Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington, DC 20515

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September 6, 2019

SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Highways and Transit
FROM: Staff, Subcommittee on Highways and Transit
RE: Subcommittee Hearing on "Pricing and Technology Strategies to Address Congestion on and Financing of America's Roads"

PURPOSE

The Subcommittee on Highways and Transit will meet on Wednesday, September 11, 2019, at 10:00 a.m. in 2167 Rayburn House Office Building to receive testimony related to "Pricing and Technology Strategies to Address Congestion on and Financing of America's Roads." The purpose of this hearing is to: evaluate current Federal policies on tolling and demand management; discuss examples of tolling and pricing strategies pursued by States and cities to address congestion and revenue gaps for surface transportation projects; and examine how new technologies may impact congestion. The Subcommittee will hear from representatives from the Miami-Dade Transportation Planning Organization, the Oregon Department of Transportation, the Intelligent Transportation Society of America, the American Trucking Associations, the Texas A&M Transportation Institute, and the Competitive Enterprise Institute.

BACKGROUND

Surface Transportation Funding: Highway Trust Fund

Federal surface transportation investments are funded through Federal excise taxes levied on motor fuels and on related products such as certain tires, which are deposited into the Highway Trust Fund (HTF). Congress has not adjusted the motor fuel excise taxes since 1993, and the purchasing power of these taxes have fallen over 40 percent in the last 25 years. Improved vehicle fuel efficiency has further eroded Federal revenues. The Congressional Budget Office (CBO) estimates that over the next 10 years, the HTF will fall $171 billion short based on continuing currently-authorized highway, transit, and safety programs levels. An additional $5 billion is necessary to ensure that there is a prudent balance in the HTF, which brings the shortfall to $176

billion. This does not include any higher investment levels to meet growing surface transportation needs.

Tolling

Title 23, United States Code, includes a general prohibition on the imposition of tolls on Federal-aid highways, including the Interstate System. Congress has grandfathered in certain tolled highways as part of the Interstate system, and over the years has enacted exceptions to the general prohibition. There are currently two general Federal tolling programs and two pilot programs, which offer States or local public agencies opportunities to use tolling to generate revenue for highway construction and implement priced managed lanes on Federal-aid highways. States are free to impose tolls, subject to State laws, on any public roads not eligible for Federal assistance.

General Tolling Programs

States may utilize tolling authority under the two general Federal tolling programs, codified in Sections 129 and 166 of Title 23, on eligible projects. However, there are restrictions on how toll revenues can be used, and annual audits are required to ensure compliance with these restrictions.

Section 129 of Title 23 allows public agencies to impose new tolls on Federal-aid highways in the following cases:

- Initial construction of a new highway, bridge, or tunnel;
- Initial construction of new lanes on highways, bridges, and tunnels (including Interstates), as long as the number of toll-free lanes is not reduced;
- Reconstruction or replacement of a bridge or tunnel;
- Reconstruction of a highway (other than an Interstate);
- Reconstruction, restoration, or rehabilitation of an Interstate highway, as long as the number of toll-free lanes is not reduced.

Section 166 of Title 23 authorizes States and local public agencies to allow toll-paying vehicles that do not meet minimum occupancy standards to use high-occupancy vehicle (HOV) lanes, including on the Interstate. These lanes are commonly referred to as high occupancy toll (HOT) lanes. Section 166 establishes requirements for tolls charged to these vehicles, including that the tolls must be variably priced in order to manage travel demand and collected automatically. To implement tolls on an existing HOV facility, States and local public agencies must demonstrate that the conditions on the facility are not already degraded and that the presence of paying vehicles will not cause the facility to become degraded. If the HOV facility becomes degraded, the State or local public agency is required to develop a plan details the actions it will take in order to bring the facility into compliance. The plan is subject to the approval of the Secretary of Transportation. The actions can include: increasing HOV occupancy requirements; increasing tolls; increasing capacity of the facility; or eliminating access to paying vehicles. Additionally, existing HOV lanes may be converted to tolled facilities under Section 129 of Title 23.

Toll Pilot Programs

In addition to general tolling authority, Congress has enacted tolling exceptions under pilot programs with a limited number of slots, as discussed below. A project sponsor is required to submit an application and to execute a toll agreement with the Federal Highway Administration (FHWA) in order to impose tolls under these programs.

The Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP) was authorized in 1998 under the Transportation Equity Act for the 21st Century (TEA-21; P.L. 105-178), to permit up to three existing Interstate facilities, which must be in different States, to be tolled in order to fund reconstruction or rehabilitation on Interstate corridors that could not otherwise be adequately maintained or functionally improved without the collection of tolls. For years, all three slots for this program were reserved for projects in Missouri (I-70), Virginia (I-95), and North Carolina (I-95) to allow the States to develop a complete application for the program. However, none of these States submitted final applications under this program. In 2015, Section 1411 of the Fixing America's Surface Transportation Act modified the ISRRPP by establishing timeframes under which States must complete an application. Any State receiving provisional approval to participate in the ISRRPP now has three years from the date of that approval to fully satisfy the program criteria, complete environmental review, and execute a toll agreement with the FHWA. FHWA can extend this timeframe for up to one additional year if the State demonstrates material progress toward implementing its pilot project.

The Value Pricing Pilot Program (VPPP), initially authorized in 1991 under the Intermodal Surface Transportation Efficiency Act (ISTEA; P.L. 102-240), is an experimental program designed to assess the potential of different value pricing approaches for reducing congestion. Under this program, tolls may be imposed on existing toll-free highways, bridges, and tunnels, so long as variable pricing is used to manage demand. Congress has authorized 15 slots for the program, which are allocated to State, local agencies, or public authorities. Once an entity holds a slot, there is no limit on the number of value pricing projects that can be implemented under that slot. Section 1216 of the Transportation Equity Act for the 21st Century (TEA-21) further required a project under the VPPP to include an analysis of the effects of value pricing projects on low-income drivers and permits the inclusion of measures to mitigate the adverse effects of tolls on those drivers. The VPPP requires the Secretary of Transportation to monitor the projects for at least 10 years and submit biennial reports to Congress. Slots may become available in the future as entities complete their projects. Since 2012, Congress has not authorized any additional funding for the VPPP, but FHWA continues to manage the completion of all active projects and can still provide tolling authority to State, local agencies, or public authorities through an available slot.

Use of Toll Revenue

Federal general tolling programs and tolling pilot programs come with restrictions on the use of toll revenues.

Under the general tolling programs (Sections 129 and 166, Title 23), toll revenue may be used: for debt service; to provide a reasonable return on investment to any private party financing a project; for improvements to and the operations and maintenance of the toll facility; and payments between public and private partners involved in a public-private partnership. If the public authority with responsibility for the toll facility certifies that the facility is being adequately maintained, then

toll revenues may also be used for other purposes eligible under Title 23, such as a bridge or public transit project.

The ISRRPP includes similar restrictions, but it does not allow toll revenues to be used on other projects eligible under Title 23, whereas the VPPP allows toll revenues to be used on projects eligible under Title 23.

All facilities tolled under Section 129, Section 166, and the ISRRPP tolling programs are required to undergo annual audits to ensure compliance with these limitations and, if it is determined that the project sponsor is not in compliance, FHWA may require that toll collection on the facility be discontinued until an agreement is reached to achieve compliance.

Prevalence of Tolling

According to FHWA data, in 2017, there were approximately 6,000 toll roads in the United States, representing a small fraction (3.5 percent) of the 164,000-mile National Highway System. Toll bridge, tunnel, and road miles are split roughly evenly between on the Interstate system (3,495 miles) and off the Interstate (2,503 miles); and in rural areas (2,728 miles) and in urban areas (3,457 miles).[1] In 2016, States collected $14.5 billion in toll revenue,[2] which accounts for approximately seven percent of State and local contributions to highway spending.

