PRICING AND TECHNOLOGY STRATEGIES TO ADDRESS CONGESTION ON AND FINANCING OF AMERICA'S ROADS

(116–30)

HEARING

BEFORE THE

SUBCOMMITTEE ON
HIGHWAYS AND TRANSIT

OF THE

COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTEENTH CONGRESS

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CONTENTS

APPENDIX

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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.

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.

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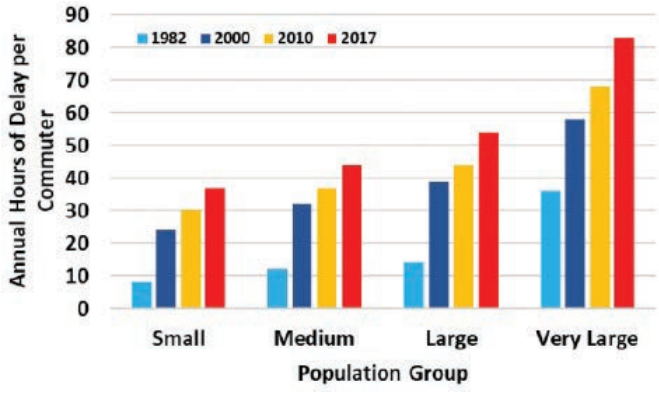
[1] FHWA, *Toll Facilities in the United States*, March 2018.
[2] FHWA *Highway Statistics 2016*.
[3] http://www.ncsl.org/Portals/1/Documents/transportation/P3__State__Statutes.pdf
[4] http://www.ncsl.org/blog/2018/10/24/a-tolling-revolution-or-just-a-loose-change.aspx
[5] FHWA, "2015 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance," https://www.fhwa.dot.gov/policy/2015cpr/.

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

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

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[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.

[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.

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.
- 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 North-

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[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.

[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/.

ern Virginia outside of Washington, D.C., on SR 520 in Seattle, Washington, and the proposed tolls on Interstate 5 in Portland, Oregon.

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.

WITNESS LIST

- The Honorable Oliver Gilbert III, Mayor, City of Miami Gardens, and Chairman, Miami-Dade Transportation Planning Organization
- Mr. Travis Brouwer, Assistant Director for Public Affairs, Oregon Department of Transportation
- Ms. Tilly Chang, Executive Director, San Francisco County Transportation Authority, *on behalf of the Intelligent Transportation Society of America*
- Mr. Darren D. Hawkins, President and Chief Executive Officer, YRC Worldwide Inc., *on behalf of the American Trucking Associations*
- Mr. Timothy J. Lomax, Ph.D., PE, Regents Fellow, Texas A&M Transportation Institute
- Mr. Marc Scribner, Senior Fellow, Competitive Enterprise Institute

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

PRICING AND TECHNOLOGY STRATEGIES TO ADDRESS CONGESTION ON AND FINANCING OF AMERICA'S ROADS

WEDNESDAY, SEPTEMBER 11, 2019

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON HIGHWAYS AND TRANSIT,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:05 a.m., in room 2167, Rayburn House Office Building, Hon. Eleanor Holmes Norton (Chairwoman of the subcommittee) presiding.

Ms. NORTON. The subcommittee will come to order. I ask unanimous consent that the chair be authorized to declare recesses during today's hearing.

Without objection, so ordered.

I ask unanimous consent that Members not on the subcommittee be permitted to sit with the subcommittee at today's hearing and ask questions.

Without objection, so ordered.

I want to welcome our witnesses in particular, but all of you to today's hearing, as we are fast galloping toward the need to reauthorize the FAST Act, and our cities and localities are looking to us to see what we are going to do. I met this morning with a group here in the Congress.

The focus generally has been on revenue, and why not, especially since that has been the most difficult part of what we have had to do. But the issues haven't waited for Congress to catch up on revenue, and people are asking for and indeed using other methods to get rid of congestion and to bring us into the 21st century on transportation.

In today's hearing we are going look at some of those questions, the nuances of Federal tolling policy, of congestion pricing, of technology solutions to address congestion, and many other transportation needs today.

So while Congress fiddled and failed to solve the revenue question, congestion has negatively affected our constituents as never before, not to mention the quality of air we breathe and the failure to deal with climate change, which was not even discussed at the time of the last reauthorization, to indicate just how far time has moved and how much Congress has to catch up.

The "Urban Mobility Report" indicates—and you might want to look at what it says for your constituents—that my constituents pay $1,840 a year in congestion costs, and we here in the National

Capital region are the third highest in the Nation. I hope yours aren't paying $1,840 per year, per constituent. That is what my constituents pay.

This is nothing short of a congestion tax. And in our case here in this region it is the result of 248 million—that is "m"—million hours of congestion delays in 2017 across the Washington, DC, metropolitan area. I invite you all to look at what this means, what the "Urban Mobility Report" says for your own area.

A Harvard School of Public Health study found that 83 percent of the Nation's largest urban areas contributed more than 2,200 premature deaths annually. That is an $18 billion cost to the healthcare system. When it says largest urban areas, it really means the entire area of a big city and its suburbs.

While we debate how to resolve congestion, we have left the States and localities looking on their own and looking for more sources of revenue. In today's testimony, we will hear support for greater tolling flexibility, enabling States and localities to raise more revenue. But we will also hear from others that Congress should erect barriers to tolling.

This difference that is going to come out in this hearing is deliberate. The division you will see on the panel is representative of a broader disagreement on tolling policy that Congress will have to debate.

Congestion pricing has become mainstream. They have HOT lanes springing up across many urban areas. We have variable rate cordon pricing, charging drivers to enter into a congestion area. You see what New York City has done.

Closer to my own district here in the State of Virginia, we have variable tolls on all lanes on I–66 during rush hour. I never thought I would see what has resulted. People are paying it with tolls as high as $47.50 for a single 10-mile trip.

Excessive tolls raise significant equity questions, of course, particularly the impact on low-income drivers, and they are likely to divert traffic onto nearby roads and neighborhoods because people are not wanting to pay $47-plus to get you anywhere. So we can't gloss over those impacts as we look at these new strategies.

I am particularly interested in technology and how it can help resolve congestion. Autonomous vehicles, for example, can they reduce congestion or do they increase congestion when anybody can hop in a car and go anyplace she wants to on her own? We should be asking the same questions for transportation networks and connected vehicles.

Finally, I think it is critical and I do not intend to neglect the robust transit systems we need and the role transit plays in reducing congestion. I cannot imagine this area, this National Capital region, without transit. The roads would simply be impossible.

Dense urban areas rely on subway service, while rapid bus transit will also greatly reduce congestion, not to mention HOT lanes, which are becoming more and more popular.

Some on today's panel suggest that toll revenues should only go to maintain the tollroad. However, I remind you that investing in transit and other methods to reduce vehicle-miles traveled is a highly effective tool to reduce congestion.

I want to thank the witnesses for joining us today.

[Ms. Norton's prepared statement follows:]

Prepared Statement of Hon. Eleanor Holmes Norton, a Delegate in Congress from the District of Columbia, and Chairwoman, Subcommittee on Highways and Transit

Welcome to today's hearing. As we prepare to reauthorize the FAST Act, States and cities are looking to Congress to help them tackle growing revenue needs and congestion woes. Today's hearing will explore the nuances of federal tolling policy, congestion pricing, and technology solutions to address congestion.

Our constituents are reminded daily that traffic congestion is getting worse, negatively affecting their lives, costing them time and money, and lowering the quality of the air we breathe. According to the latest Urban Mobility Report, my constituents pay $1,840 a year in congestion costs, the third highest in the nation. This congestion "tax" is the result of the 248 million hours of congestion delays in 2017 across the Washington, DC metro area.

A Harvard School of Public Health found that air pollution from traffic congestion in 83 of the nation's largest urban areas contributes to more than 2,200 premature deaths annually, costing the health system at least $18 billion.

While we debate how to resolve congestion, every state and locality is also looking for more sources of revenue. Today, in testimony, we will hear support for greater tolling flexibility, enabling states and localities to raise more revenue; and conversely, we will also hear that Congress should erect more barriers to tolling. This division on the panel is representative of a broader disagreement on tolling policy that Congress will have to debate.

Congestion pricing strategies have become mainstream, with HOT lanes springing up across many urban areas. Variable rate cordon pricing charges drivers to enter into a congested area, and is, currently being pursued by New York City. Closer to my district, the State of Virginia instituted variable tolls on all lanes of I–66 at rush hour, which have reached as high as $47.50 for a single, 10-mile trip.

Excessive tolls raise significant equity questions, particularly the impacts on low-income drivers, and are more likely to divert traffic onto nearby roads and neighborhoods. I believe we need to take a hard look at current tolling and congestion pricing strategies, to ensure that States and local governments do not gloss over these impacts on Federal-aid roads.

I would also like to hear from our witnesses how technology can help resolve congestion, and their thoughts on the impacts of autonomous vehicles. Will AVs reduce congestion or increase congestion? We should be asking the same questions for transportation network companies (TNCs) and connected vehicles.

Finally, I think it's critically important to highlight that robust transit service plays a major role in reducing congestion in urban areas. Dense urban areas rely on subway service, while bus rapid transit can greatly reduce congestion in outlying areas. Express buses on HOT lanes can also play a critical role in ensuring everyone has affordable access to toll lanes. Some on today's panel suggest that toll revenues should only go to maintain the toll road. I remind you that investing in transit and other methods to reduce vehicle miles travelled is a highly effective tool to reduce congestion for roadway users.

I thank our witnesses for joining us today and look forward to your remarks.

Ms. NORTON. And I want to ask the chairman of our full committee, Mr. DeFazio—oh, excuse me. I should ask the ranking member—how could I possibly not move to my left?—my good friend, Mr. Davis, for his comments.

Mr. DAVIS. Thank you, Madam Chair.

I mean, in honor, especially if we get some policies, if we move forward, I would always yield to the chairman first, if that helps us.

Mr. DEFAZIO. I want you to wake everybody up.

Mr. DAVIS. You want me to wake everyone up? All right. I can do that.

Ms. NORTON. Which means I put them to sleep.

Mr. DAVIS. Clearly, Madam Chair, it was not me who alluded to that. That was the chairman.

In all seriousness, thank you. This is a great committee. I really enjoy serving with Chairwoman Norton. And this committee has a history of bipartisanship. We are looking for solutions which is why you are all here today, is to help us find those solutions.

I do want to thank the witnesses and recognize that this subcommittee is going to continue to do our work to reauthorize the Federal surface transportation policies. And as part of this effort, as you know, you are all here. We have held a number of hearings, too, outside of this one on very important policy topics and I want to thank the chair for allowing us to participate in these types of gatherings because it truly does help us come up with solutions.

Today, as we know, the subcommittee will focus on tools being utilized by State and local communities to mitigate congestion. Congestion can be caused by various issues, such as weather, traffic incidents, and, as many of you had in your testimony, capacity constraints.

According to the "2019 Urban Mobility Report," Americans traveled an extra 8.8 billion hours due to congestion and purchased an extra 3.3 billion gallons of fuel, leading to a total congestion cost of $166 billion in 2017. Dr. Lomax, who worked on this report, is with us today, and I look forward to learning more about its findings in his testimony and followup questions.

As we know, congestion negatively impacts our ability to move products to domestic and international markets, which undermines our economy and America's global competitiveness. And congestion is not just an urban issue, although I can tell you, in my district in central and southwestern Illinois, my constituents' idea of congestion is much different than the idea of congestion out here in Washington, DC, or in other large urban areas.

But it is perhaps most importantly, though, congestion, again, no matter where you are, in my district or here, it is a personal issue. Sitting in traffic means that there is less time to do the things that are most important to each of us. I can remember sitting in traffic. It made me late to football practices that I was coaching my kids' football game or coaching my kids' football teams or getting to a basketball game late to watch my daughter cheer when she was in high school. So these are things that are very personal to us.

This hearing is going to specifically focus on how States and local communities are utilizing some of the tools in the toolbox: tolling, congestion pricing strategies, and new technologies to address congestion. Our witnesses will provide us with real-world examples of how these tools are all being deployed, as well as give us their perspective on whether or not these tools are working well.

There are other tools to address congestion beyond those that are the focus of today's hearing. If we are going to tackle congestion, we need a thoughtful approach that provides State and local communities with the flexibility to do what makes sense, given their unique circumstances, because no single solution is going to work here in Washington, DC, and at the same time work in the 13th Congressional District of Illinois where I am blessed to serve.

I look forward to our discussion on this important issue and learning more about how the Federal Government can be a good

partner to States and local communities as they seek to address congestion.

And with that, again, thank you to our witnesses. Thank you to Chairwoman Norton. And thank you to Chairman DeFazio for being here at this important hearing today.

And I yield back.

[Mr. Davis' prepared statement follows:]

Prepared Statement of Hon. Rodney Davis, a Representative in Congress from the State of Illinois, and Ranking Member, Subcommittee on Highways and Transit

The Subcommittee is continuing our work to reauthorize federal surface transportation programs and policies. As part of that effort, we have held a number of hearings on important policy topics.

Today, the Subcommittee will focus on some of the tools being utilized by state and local communities to mitigate congestion. Congestion can be caused by various issues, such as weather, traffic incidents, and capacity constraints.

According to the *2019 Urban Mobility Report*, Americans traveled an extra 8.8 billion hours due to congestion and purchased an extra 3.3 billion gallons of fuel, leading to a total congestion cost of $166 billion in 2017. Dr. Lomax, who worked on this report, is with us today, and I look forward to learning more about its findings as part of his testimony.

Congestion negatively impacts our ability to move products to domestic and international markets, which undermines our economy and global competitiveness.

Congestion is also not just an urban issue. Congestion can and does happen everywhere, in our small towns and in our large cities.

Perhaps, most importantly, congestion is a personal issue. Sitting in traffic means that there is less time to do the things that are important to each of us—spending time with our families and friends or watching our children play sports, like my twin boys when they played high school football or my daughter when she was a cheerleader.

This hearing will specifically focus on how states and local communities are utilizing some of the tools in the toolbox—tolling, congestion pricing strategies, and new technologies—to address congestion. Our witnesses will provide us with real-world examples of how these tools are being deployed, as well as give us their perspective on whether or not these tools are working well.

There are other tools to address congestion beyond those that are the focus of today's hearing. If we are going to tackle congestion, we need a thoughtful approach that provides states and local communities with the flexibility to do what makes sense given their unique circumstances, because no single solution is going to work everywhere.

I look forward to our discussion on this important issue and learning more about how the Federal government can be a good partner to states and local communities as they seek to address congestion.

Ms. NORTON. I appreciate your remarks, Mr. Davis.

Now it is your turn, the chairman of our full committee, Mr. DeFazio.

Mr. DEFAZIO. Thanks, Madam Chair.

You have both made points that Congress needs to pay attention to. I mean, the costs of congestion on an annual basis are nearly four times our Federal investment in surface transportation and transit. Just think about that. We are wasting nearly four times as much money as we are investing on an annual basis year after year after year.

But around here we are paralyzed. My God, we can't figure out how are we going to pay for this. How are you ever going to pay for this?

Oh, let's see. We haven't adjusted the gas and diesel tax since 1993. I have proposed something that is so de minimus that it is

just embarrassing that we can't do it. Let's just index the gas and diesel tax and do some bonding and limit the annual increase to 1½ cents a gallon a year.

And I keep saying: You think you are going to lose your election if the gas goes up 1½ cents a gallon? When you drove to work today, you drove by the gas station. It probably went up a nickel or down a nickel on the digital sign. No one is going to notice that. And people around the country have showed that they are willing to pay to get out of congestion.

But Congress hasn't gotten the message. The White House hasn't gotten the message. They love to talk about: Oh, big infrastructure bill. We were up to $2 trillion for 3 weeks and then we were down to zero. In fact, the proposals in the President's budget consistently cut transportation investment.

So the States can't do it on their own. They are trying. The States are trying. A lot of all-red States have raised their gas tax, raised their registration fees, and States that have mixed governments in blue States. It is not a partisan issue out there in America. It just seems to be a partisan issue here in Washington, DC.

We are at the point of total paralysis. I am not going to repeat the statistics on how much time people waste and the hours. The amount of fuel wasted, sitting around? About 4 billion gallons a year wasted fuel, adding to the problems with climate change, which some of us believe in.

So it is time to act. Now, we are going to hear some things today, you are going to say, well, congestion pricing. Congestion pricing with what kind of alternatives for people? You can't just price people off the roads and say: Hey, we solved congestion. That person doesn't set their schedule to go to work, most likely, and they don't have a lot of options. Unless you build sufficient options, you can't just price people off the road.

And when Eleanor talked about $47 for 10 miles, $4.70 a mile, that is not even a Lexus lane. That is a chauffeured limousine lane. I mean, who can afford that? In my own State we have freeways. We don't have tolls. Now the mayor and some in the legislature of Portland have decided, well, maybe we ought to just toll parts of our freeways to deal with some problems. But, of course, it isn't even going to be like the HOT lane. No one is going to have an option. You are going to either use it or not use it.

What about diversion? What about people who have to go from the East Side of Portland to the West Side of Portland to Intel to go to work? Well, sorry, it is going to take you 2 hours or it is going to cost you a bunch of money that you can't afford.

So, we need a comprehensive approach, which is more Federal investment. And then we need to start applying technology, smart technology, 21st-century technology.

You know, you sit at traffic lights. No one is coming. I was in Pittsburgh—they have smart traffic lights, realtime. Imagine that, 21st-century technology, and we are still working with 19th-century technology with metered traffic lights that are set by traffic engineers who go out and do traffic counts and stand around on the corner and then set them according to what they think traffic flows are going to be in the future, which has nothing to do with reality.

So I am losing patience with what is going on around here. The Senate passed a bill. It has got some decent policy in it. It has got a little more spending. But the leaders of the Senate have said: Oh, it is impossible to pay for. We don't know how we are going to pay for that. We can't pay for that. How are we going to pay for it?

Well, if we don't pay for it, we are going to waste a hell of a lot more money, year in, year out, day in, day out, and Americans are going to get more and more frustrated.

