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Before the Utah Transportation Governance and Funding Task Force

August 16, 2017

Chairs Harper and Schultz, and members of the task force, thank you giving me the opportunity to testify on the future of transportation finance and governance on behalf of the Competitive Enterprise Institute (CEI). CEI's interest in transportation policy spans across auto, rail, and aviation modes at the federal, state, and local levels, where we encourage innovative private solutions to public policy problems.[1]

My testimony today will focus on surface transportation, in particular how reforms can address both present and future challenges in transportation finance and governance that have arisen and will arise from technological change.

Recent Developments in Federal Surface Transportation Policy. The most recent federal surface transportation reauthorization, the Fixing America's Surface Transportation (FAST) Act of 2015,[2] is still being implemented by the U.S. Department of Transportation (USDOT). This is especially true of permit streamlining provisions. Utah projects currently in the FAST Act pipeline include the West Davis Corridor, I-80 & State Street Interchange, and I-15 Payson Main Street Interchange.

USDOT has indicated it plans to release a comprehensive transportation infrastructure proposal in Quarter 3 2017.[3] While details remain scant, the administration has indicated that it looks to harness both traditional funding and innovative financing tools, with an emphasis on private capital investment and management.[4] To that end, the Federal Transit Administration in July 2017 issued a notice of proposed rulemaking to implement provisions of 2012's Moving Ahead for Progress in the 21st Century Act and 2015's FAST Act in order "to address impediments to the greater use of public-private partnerships (P3s) and private investment in public transportation capital projects."[5]

Recent Developments in Surface Transportation Revenue Collection. In recent years, concerns over the future adequacy and equity of traditional fuel tax revenue have led states to investigate alternative revenue models. These includes all-electronic tolling and mileage-based user fees (MBUFs). MBUF systems remain in their early stages, but several states are currently piloting MBUFs, which are aimed to replace fuel taxes over time as the vehicle fleet becomes increasingly fuel efficient and electrified.

Utah is a member of the Western Road Usage Charging Consortium (RUC West). In the case of other RUC West members, Oregon is currently operating a small-scale MBUF program, while

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[1] "Transportation and Infrastructure," CEI website (accessed Aug. 11, 2017), https://cei.org/issues/transportation-and-infrastructure.
[2] Fixing America's Surface Transportation Act, Pub. L. 114-94, 129 Stat. 1313 (2015).
[3] AASHTO, "Chao: Infrastructure Plan 'Principles' Coming This Month," *AASHTO Journal* (May 19, 2017), https://news.transportation.org/Pages/051917chao.aspx.
[4] *See, e.g.,* remarks of U.S. Secretary of Transportation Elaine L. Chao, "CEI 'Through the Looking Glass' Dinner" (Jun. 7, 2017), https://www.transportation.gov/briefing-room/cei-%E2%80%9Cthrough-looking-glass%E2%80%9D-dinner.
[5] Private Investment Project Procedures, *Notice of Proposed Rulemaking*, Docket No. FTA-2016-0008, 82 Fed. Reg. 35500 (Jul. 31, 2017).

California, Colorado, Hawaii, and Washington are in various stages of MBUF pilot programs.[6] Utah has been studying MBUFs since 2015 and the study is projected to be completed by December 2017.[7]

The FAST Act of 2015 provided federal grant funding to states wishing to pilot "user-based alternative revenue mechanisms that utilize a user fee structure to maintain the long-term solvency of the Highway Trust Fund" through Fiscal Year 2020.[8]

Due to increasingly fuel efficient vehicles, the users-pay/users-benefit principle that long characterized fuel tax and transportation trust fund expenditures has begun to break down. Relative to general revenue funding, the users-pay principle offers a number of advantages:

- Fairness: Highway users benefit from the improvements their user fees generate.
- Proportionality: Users who drive more pay more. Users who impose disproportionate costs, such as heavy trucks, are charged more.
- Funding Predictability: Highway use and therefore highway user revenues do not fluctuate wildly in the short-run.
- Signaling Investment: Revenue roughly tracks use, which provides policy makers with an important signal as to how much infrastructure investment is needed to maintain a desired level of efficiency.

