing services are most frequently used for social trips between 10 PM and 4 AM, times when public transit runs infrequently or is not available." This finding suggests that transit and technology enabled mobility companies are not necessarily in competition with one another, and there may be mobility aspects that are better served by one service than another. For example, mass transit excels at effectively moving a large quantity of people efficiently, such as during commuting times. Whereas, technology enabled mobility options may provide a cost-effective, more efficient late night service.

SUMC's report followed a paper published in early 2016 by the Transportation Research Board (TRB).[i] TRB found that new, innovative mobility services are expanding travel choices and are being widely embraced by millions of travelers. TRB recommend that, "policy makers and regulators should seek to integrate the features of TNCs and other innovative shared mobility services into existing transportation systems and services in ways that leverage the new services' strengths and features."

In 2014, Berkeley's Transportation Sustainability Research Center published a report that found "a substantial portion of sampled ridesourcing trips are spatially and temporally not well served by public transit, suggesting a complementary relationship with transit, at least for some trips." It also found that, "ridesourcing users also appear to be less likely to own an automobile."[ii]

In addition to service synergies, researchers have found that there is a role for policy makers to ensure public benefit. TRB found that without public sector intervention, TNCs could exacerbate the 'digital divide,' which is the divide between those who both have access to technologies like smart phones and who have the digital literacy to capitalize on these serves. Similarly, SUMC recommended that, "public entities should identify opportunities to engage with [technology enabled mobility companies] to ensure that benefits are widely and equitably shared."[iii] Through thoughtful partnerships, these services could enhance mobility for low-income and older adults.

In May 2016, the Pew Research Center released a study that evaluated the rise of new on-demand services, including TNCs. Pew's study found that TNC users generally capitalize on the larger wider range of transportation options, reducing their reliance on personal vehicle ownership.[iv]

Pew's study also found that 26 percent of survey respondents that made over $75,000 had used TNC services before, whereas only 10 percent of those who make less than $30,000 had used the service. This finding suggests that without governmental intervention, there may be a continued bifurcation based on income level for those who can and those who cannot access TNCs as a mobility service, something that this pilot program aims to overcome.

In February 2016, the Eno Center for Transportation (Eno) released a paper titled "Emerging Technology Trends in Transportation."[v] In this paper, Eno found that the federal government has a role in assisting the creation of partnerships between the public and private sectors to provide innovative mobility solutions and in ensuring equitable access to economically disadvantaged communities.

Thought leaders and policy makers have also been exploring the benefits and challenges associated with technology enabled mobility companies with full vehicle automation just on the horizon. As fully autonomous vehicles reach the market, researchers have developed a variety of potential scenarios for how vehicle automation may penetrate the market. On one side of the spectrum, policies and strategic partnerships could incorporate technology enabled mobility and vehicle automation onto the public mobility market, optimizing the use of resources and assets, increasing public mobility, and potentially cutting down on greenhouse gas emissions (GHG). However, without strategic partnerships, it is possible that autonomous vehicles may replace personal vehicles, which may lead to an increase in national and local vehicle miles travelled, increased congestion, and an increase in GHG. Policy makers have a role incentivizing the preferred option, and to be most effective that will likely have to occur prior to full vehicle automation through partnerships with technology enabled mobility companies.

This body of literature continues to grow with many current research projects underway. Research entities including Transit Center, Transportation for America, Eno, the National Research Defense Council, the Shared Use Mobility Center, and the Berkeley Transportation Sustainability Research Center currently have related research projects on-going that are expected to be released sometime within the year.

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[i] http://www.trb.org/Main/Blurbs/173511.aspx

[ii] http://www.uctc.net/research/papers/UCTC-FR-2014-08.pdf

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

[iv] http://www.pewinternet.org/2016/05/19/the-new-digital-economy/

[v] https://www.enotrans.org/etl-material/emerging-technology-trends-transportation/