So, I hope today's hearing provides some ideas that will help mitigate these problems. But the bottom line is we have to pony up some money or we are not going to solve any problems.

Thank you.

[Mr. DeFazio's prepared statement follows:]

Prepared Statement of Hon. Peter A. DeFazio, a Representative in Congress from the State of Oregon, and Chairman, Committee on Transportation and Infrastructure

Thanks, Madam Chair. You both made points that Congress needs to pay attention to. The cost of congestion on an annual basis are about four times our Federal investment in surface transportation and transit. Just think about that. We're wasting four times as much money as we're investing on an annual basis year after year after year.

But around here we're paralyzed! We can't figure out how we're going to pay for this . . . how are you ever going to pay for this?

Oh, let's see. We haven't adjusted the gas and diesel tax since 1993. I've proposed something that's so de minimis, that it's just embarrassing that we can't do it. Let's just index the gas and diesel tax and do some bonding and limit the annual increase to one and a half cents a gallon a year.

And I keep saying, "You think you're going to lose your election if gas goes up one and a half cents a gallon?"

When you drove to work today you drove by the gas station—it probably went up a nickel or down a nickel on the digital sign. No one's going to notice that. And people around the country have shown that they are willing to pay to get out of congestion.

But Congress hasn't got the message. The White House hasn't got the message. They love to talk about a big infrastructure bill, we were up to two trillion dollars for three weeks and then we were down to zero.

In fact, the proposals in the President's budget consistently cut transportation investment.

The states can't do it on their own. They're trying, the states are trying. A lot of all red states have raised their gas tax, raised their registration fees and states that have mixed governments and blue states.

It's not a partisan issue out there in America. Just seems to be a partisan issue here in Washington, D.C.

Ms. NORTON. I feel the chairman's frustration. We passed the FAST Act with no new money. We just can't do what we did last time. So in order to get new money, we had to make a 6-year bill a 5-year bill. Who are we fooling?

And I appreciate that the chairman raised the issue of the gas tax. How come in red States they are not afraid to raise the gas tax but they send people to Congress who are? So we are stuck on stupid when it comes to revenue and overwhelmed by what needs to be done in our system. I am pleased that the Senate, controlled by the other side, is looking at new revenue.

I want to welcome our witnesses, the Honorable Oliver Gilbert III, who is the mayor of the city of Miami Gardens and chairman of the Miami-Dade Transportation Planning Organization; Travis

Brouwer, the assistant director for public affairs for the Oregon Department of Transportation; Tilly Chang, the executive director of the San Francisco County Transportation Authority, on behalf of the Intelligent Transportation Society of America; Darren D. Hawkins, chief executive officer of YRC Worldwide Inc., on behalf of the American Trucking Associations; Timothy Lomax, Regents fellow at Texas A&M Transportation Institute; and Marc Scribner, senior fellow at the Competitive Enterprise Institute.

I want to thank all of you for being here today. I look forward to your testimony.

Before we hear from the panel, I would like to recognize Ms. Wilson to introduce Mayor Gilbert, a constituent from her district.

Ms. WILSON. Thank you so much. Thank you so much, Chairwoman Norton.

I am honored to introduce my personal mayor, the mayor of the great city of Miami Gardens, which will host the 2020 Super Bowl, and chair of the Miami-Dade Transportation Planning Organization, TPO, Mayor Oliver Gilbert.

When I learned that this subcommittee was having a hearing on congestion and tolling, Mayor Gilbert was the first witness that I knew I had to recommend. He is a young lawyer with a long and distinguished career in public service that began as an aide in the Florida Legislature. He was regarded as an astute staffer, both legislatively and politically. Within a decade, he became the mayor of the city of Miami Gardens.

As mayor, he has launched several successful initiatives to increase access to public transportation and improve mobility. One such initiative is the Miami Gardens Express, a free trolley service that many, many residents depend on.

His accomplishments as mayor and leadership on transportation issues compelled his Miami-Dade TPO colleagues to elect him as their chair in January 2019. As TPO chair, Mayor Gilbert oversees the implementation of the county's Strategic Miami Area Rapid Transportation, SMART Plan, a multibillion-dollar infrastructure investment program to reduce congestion and spur economic growth.

Mayor Gilbert, welcome to Congress, and thank you for testifying today and for your leadership on transportation issues that greatly concern Floridians and others throughout this Nation.

Thank you, Madam Chair. And I yield back.

Ms. NORTON. Thank you, Congresswoman Wilson.

I would like to now recognize Congresswoman Davids to introduce Mr. Hawkins.

Ms. DAVIDS. Thank you, Madam Chair and Ranking Member.

I would like to take the opportunity of introducing Mr. Darren D. Hawkins, chief executive officer of YRC Worldwide Inc., on behalf of the American Trucking Associations.

YRC Worldwide is a freight holding company based in the Kansas Third Congressional District in Overland Park, Kansas. They employ 24,000 drivers and dock workers who are members of the International Brotherhood of Teamsters. Their trucks travel more than 900 million miles annually in the United States, and more than 1,700 YRCW drivers have more than 1 million consecutive ac-

cident-free miles. That is something a lot of us should be celebrating.

YRCW has a long history and has long been important in the Kansas City metropolitan area business community and the civic community and we are proud to be very well represented in hearing your testimony today, Mr. Hawkins, and I appreciate you taking the time to be here. It is a pleasure to have you.

And I yield back.

Ms. NORTON. Thank you, Congresswoman Davids.

Without objection, witnesses' full statements will be entered into the record. Since your written testimony will be made a part of the record, the subcommittee requests that you limit your oral testimony to 5 minutes.

Mayor Gilbert, I ask you to proceed now, sir.

TESTIMONY OF HON. OLIVER GILBERT III, MAYOR, CITY OF MIAMI GARDENS, AND CHAIRMAN, MIAMI-DADE TRANSPORTATION PLANNING ORGANIZATION; TRAVIS BROUWER, ASSISTANT DIRECTOR FOR PUBLIC AFFAIRS, OREGON DEPARTMENT OF TRANSPORTATION; TILLY CHANG, EXECUTIVE DIRECTOR, SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY, ON BEHALF OF THE INTELLIGENT TRANSPORTATION SOCIETY OF AMERICA; DARREN D. HAWKINS, CHIEF EXECUTIVE OFFICER, YRC WORLDWIDE INC., ON BEHALF OF THE AMERICAN TRUCKING ASSOCIATIONS; TIMOTHY J. LOMAX, PH.D., P.E., REGENTS FELLOW, TEXAS A&M TRANSPORTATION INSTITUTE; AND MARC SCRIBNER, SENIOR FELLOW, COMPETITIVE ENTERPRISE INSTITUTE

Mr. GILBERT. Thank you.

I would be remiss if I didn't start by saying 18 years ago this country was attacked. I stand in awe of you all's service and the men and women of our military, what they do for us around the world to ensure that we can be here in this room, having this discussion. It is important. I thank them, and I thank you all.

Good morning, Chair Norton, Ranking Member Davis, Chair DeFazio, and members of this distinguished subcommittee. Thank you for the opportunity to testify.

I would also like to thank my congresswoman, Frederica Wilson, for her service to our district. Today I stand as her mayor and resident in awe of her service and the example she sets for our community.

I am Oliver Gilbert, as stated before, the chair of the Miami-Dade County Transportation Planning Organization, and I am also the proud mayor of Miami Gardens, and also the proud mayor of the Miami Dolphins. Yeah, I know. Yeah, I know. I am long suffering. It is a thing.

You know, I am here to tell you today that roads, they aren't just asphalt. They are pathways to something greater. Rail is not just something that carries trains. Rail, specifically the Metrorail in Miami-Dade County, carried a young boy from Miami Gardens to the University of Miami Law School every day. It helped him get his law degree. Ultimately, it was responsible for him being the mayor of his hometown, Miami Gardens.

I stand before you today in large part because someone invested in meaningful and efficient public transportation. Today I advocate that we pay their brilliance forward and find ways to expand rail, create dynamic transportation, reduce congestion, and promote conservation of time and of the planet.

I would like to now share how we are starting to address this in Miami-Dade County and how you can partner with us to make transportation an instrument of economic development and job creation.

In Miami-Dade County, traffic is an impediment not just to our growth economically, but to our development as a community. Our expressway system has almost reached its limit, and we have no room to build our way out of congestion.

This is why we are providing travel choices and alternatives that include both express lanes, as well as expanding transit through the Miami-Dade SMART Plan, a rapid transit plan for our future.

95 Express has been in operation for 10 years and it has reduced overall traffic congestion and increased traffic flow. While the Miami-Dade region has the fourth largest population, we are the 12th ranked area of congestion, partly due to the use of express lanes and BERT service.

BERT service has been highly successful, with ridership rising 48 percent in the first 2 years it was implemented. We plan to expand this network as a part of the SMART Plan.

Congress' support of the Value Pricing Pilot Program and the leadership of Congressman Webster, who was in the Florida Senate at the time, allowed us to pilot the 95 Express project forward and convert HOV lanes to HOT lanes. We improved our rankings on hours of driver delay from 10th to 12th, even as our population grew, which is actually quite remarkable.

This is not to say that congestion isn't a problem. However, the express lanes in BERT improved the commute times for all lanes, including the nontolled lanes, which is also significant.

While express lanes help, the best long-term remedy for relieving congestion in south Florida is through the expansion of a rapid transit network.

Our TPO has designated the SMART Plan as our top priority. The SMART Plan involves improvements to the BERT network and six rapid transit corridors. Right now the south corridor of the plan is in the development and funding stage. Miami-Dade has committed $100 million. The State has committed $100 million. We are asking the FTA to commit $100 million.

Locally, we have committed all available local funding, including TIPs, over the next 40 years to implement the projects. But it won't be enough. We need your help.

Federal support of innovative projects like SMART is essential and a Federal process that offers certainty and helps move projects like SMART forward is a must.

For example, the north corridor. The expansion of the Metrorail was initially contemplated when I was in elementary school and still no rail has been built. Students in class right now at Scott Lake and Crestview and Norland and Parkway, they deserve better.

We have to do better, and we have to do it faster. We need a Federal funding process that acknowledges the need of a community to access opportunity within a reasonable timeframe so all the partners can plan and do their part. There needs to be predefined funding structures for regions like Miami-Dade that provide for more than widened highways as a solution to congestion.

With this, we can create a future with substantially less congestion. With this, we can create a future so that a kid who went to FAMU can actually do some great things.

I would end my comments with this, just the wisdom of Albert Einstein: You can't solve a problem with the same thinking that created it. Our goal must not only be better answers, but also we have to ask tomorrow's questions. This will allow us to design and build a system that is flexible, expansive, and growable.

Thank you for your partnership, thank you for your support, and thank you for your leadership. Together we can grow the system forward.

Thank you, Madam Chair.

[Mr. Gilbert's prepared statement follows:]

Prepared Statement of Hon. Oliver Gilbert III, Mayor, City of Miami Gardens, and Chairman, Miami-Dade Transportation Planning Organization

Good morning, Chair Norton, Ranking Member Davis, and members of the distinguished House Transportation and Infrastructure Committee, Subcommittee on Highways and Transit. Giving special attention and admiration to my Congresswoman Frederica Wilson. Today, I stand as her Mayor and Resident and someone who is awed by her service through voice and example for her community. Thank you all for your service to your congressional districts and to this country. Here your voices define not just who we are but who we are to become as an America.

I am Oliver Gilbert, Chairman of the Miami-Dade County Transportation Planning Organization (TPO). I am also the Mayor of Miami Gardens. Thank you for the opportunity to address the topic of "Pricing And Technology Strategies To Address Congestion On And Financing Of America's Roads." Before I get into the technical aspects of my testimony, I want to offer some general thoughts on transportation and how we should see it as a growing and developing America.

I engage your imagination to view a road as not just pavement and asphalt. I ask that you see traffic independent of its congestion; to see rail without regard to its cost. While all the things mentioned are relevant, roads are pathways to something greater. They are instruments of economic development and job creation. Traffic is an impediment not just to our growth economically but to our development as a community. Rail is not just something to carry trains. Rail, specifically the Metrorail in Miami Dade County, carried a young boy from Miami Gardens to the University of Miami every day. It helped him get his law degree. Ultimately, it's responsible for him being the mayor of his hometown Miami Gardens. I stand before you today in large part because someone invested in meaningful and efficient public transportation. Today, I advocate that we pay their brilliance forward and find ways to expand rail, create dynamic interactions with regard to roads, reduce congestion, all the aforementioned promote conservation of time and of the planet.

EXPRESSWAY SYSTEM BUILT OUT IN MIAMI-DADE

The expressway system in Miami-Dade has reached its limit, and we have no room to build our way out of congestion. Heavy congestion has become a way of life in Southeast Florida. We have one possible new extension of an expressway, and beyond that we must provide travel choices and alternatives that include:

1. Rebuilding and fine-tuning operations of existing expressways such as express lanes; and
2. Expanding rapid public transit through the Miami-Dade Strategic Miami Area Rapid Transit (SMART) Plan.

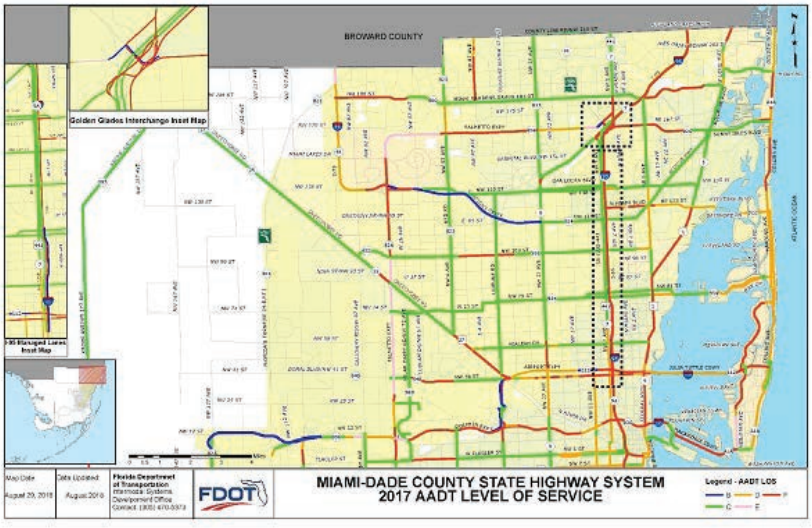

Figure 1. Level of Service depicting I–95 Corridor

ELECTRONIC TOLLED EXPRESS LANES IMPROVE THROUGHPUT

The fine-tuning of highway operations has involved providing a choice for users of highly congested expressways through "express lanes," which are electronic tolled lanes (SunPass electronic tolls only) within expressways that also include non-tolled lanes. Managed lanes which we term express lanes are expressway lanes dynamically tolled based upon congestion levels, where tolls fluctuate per the amount of traffic using these lanes. The goals of 95 Express are to reduce overall traffic congestion; provide a safe and predictable trip, in terms of travel time, for express lane motorists; maintain an express lane free-flow speed of 45 mph or greater for users including express buses; and increase the overall throughput of vehicles per hour on the entire expressway facility. The express tolls are electronically set by software and detection equipment that detects the speed and level of traffic in the express lanes and raises the toll when speeds drop and lowers the toll when speeds rise compared to a preset speed. A section of 95 Express is shown in Figure 2 below where the lanes to the right are non-tolled and "poles" separate the tolled express lanes to the left. Vanpools, buses, and registered carpools use the express lanes toll free.

Figure 2—Source: Florida Department of Transportation (http://floridaexpresslanes.com/southeastfl/)

The 95 Express lanes projects were developed and funded through an Urban Partnership between the United States Department of Transportation, Florida Department of Transportation (FDOT), local Metropolitan Planning Organizations, local transit agencies and the State of Florida with general funding. This Urban Partnership was facilitated by you through the congressionally created Value Pricing Pilot Program that allowed the conversion of High Occupancy Vehicle lanes (HOV) to High Occupancy Toll (HOT) lanes. Subsequent changes in Federal law by Congress expanded the ability to provide toll lanes within existing non-tolled expressway facilities that have been codified into Title 23 and Title 49 of United States Code. Thank you for your support of these innovative options for highly congested expressways. A special thank you to Congressman Daniel Webster, who as a leader in the Florida Senate led the effort for state general funds and FDOT funds to match the Federal Urban Partnership grant to move the pilot 95 Express project forward.

We are pleased that the express lane tolls in Southeast Florida are supporting Express Bus service in the express lanes. Our Express Bus system on the express lanes has been highly successful and provides a viable alternative to driving a car in the express lanes. We plan to expand the Express Bus network to all the current and future express lanes to ensure that all travelers have an option to take advantage of more reliable travel times provided by the express lanes. Express Bus ridership for Miami-Dade Express rose 48% from 2008 to 2010 (depicted in Figure 3 on the next page), after the express lanes were implemented in mid-2009.

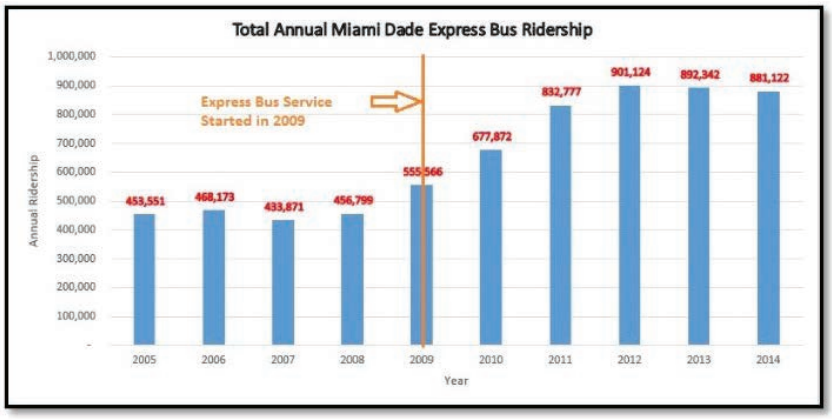

Figure 3 Source: Florida Department of Transportation

The success of 95 Express resulted in rapid growth of express lanes in Southeast Florida and across Florida's major metro areas. For example, we started 95 Express as a pilot in 2008 with Phase 1, being 7 miles that fully opened in 2010. As of September 2019, we have 62 miles of express lanes open in Southeast Florida (shown below in green in Figure 4) that provide a choice for daily travelers and visitors on most expressways, being I–95, I–75, I–595, Palmetto Expressway and soon on Florida's Turnpike Homestead Extension. By 2024, South Florida will have a total of 155 miles of express lanes (shown in green and red on Figure 4) open to traffic with 188 miles (shown in blue in Figure 4) under consideration as express lanes in the future (as shown in Figure 4).