According to the National Council of State Legislators, at least 35 states currently have some type of toll facility, such as a traditional toll road, bridge, or tunnel, or a price-managed lane.[3] States typically pursue tolling strategies as a means to raise revenue for surface transportation, and the interest among States and local governments to institute tolls has increased as highway and transit investment needs grow. Since 2013, at least 36 states have considered more than 550 bills related to tolling.[4]

For example, in 2016, the Rhode Island General Assembly enacted legislation to establish the RhodeWorks program, with the stated goal of bringing the State's roads and bridges into a state of good repair by 2025. A bridge tolling program was included in this legislation. This program imposes tolls on large trucks in 12 locations across the State. Each of the toll locations is paired with a bridge or bridge group that is being repaired or replaced, which makes the tolling allowable under Federal law. Last year, the State instituted tolls at two locations on Interstate 95 near the Connecticut border, with 10 additional locations planned in the future; some on the Interstate. The budget for the RhodeWorks program is $4.9 billion over ten years, but only about one tenth of that amount will be generated by tolls. Once the Rhode Island Department of Transportation (RIDOT) demonstrates that the tolled Interstate bridges are adequately maintained, the State can use toll revenues on other Title 23 eligible projects. The trucking industry opposes the program, arguing that in the already congested – and heavily tolled – Northeast Corridor, additional truck-only tolls will impose significant business costs.

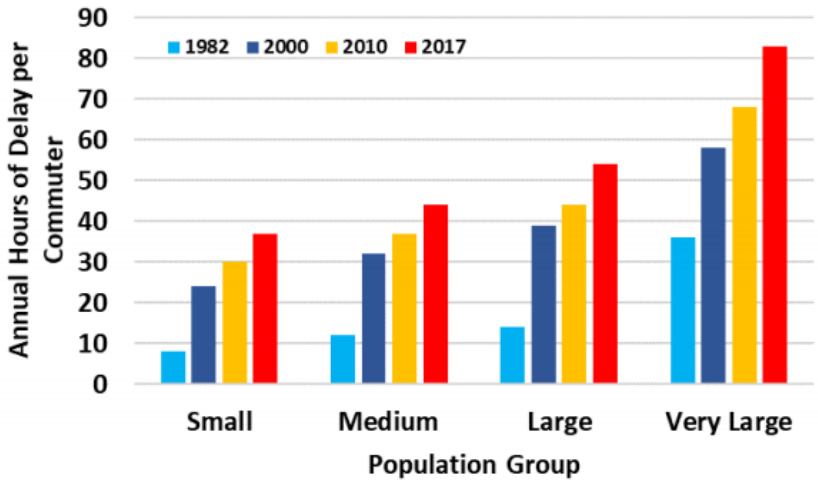
[1] FHWA, *Toll Facilities in the United States*, March 2018.
[2] FHWA *Highway Statistics 2016*.
[3] http://www.ncsl.org/Portals/1/Documents/transportation/P3_State_Statutes.pdf
[4] http://www.ncsl.org/blog/2018/10/24/a-tolling-revolution-or-just-a-loose-change.aspx

Congestion

The poor condition of our surface transportation network has contributed to, and is exacerbated by, congestion on the Nation's roads. The U.S. Department of Transportation's (DOT) latest *Conditions & Performance Report*[5] documents that all levels of government need to invest approximately $143 billion per year to improve the conditions and performance of our roads and bridges - $37 billion less than we currently invest annually. DOT also estimates that the cost to bring rail and bus transit systems into a state of good repair is $90 billion, and $26.4 billion per year would need to be invested to accommodate the high-growth scenario of future ridership. This equates to approximately $9.5 billion more per year at all levels of government needed for transit capital investments.

Congestion costs consumers time and money. Globally, three of the top 25 most congested cities in the world are in the United States, according to INRIX.[6] According to the *2019 Urban Mobility Report* (Report) by the Texas A&M Transportation Institute (TTI), Americans lost a total of 8.8 billion hours due to congestion[7] with the average commuter spending 54 hours in traffic in 2017. The Report further found that in 2017, the annual cost of congestion rose to $166 billion, and Americans wasted 3.3 billion gallons of fuel in traffic; and the average commuter incurred an extra $1,010 in costs due to wasted time and fuel from traffic congestion. The Report also found that while hours of delay for commuters in cities over one million people have nearly tripled since 1982, small cities (less than 500,000 people) have fared even worse, with average hours of delay quadrupling over that time.

Exhibit 4. Congestion Growth Trend – Hours of Delay per Auto Commuter



Small = less than 500,000
Medium = 500,000 to 1 million
Large = 1 million to 3 million
Very Large = more than 3 million

[5] FHWA, "2015 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance," https://www.fhwa.dot.gov/policy/2015cpr/.
[6] "Global Traffic Scorecard." *INRIX Research*, Feb. 2019. http://inrix.com/scorecard/.
[7] "2019 Urban Mobility Report." *Texas A&M Transportation Institute*, Aug. 2019. https://static.tti.tamu.edu/tti.tamu.edu/documents/mobility-report-2019.pdf.