These benefits also apply to toll road facilities, but MBUFs have the potential to not only capture user revenue on limited-access highways, but arterials and local streets as well. Revenue raised could then be directed to the owners of various assets, including toll road operators. There may be interoperability challenges across in-state asset managers as well as across state lines, but they are not insurmountable.

Recent Developments in Surface Transportation Finance and Management. Public-private partnerships (P3s) can provide the public with a number of benefits: lower project costs, more rapid project delivery, improved quality of service, and the transfer of financing and project risks from taxpayers to private investors. Nearly three dozen states currently authorize P3s in transportation.[9] Since 2006, Utah has permitted long-term concessions with the private sector for toll road facilities.[10]

Much like the U.S. as a whole, transportation P3s have been underutilized in Utah relative to the contracting observed in peer countries. Utah's only notable foray into private-sector public-purpose infrastructure investment is the Adams Avenue Parkway near Ogden, a half-mile toll facility that predates the 2006 statewide P3 law.

The financial crisis coupled with overly optimistic traffic and revenue forecasts led to several P3 bankruptcies across the country, resulting in a cooler investment climate. However, investor

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[6] Western Road Usage Charge Consortium, "State Progress," RUC West website (accessed Aug. 11, 2017), https://www.rucwest.org/about/state-progress/.
[7] Utah Department of Transportation, "Road User Charge (RUC) Research Support," PIC AM16.01, Active Research Projects (last updated May 31, 2017), https://www.udot.utah.gov/main/uconowner.gf?n=12835913852004603.
[8] Fixing America's Surface Transportation Act, Pub. L. 114-94, 129 Stat. 1313, 1582 (2015), § 6020.
[9] National Conference of State Legislatures, "Public-Private Partnerships for Transportation: A Toolkit for Legislators," NCSL website (last updated Dec. 17, 2015), http://www.ncsl.org/research/transportation/public-private-partnerships-for-transportation.aspx.
[10] Utah Code Ann. § 72-6-201 *et seq*.

confidence in long-term concession agreements for public infrastructure assets has since rebounded, particularly in light of recent financing innovations.

The U.S. has experience in transportation P3s, up to the most comprehensive design-build-finance-operate-maintain agreements, but has significantly less than peer countries such as Australia. One new financing tool first developed by the Australians is known as asset recycling and is worth investigating for application in the U.S.

Asset recycling enables governments to sell or lease publicly owned assets to the private sector and then use those proceeds to fund other public projects, especially those that lack viable potential user revenue streams that are often a prerequisite for private investor interest in public-purpose infrastructure assets. But before embarking on this experiment, public asset owners must first develop and maintain a comprehensive life-cycle inventory of existing assets. Each asset potentially subject to "recycling" must be carefully evaluated individually and the U.S. has generally done a poor job of considering full life-cycle costs, which in part has led to chronic deferred maintenance and rising total infrastructure costs.

In the case of Utah and most other states, implementing asset recycling may require new legislation. Even in states that authorize P3s in some form, expanding eligible public asset classes to what is often called social infrastructure—schools, government buildings, and the like that may preclude any user-fee revenue stream—is critical. Further, establishing and funding dedicated P3 offices to manage complex project coordination, development, and oversight is likely a prerequisite for successful implementation.

Potential Future Impacts of Automated Vehicle Technology on Transportation Finance and Governance. Automated vehicles, often called self-driving cars, have captivated public attention in recent years. Vehicle automation technology has the potential to greatly improve the safety, efficiency, and equity of our road networks by reducing or eliminating human error from the driving task.

To date, the broader social impacts of automated vehicles have centered on crash reductions, improved access for mobility-impoverished groups, and reduced individual auto ownership due to a potential advent of low-cost self-driving taxi service. The third potential impact—the rise of mobility as a service and reduction in the size of the personal vehicle fleet—has major implications for land-use planning and infrastructure investment decision-making.

This could be called the "pull" land-use scenario. The long American trend of urbanization is further intensified as people seek to locate in dense metropolitan areas where the expense of auto ownership can now be avoided without limiting access to employment opportunities and leisure activities due to dependence on inefficient mass transit. The prospect of door-to-door automated shared mobility could reduce public demands for parking infrastructure and limit traditional roadway infrastructure investments as existing capacity is used more efficiently.[11] It could also allow the substitution of heavily subsidized mass transit and paratransit services with superior, more cost-effective, and privately operated personal mobility services.