Figure 4—Source: Florida Department of Transportation (http://floridaexpresslanes.com/southeastfl/)

In the Texas A&M Transportation Institute Report Titled, *2019 Urban Mobility Report* [https://mobility.tamu.edu/umr/], "Miami" Urbanized Area, which includes Miami-Dade, Broward, and Palm Beach Counties, has the 4th ranked population and the 12th ranked level of congestion. We believe the rating of 12th on congestion compared to 4th on population is in part due to providing choices for travelers on our congested expressway system such as express lanes and Bus Express Rapid Transit (BERT) service. As the express lane network and BERT was coming on-line, we improved from ranking 10th on hours of driver delay in the early 2000s to 12th on hours of driver delay in 2017. This is a remarkable improvement considering the Miami Urbanized Area population grew from a rank of 5th in the early 2000s to 4th in 2017 while also improving in the hour of driver delay congestion index. This is not to say our congestion is good by any means; it does, however, indicate that express lanes and BERT have helped make the congestion more tolerable and improved the commute times for all lanes including the non-tolled lanes.

We learned many lessons during the past decade on pricing and technology to provide choices and alternatives to congested expressways. They include:

- *Communication is essential* because express lanes are not "normal" operations for expressways. A consistent level of communication to elected officials, press, public, transportation professionals, and expressway system users is essential. This can be very challenging. When the first express lanes were proposed in Miami-Dade and Broward Counties in Florida, there was not a point of ref-

erence to help frame how express lanes work. Communication is also essential over time as newly elected officials assume office and the press, public and users change.

- *Providing a higher level of service in express lanes is essential* including enforcement, roadway service to clear issues timely, and clear and timely message signs on toll information so drivers can make decisions about using the express lanes or continue in the non-tolled lanes.
- *Express lanes reduce travel times* for the express lane users significantly while also improving travel times for those in the non-tolled lanes. A higher overall speed in the expressway corridor moves more vehicles through the corridor perhour throughout the day.

SMART Rapid Transit Plan

Express lanes are essential, but we believe the best long-term alternative to highly congested roadways in Miami-Dade is to expand our rapid transit network. The Miami-Dade Transportation Planning Organization designated the Strategic Miami Area Rapid Transit Plan or SMART Plan our top priority. This involves the BERT network and the addition of six rapid transit corridors. We are seeing high growth around existing rapid transit stations, and near the private sector premium rapid intercity rail service called Brightline-Virgin Rail currently running between Miami and Palm Beach with construction underway to Orlando.

Figure 5—Source: Miami-Dade Transportation Planning Organization (http://miamidadetpo.org/smartplan.asp)

The South Corridor of the SMART Plan is in the development and funding stage with a local funding commitment of $100 million, as well as Florida DOT committing $100 million, and a request with the Federal Transit Administration for a Small Starts grant of $100 million. The remaining five rapid transit corridors will reach the locally preferred alternative stage in the next six to twelve months and will be presented to Florida DOT and the Federal Transit Administration for development and funding in 2020. The Miami-Dade County Commission and Mayor have allocated over $9 billion of future local funds over 40-years as the local share of funding for the SMART Plan. This includes harnessing the fees and taxes from development along existing and new rapid transit corridors to help fund the local share. The SMART Plan Rapid Transit and BERT corridors are shown in Figure 5 above.

AUTOMATED VEHICLES

In addition, the Miami-Dade Transportation Planning Organization is working with Florida DOT and the industry on the future of automated vehicle technology. With the growth in popularity of Autonomous Connected Electric Shared (ACES) vehicle technology, it is imperative that current infrastructure be adaptable to accommodate these future platforms/technologies. Express lanes and their underlying technology infrastructure provide a great opportunity for integration of automated vehicles on our public roadways given the less complex maneuvers and the safety that comes with separating special use lanes.

We look forward to improved automated vehicle technology and will consider adjusting the use of the expressway such as automated vehicle uses of the express lanes to best facilitate those vehicles when they become a significant part of the future.

CONCLUSION

Thank you for providing the tools to support electronic express lanes and BERT in the express lanes, and we certainly want these tools to continue. We support a public transit program that includes a strong capital program for the Federal Transit Administration to help support implementation of the Miami-Dade SMART Plan.

We support innovative project delivery approaches that best solve the cost-effective and timely delivery for each major project.

Our assessment is congestion in Miami-Dade County will require ALL innovations, choices, and alternatives including electronic express lanes, modern rapid transit, and automated vehicles to provide Residents and visitors with more reliable travel options in the future.

A future that is of our creation. A future that will determine whether a young boy or girl can build upon their dreams and become the mayor of their hometown. A future that will enhance economic development and increase the amount of time that we get to spend with our families. A future that will use every tool and resource available to create the South Florida and America we deserve. We are not just talking about congestion and traffic. We are talking about growth, development, education, and opportunity. We are talking about the American dream.

Thank you for your partnership again. Thank you for your support and your leadership. Together, we go forward.

REFERENCE INFORMATION ON EXPRESS LANES IN FLORIDA

Florida Department of Transportation and partners have developed a network of express lanes in Southeast Florida that now includes the facilities in the table below that are open or under construction in Florida's major metro areas. The map in Figure 6 and Table 1 in the outline below illustrate the express lanes network statewide. http://floridaexpresslanes.com/

TABLE 1—FLORIDA EXPRESS LANES

Open to Use and Under Construction as of September 2019

Northeast Florida

- *Northeast Florida Express (I–295)* in the Jacksonville metro area
  - I–95 to Buckman Bridge (5 miles): 2 express lanes per direction open to traffic
  - SR 9B to J. Turner Butler Boulevard (5 miles): 2 express lanes per direction open 2020

Central Florida

- *Beachline Express (SR 528)* in the Orlando metro area

- I–4 to Florida's Turnpike Mainline (4 miles): 2 express lanes per direction open to traffic
- Florida's Turnpike Mainline to McCoy Road (4 miles): 1 express lane per direction open Fall 2019

- *I–4 Express* in the Orlando metro area—SR 434 to Kirkman Road (21 miles): 2 express lanes per direction open 2021
- *Florida's Turnpike* in the Orlando metro area—Osceola Parkway to Beachline West Expressway / SR 528 (6 miles): 2 express lanes per direction open 2021

Tampa Bay

- *Veterans Express* in the Tampa metro area—Hillsborough Ave. to Dale Mabry Hwy. (9 miles): 1 express lane per direction open to traffic
- *Crosstown Parkway Express* adjacent to the Selmon Crosstown Parkway in Tampa—approximately 10 miles—3 reversible lanes open to traffic
- *I–275* in St. Petersburg metro area—Gandy Boulevard to 4th Street N (4 miles): 1 express lane per direction open 2022

Southeast Florida

- *95 Express* in Miami/Fort Lauderdale/Palm Beach metro areas
  - Junction of I–95 and SR 836/I–395 in downtown Miami to Golden Glades interchange (7 miles): 2 express lanes per direction open to traffic
  - Golden Glades interchange to Broward Boulevard (14 miles): 1 to 2 express lanes per direction open to traffic
  - Broward Boulevard to SW 10th Street (19 miles): 2 express lanes per direction—open 2020
  - SW 10th Street to Glades Road (5 miles): 2 express lanes per direction open 2022
- *595 Express* in the Fort Lauderdale metro area—I/595/I–75/Sawgrass Expressway to Turnpike Mainline (10 miles): 3 reversible express lanes open to traffic
- *75 Express* in the Fort Lauderdale/Miami metro areas
  - Miami Gardens Drive to I–595 (11 miles): 2 express lanes per direction open to traffic
  - Palmetto Expressway/SR 826 to Miami Gardens Drive (4 miles): 1 express lane per direction open to traffic
- *Palmetto Express* in the Miami metro area—West Flagler Street to NW 154th Street (9 miles): 2 express lanes per direction open to traffic
- *Florida's Turnpike Homestead Extension* in the Miami metro area (opens in segments through 2024)
  - Biscayne Drive to Killian Parkway (14 miles): 1 express lane per direction
  - Killian Parkway to Dolphin Expressway/SR 836 (7 miles): 2 express lanes per direction
  - I–75 to Turnpike Mainline (8 miles): 1 express lane per direction

Under Study as of September 2019 (under consideration in the planning stages)

Northeast Florida

- I–295 (9 miles)
- I–95 (26 miles)

Central Florida

- Florida's Turnpike Mainline (46 miles)
- I–4 (41 miles)

Tampa Bay

- I–275 (21 miles)
- SR–60 (3 miles)
- I–4 (25 miles)
- I–75 (42 miles)

Southeast Florida

- Florida's Turnpike Mainline (88 miles)
- Florida's Turnpike Homestead Extension (14 miles)
- I–95 (50 miles)
- Sawgrass Expressway (21 miles)
- Palmetto Expressway (15 miles)

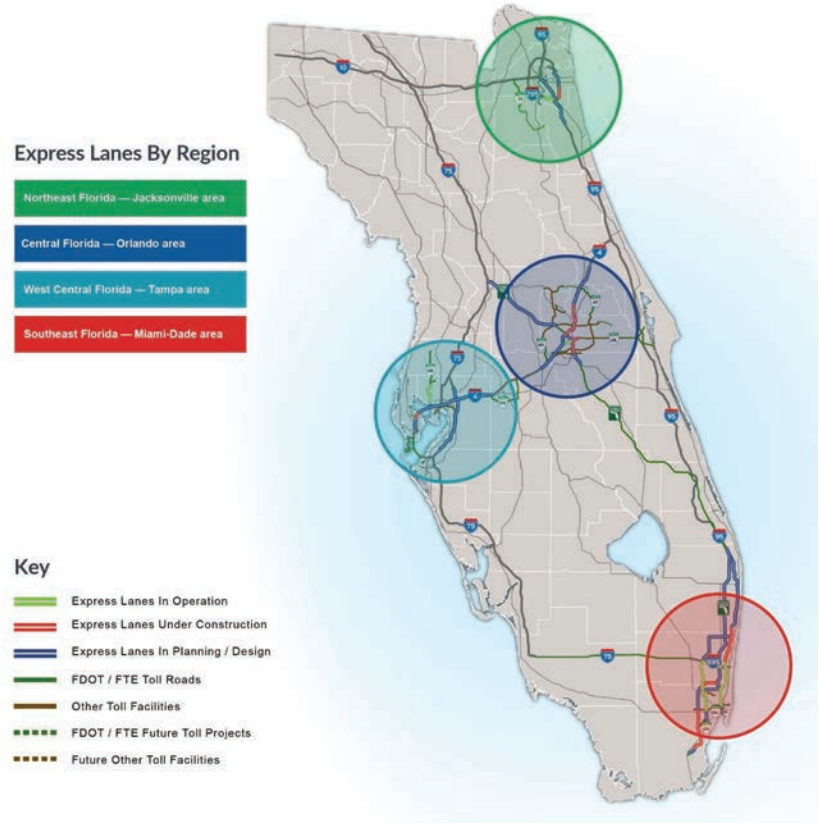

Figure 6 Source: Florida Department of Transportation

Ms. NORTON. Thank you very much, Mayor Gilbert.

I am going to now call on Travis Brouwer, assistant director of public affairs for the Oregon Department of Transportation.

Mr. BROUWER. Chair Norton, Ranking Member Davis, Chairman DeFazio, and members of the subcommittee, my name is Travis Brouwer. I am the assistant director for public affairs of the Oregon Department of Transportation, or ODOT. I want to thank you for the opportunity to appear before you today, and I particularly want to thank Chairman DeFazio for his leadership on transportation issues and all he has done over three decades of service on this committee to make our Nation's transportation stronger.

It is interesting to be here talking about tolling, because Oregon and ODOT, we don't operate any tollroads currently. But that could change in coming years as the clamor from the public for relief from the gridlock that is gripping the Portland metro area has led our legislators to direct ODOT to implement tolling.

Data show that the Portland metro region's congestion is bad and getting worse due to rapid population and job growth. In just 2 years, from 2015 to 2017, hours of congestion increased by 13 percent across the region and daily vehicle hours of delays increased

by 20 percent, and that was on top of a similar increase in the previous 2 years.

Many of our highways function more like parking lots at rush hour, and rush hour has now spread to become rush afternoon and evening as five sections of State highway in the Portland metro region are congested at least 7 hours every day.

Residents and businesses across the State increasingly are complaining to legislators and ODOT about how congestion in Portland poses a growing threat to our State's economy, making it more costly for companies across Oregon to get their goods to market.

In response to these concerns about the threat to the economy and our quality of life, in 2017 the Oregon Legislature passed the largest transportation investment package in the State's history, known as Keep Oregon Moving. This legislation included a comprehensive multimodal congestion relief strategy. The legislature funded new lanes on I–5, I–205, and other highways to alleviate bottlenecks.

But they recognized that we can't build our way out of congestion. So they also invested in intelligent transportation systems that help make traffic flow more efficiently, and they provided significant investment in transportation options, particularly public transportation. This will allow TriMet, our major transit agency in the region, to launch its biggest service expansion ever.

But the legislature recognized that even with all of these investments, they wouldn't be enough to achieve the congestion reduction the public demands. Even with this historic funding package, the legislature could not fund a number of high-priority congestion relief projects, including improvements to Interstate 205.

That is why the legislature turned to tolling to address congestion and raise revenue for improvements. In Keep Oregon Moving, they directed the Oregon Transportation Commission, ODOT's governing body, to implement tolling on both I–5 and I–205, our main north/south corridors in the region that carry the bulk of our freight and face the worst congestion.

Faced with this legislative mandate, the commission engaged regional stakeholders and created a public engagement process that reached members of the public more than 46,000 times. They created a stakeholder advisory committee made up of local government officials, the trucking industry, advocates for low-income communities, and others.

The commission charged this group with developing a recommendation for where we could use tolling to reduce congestion and how to address potential impacts. We analyzed options for tolling along the I–5 and I–205 corridors, including managed lanes, tolling all lanes, and tolling bridges.

After detailed analysis, managed lanes, like high-occupancy toll lanes and express toll lanes, fell by the wayside. We simply didn't find any location where these would offer significant congestion relief. What the advisory committee ultimately recommended was two tolling options that could significantly reduce congestion.

First, implement variable rate tolling on I–5 through the core of the Portland metro region. The American Trucking Research Institute recently ranked this the 28th worst truck bottleneck in the Nation. Tolling would be implemented in conjunction with a con-

gestion relief project that will add lanes at the interchange between I–5, I–84, and I–405. Tolling could help pay for this and other improvements.

Second, toll on or near the Abernethy Bridge on Interstate 205. This section of I–205 is just two lanes in each direction and we are designing a project to widen that section of highway, but neither the legislature nor ODOT has been able to find a half billion dollars needed to fund that project. Tolling offers a potential way to fund some or all of it.

In addition to recommending where tolling could benefit the public, the committee also looked at some of the areas where we need to mitigate potential impacts of tolling. They asked the commission to find ways to avoid diversion of traffic onto local streets, to ensure that tolling doesn't cause significant issues for low-income families who may not be able to afford tolls, and to ensure that there is good transit service so that people have another option to get around.

The commission is moving forward on these recommendations, and we are developing an indepth public involvement process that will answer many of these questions. Ongoing public engagement is going to be critical because we know that in order to be successful we need to address the public's concerns and show how tolling can improve their ability to get around efficiently.

We are a member of the American Association of State Highway and Transportation Officials, or AASHTO. AASHTO supports increased tolling flexibility to allow States to maximize revenue-raising opportunities in light of some of the Federal funding challenges that Congressman DeFazio mentioned. Greater flexibility would allow States to work with communities to use tolling to help improve our transportation system across the Nation.

Thank you for the opportunity to be here today.

[Mr. Brouwer's prepared statement follows:]

Prepared Statement of Travis Brouwer, Assistant Director for Public Affairs, Oregon Department of Transportation

Chairman DeFazio, Ranking Member Graves, Chair Norton, Ranking Member Davis, and other distinguished members of the Subcommittee on Highways and Transit, thank you very much for the opportunity to appear before you today.

My name is Travis Brouwer and I am the Assistant Director for Public Affairs at the Oregon Department of Transportation (ODOT). I am here today to discuss tolling and congestion pricing on state highways in Oregon.

GROWING CONGESTION IN PORTLAND PUSHES OREGON TO TOLL

Today, Oregon is not a toll state. No state-owned highway, bridge or tunnel is tolled, and this has been the case for decades. However, growing congestion in Portland led the Oregon Legislature in 2017 to direct ODOT to implement tolling on Interstate 5 and Interstate 205 in the Portland metro area.

In the lead up to consideration of a major transportation funding bill, both a blue-ribbon commission created by Oregon Governor Kate Brown and members of the state legislature embarked on statewide transportation listening tours. These efforts revealed that freeway congestion in the Portland metropolitan area is a statewide concern. Communities and businesses across the state, in many cases located hundreds of miles away from Portland, consistently reported struggles with getting products and people to and through the Portland area. Thanks to these listening tours, policymakers recognized that Portland congestion is an urban problem *and* a rural problem that must be addressed at a statewide level in Oregon.

Indeed, Portland area congestion is bad and getting worse. From 2015 to 2017, hours of congestion increased by 13 percent across the region. In that same period, daily vehicle hours of delay increased by 20 percent. Increasingly, Portland area highways are congested not just in the traditional evening "rush hour," but throughout the entire afternoon and evening.