Traffic congestion also has a direct effect on businesses and the economy. The TTI Report found that 33 percent of traffic delays occur mid-day and overnight; in order to account for unpredictable travel times caused by congestion, travelers and shippers had to add nearly 70 percent more travel time in 2017. Congestion cost the trucking industry $74.5 billion in 2017, $68.1 billion of which occurred in dense urban areas.[8] The cost of congestion for truckers grew by 40 percent between 2012 and 2017, compared to a 14 percent increase in congestion costs for non-commercial drivers. The U.S. Travel Association reports that Americans avoided an estimated 47.5 million automobile trips due to highway congestion in 2018, which would have generated $30 billion in economic activity and created 248,000 jobs.[9] TTI predicts that congestion will grow to an annual cost of $200 billion in 2025, and the average commuter will waste 62 hours and 23 gallons of fuel in traffic by that year. [10]

Mitigating Congestion with Technology

According to a report by Cambridge Systematics, traffic congestion is generally a result of seven sources, that often interact with one and other: bottlenecks, weather, traffic incidents, works zones, traffic control devices, special events, and the number of vehicles on a roadway at any given time.[11] Current efforts to leverage technology to alleviate congestion are successful when they target one or more causes of congestion. Examples of technological solutions to combat congestion include ramp metering, signal coordination, reversible lanes, electronic signage and improved public transit.

Yet, as the population rises and the economy adds jobs, the additional vehicles on the road and the corresponding additional miles traveled will further increase congestion. At the same time, the transportation network has absorbed the introduction of technology solutions that seek to improve mobility. The impact that these new mobility options will have on congestion remains to be seen. Examples of technology solutions include:

- Transportation Network Companies (TNCs), such as Uber and Lyft, which use private vehicles and app-based technologies to link drivers to passengers for both single passenger trips and pooled trips.
- Autonomous Vehicles, while not ready for mass dissemination yet, use on-board systems (ex: radar and lidar) to drive the vehicle and eliminate the risk of crashes caused by driver behavior.
- Connected Vehicles, hindered by the debate over who gets to access the 5.9GHz spectrum, will communicate with other vehicles and highway infrastructure, such as traffic lights, to share speed, direction, intention, and other information, thereby improving highway safety.

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[8] "Cost of Congestion to the Trucking Industry." *American Transportation Research Institute*, Oct. 2018. https://atri-online.org/wp-content/uploads/2018/10/ATRI-Cost-of-Congestion-to-the-Trucking-Industry-2018-Update-10-2018.pdf.

[9] "Infrastructure/Road Congestion Economic Impact Study and Survey." *U.S. Travel Association*, May 2019. https://www.ustravel.org/sites/default/files/media_root/Congestion_Survey%20%281%29.pdf.

[10] "2019 Urban Mobility Report." *Texas A&M Transportation Institute*, Aug. 2019. Page 12. https://static.tti.tamu.edu/tti.tamu.edu/documents/mobility-report-2019.pdf.

[11] Traffic Congestion and Reliability Trends and Advanced Strategies for Congestion Mitigation prepared for Federal Highway Administration prepared by Cambridge Systematics, Inc. with Texas Transportation Institute. Page 2-1. https://ops.fhwa.dot.gov/congestion_report/congestion_report_05.pdf.

- Mobility on Demand (MOD) is defined as an innovative, consumer-focused approach which leverages emerging mobility services, integrated transit networks, real-time data, connected travelers, and cooperative intelligent transportation systems (ITS) to allow for a more traveler-centric transportation system, providing improved mobility options to all users of the system in an efficient and safe manner.[12] In practice, MOD is usually accessed via a smart phone app that provides consumers with easy access to multiple shared travel options based on availability, price point and convenience level. MOD apps can provide integrated trip planning and booking, real-time information, and a single fare payment. Transportation options facilitated through MOD providers may include: carshare, bikeshare, rideshare, transportation network companies (TNCs), scooter sharing, microtransit, shuttle services, public transportation, and others. MOD can provide real opportunities to develop a system of mobility choices, integrated with traditional transportation options, that can meet the needs of diverse users.
- Smart traffic lights and priority signaling technology can reduce wait times at traffic lights to improve efficiency. Priority signaling gives buses more time to get though a traffic light, improving the frequency of public transit services.