[11] Daniel J. Fagnant and Kara Kockelman, "Preparing a nation for autonomous vehicles: opportunities, barriers and policy recommendations," *Transportation Research Part A: Policy and Practice*, Volume 77 (Jul. 2015), pp. 167-181, https://doi.org/10.1016/j.tra.2015.04.003.

Another potential implication of the "pull" scenario is a possible thawing of public iciness to road pricing. In states that lack major legacy turnpikes, public opposition to the imposition of tolls has greatly curtailed their use. But if dynamic road pricing—perhaps MBUFs—were to be integrated with door-to-door automated taxi service, the "full fare" including the cost of the vehicle service plus the cost of the infrastructure service could become more palatable. This suggests that innovations taking place on the "flow" (vehicle) side of automobility could enable future innovations in the financing and management of the "grid" (infrastructure) side that are currently not politically feasible.

But what of a "push" land-use scenario where reducing or eliminating the time-on-task of an automated vehicle's human occupants makes them willing to spend more time in their vehicles to chase cheaper land prices on the urban periphery and beyond?

Marchetti's constant posits that people have a fixed travel time budget and that they are willing to commute approximately one hour per day.[12] This has been a reliable predictor of human responses to vehicle speed improvements.[13] When average vehicle speed increases due to modal substitution or infrastructure enhancements, long-run commuting time trends remain relatively unchanged but average commuting distances increase. In addition, people may increase their travel time budgets when they are able to complete their trips using high-quality transit, such as commuter rail, where they can relax or work rather than navigate stressful automobile traffic. Under this scenario, development "sprawl" intensifies, the benefits of shared mobility decrease, and vehicle ownership trends are less impacted.

Unfortunately, predictions regarding the deployment of automated vehicles—let alone their social implications—are highly speculative. Indeed, both the "pull" and "push" scenarios could ultimately play out to some degree, as consumers express their varying preferences for dense urban living and idyllic exurban or rural living over the course of their lives.

However, there may be one reasonable decision to make under this great uncertainty surrounding automated vehicles and resulting social phenomena: cease most future fixed-guideway mass transit investments. In recent decades, many U.S. cities, including Salt Lake City, have deployed costly and inefficient surface rail transit systems such as light rail and streetcars. The costs of surface rail transit far exceed those of buses while providing few if any mobility benefits to riders relative to less costly bus service.[14] Indeed, promoters of these systems often tout alleged secondary economic development benefits as their primary purpose.[15]

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[12] Cesare Marchetti, "Anthropological Invariants in Travel Behavior," *Technological Forecasting and Social Change*, Vol. 47, No. 1 (Sep. 1994), pp. 75-88.

[13] Kevin S. Kung, Kael Greco, Stanislav Sobolevsky, and Carlo Ratti, "Exploring Universal Patterns in Human Home-Work Commuting from Mobile Phone Data," *PLOS ONE* (Jun. 16, 2014), https://doi.org/10.1371/journal.pone.0096180.

[14] *See, e.g.,* Ming Zang, "Bus Versus Rail: Meta-Analysis of Cost Characteristics, Carrying Capacities, and Land Use Impacts," *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2110 (2009), pp. 87-95, http://dx.doi.org/10.3141/2110-11.

[15] Thomas A. Garrett, "The Costs and Benefits of Light Rail," *Central Banker* (Fall 2004), https://www.stlouisfed.org/publications/central-banker/fall-2004/the-costs-and-benefits-of-light-rail. *See also* Luis Enrique Ramos-Santiago, Jeffrey R. Brown, and Hilary Nixon, "Streetcar Resurgence in the United States: Transit Strategy, Growth Machine Tactic, or Some of Both?" *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2540 (2016), pp. 30-38.

Automated vehicles will likely be a "transit killer" in all but the densest urban cores, such as Manhattan, where personalized door-to-door service is infeasible due to severe constraints on roadway capacity expansion. In those places, subway transit service likely will and should continue. But cities currently contemplating new rail transit systems or system expansions should think deeply about those systems' three-decade lifecycles and if decision-making currently unsupported by the best available analysis will look downright disastrous in the coming decades once automated vehicles are widely deployed.

Conclusion. Thank you for the opportunity to testify and I look forward to answering any of your questions or supplying the task force with any additional information as it may request.