Traffic congestion in Portland affects the statewide economy through delayed movement of goods and services, and it compromises reliability for employers and employees. Quality of life is reduced for residents as they sit in cars or buses trying to meet work or family commitments on time. Commuters, business travelers, freight haulers, and others struggle to plan consistent departure and arrival times. The rapid population growth of the Portland area has only compounded these problems.

KEEP OREGON MOVING LEGISLATIVE DIRECTION TO TOLL

In 2017, the Oregon Legislative Assembly passed a $5.3 billion state-level funding package for transportation dubbed *Keep Oregon Moving*, the largest investment in Oregon's transportation system in history. To address the growing challenge of Portland-area congestion, the state legislature included in *Keep Oregon Moving* a comprehensive congestion relief program. This program is an "all of the above" approach to congestion relief that includes funding for bottleneck relief projects on the Portland-area freeway system, investments in intelligent transportation system technology to increase the efficiency of existing highway capacity, more resources for transportation options such as public transportation, and more state level investments in freight rail improvements.

However, the legislature realized that even these significant investments would not be enough to achieve the congestion relief the public demands—and they also realized additional resources are needed to complete congestion relief projects in the region, as a number of high-priority congestion relief projects could not be funded even with *Keep Oregon Moving*'s historic levels of investment.

In response, *Keep Oregon Moving* directs the Oregon Transportation Commission (ODOT's Governor-appointed policy and oversight body) to implement tolling on both Interstate 5 and Interstate 205 in the Portland metropolitan area. The legislation required the Oregon Transportation Commission to seek approval from the Federal Highway Administration (FHWA) by December 2018 to implement tolls.[1]

Interstate 5 and Interstate 205 are the two key north-south freight routes through the Portland metro region, Oregon's largest urban area. Interstate 5 travels through the urban core and provides connections to the Port of Portland's marine terminals—it is also the most congested corridor in the Portland metro region. Interstate 205 provides direct connections to Portland International Airport and experiences severe congestion. Addressing congestion on both of these corridors will be complex and incredibly costly. Even after passage of *Keep Oregon Moving*, we simply do not have the funding we need to make the necessary improvements on these corridors.

OREGON'S PROCESS FOR IMPLEMENTING THE TOLL MANDATE

With only 18 months to respond to this new mandate, the Oregon Transportation Commission and ODOT assembled an extensive engagement process to consider questions about how tolling could work in the Portland area. The Commission created a multi-stakeholder Policy Advisory Committee to publicly explore questions about what types of tolling should be applied in the Portland area and what mitigation strategies should be pursued to reduce negative impacts on individuals and

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[1] Oregon State Legislature, 2017 Regular Session, HB 2017 Enrolled:

SECTION 120.

(1) The Oregon Transportation Commission shall establish a traffic congestion relief program.

(2) No later than December 31, 2018, the commission shall seek approval from the Federal Highway Administration, if required by federal law, to implement value pricing as described in this section.

(3) After seeking and receiving approval from the Federal Highway Administration, the commission shall implement value pricing to reduce traffic congestion. Value pricing may include, but is not limited to, variable time-of-day pricing. The commission shall implement value pricing in the following locations:

(a) On Interstate 205, beginning at the Washington state line and ending where it intersects with Interstate 5 in this state.

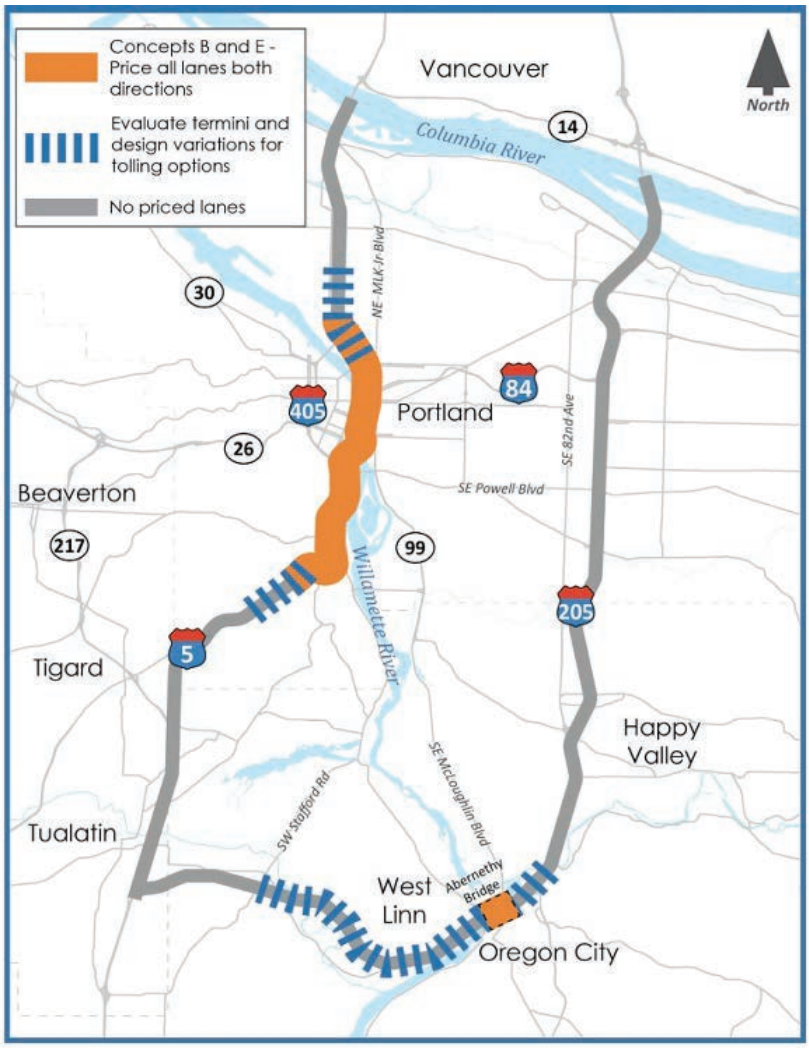
(b) On Interstate 5, beginning at the Washington state line and ending where it intersects with Interstate 205.

(4) In addition to areas listed in subsection (3) of this section, the commission may implement value pricing in other areas of this state.

communities. This 24 member Committee included members of the Oregon Transportation Commission, local governments from both Oregon and Washington, public transit, private business, trucking and automotive highway user associations, environmental justice advocates, ports, and more. The Oregon Transportation Commission charged this committee with developing tolling recommendations in the Portland area that will reduce congestion by helping fund bottleneck relief construction projects or by managing demand.

Our analysis of tolling options included extensive public engagement because we recognized the need to listen to the public in order to develop a plan that will provide significant benefit to users of the transportation system and address their concerns. In addition to the six public meetings held by the Policy Advisory Committee where rigorous discussions of tolling analysis and stakeholder concerns took place, we made 49 presentations to community groups, held eight in-person open houses in both Oregon and Washington, hosted six equity-focused discussion groups, and held two online open houses and a public hearing. All told, we reached stakeholders more than 46,000 times through our public engagement.

The Policy Advisory Committee considered a number of tolling options on Interstate 5 and Interstate 205. These options ranged from the expansive—tolling all miles of all lanes on both corridors—to managed lanes to more traditional and straightforward bridge tolling. After analysis, high occupancy toll (HOT) lanes, express toll lanes, and other managed lanes were ruled out because they simply did not provide congestion relief. Our analysis showed the cost of building a new HOT lane would exceed the revenue the facility would generate, leaving ODOT unable to fund construction of a new lane.



At the conclusion of the public engagement process, the Policy Advisory Committee recommended that the Oregon Transportation Commission pursue two separate tolling projects to address two of our major congestion chokepoints:

1. Toll all lanes of Interstate 5 through the core of metro Portland using variable rate congestion pricing. This is one of the most congested sections of freeway in the region and was recently ranked as the 28th worst truck bottleneck in the nation by the American Trucking Research Institute. Tolling would be implemented in conjunction with a freeway improvement project that will add lanes at the interchange between Interstate 5, Interstate 84, and Interstate 405. Tolling could help pay for these and other freeway improvements.
2. Toll on or near the Interstate 205 Abernethy Bridge over the Willamette River. This section of the Interstate is just two lanes in each direction, and we are developing a project to address this bottleneck. However, neither the legislature nor ODOT has been able to identify the funding to construct this more than $500 million project. Tolling offers a potential way to fund some or all of this project, including widening the Abernethy Bridge and adjacent sections of freeway.

The Policy Advisory Committee also recommended three key mitigation strategies: Improved transit along the newly tolled corridors, provisions to mitigate the costs of tolling for low-income communities, and strategies to minimize and mitigate impacts of diversion.

Based on the recommendation from the Policy Advisory Committee, the Oregon Transportation Commission made a formal request of FHWA in December of 2018 to move forward with both tolling concepts. FHWA has indicated that both proposals would likely be eligible to proceed—the Interstate 5 proposal under the Value Pricing Pilot Program and the Interstate 205 Abernethy Bridge toll proposal under either Title 23 US Code, Section 129 (mainstream tolling program) or the Value Pricing Pilot Program, depending on the configuration.

For ODOT, the next steps in the implementation process include in-depth planning and environmental analysis, policy development, and toll system development—all backed by extensive public engagement.

KEYS TO SUCCESS

While we are still in the early stages of this process, there are several key elements we know we must employ if we are to be successful in advancing tolling as a tool for transportation challenges in the region.

- Recognizing that the public will experience a monumental shift in how the highway system works and how people get around, high quality and extensive public engagement and involvement will continue to be a key element of the implementation strategy at each step moving forward. ODOT will remain closely coordinated with FHWA, other state and federal agencies, regional transportation partners, community and stakeholder organizations, and the general public. Included in this coordination will be extensive community engagement with a strong focus on underrepresented populations to ensure tolling policies reflect the values and priorities of the broader region.
- Before moving forward we must ensure that tolling will offer the public a significant benefit. If the public is to pay tolls, they must be able to see how tolling will enhance their mobility.
- We must find ways to mitigate potential issues, including impacts to low-income families and traffic diversions that affects local communities.
- Tolling must be just one of the tools we use to address congestion and enhance mobility. We must have a comprehensive strategy to address gridlock that includes all modes of the transportation system, and we must recognize that tolling by itself will not solve all our problems.

TOLLING POLICY GOING FORWARD

The realities of endlessly growing congestion and rapidly increasing population have conspired to move Oregon from its longtime status as a no toll state, just as many other jurisdictions are turning toward tolls to address their funding and congestion challenges.

Current federal authority for states to toll and use pricing to generate revenue as well as manage congestion and environmental impacts has evolved over time. Since the creation of the Interstate Highway System, federal law has limited where tolls can be used. Currently, tolling is generally limited to new roads and new lanes on existing highways, as well as reconstruction or replacement of bridges. In recent decades Congress has taken steps to evolve the federal stance on tolling by permitting public agencies to toll a limited number of existing Interstate highway corridors on a pilot basis, build High Occupancy Toll lanes to reduce congestion, allow variable congestion-based pricing on existing Interstate highways to manage roadway congestion and regional air quality, and allow new or reconstructed Interstate highway bridges to be tolled.

As a state department of transportation, ODOT is a member of the American Association of State Highway and Transportation Officials (AASHTO). AASHTO represents states with a range of viewpoints on tolling and pricing, and as a result, the association supports increased tolling flexibility to states to allow those states that so choose to maximize revenue-raising opportunities in light of federal funding challenges. Greater flexibility would allow states to work with their communities to use tolling to help improve their transportation systems. ODOT also supports this increased flexibility.

Chairman DeFazio, Ranking Member Graves, Chair Norton, Ranking Member Davis, and members of the subcommittee thank you again for the opportunity to testify before you today. I look forward to your questions.

Ms. NORTON. Thank you for your testimony, Mr. Brouwer.

We will hear next from Tilly Chang, executive director of the San Francisco County Transportation Authority, who is speaking on behalf of the Intelligent Transportation Society of America.

Welcome, Ms. Chang.

Ms. CHANG. Good morning, Chair Norton, Ranking Member Davis, Chair DeFazio, and subcommittee members. Thank you so much for the opportunity to provide San Francisco's and ITS America's perspective on the topic of pricing and congestion management.

My name is Tilly Chang. I serve as the executive director of the San Francisco County Transportation Authority, and it is an honor to provide testimony on our local experience with these topics and why we believe pricing and incentives are promising strategies to help us reach our transportation goals.

First, let me provide an overview of the problem. As in other places, rising population and employment, but also combined with the growth of ride hail vehicles, are clogging our streets. In a typical year commuters spend about 116 hours, almost 3 weeks, stuck in traffic. Muni buses, private cars alike, they crawl on city streets at about 5 to 10 miles per hour during the rush hour period.

Congestion also affects public health in our core neighborhoods. These are areas seeing record numbers of severe and fatal crashes, which our Vision Zero policy seeks to address. In addition, particulate emissions are adversely affecting our health of the freeway-adjacent neighborhoods in the downtown and leading areas.

Finally, congestion is a big part of why transportation as a sector is the largest component of greenhouse gas emissions in our city and State.

So why are we looking at pricing? As a city we have taken many steps to try to alleviate our rising congestion. We are investing heavily in our transit systems, building out our bicycle and pedestrian infrastructure, and approving more housing than ever near transit. And we have also implemented variable pricing of parking through our federally funded SFpark program.

But it is not enough. We need more long-term Federal funding. And in the near term we hope to address our needs through congestion pricing and incentives, because this strategy has the potential to dramatically and cost effectively reduce traffic, improve public health, and increase equitable access.

What is pricing? Let me address the basic components of a typical congestion pricing system. Pricing involves charging motorists a fee to drive in the busiest locations and times of day. Best practice usually combines pricing, transit, and discounts and incentives altogether, these policies and programs that new technologies now allows us to implement more effectively.

In San Francisco we began studying the feasibility of congestion pricing for our downtown area in 2008 with the support of a Federal Urban Partnership Agreement grant and Value Pricing Program. That study found multiple benefits of a potential cordon, including 12 percent fewer rush hour trips, 20 percent faster bus speeds, and 16 percent lower emissions in the priced zone. The program also would generate about $80 million a year as estimated in 2010.

We successfully piloted an incentive-based program as well in 2016 with Bay Area Rapid Transit, or BART, using Federal Value Pricing Pilot Program funds. This project shifted 10 percent of riders to the off-peak shoulder hours during average weekday morning peaks, and this was possible by using very modest rider rewards. So the use of carrots and not just sticks is possible through technology.

Recently, due to the return of severe congestion, our board asked us to update these studies and identify an implementable area pricing or cordon pricing program by the end of next year. We are partnering with State, regional, and local agencies to do that work currently.

A common concern around congestion pricing is whether the use of price to manage demand is fair. We think about this important question in three ways.

First, driving in San Francisco is an expensive way to commute. Most peak period drivers earn high incomes, and the lowest income travelers are generally on transit. For low-income motorists and choice commuters who would prefer to take transit but don't have good options, pricing comes with a built-in solution, revenues, revenues to fund new, affordable transit services, as well as active transportation.

Next, equity and efficiency have been balanced before in other sectors. Consider what happens in the power sector. Where demand is high, rates rise. And as found in that sector, lifeline rates can help mitigate financial impacts of peak charge for those who need it most.

Finally, beyond mitigating the impacts of pricing, we believe such programs can actually help make San Francisco's transportation more equitable. This is because traffic disproportionately affects poor neighborhoods, as I mentioned previously, through impacts to transit performance, pedestrian safety, and emissions.

Traffic reduction and revenue generation can greatly benefit low-income communities. Going forward, we intend to directly involve these communities in the program design itself. We will seek input about fee levels, discounts, and how to invest net revenues from those most affected, and we will explore innovative new approaches, like enabling frequent transit riders to earn toll credits for those times when they need to drive.

In conclusion, San Francisco faces a steep challenge with congestion and we think a congestion pricing pilot can move the city toward a healthier, more equitable future. Our agency and ITS America are hopeful that the FAST Act reauthorization will maintain policy and grow funding support for pricing strategies, as well as for deployment of new technologies.

Federal support for pricing and technology deployment could build on existing programs, like the Advanced Transportation and Congestion Management Technologies Deployment program or Value Pricing Program, or take the form similar to the 2008 Urban Partnership Agreements that I mentioned previously.

Based on the large response to the Smart Cities Challenge a few years ago, our region believes demand for congestion relief programs will be high. We urge the committee to consider expanding

this program and to provide flexibility to cities, regions, and States in designing our respective solutions.

Thank you again, and thank you for your leadership. I am pleased to answer your questions.

[Ms. Chang's prepared statement follows:]

Prepared Statement of Tilly Chang, Executive Director, San Francisco County Transportation Authority, on behalf of the Intelligent Transportation Society of America

INTRODUCTION

Chair Norton, Ranking Member Davis, and Members of the Subcommittee, thank you for the opportunity to provide the San Francisco County Transportation Authority and Intelligent Transportation Society of America's (ITS America) perspectives on "Pricing and Technology Strategies to Address Congestion on and Financing of America's Roads."

My name is Tilly Chang, and I am Executive Director of the San Francisco County Transportation Authority (SFCTA). As Congestion Management Agency and transportation sales tax administrator for San Francisco, the Transportation Authority collaborates with public agencies, community groups, and the private sector to improve transportation options for residents, local and regional commuters, and visitors. Our mission is to make travel safer, healthier, and easier for all.

Our agency's Board of Commissioners are the eleven members of the Board of Supervisors of the City and County of San Francisco. As the designated Congestion Management Agency (CMA) for San Francisco under state law, we have a wide range of responsibilities, including prioritizing state and federal transportation funds for San Francisco, preparing the long-range Countywide Transportation Plan, and developing a computerized travel demand forecasting model and supporting databases.

Before becoming SFTCA's Executive Director in 2013, I served as the Transportation Authority's Deputy Director for Planning and held posts with the World Bank, Metropolitan Transportation Commission (MTC), and a technology startup. I serve on the boards of the California Transportation Foundation, San Francisco Bay Area Planning and Urban Research Association, and the University of California Transportation Centers.