Possible impacts include scenarios that may decrease or increase congestion. For example, technology that makes information on transportation options readily available could help reduce congestion. Technological innovation also could reduce congestion by eliminating crashes and improving system efficiency and reducing the spacing between vehicles. On the other hand, AVs and TNCs could increase vehicle miles traveled in an already congested corridor.

Mitigating Congestion with Congestion Pricing

In response to growing congestion, numerous States and cities are looking to implement roadway pricing strategies as a means to manage demand on highway facilities, particularly in rush hour and other high-volume times of day. Congestion pricing typically takes the form of a variably-priced lane, such as an Express Lane or HOT Lane; a variable toll on an entire roadway or facility; or a cordon charge that is levied on drivers to enter or move within a specifically-designated area.

Express Lanes and HOT lanes have been instituted in many regions of the country, and currently are in operation in 10 States.[13] These lanes, which run adjacent to a section of existing roadway, provide a more predictable mobility option for drivers who are willing and able to pay the toll.

Several States have pursued fully variably-tolled roadways at certain times of day to address congestion. Examples of this include the tolls on Interstate 66 in Northern Virginia outside of Washington, D.C., on SR 520 in Seattle, Washington, and the proposed tolls on Interstate 5 in Portland, Oregon.

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[12] https://www.its.dot.gov/factsheets/pdf/MobilityonDemand.pdf.

[13] Transportation Research Board managed lanes database, https://managedlanes.wordpress.com/2017/07/07/projects-database/.

New York City is the first U.S. city to pursue cordon pricing. In April 2019, the New York State legislature approved legislation to implement congestion pricing in lower Manhattan known as the Central Business District Tolling Program. Details are still being finalized, but the program envisions a charge to be levied for entering lower Manhattan, via the multiple bridges and tunnels with direct access into lower Manhattan as well as for vehicles heading south within Manhattan once they cross 60th street. The tolls will be variably priced. Exact tolling rates and other policies on credits and exemptions have not been determined but will be set by an appointed six-person Traffic Mobility Review Board. However, New York expects the program to raise about $1 billion annually. The legislation requires that the toll revenue be used to secure bonds totaling $15 billion for public transit projects as part of the Metropolitan Transportation Authority's capital program through 2024. Tolls are scheduled to start no earlier than December 31, 2020.

Public Policy Considerations

When developing and implementing pricing strategies, including tolling and congestion pricing, State and local agencies take into account other potential impacts. States, local agencies, and other project sponsors conduct public engagement and evaluate the potential impacts of a new toll or managed lane on surrounding communities as part of the planning and environmental review processes, including through traffic analyses which evaluate any diversion onto nearby roadways or neighborhoods that a new toll collection facility may create. Diversion off the tolled facility can both undermine the revenue expectations that a new toll will generate, and in the case of congestion pricing, can shift vehicle traffic and any associated congestion to a different roadway.

Equity impacts of a new toll or congestion charge are also a significant consideration. In the case of the Interstate 66 tolls in Virginia, which are dynamically priced without a cap, tolls for single occupancy vehicles have reached as high as $47.50 for a one-way trip in order to keep traffic moving[14]. Paying the toll provides access for a solo driver to a segment of I-66 that was previously only open to HOVs. The I-66 toll lanes are part of the Virginia Department of Transportation's Transform I-66, which consists of two programs focused on multimodal improvements inside and outside the Capital Beltway along the I-66 corridor in Northern Virginia. These improvements include new express lanes, and new and improved bus service and transit routes, new and expanded park and ride lots, and interchange improvements. The levels reached by this this toll illustrates that variable pricing charges deliver mobility by pricing a roadway at a sufficient level to manage and impact demand. States and localities may also consider how to ensure mobility options for those unable to pay the toll or congestion charge, how to provide alternatives to congested roadways, and how to pay for those transportation investments.

[14] *Washington Post*, "Virginia to tweak 66 Express Lanes pricing to address tolls that have topped $47," April 30, 2018.

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