I also serve on the ITS America Advocacy Trust, which is the association's principal policymaking group, where I most recently advised on the association's Fixing America's Surface Transportation (FAST) Act reauthorization platform: *Moving People, Data, and Freight: Safer. Greener. Smarter*. ITS America's vision is "A better future transformed by intelligent mobility—one that is safer, greener, and smarter." Our mission is to advance the research and deployment of intelligent transportation technologies and solutions to save lives, improve mobility, promote sustainability, and increase efficiency and productivity. Our focus is policy that accelerates seamless mobility technology, connected and automated vehicle technologies, and smart infrastructure; policy that breathes new life into our transportation infrastructure by expanding investments in technologies that support smart communities; and policy that encourages new models and modes of transportation, including micro-transit, rideshare, carshare, bikeshare, micro-mobility, and unmanned systems. Investments in these new modes should also address issues of transportation equity so everyone gains access to mobility and opportunity.

ITS America recognizes that only with investment certainty will cities, metropolitan areas, and states see and benefit from transformational deployment of intelligent transportation technologies that will define the way people, goods, services, and information move in the 21st century. To that end, ITS America's *Moving People, Data, and Freight: Safer. Greener. Smarter*. FAST Act reauthorization platform supports maintaining federal programs that allow state, metropolitan areas, and city congestion pricing strategies.

The following sections of my testimony are real-world pricing and technology use cases in the San Francisco Metropolitan Area. Following the use cases are ITS America's FAST Act reauthorization priorities that bridge new and exciting infrastructure technologies and new modes of mobility that we see across the country with the utmost importance of this Congress to make urgent investments to bring our nation's transit, roads, bridges, and rail infrastructure to a state of good repair

and to integrate technology in order to maximize infrastructure and mobility efficiencies and safety through a timely reauthorization.

PRICING AND TECHNOLOGY STRATEGIES: REDUCE TRAFFIC, IMPROVE PUBLIC HEALTH, AND INCREASE EQUITY

Congestion in San Francisco has reached record levels: whether on Muni buses or in private cars, commuters average 5–10 mph on our city streets during peak periods.[1] Rising population and job growth—combined with a growing presence of ridehail vehicles—has resulted in clogged streets, particularly in our downtown, South of Market and Eastern neighborhoods. We are studying congestion pricing implementation options because this strategy has the potential to dramatically reduce traffic, improve public health and increase equitable access for our community.

Given our city's long-standing Transit First Policy, San Francisco has deployed multiple transit, bicycling and pedestrian improvement strategies, and paired these with land use, parking and managed lanes initiatives, to tackle congestion. However, with the addition of 80,000 residents[2] and over 150,000 jobs[3] since 2010, and the rise of transportation network companies (TNCs), San Francisco is experiencing significant levels of congestion on our roadways. In a typical year, San Francisco commuters are estimated to spend 116 hours (or almost 3 work weeks) stuck in traffic.[4]

Apart from the economic cost of this congestion, we are concerned about the safety, public health and equity impacts of gridlock. On average, a Muni bus travels at one half to two-thirds the speed and reliability of private vehicles on our downtown streets, while carrying 40 times more people of lower than average incomes. High volumes of vehicles also contribute to San Francisco's record high numbers of severe and fatal crashes involving pedestrians and cyclists (here San Francisco's troubling trends mirror national ones[5]), which our Vision Zero policy seeks to eradicate.[6] And, in addition to generating heavy loads of particulate emissions affecting freeway adjacent neighborhoods, rising vehicle use and congestion makes the transportation sector the largest component of greenhouse gas emissions in our city and state. In San Francisco, due to the clean profile of our stationary sources energy use, the transportation sector accounts for 46% of greenhouse gas emissions.[7]

For this reason, with the help of Federal, state and regional funding partners, we are investing heavily in rail expansion for Bay Area Rapid Transit (BART), our local Muni, and Caltrain, and adding signal priority and dedicated lanes for buses and bicycles. We are emphasizing safer streets in pursuit of our Vision Zero goals and changing land use polices to reduce parking requirements and vehicle miles traveled (VMT). But as I noted in a news article earlier this year, all of this has not been enough.[8] Hundreds of thousands of commuters, on Muni buses and in cars, experience gridlocked conditions on typical weekday peak periods in our city's core.

While a significant portion of this chronic on-street congestion in San Francisco is due to economic growth, a comparable contributor is the rise of ridehail trips by transportation network companies (TNCs). In our 2017 report "TNCs Today," we estimate that on an average weekday, about 170,000 ridehail trips operate on our streets, accounting for about 1 in 4 trips downtown and 15% of intra-city (local) daily trips, citywide.[9] Our TNCs and Congestion report subsequently estimated that about 50% of the rise of congestion in San Francisco between 2010 and 2016 was due to the growth of ridehail services and that TNC trips account for 25% of total 2016 citywide congestion.[10] Recently released trip figures from Uber and Lyft themselves indicate that San Francisco TNC trip activity exceeds our 2017 estimates,

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[1] SFCTA, 2017 Congestion Management Program, https://www.sfcta.org/sites/default/files/2019-03/CMP__2017__12.05.17.pdf

[2] https://sf.curbed.com/2018/3/26/17165370/san-francisco-population-2017-census-increase

[3] https://www.sfcta.org/sites/default/files/2019-05/TNCs__Congestion__Report__181015__Finals.pdf

[4] http://inrix.com/scorecard/

[5] https://www.nytimes.com/2019/03/07/us/pedestrian-deaths.html?auth=login-email&login=email&module=inline, "An estimated 6,227 pedestrians were killed in traffic in 2018, according to the study from the Governors Highway Safety Association, a projection based on data from the first half of the year. That figure represents a striking rise from a decade earlier, when 4,109 pedestrians were killed in traffic."

[6] https://www.visionzerosf.org/

[7] SF Department of the Environment, San Francisco Climate Action Plans 2014–2017

[8] https://www.nytimes.com/2019/04/01/nyregion/new-york-congestion-pricing.html, "Everyone agrees there's a [congestion] problem. There are multiple views of the solution. But frankly, we've tried a lot of them and they're not enough."

[9] SFCTA, TNCs Today, 2017, https://www.sfcta.org/projects/tncs-today

[10] SFCTA, TNCs and Congestion, 2018, https://www.sfcta.org/projects/tncs-and-congestion

likely due to the addition of two years of trip growth and the inclusion of all San Francisco trips, including regional trips with one trip end outside of San Francisco.[11] The benefits of ridehail are numerous in many areas, but for San Francisco, the impacts are great as well, in terms of induced traffic, conflicts with pedestrians, bus and bicycle lanes, and erosion of public transit ridership.[12]

With limited ability for San Francisco to regulate ridehail companies (due to California Public Utilities Commission exclusive regulatory jurisdiction), recent local plans, studies[13] and task forces[14] in San Francisco have recommended strategies like congestion pricing and a per-ride tax to manage demand and generate congestion relief funds to offset the impact of these services. San Francisco is currently pursuing both congestion pricing (on all peak area motorists) and a per-trip tax measure (citywide). Because our workforce is highly regional, we have requested and received funding and technical support for our congestion pricing study from the Metropolitan Transportation Commission, our regional MPO (metropolitan planning organization). The ridehail industry also is generally supportive of area-based congestion pricing as a congestion reduction strategy, provided all vehicle trips are priced.[15]

Some experts believe the popularity of ridehail services are a precursor of what the future may bring with automated vehicles (AV).[16] Deployed ideally, AVs will result in safety, mobility, economic, and environmental benefits. For example, if deployed as shared, electric, and affordable fleet-based services, AVs should dramatically increase safety, increase the accessibility and efficiency of our transportation system and reduce demand for parking and road space. On the other hand, the ease, comfort and convenience of AVs could induce greater private vehicle travel demand and associated vehicle miles of travel (VMT), exacerbating congestion, hindering transit performance, and widening equity disparities. This risk presages the need to explore management strategies like de-congestion pricing and the prioritization of street space for sustainable modes.[17] To avoid further gridlock, SFCTA is investing in dedicated infrastructure for walking, bicycling, transit and carpooling and studying the best way to implement congestion pricing.[18]

In this way, San Francisco is joining cities around the United States and the world that are looking to transportation demand management, pricing and incentives to help reach safety, climate, access, equity and Transit First goals.[19] In the United States, multiple cities are also examining potential applications of area-based congestion pricing.

Pricing and Technology Strategies: Congestion Pricing and Rewards—San Francisco's Experience

What is congestion pricing? Congestion pricing is a way to manage demand for driving by charging motorists a fee to drive in the most congested locations at the most congested times of day (typically AM and PM peak). It is one of the most cost-effective tools in our congestion management toolbox. Industry best practice is to evaluate congestion pricing carefully and inclusively, typically packaging the pricing with incentives/rewards, discount and exemption policies, and multimodal improvements funded by the pricing program itself.

Below is a summary of key San Francisco pricing-related programs and initiatives:

1. *SFMTA SFpark Program*—In the late 2000's, during the Bush Administration and under U.S. Secretary of Transportation Mary Peters, SFCTA, the MTC and our sister agency the San Francisco Municipal Transportation Agency (SFMTA) applied for and received a Federal Urban Partnership Program

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[11] https://www.citylab.com/transportation/2019/08/uber-lyft-traffic-congestion-ride-hailing-cities-drivers-vmt/595393/

[12] Regina R. Clewlow and Gouri Shankar Mishra, "Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States", UC Davis, October 2017.

[13] SFCTA, Emerging Mobility Evaluation Report,2018, https://www.sfcta.org/sites/default/files/2019-03/Emerging%20Mobility%20Studies__11.pdf

[14] San Francisco Transportation 2045 Task Force Report, 2018, https://www.sfcta.org/sites/default/files/2019-03/T2045%20TF%20Report%20for%20TA%20Board__v2.pdf

[15] https://www.vox.com/the-goods/2019/8/6/20757593/uber-lyft-traffic-congestion-pricing

[16] There are a large number of unknowns about how AVs will impact the transportation system. As such, cities and states should retain existing roles and responsibilities with respect to the operation of AVs or vehicles equipped with automated driving systems to shape and manage a range of possible AV futures.

[17] https://www.weforum.org/agenda/2019/07/autonomous-vehicles-driverless-cars-public-transport

[18] https://www.sfcta.org/policies/transit-first-policy

[19] https://www.sfcta.org/policies/pricing-incentives

grant.[20] This grant allowed SFMTA to develop and test its *SFpark* parking management system at 7,000 metered spaces and 12,250 spaces in city-owned parking garages.[21] The *SFpark* pilot collected and distributed real-time information about available parking so that drivers can quickly find open spaces. To help achieve the ideal level of parking availability, *SFpark* periodically adjusts meter and garage pricing up and down to match demand. Demand-responsive pricing encourages drivers to park in underused areas and garages, reducing demand in overused areas. Through *SFpark*, real-time data and demand-responsive pricing work together to readjust parking patterns in the city so that parking is easier to find. As a federally-funded demonstration of a new approach to managing parking, the *SFpark* project collected an unprecedented data set to enable a thorough evaluation of its effectiveness.[22] A main finding of the evaluation was that, even as the economy, population, and overall parking demand grew, parking availability improved dramatically in *SFpark* pilot areas. The target parking availability (60–80% occupancy) increased by 31 percent in pilot areas, compared to a 6 percent increase in control areas. Federal funding through the Department of Transportation's Urban Partnership Program paid for 80 percent of the *SFpark* project.

2. *2010 Congestion Pricing Feasibility Study*—In 2007, after visiting officials in Stockholm and seeing the success of their cordon pricing system, our agency received a federal Value Pricing Pilot Program grant to study downtown cordon pricing in San Francisco. The $1 million VPPP grant was key to our ability to conduct inclusive community outreach and thorough technical studies on potential pricing program designs. The San Francisco Mobility Access and Pricing study found that an area-pricing program would be feasible and effective and recommended a "northeast cordon" pilot, with peak period charges of $3/crossing and a series of discounts for residents of the zone and low-income motorists. This program was estimated to reduce peak period vehicle trips by 12%, increase bus speeds by 20–25%, generate net $80M/year in revenues toward funding a multi-modal package of transit, bicycling and mobility improvements, and ultimately to reduce daily emissions by about 16%.[23]
3. *2011 Treasure Island Development and Transportation Improvement Plan*—In 2011, San Francisco approved a large multi-use development on Treasure Island that includes congestion pricing as a way to manage demand for driving and fund robust investment in bus, ferry and non-motorized infrastructure across the Island. Following passage of state legislative authority to implement congestion pricing on the Island, SFCTA (acting as the Treasure Island Mobility Management Agency) became the administrator of the transportation program in 2014 and continues to develop the toll system and transit service and affordability program, as well as to lead a Federally-funded (2016 ACTMTD grant, awarded to SFMTA) on-Island tolling system and Autonomous Vehicle Shuttle pilot project.[24]
4. *2017 BART Perks Rewards Program and Pilot*—BART Perks was a six-month federally-funded (VPPP) test program led by SFCTA in partnership with BART to explore the use of incentives and rewards to reduce crowding on BART. The goal of the program was to see if small incentives could effectively encourage people to ride outside of the morning rush. The pilot found that incentives can successfully shift the travel behavior of BART riders. Evaluation studies found that of the 2,600 Perks participants who had traveled during the peak hour each day before the program, an average of 250 Perks participants each weekday (about 10%) shifted their ride to either before or after the peak morning rush hour. That amounts to the equivalent of two full BART cars being freed up each weekday morning during BART's busiest hour.[25]
5. *2017–2019 Managed Lanes Studies (ongoing)*—Like other counties and regions, we are also leading express lane studies for US101-I–280 within San Francisco, in partnership with Caltrans and MTC.[26] Express lanes are a system of freeway lane management that aims to improve reliability and efficiency (people

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[20] https://ops.fhwa.dot.gov/congestionpricing/agreements/docs/termsheetsanfran.htm
[21] https://www.sfmta.com/projects/sfpark-pilot-program
[22] https://www.sfmta.com/getting-around/drive-park/demand-responsive-pricing/sfpark-evaluation
[23] SFCTA, Mobility Access and Pricing Study, 2010, https://www.sfcta.org/projects/downtown-congestion-pricing
[24] https://www.sfcta.org/projects/treasure-island-transportation-program
[25] SFCTA, Evaluation Findings from the BART Perks Program, 2018, https://www.sfcta.org/projects/bart-perks-test-program
[26] SFCTA, Freeway Corridor Management Study Phase 2 Final Report, 2018, https://www.sfcta.org/projects/101280-carpool-and-express-lane-project

throughput) of regional highways by allowing transit and carpool trips to use the lane for free, and solo travelers to use the lane for a fee. The fee level is typically dynamically set to maintain reliable travel times and reliability of the lane. Net revenues may be invested in public transit services in the corridor (regional and local public bus services). Our board has asked that equity analyses and transit service planning be integrated into our managed lanes studies to ensure a comprehensive and equitable approach, going forward.

6. *2019 Congestion Pricing Update*—Finally, we are currently updating our prior study of cordon pricing for the northeast quadrant of San Francisco. We believe a program that utilizes pricing and incentives can greatly improve system efficiency (person/goods movement), effectiveness (improving reliability, travel times, travel options) and equity (reducing emissions, increasing public health, advancing equity). Two new aspects to this study compared with the prior 2010 study will be how to address TNCs and new mobility modes and how to bring incentives and rewards into the program design. While other cities are looking to congestion pricing to raise revenue as well as to manage demand, we remain focused on reducing private vehicle demand, with net revenue—which can fund increased transit service and bicycle/pedestrian and circulation improvements as well as equity investments—as an important, but secondary, objective.

PRICING AND TECHNOLOGY STRATEGIES: MAKING SURE PRICING PROGRAMS ARE FAIR

One concern that our SFCTA Board and members of the public express is whether the use of price to manage transportation demand is fair. An important consideration is to consider the status quo. Inequities have long been ingrained in our transportation system, as noted in the 2019 TransForm report 'Pricing Roads, Advancing Equity.' Vulnerable communities—which include low-income households, people of color, and those disadvantaged due to ability, age, or other factors—have long borne the brunt of negative transportation impacts while paying a proportionally larger share of their income to get where they need to go—especially if they are automobile dependent—the report states.

With careful design and inclusive public involvement, we believe transportation pricing can make San Francisco's transportation system more equitable.[27] At the request of our Board, our Downtown Congestion Pricing Update study will begin with data collection and analysis to better understand who is driving in the peak (our 2010 study estimated that less than 5% of peak period motorists had annual incomes below $50,000/household), designing for equitable impacts, and involving communities of concern and stakeholder who are most impacted by vehicle congestion from the start.

A best practice for ensuring an equitable pricing program is to combine a fee with subsidies, discounts, and/or incentives that specifically help disadvantaged travelers. Another common practice is to use pricing revenues to pay for more sustainable transportation modes such as transit, walking, and biking. A few examples include:

- Targeted Re-investment of Fees: Prioritize revenue from congestion fees for services and improvements benefitting low-income travelers and affected neighborhoods such as increased bus service, lighting, and safer streets.
- Subsidies: People with low incomes receive a subsidy to offset the costs of a pricing system. For example, Los Angeles Metro's Low-Income Assistance Plan for the region's express lanes provides $25 in toll credits and waives monthly fees for low-income customers.
- Discounts: People with low incomes, disabilities or clean air vehicles pay a discounted rate.
- Incentives: People with low incomes accrue credits after taking a certain number of trips on transit and can use those credits to pay for pricing fees, transit, or other services like bikeshare.

SAN FRANCISCO PRICING AND TECHNOLOGY STRATEGIES: WHO IS LEADING AND WHO'S INVOLVED?

SFCTA is the County Congestion Management Agency for San Francisco and is leading several of the aforementioned pricing and demand management studies and projects, in partnership with local, regional and, in some cases, state agencies. With regional commuters comprising 60% of our workforce, it is critical to ensure coordination with other agencies and adjacent communities.

[27] Assistant Professor Michael Manville, UCLA and 100 Hours Campaign "Is congestion pricing fair to the poor?", 2017, https://medium.com/100-hours/is-congestion-pricing-fair-to-the-poor-62e281924ca3

- Downtown Congestion Pricing Study Update—SFCTA is leading the study in collaboration with key partners City and County of San Francisco (CCSF) /SFMTA and MTC and involvement of several regional and state agencies including Caltrans. State legislative authority is required to implement the project.
- Treasure Island Transportation Improvement Program—SFCTA acting as the Treasure Island Mobility Management Agency (TIMMA) is implementing the Treasure Island mobility management and congestion pricing program, in partnership with the Treasure Island Development Authority.
- US101/I–280 Managed Lanes—SFCTA is leading the San Francisco network study, in coordination with Caltrans (freeway owner), MTC (Regional network planning lead) and San Mateo and Santa Clara counties (US101 corridor partners).

PRICING AND TECHNOLOGY STRATEGIES: TECHNOLOGY IN CONGESTION PRICING/ CONGESTION MANAGEMENT

Technology innovation is enabling rapid and robust congestion management solutions that were previously out of reach in terms of cost or otherwise infeasible. New solutions bring the possibility and promise of expanding mobility choices and filling access gaps. We at SFCTA are particularly excited about first/last mile services to complement mainline transit networks, and highly customer-oriented integrated payment and trip planning/booking systems known as Mobility as a Service (MaaS). We are also preparing to test autonomous shuttles on Treasure Island.

Technology is not a silver bullet, though, and some new services have the potential to hinder rather than help cities' abilities to reach their goals. Successful transitions require the public sector to have clear goals, willingness to engage/pilot, capacity to regulate and lead initiatives, and strong ground rules and research/transparency at this early stage to inform policy. San Francisco transportation agencies (SFCTA, SFMTA) have invested in staff, research and tools to help manage this transition and our policy boards have adopted 10 Emerging Mobility Services and Technology goals and objectives to anchor our city's new mobility policy framework and preliminary sector evaluation.[28] These are informing implementation policies, permit systems and pilots.

In addition to congestion pricing, we are interested in safety, customer focused, mobility on demand, and system efficiency-oriented innovations including:

1. Inter-operability and standardization
2. Curb management solutions
3. Integrated payments (Mobile Wallet)
4. Trip planning/booking apps
5. Modernization and enhancement of public transit
6. Shared, Electric, Automated shuttles for first/last mile public transit access
7. Bicycle and micromobility infrastructure
8. Strong data transparency, community-based pilots and data-driven research

The recent Senate Environment and Public Works Committee proposal for reauthorization of the FAST Act proposes to continue a federal commitment to support innovative approaches to solve pressing congestion and mobility challenges. The proposal included a new $40 million discretionary congestion relief program to fund integrated congestion management, pricing strategies, operation of mobility services, incentives programs to carpool or shift travel to non-peak periods, as well as other innovative solutions. This program could provide opportunities for regions and jurisdictions like San Francisco to pilot cost-effective near-term demand management strategies and document results for federal program evaluation and dissemination.

In fact, given the growing number of cities that are studying this strategy, an even larger program may be desirable. The following federal programs have provided valuable funding and technical support to San Francisco pricing studies and pilots:

- FHWA Value Pricing Pilot Program, which provided incentives in support of congestion pricing programs. San Francisco has been fortunate to receive several VPPP grants including a 2007 grant for our congestion pricing feasibility study (Mobility Access and Pricing Study), multiple innovative parking program grants through the UPA (2008, 2011, 2012), priced electric-assist bicycle sharing (2011), BART Perks (completed 2018) and the Treasure Island Mobility Management study (2012).

[28] SFCTA, Emerging Mobility Evaluation Report, 2018, https://www.sfcta.org/policies/emerging-mobility

- FHWA Urban Partnership Agreement/Congestion Reduction Demonstration Program (2007–2009) which funded $80 million of pricing projects that focused on the 4 Ts:
  - Tolling or other pricing
  - Transit
  - Telecommuting, including additional TDM strategies
  - Technology

  San Francisco received a UPA grant to support SFpark variable pricing program among other activities.

One of the most important components of the UPA program was the inclusion of bus and bus facilities grants to help ensure adequate transit capacity to support demand mode shifts for pricing projects. A successful congestion pricing program must provide increased transit service on Day 1, and these grants provide critical capacity to handle mode shifts from private car travel to public transportation on Day 1 of a pricing pilot.

PRICING AND TECHNOLOGY STRATEGIES: ADVANCING THE NEXT GENERATION OF MOBILITY

Rapid technological change is transforming the options for travel, and the federal government can play a key role supporting efforts to help fund, research, test and evaluate new mobility deployments. The next federal transportation bill could advance study and experimentation using new mobility technology by sustaining and expanding initiatives established by the FAST Act:

- The FHWA Advanced Transportation and Congestion Management Technologies Deployment program funds competitive grants to pilot large scale installation and operation of advanced transportation technologies to improve safety, efficiency, system performance, and cost effectiveness. San Francisco (SFMTA) received $10.9 million under this program to advance congestion pricing, carpooling and ridesharing, smart connected traffic signals, and dynamic curb management. The SFCTA received a portion of these funds to install tolling equipment and pilot an automated shuttle service for Treasure Island and Yerba Buena Island in support of the Treasure Island Transportation Improvement Program.
- The FTA Integrated Mobility Innovation program funds projects that demonstrate innovative and effective practices, partnerships, and technologies to enhance public transportation effectiveness, increase efficiency, expand quality, promote safety, and improve the traveler experience. It includes the Mobility on Demand Sandbox Project program for local jurisdictions to pilot new mobility concepts and solutions in real time, including bike- and car-sharing systems, demand-responsive bus services, and projects that provide travelers with flexible and convenient transportation options.
- The FHWA Surface Transportation System Funding Alternatives program funds grants to test new ways to finance highway and bridge projects, with the 2018 round supporting an exploration of how California's Road Usage Charge program could connect with emerging technologies and services, specifically TNCs and autonomous vehicles. As a self-help county, we are interested in studying congestion pricing as a way to supplement federal aid revenues, under this program.

Public sector agencies need this type of funding to support piloting and evaluation of new mobility services and technologies that provide both opportunities and challenges. Federal support for public involvement, research, analysis, and demonstration pilots are essential to ensure that states, regions and localities can develop policies for integrating new mobility services into our existing transportation systems effectively.

ITS AMERICA'S FAST ACT REAUTHORIZATION PLATFORM: MOVING PEOPLE, DATA, AND FREIGHT

Given the title and focus of the hearing is "Pricing and Technology Strategies to Address Congestion on and Financing of America's Roads," and with Congress increasingly focused on the reauthorization of the FAST Act, the balance of my written testimony encompasses ITS America's FAST Act Reauthorization Platform: Moving People, Data, and Freight. Moving People, Data, and Freight.

Increase Investment in Research and Deployment of Intelligent Transportation Technologies

Intelligent transportation technologies advance transportation safety and mobility, reduce congestion, improve air quality, and enhance American productivity by integrating advanced technologies into transportation infrastructure, operations, and vehicles. The Moving People, Data, and Freight investment policy supports the solvency of the Highway Trust Fund; the transition to a long-term and sustainable revenue source for transportation; and a national VMT pilot. In connection with a national VMT pilot, the platform recommends that large freight shippers participate and examines whether fleet telematics can be used as a method of data collection.

The platform supports increased funding for research, development, and demonstration of Intelligent Transportation Systems (ITS) technology; maintaining federal programs that allow state, metropolitan areas, and city congestion pricing strategies; and increased funding for ITS programs to streamline the movement of goods beginning at ports and continuing through the multimodal supply chain, including freight ITS and digital infrastructure systems.

ITS America strongly supports the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) program. San Francisco was fortunate to receive one of the first set of grants for testing autonomous shuttles and implementing congestion pricing on Treasure Island.

The ITSA platform supports increasing the funding and federal share to 80%. Moving People, Data, and Freight recommends increasing the federal share to 100% for safety critical connected vehicle technologies including Vehicle-to-Vehicle (V2V), Vehicle-to-Infrastructure (V2I), and Vehicle-to-Pedestrian (V2P) under ATCMTD. ITS America supports policy that makes V2P technologies an eligible activity under ATCMTD. Moving People, Data, and Freight recommends authorizing and dedicating separate funding for ATCMTD. Under the FAST Act, the ATCMTD program has been funded through a set-aside from the Highway Research and Development, Technology and Innovation Deployment and Intelligent Transportation System Research programs, which has resulted in a reduction of transportation research and development that has historically propelled United States leadership in areas such as connected and automated vehicle development and the emerging area of artificial intelligence in mobility management.

Safeguard Transportation Infrastructure from Cybersecurity Threats

As vehicles and infrastructure become more connected, our nation's transportation system faces increasing cybersecurity risks. Given the ability to cause loss of life and inflict significant economic damage in a highly visible manner, cybersecurity attacks directed at those producing or operating technologies travelling over or connected to U.S. roadways will intensify. ITS America supports policy that would provide states and localities funding and technical assistance under federal-aid highway programs, federal public transportation programs, and ATCMTD to safeguard critical transportation systems that are more reliant than ever on connectivity to communicate and exchange data from cybersecurity threats.

Grow Investments in Vehicle-to-Pedestrian Technologies

The U.S. Department of Transportation is working with industry, safety, and public sector stakeholders to develop and evaluate cooperative technologies, equipment, and applications known as Connected Vehicle (CV) technologies that operate in the 5.9 GHz band, inclusive of V2V (vehicle to vehicle), V2I (vehicle to infrastructure), and V2P (vehicle to pedestrian)—collectively referred to as Vehicle-to-Everything (V2X). This includes all V2X technologies—Dedicated Short Range Communications (DSRC) as well as Cellular vehicle-to-everything (C–V2X)—because these technologies can be configured to enable real-time crash-avoidance alerts and warnings, offering a significant opportunity to transform transportation safety.

As mentioned earlier, we are seeing record crashes involving pedestrians in San Francisco and nationally. Pedestrian deaths increased by an estimated 4 percent and "pedalcyclist" deaths increased by an estimated 10 percent in 2018, according to NHTSA's preliminary statistics. V2X will enable deployment of safety solutions to protect vulnerable users of the system. By allowing vehicles to communicate with these users through sensors or vehicle-to-device communication, we can significantly reduce the number of people killed on our roadways. V2P encompasses a broad set of road users—people walking, children being pushed in strollers, people using wheelchairs or other mobility devices, passengers embarking and disembarking buses and trains, and people riding bicycles and scooters. ITS America recommends expanding eligibility under the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) program to include V2P technologies.

Expand Investment in Advanced Mobility Improvements

ITS America supports expanding eligibility under highway programs to include advanced mobility safety improvements including data infrastructure and analysis, smart mobility improvements such as smart truck parking, smart work zones, smart pavements, predictive analytics platform, and build out of electric vehicle charging stations, hydrogen fueling infrastructure, natural gas fueling infrastructure, and other alternative fuels.

Plan for Transformative Transportation Technologies

States, providers of public transportation and Metropolitan Planning Organizations (MPOs) are expanding beyond traditional long-range scenario planning, which holds fixed certain transportation and land use assumptions, to consider big questions facing the transportation system including whether connected and automated vehicles will increase the vehicle capacity of existing highway lanes; how automation and active transportation connections might help solve the first mile/last mile transit challenge, what roadway investments could incentivize the shift to connected and automated vehicles, how to make sure the entire transportation system is working together, and how to expedite technology safety benefits. Increased funding and flexibility will help planners analyze project performance across a range of different futures, including ensuring all modes of transportation work in concert, which will lead to more informed project prioritization that maximizes the benefits of connected and automated technologies.

The Metropolitan Transportation Commission (MTC), the metropolitan planning organization for the San Francisco Bay Area, has undertaken Horizon, a new effort to plan for, and help shape, a range of possible connected and automated vehicle futures. By expanding beyond traditional long-range scenario planning, which holds fixed certain transportation and land use assumptions, Horizon will help inform big questions facing the transportation industry, such as:

- Will connected and automated vehicles substantially increase the vehicle capacity of existing highway lanes? If so, does it make sense to add additional physical capacity today?
- How might automation help solve the first-mile/last-mile transit challenge, reducing barriers to transit ridership? What type of investments are needed to get us there?
- What roadway investments could incentivize the shift to connected and automated vehicles and expedite short-term safety benefits?

Ultimately, this effort could help planners analyze project performance across a range of different futures and lead to more informed project prioritization. Though the benefits may be significant, this planning effort requires substantial time and resources. Additional federal planning funds and flexibility to experiment with innovative initiatives like Horizon could support transportation planners in efforts to maximize the benefits of connected and automated technologies.

Establish a Mobility on Demand (MOD) Program for the New World of Mobility

In the 21st century, mobility is less about moving vehicles and more about moving people, data and freight. Long-existing silos among cities, states, counties, road and transit agencies are disappearing; and private mobility service providers barely existed a decade ago. More choices exist now, but for people to fully realize the benefits of this new world of mobility, it must be easier to choose which option best meets their needs. This also means services that are accessible for every traveler and in all communities and neighborhoods.

In cities, MOD offers convenient, affordable, and, in the case of bikeshare, rideshare or micromobility services, more sustainable alternatives to driving within congested environments. For suburban areas, MOD offers first mile/last mile accessibility to transit, as well as more dynamic on-demand services to get around town. While often seen as an urban/metro transportation solution, MOD deployed in rural areas also provides first mile/last mile (though more like first/last 50 miles) connections to transit, intercity bus and rail transport, and essential air service airports. Rideshare and ride sourcing is providing support for seniors to access social and health services. Micromobility services offer options to travel in town. MOD include bikeshare and scooter share deployments on college campuses. New and improved MOD transit and paratransit services also can benefit rural communities.

Moving People, Data, and Freight supports establishing MOD program that encourages flexibility within federal transportation programs to meet changing mobility needs including partnerships with companies offering shared-use trips (car, bicycle, new mobility modes), data management, and other technology companies for first mile/last mile services, the integration of mobility services and technologies, and new fare technologies. ITS America supports the integration of MOD programs

with public transportation that fosters the efficient use of capacity, enhances management of new modes of mobility, and promotes the creation of innovative planning tools.

Please read ITS America's full FAST Act reauthorization at www.itsa.org.

CONCLUSION

In conclusion, the transportation sector in San Francisco and communities across the nation are undergoing historic transformations with the promise of greatly boosting the safety, access, equity, and sustainability of our transportation system. We in San Francisco believe that strong federal policy and funding support can help states, regions and localities explore cost-effective congestion reduction solutions like congestion pricing and rewards, as well as bolster road user fee initiatives like mileage-based Road User Charge programs that build upon our primary but declining transportation funding mechanism: the gas tax. With San Francisco's Transit First, Vision Zero, Climate and Equity goals serving as our durable North Star, we remain optimistic that aspirational but achievable policies are within reach with effective federal, state, local and private sector partnerships.

Thank you again for the opportunity to testify today, and I am happy to answer any questions you may have.

Ms. NORTON. Thank you very much, Ms. Chang.

Next we will hear from Mr. Darren Hawkins, CEO of YRC Worldwide Inc., speaking on behalf of the American Trucking Associations.

You can proceed, please.

Mr. HAWKINS. Chair Norton, Ranking Member Davis, Chairman DeFazio, and members of the subcommittee, thank you for providing me with the opportunity to testify on behalf of the American Trucking Associations.

And a special thanks to Congresswoman Davids for the intro and also for the representation in Kansas where we have 1,200 employees in 6 specific operations.

I am CEO of YRC Worldwide, one of the Nation's largest trucking companies. We have 380 terminals nationwide and employ 31,000 nonunion and union people across the country. Each year we transport 20 million shipments with our 14,000 tractors and 45,000 trailers.

Given that this is National Truck Driver Appreciation Week, I would also like to offer a special thanks to our professional drivers and all truckdrivers who work hard to deliver 71 percent of America's freight.

While the trucking industry is willing to pay its fair share for infrastructure improvement, we believe that tolls are not the right solution and, in fact, can be very harmful to our industry, our customers, and ultimately to all consumers. ATA does not oppose toll financing of new interstate highway lanes, nor do we oppose the conversion of HOV lanes to HOT lanes. Our concern is with the tolling of existing general-purpose interstate highways.

Tolling has very high collection costs relative to other highway user fees. A recent study found that converting all interstates into tollroads would cost more than $55 billion. While the cost of collection has come down with the introduction of transponders, costs can still exceed 10 percent.

On some major toll facilities these costs are much higher. On the Ohio turnpike, for example, 19 cents out of every dollar is spent collecting tolls, while the Pennsylvania turnpike's collection costs exceed 20 percent. Contrast this with the 0.2-percent cost of collecting Federal fuel taxes.

Of the $37 billion in Federal fuel tax revenue collected in 2017, just $75 million went to collection. Compare this with the Pennsylvania turnpike, which in 2016 spent more than $212 million to collect just over $1 billion.

Clearly the waste that goes into collecting a toll is simply unacceptable when far more efficient alternatives are available. Our user fees should be allocated to build roads and bridges, not to pay excessive tollroad administrative fees, especially at a time when the American Society of Civil Engineers gives our roles a D grade and our bridges a grade of C-plus.

Another significant problem is diversion of traffic to alternative routes. These routes are likely to be less safe and not as well-constructed as the tolled highway.

It is often claimed that one advantage of tolls is that it is a true user fee. Motorists pay to use the facility, and the tolls cover the cost. In practice, this is not always the reality. In most cases Federal law allows States to shift excess tolling revenue to any title 23-eligible purpose. This results in tollpayers bankrolling projects that they may not benefit from.

In addition, because the vast majority of roads can't support tolls, a small minority of motorists can be saddled with the subsidization of a State surface transportation system, regardless of whether the tollpayers benefit.

Furthermore, States often look for opportunities to target motorists with little political power, such as non-State residents, particularly trucks engaged in interstate commerce.

Several States and cities are exploring the use of congestion pricing to manage traffic congestion. This might be an effective tool for car drivers. However, since it is the customer who determines pickup and delivery times, often with penalties for late deliveries, pricing is not an effective tool for influencing truck travel choices.

Today's e-commerce-driven supply chain sets the timeline in motion, and it will not be influenced by tolling. Therefore, pricing has very little impact on congestion caused by trucks.

While ATA flatly opposes tolls on existing interstates and would prefer the elimination of all related Federal tolling authority, we recognize that there is an interest in allowing tolls for certain purposes, specifically for very expensive bridge and tunnel projects and congestion management.

ATA has recommended several changes to Federal tolling law that will protect the public from the types of abuses I have described, while still allowing tolls to be used under some circumstances. For example, States should be required to disclose the likely impacts of toll diversion on safety, congestion, and air quality. In addition, toll rate discrimination based on vehicle class or State of residence should be outlawed, and tollpayers should not be forced to subsidize projects they don't benefit from.

Finally, it is important to note that tolls will not solve the most important challenge facing this subcommittee, the impending bankruptcy of the Highway Trust Fund. Failure to address the shortfall will continue to induce States to consider bad options like tolls. ATA and nearly every organization that cares about surface transportation efficiency has proposed an increase in the fuel tax to address these needs, and we urge your support.

Thank you again for this opportunity. I look forward to your questions.

[Mr. Hawkins' prepared statement follows:]

Prepared Statement of Darren D. Hawkins, Chief Executive Officer, YRC Worldwide Inc., on behalf of the American Trucking Associations

Chair Norton, Ranking Member Davis, and members of the subcommittee, thank you for providing me with the opportunity to testify on behalf of the American Trucking Associations (ATA).[1] My name is Darren Hawkins, and I am Chief Executive Officer of YRC Worldwide Inc., a publicly traded holding company for a portfolio of successful less than truckload companies including Holland, New Penn, Reddaway, YRC Freight and our newest company, HNRY Logistics. YRC Worldwide is headquartered in Overland Park, Kansas, and we have 380 terminals from coast to coast employing 31,000 people. Annually we transport twenty million shipments for our customers with our 17,000 drivers, 14,000 tractors and 45,000 trailers.

As CEO of one of the Nation's largest trucking companies I want to take a moment to thank our 17,000 professional drivers for their commitment to safety. While there is much talk about autonomous trucks, the most important safety device in a truck is still a professional driver. More than 1,700 of our drivers have over one million consecutive accident free miles. Our commitment to safety is not unique or even unusual, as the same commitment to safety can be found with our fellow ATA member companies.

I serve on the Executive Committee of ATA, an 86-year-old federation that represents every sector of the trucking industry, with affiliates in all 50 states. The federation has members in every Congressional district and every community. More than 80 percent of U.S. communities rely exclusively on trucks for their freight transportation needs. Trucking is the lifeline that connects all modes of freight transport in support of the American economy.

Madam Chair, we very much appreciate this opportunity to focus attention on the spread of toll roads. While the trucking industry is willing to pay its fair share for infrastructure improvement, we believe that tolls are not the right solution, and in fact can be very harmful to our industry, customers and ultimately, to consumers. My testimony will explain why toll roads are a poor revenue source for highways and how Congress can reform existing federal laws to better protect the public from their negative effects.

THE TRUCKING INDUSTRY

This year the trucking industry will move 71 percent of the nation's freight tonnage, and over the next decade will be tasked with moving 2.5 billion more tons of freight than it does today while continuing to deliver the vast majority of goods.[2] Trucks haul 100 percent of the freight originating in the District of Columbia, and DC residents and businesses rely on trucks to deliver 98% of the goods coming into the District. More than two-thirds of the freight delivered to and from Illinois was loaded onto a truck. In 2017, the goods moved by trucks nationwide were worth more than $10 trillion.[3] The trucking industry is also a significant source of employment, with 7.8 million people working in various occupations—including 3.5 million drivers—accounting for every 1 in 18 jobs in the U.S.[4] Furthermore, "truck driver" is the top job in 29 states.[5]

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[1] American Trucking Associations is the largest national trade association for the trucking industry. Through a federation of 50 affiliated state trucking associations and industry-related conferences and councils, ATA is the voice of the industry America depends on most to move our nation's freight. Follow ATA on Twitter or on Facebook. Trucking Moves America Forward.

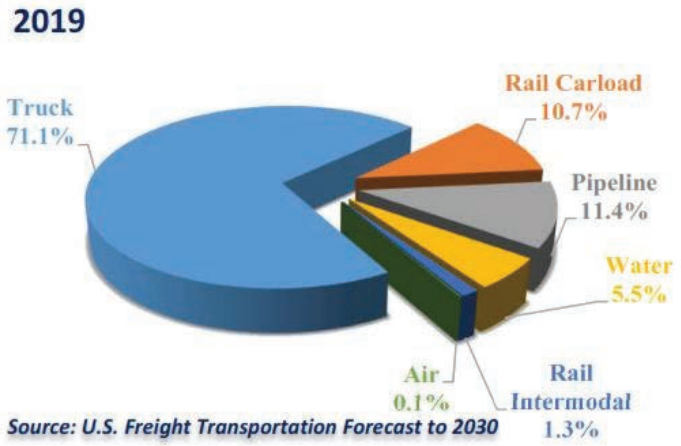
[2] *Freight Transportation Forecast 2019 to 2030*. American Trucking Associations, 2019.

[3] *2017 Commodity Flow Survey Preliminary Report*. U.S. Census Bureau, Dec. 7, 2018.

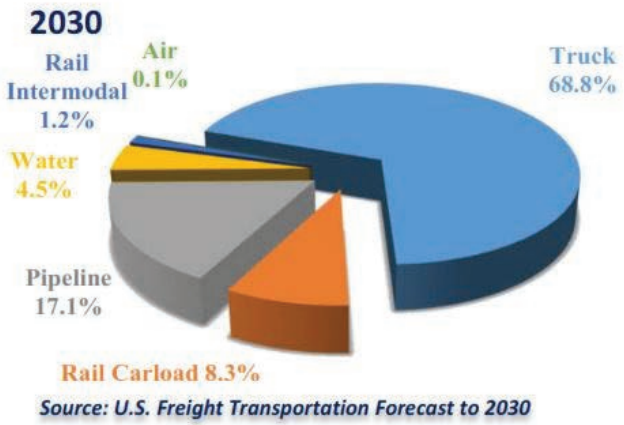
[4] *American Trucking Trends 2019*, American Trucking Associations.

[5] https://www.marketwatch.com/story/keep-on-truckin-in-a-majority-of-states-its-the-most-popular-job-2015-02-09.

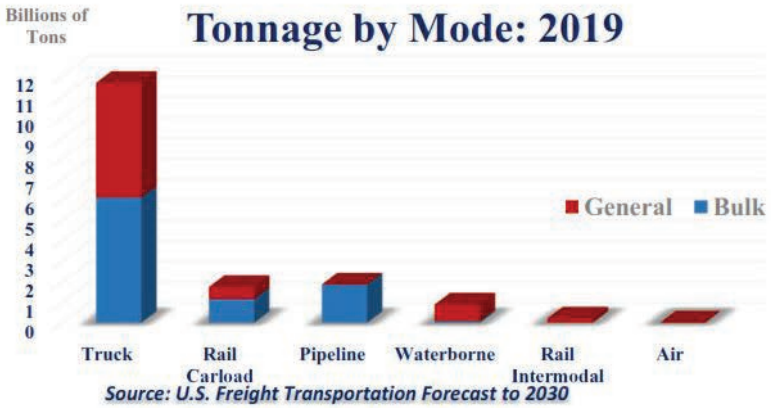
Distribution of Tonnage by Mode: 2019 vs 2030



Source: U.S. Freight Transportation Forecast to 2030



Source: U.S. Freight Transportation Forecast to 2030



Without trucks, our cities, towns and communities would lack key necessities including food and drinking water; there would not be clothes to purchase, and no parts to build automobiles or fuel to power them. The rail, air and water intermodal sectors would not exist in their current form without the trucking industry to support them. Trucks are central to our nation's economy and our way of life, and every time the government makes a decision that affects the trucking industry, those impacts are also felt by individuals and by the millions of businesses that could not exist without trucks.

The Cost of Inaction on the Highway System

A well-maintained, reliable and efficient network of highways is crucial to the delivery of the nation's freight and vital to our country's economic and social well-being. However, the road system is rapidly deteriorating, and costs the average motorist more than $1,600 a year in higher maintenance and congestion expenses.[6] Highway congestion also adds nearly $75 billion to the cost of freight transportation each year.[7] In 2016, truck drivers sat in traffic for nearly 1.2 billion hours, equivalent to more than 425,000 drivers sitting idle for a working year.[8] At a time when we need more truck drivers the prospect of a driver spending a good part of their working day stuck in traffic is not an attractive career proposition.

The Highway Trust Fund (HTF), the primary source of federal revenue for highway projects, safety programs and transit investments, is projected to run short of the funds necessary to maintain current spending levels by FY2021.[9] While an average of approximately $42 billion per year is expected to be collected from highway users over the next decade, nearly $60 billion will be required annually to prevent significant reductions in federal aid for critical projects and programs.[10] It should be noted that a $60 billion annual average federal investment *still* falls well short of the resources necessary to provide the federal share of the expenditure needed to address the nation's surface transportation safety, maintenance and capacity needs.[11] According to the American Society of Civil Engineers, the U.S. spends less than half of what is necessary to address these needs. As the investment gap continues to grow, so too will the number of deficient bridges, miles of roads in poor condition, number of highway bottlenecks and, most critically, the number of crashes and fatalities attributable to inadequate roadways.

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[6] *Bumpy Road Ahead: America's Roughest Rides and Strategies to make our Roads Smoother*, The Road Information Program, Oct. 2018; *2019 Urban Mobility Report*. Texas Transportation Institute, Aug. 2019.

[7] *Cost of Congestion to the Trucking Industry: 2018 Update*. American Transportation Research Institute, Oct. 2018.

[8] *Ibid*.

[9] The Budget and Economic Outlook 2019–2029, *January 2019* Congressional Budget Office.

[10] *Ibid*.

[11] *2015 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance*. USDOT, Dec. 2016; see also *2017 Infrastructure Report Card*. American Society of Civil Engineers, 2017.

TOLL FINANCING OF HIGHWAYS

While federal law generally restricts states' ability to toll existing Interstates (23 U.S.C. § 301), there are several exceptions. States may use tolls to finance new, reconstructed, or replacement bridges or tunnels (23 U.S.C. § 129(a)), or apply to the U.S. Department of Transportation (USDOT) for authority to toll under two pilot programs. The Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP), authorized under Section 1216(b) of the 1998 Transportation Equity Act for the 21st Century, allows three states to toll one Interstate highway, with revenue to be used for improvement of the tolled facility. The Value Pricing Pilot Program, initially authorized by Congress in the Intermodal Surface Transportation Efficiency Act of 1991, allows up to 15 jurisdictions to apply for authority to toll Interstates for the purpose of managing traffic demand by adjusting toll rates to a level that reduces peak-hour travel.

ATA does not oppose toll financing to cover the costs of new Interstate highway lanes, provided a reasonable toll-free option is available. For example, some states have built tolled express lanes parallel to existing toll-free lanes. Nor does ATA oppose the conversion of high-occupancy vehicle (HOV) lanes to high-occupancy toll (HOT) lanes. Our concern is with the conversion of existing toll-free general-purpose Interstate highway lanes to a tolled facility. My testimony will discuss the general problems with tolling Interstates and will then describe specific concerns we have with current federal legal exceptions to the general prohibition on Interstate highway tolls.

General Concerns with Interstate Tolls

Collection Costs

Tolling systems have very high collection costs relative to other user fees because there are several necessary components that are generally not present or are less onerous in fuel taxes, registration fees, license fees, and other common user fees. One study found that converting all Interstate highways into toll roads would cost more than $55 billion.[12] A National Academy of Sciences report listed some of the potential components that should be considered when determining the potential costs of toll collection: [13]

Operational costs:

- Operation and maintenance of tollbooths;
- Operation and maintenance of ETC [electronic toll collection] and video tolling systems as well as the related information technology hardware and software;
- Customer account management, payment processing, and banking charges relating to toll accounts;
- Inventory, distribution, and sale of transponders; and
- Cash counting, transportation and vault services.

Enforcement costs:

- Catching violators;
- Assessing administrative fees and fines;
- Account settlement before the toll violation reaches court; and
- Prosecuting violators (court costs).

While the cost of toll collection has come down with the introduction of electronic toll collection (ETC), according to a Congressional Research Service report, collection costs on ETC systems can still exceed 10 percent.[14] On some major toll facilities collection costs are much higher. In 2016, for example, toll collection costs on the Ohio Turnpike were 19.2 percent, while the Pennsylvania Turnpike's collection costs exceeded 20 percent.[15]

Contrast this with the cost of collecting fuel taxes. Because fuel taxes are collected from just 850 taxpayers nationwide at the terminal rack, both collection costs and evasion are extremely low.[16] In fact, one study found that the cost to collect the fed-

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[12] *Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future (2018)*. Transportation Research Board, National Academy of Sciences, p. 6–13.

[13] Patrick Balducci et all, *NCHRP Report 689: Costs of Alternative Revenue-Generation Systems*, National Cooperative Highway Research Program, Transportation Research Board: Washington DC, 2011, DOI: 10.17226/14532.

[14] Congressional Research Service. *Tolling U.S. Highways and Bridges*, Aug. 4, 2017.

[15] American Transportation Research Institute. *A Framework for Infrastructure Funding*, Nov. 2017.

[16] Congressional Research Service. Tolling U.S. Highways and Bridges, Aug. 4, 2017.

eral fuel tax is just 0.2 percent of revenue.[17] This means that of the $37 billion in federal fuel tax revenue collected in 2017, just $75 million went to collection costs. Contrast this with the Pennsylvania Turnpike, which in 2016 spent more than $212 million to collect just over $1 billion in toll revenue. Clearly, from a highway user's perspective, the waste that goes into collecting a toll is simply unacceptable when far more efficient alternatives are available.

Traffic Diversion

Another significant problem with Interstate highway tolls is diversion of traffic to alternative routes. These routes are likely to be less safe and not as well constructed as the tolled highway. It is well documented that Interstate highways have a lower crash rate than the lower-order roadways that vehicles are expected to divert on to.[18] For example, the Massachusetts Department of Transportation found that rural Interstates had an average crash rate that is 58 percent lower than the average for rural roads statewide, while urban Interstates were more than 3.5 times safer than the average urban road.[19]

A study that explored the impacts of tolling untolled roads found that all nine facilities studied experienced traffic diversion.[20] The report found impacts in the range of –10 to –36 percent of motorists diverting from the tolled facilities. One example cited by the study is IL–390, previously the Elgin-O'Hare Expressway and now known as the Elgin-O'Hare Tollway after it was transferred to the Illinois Tollway Authority and tolled in 2016. Even after $3.4 billion in improvements, traffic counts on the highway dropped by 23 percent after tolls were imposed, sending 45,000 vehicles per day to alternative routes.

Specifically with regard to the trucking industry, whether a carrier decides to avoid a toll road depends on a number of factors, including the type of load, delivery deadline, whether the driver or carrier determines route choice, and whether the driver or carrier is responsible for toll costs. Note that the critical missing element here is the shipper. With few exceptions, the shipper is not directly billed for toll costs. Therefore the carrier usually bears the cost of the toll and has to attempt to recover these costs by either improving efficiencies or increasing rates across the carrier's entire customer base. This is a crucial factor, particularly when it comes to the ability to influence carrier behavior through congestion pricing, which will be addressed later.

While tolling analyses attempt to determine the impacts of tolls on trucking diversion using standard value-of-time assumptions, they often underestimate diversion by failing to take the above factors into consideration.[21] A survey of truck drivers found wide variation in their willingness to avoid paying a toll, with some drivers unwilling to lose any time by using an alternative route, and others willing to lose an average of 52 minutes in order to avoid a toll payment of any amount.[22]

Unfair Subsidization

An oft-cited advantage of tolls is that it is a true user fee—motorists pay to use the facility and the tolls they pay cover the costs of that facility. In practice this is often not the reality. Except for tolls authorized under the ISRRPP, Federal law allows states to shift toll revenue to any Title 23 eligible purpose, provided toll facility financing costs have been covered and the state certifies that the facility is being adequately maintained. This results in toll payers bankrolling all manner of projects that they may not benefit from. In addition, because the vast majority of roads cannot support tolls, a small minority of motorists can be saddled with the subsidization costs of an entire state's surface transportation system, regardless of whether the toll payers benefit from this spending. As one Congressional Research Service report put it:

> Whether it is built or operated by a government agency or by private investors, a toll road must have sufficient traffic willing to pay a high enough toll to cover construction, maintenance, and toll collection costs if it is to be financially successful. Most roads on the federal-aid system are not like-

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[17] American Transportation Research Institute. A Framework for Infrastructure Funding, Nov. 2017.

[18] See for example: https://www.mass.gov/service-details/intersection-and-roadway-crash-rate-data-for-analysis
http://apps.itd.idaho.gov/apps/ohs/Crash/14/2014RoadClass.pdf.

[19] *Ibid*.

[20] *The Tradeoffs of Tolling Untolled Roads*. Transportation Research Record: Journal of the Transportation Research Board, Volume 2672, Issue 4, 2018, pp 54–64.

[21] Toledo, T., Sun, Y., Rosa, K., Ben-Akiva, M., Flanagan, K., Sanchez, R. and Spissu, E. (2013), "Decision-Making Process and Factors Affecting Truck Routing."

[22] *Ibid*.

> ly to pass that test. In rural areas, highways often do not have enough traffic to cover the cost of building toll-collection infrastructure and collecting tolls. Although urban roads typically have more traffic, they may not be able to generate sufficient toll revenue to make the facilities self-sustaining.[23]

Furthermore, states often look for opportunities to target motorists with little political power, such as non-state residents—particularly trucks engaged in interstate commerce—and low-income or minority communities. Both of these factors came into play when Virginia attempted to use the authority granted by the ISRRPP to toll I–95 near the North Carolina border. The tolls would have been placed in an area with significant non-state traffic in a location with a large low-income minority population. In Rhode Island the bridge exemption was used to toll tractor-semitrailers only, and toll rates are structured so that they explicitly target out-of-state drivers for a disproportionate share of toll revenue.[24] On the Indiana Toll Road (ITR), which carries a significant amount of through traffic, tolls have been raised substantially to pay for projects more than 150 miles away. When announcing a 35 percent increase in ITR toll rates, the Governor explicitly acknowledged that the increases were intended to milk non-Indiana residents to pay for projects that primarily benefitted Indiana residents, stating: "The majority of the traffic is from out-of-state," Holcomb said. "We're capturing other people's money."[25] It is important to note that with the Indiana increase the trucking industry's fee will be in part used to support more international flights from the Indianapolis Airport and expand rural broadband access. At a time when the Highway Trust Fund is nearly broke and our bridges and roadways are in critical condition, this form of diversion is the worst kind of public policy.

Specific Concerns with Federal Tolling Law

Interstate System Reconstruction & Rehabilitation Pilot Program (ISRRPP)

The Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP), authorized under Section 1216(b) of the 1998 Transportation Equity Act for the 21st Century, allows three states to toll a single Interstate highway for the purpose of funding improvements to that highway. All of the revenue must be spent on the tolled facility and the state must submit a detailed application to the FHWA in order to win approval. Despite several attempts[26] by various states to utilize this pilot program, not a single project has been authorized by FHWA. These states wasted many years and millions of dollars on consultants, only to abandon a toll strategy and finally address their funding shortfalls with more efficient and fair revenue sources. After 21 years it is clear that this pilot program has failed, and it is time to finally put an end to it.

Bridge and Tunnel Exception

States may use tolls to finance new, reconstructed, or replacement Interstate highway bridges or tunnels under 23 U.S.C. § 129(a). This exception to the general ban on tolls on federally funded roads was enacted in 1927 (for bridges, tunnels were added in 1958) for new structures only.

Since the tolled bridge or tunnel was to become toll-free once the construction costs were paid off, it is clear that the original intent was to allow this exception for the express purpose of covering the original costs of building the facility. Over the years, however, this provision has been expanded to allow tolls for reconstructed bridges and tunnels, and the requirement that tolls must end once the project is paid off was eliminated. Now, any revenue in excess of project costs can be used for any purpose eligible under Title 23 of the U.S. Code, provided the state self-certifies that the facility is being adequately maintained.

The federal law that authorizes the tolls only requires that the tolled facility is a bridge or tunnel and that the structure is replaced or reconstructed. A bridge is undefined in this context and has been broadly interpreted by USDOT to include any structure over 20 feet long with supports, erected over a depression or obstruction.[27] With nearly 58,000 bridges on the 48,000-mile Interstate system, essentially the entire network is eligible for tolling under this section of law.

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[23] Congressional Research Service. Tolling U.S. Highways and Bridges, Aug. 4, 2017.

[24] https://www.ttnews.com/articles/ata-carriers-sue-rhode-island-dot-over-truck-only-tolls.

[25] https://www.nwitimes.com/news/local/govt-and-politics/state-to-receive-billion-in-exchange-for-allowing-higher-truck/article__640a7253-34cb-5bfe-a7fd-5b653ba4ef86.html.

[26] Arkansas multiple Interstates; Virginia I–81 & I–95; N. Carolina I–95; Pennsylvania I–80; Missouri I–70.

[27] 23 CFR 650.305.

The Rhode Island experience is a case study in how this provision can be abused. It illustrates why Congress should revisit this exception in order to preserve the original intent of the provision to give states the opportunity to use tolls to finance projects that are too expensive, while inserting language that protects the public.

In June 2018 Rhode Island imposed tolls at two locations on Interstate 95 near the border with Connecticut, and recently activated a toll gantry on U.S. 6 in Providence. The state has indicated that it will impose tolls at eight additional locations statewide, including on three Interstate highway routes. The tolls are charged only on tractor-semitrailers.[28] The I–95 tolls alone are costing YRC Worldwide companies $750,000 per year for what is essentially a microscopic section of our nation's entire Interstate system. Providence is as the 130th largest city in the United States. What would happen to our nation's supply chain, truck drivers and economy if just half of the largest 100 cities in America implemented similar tolls?

Neither federal law, nor agency regulation or guidance, establishes any standards governing the condition of the structures eligible for tolling. In fact, several bridges targeted for tolling by Rhode Island are neither structurally deficient nor functionally obsolete, despite the fact that the state has the highest proportion of structurally deficient bridges in the country.[29] It appears that the state chose many of these bridges for tolling primarily due to their potential for revenue collection, and not because they are a priority for improvement.

In addition, there appear to be no current federal standards that define "reconstruction," but FHWA has apparently interpreted it to include relatively minor improvements, given the Rhode Island example. Some of the "reconstruction" projects paid for partially with toll revenue are expected to cost less than $10 million. Furthermore, in some cases toll revenue represents a small fraction of the cost of the project; for example, in one case toll revenue is expected to cover just six percent of project costs. Overall, Rhode Island's 10-year bridge improvement program relies on bridge tolls to cover just 10 percent of the costs. As stated above, once the state certifies that the tolled bridges are being adequately maintained, the toll revenue can be used for any project eligible under Title 23 of the U.S. Code. This includes federal-aid roads statewide, transit projects, bicycle and pedestrian facilities, ferries and any number of other projects that may be of no benefit whatsoever to the toll payers, all of whom are the operators of tractor-semitrailers. It is clear that Rhode Island's intent all along was not to use tolls to pay for its bridge program, but to use the flexibility in federal law to treat tractor-semitrailers as a perpetual piggy bank for projects that they are very unlikely to benefit from.

Another troubling aspect of the Rhode Island experience is the role that the U.S. Department of Transportation played. USDOT authorized the Rhode Island Department of Transportation to issue an Environmental Assessment (EA) rather than conduct a more detailed Environmental Impact Statement normally required of projects that are, among other things, likely to have a significant impact on traffic patterns.[30] USDOT also made the bizarre decision to allow RIDOT to only evaluate the impacts of tolls on an individual facility basis, without consideration of what would happen once the state tolled virtually its entire highway network. RIDOT clearly indicated this was its intent, and USDOT was clearly aware of it because the agency signed a Memorandum of Understanding authorizing tolls on all of these bridges prior to the inception of the environmental review process.[31] This very likely resulted in an incomplete and inaccurate analysis of traffic diversion patterns. Furthermore, even though ATA and others pointed out numerous, obvious flaws in the EA (including, for example, failing to analyze the most likely diversion routes), USDOT approved the EA as written and twice issued a Finding of No Significant Impact (FONSI), allowing tolls to move forward.[32] This, despite the fact that the EA failed to include a safety or economic analysis, and did not consider alternatives to tolling, even though USDOT stated in a 2015 document that an alternative funding analysis is advisable.[33]

Even in a case where the state is seemingly attempting to use the bridge and tunnel exception for its intended purpose, several problems have presented themselves that illustrate the problems with toll financing. The I–10 Mobile River Bridge and

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[28] See here for details on the tolling program: http://www.dot.ri.gov/rhodeworks/.

[29] https://www.fhwa.dot.gov/bridge/nbi.cfm.

[30] http://www.dot.ri.gov/tolling/docs/Toll__Locations__1-2__Environmental__Assessment.pdf; http://www.dot.ri.gov/tolling/docs/Toll__Locations__3-13__Environmental__Assessment.pdf.

[31] http://www.dot.ri.gov/documents/news/Executed__MOUs__RhodeWorks__Tolling__Program.pdf.

[32] http://www.dot.ri.gov/tolling/docs/Toll__Locations__1-2__Environmental__Assessment.pdf; http://www.dot.ri.gov/tolling/docs/Toll__Locations__3-13__Environmental__Assessment.pdf.

[33] Federal Highway Administration. *Public-Private Partnership Oversight: How FHWA Reviews P3s*, Jan. 2015, p. 19.

Bayway project would have replaced a currently toll-free bridge and tunnel with a tolled crossing. The Alabama Department of Transportation (ALDOT) intended to finance the project using a concession public-private partnership (P3) model. Three P3 groups were under consideration.[34] FHWA recently issued a Record of Decision (ROD) giving ALDOT the federal green light to proceed.[35] However, after a populist uprising against tolls, a local Metropolitan Planning Organization's Board voted to remove the project from its Transportation Improvement Plan, which prevents the project from receiving federal funds.[36] Following the vote the Governor declared that the project is "dead."[37]

When it was originally conceived, the project's cost was estimated to be approximately $800 million. It ballooned to $2.1 billion, in part to pay for a bridge that meets the 100-year floodplain threshold, which ALDOT claimed was required by the Federal Highway Administration. Recently a FHWA official reportedly confirmed that this was never a requirement.[38]

Due to financing costs, including the profits incurred by the private partners, the actual cost to toll payers was projected to be around $7 billion according to an ALDOT consultant analysis.[39] Initially, cars were expected to pay a maximum toll rate of $6.00 per crossing, with trucks paying up to $24.00 per crossing, with toll rates rising over time to a maximum rate of $18.97 for cars and $75.88 for trucks in 30 years. For the commuter who crosses the entire facility twice per day, the initial weekly cost would have been $60.00, or $3,120 per year.[40] Even with the various commuter discounts proposed by ALDOT, these costs are prohibitive for many families. Compare this with a strategy to finance the project with a dedicated fuel tax, as an example. Raising an equivalent amount of revenue over the first decade would require an increase in the state fuel tax of just four cents per gallon, costing the average passenger car driver about $20 per year, or 38 cents per week.

According to ALDOT's consultant analysis, in 2030 traffic on the Cochrane Bridge, a designated alternative toll-free route, would increase from 26,400 vehicles under a no-build scenario to 47,900 vehicles with a $6 toll on the I–10 corridor. However, if the project was built without tolls, just 17,900 vehicles were projected to use the Cochrane Bridge in 2030. Under the build, no-toll scenario, the significant environmental justice impacts identified by ALDOT are eliminated, as are the many other safety, economic and environmental impacts associated with tolls and traffic diversion. However, ALDOT failed to consider alternative revenue sources that could have avoided these impacts and lowered project costs and the financial burden to the local population.

These are just two examples of how the bridge and tunnel exception is being applied in a way that fails to take the public interest, and the federal interest in protecting interstate commerce, into consideration. ATA is aware of several other states that are exploring the possibility of using this provision to toll their Interstate systems. While we support elimination of the exception, if it is to be preserved we recommend the following reforms:

- Eligible projects are those with a total project cost of at least $2 billion. These are single facility costs, not network costs.
- A state must conduct an Environmental Impact Statement for each project.
- When conducting an EIS for a network of tolls, an EIS must determine the effects of both individual toll locations and the collective network effects of a proposal.
- Revenue generated by the tolls can only be used for financing costs and project costs related to the facility. Once project costs have been paid off and USDOT determines, on an annual basis, that the facility is being adequately maintained, revenue can be used for Title 23 eligible highway or transit projects that directly benefit the users of the tolled facility. Revenue from the lease or sale of an Interstate toll facility should also be subject to this requirement.
- The maximum toll rate for any vehicle class may not exceed any other toll rate by more than five times.

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[34] For more information see the project website: https://mobileriverbridge.com/.

[35] https://mobileriverbridge.com/wp-content/uploads/2019/08/I-10-Mobile-River-Bridge-and-Bayway-Combined-FEIS-ROD__Signed-08-15-2019.pdf.

[36] https://www.al.com/politics/2019/08/gov-kay-ivey-declares-i-10-mobile-river-bridge-and-bayway-project-dead.html.

[37] https://governor.alabama.gov/statements/governor-ivey-makes-statement-following-eastern-shore-mpos-failure-to-prioritize-mobile-river-bridge-and-bayway-project/.

[38] https://www.fox10tv.com/news/mobile__river__bridge__and__bayway/lawmakers-question-where-new-bridge-estimate-came-from/article__edf2e17c-c5f6-11e9-bb49-6780d9b32716.html.

[39] https://mobileriverbridge.com/wp-content/uploads/2019/05/ALDOT-I-10-Mobile-River-TR-Report-DRAFT-May-2018.pdf, Chapter 11.

[40] *Ibid*.

- Any toll discounts must be offered to all users, regardless of residency or the state a transponder was purchased from.
- At a minimum, the State's application, either through an EIS or separate documentation, should demonstrate the following:
  - There is a net congestion reduction, taking into consideration mobility on both the tolled route and any routes to which traffic diverts. There is also a net reduction in vehicle emissions on these routes.
  - The number and severity of crashes is not likely to increase.
  - If additional maintenance or capacity improvements on diversion routes are anticipated, the state must document these improvements and include a plan to implement them within a reasonable timeframe.
  - Environmental justice impacts of tolls and mitigation measures.
  - A cost-benefit analysis that includes the impacts of tolls on roadside businesses, commercial vehicle operators, and the impacts on businesses and consumers affected by tolls, both inside and outside the states where the tolls are located.
  - A determination with regard to whether the location of tolls or the toll rate structure discriminates against interstate commerce.
  - An analysis of alternative revenue mechanisms.
  - The state is required to submit a report to the Secretary every five years with an analysis of the above, and the Secretary is to determine whether the state continues to meet the requirements.

Value Pricing Pilot Program

The Value Pricing Pilot Program (VPPP) was initially authorized by Congress in the Intermodal Surface Transportation Efficiency Act of 1991, and was originally called the Congestion Pricing Pilot Program. It allows up to 15 jurisdictions to apply for authority to toll an unlimited number and unlimited miles of Interstates as part of a congestion pilot program. The VPPP was amended several times, and today many of the original provisions are mainstreamed, and states no longer require approval of an application to gain tolling authority under many circumstances. Currently the only restriction on tolling that requires approval under the VPPP is the ability to toll a general purpose Interstate highway lane. To date, no state has used the authority under the VPPP for this purpose.

The statute is extremely broad, leaving it to USDOT to determine qualification requirements. The only requirement is that USDOT must report to Congress the effect of programs authorized under the VPPP on "driver behavior, traffic, volume, transit ridership, air quality, and availability of funds for transportation programs."

The term "congestion pricing" is generally understood to mean, as FHWA has stated:

> . . . tolling and non-tolling strategies that can reduce peak period congestion by charging motorists new or higher fees for use of roads and parking during peak times in order to encourage drivers to shift to other travel modes, routes or destinations; to travel at other times of the day; or to forgo making the trip altogether.[41]

However, since a definition exists in neither statute nor regulation, FHWA is essentially unbound in determining the types of projects that qualify. Presumably, some level of congestion reduction and air quality improvement would reasonably be expected to be achieved in order to qualify under the pilot, but the magnitude of such changes is entirely the province of FHWA's subjective opinion. Taken to the extreme, FHWA could approve a project if it can be expected to increase average peak period speeds by any number greater than zero. Furthermore, while USDOT is required to report to Congress on the results of the pilots, there is no recourse if a pilot fails to meet the objectives claimed in the application.

A debate currently being waged in Connecticut illustrates why this lack of specificity is potentially problematic. For several years Connecticut has been exploring statewide tolling on Interstates and other major highways to raise revenue. During his 2018 campaign, Governor Ned Lamont touted truck-only tolls, but once elected shifted his advocacy to tolls on all vehicles after concluding that tolls only on trucks would not raise enough money.[42] Throughout 2019 the Governor, along with state General Assembly leaders, have advocated for legislation that would authorize the Connecticut Department of Transportation to toll statewide. As of this writing the legislation had not passed.

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[41] *Report on the Value Pricing Pilot Program through April 2016*, U.S. Department of Transportation Federal Highway Administration.

[42] https://www.ttnews.com/articles/connecticut-gov-ned-lamont-pivots-truck-only-toll-plan.

While several tolling strategies have been discussed, the conversation has centered on taking advantage of the tolling exception in the VPPP. Draft tolling legislation includes resident and frequent commuter discounts.[43] Legislative leaders have stated that under this proposal an out-of-state driver could pay a toll rate that is more than twice as high as the rate for an in-state driver.

It is clear that the current proposal under consideration is primarily designed not to affect travel choices, as Congress intended, but to raise revenue. The toll rates, when the various discounts are factored in, are explicitly anticipated to impose the greatest financial burden on non-resident drivers, while giving the biggest discounts to those drivers who, under congestion pricing theory and practice, should be charged the highest rates in order to reduce congestion. This is clearly inconsistent with both the letter and intent of the VPPP.

The U.S. Department of Transportation has not received an application yet, and has therefore not determined whether the proposal passes muster. To date, FHWA has not taken final action on an application under the VPPP that involves tolling existing general purpose lanes of the Interstate Highway System, so there is no precedent to rely on. However, the criteria for qualification under the VPPP are so loose that a favorable decision is possible since there is no delineated threshold for the amount of congestion reduction or improvement in air quality in statute, regulation or agency guidance necessary to win approval.

It is also worth noting that there is no evidence that congestion pricing has an impact on truck travel choices sufficient to achieve significant reduction in congestion or improvements in air quality. Research has found that trucking companies are usually unable to pass along toll costs to customers, who determine pick-up and delivery times. Therefore customers have no incentive to change their schedules in a way that allows trucks to avoid traveling during peak periods.[44] Applying pricing pressure to trucks simply increases the cost of moving freight, without the theoretical benefits generally associated with congestion pricing. The North American supply chain is a highly choreographed daily industrial ballet. Movements are timed to keep factories running, hospitals filled with medical supplies and grocery stores stocked with fresh foods. The supply chain sets the demand cycle and congestion pricing will not throw it out of sync, especially in this era of e-commerce and same day deliveries.

While ATA recommends eliminating the VPPP, should it remain we recommend the following reforms:

- States must demonstrate that the pricing of highways (not the projects funded by tolls) by themselves significantly alleviate congestion and improve air quality in a highway corridor, including on alternative routes.
- A state must conduct an Environmental Impact Statement for each project.
- When conducting an EIS for a network of tolls, an EIS must determine the effects of both individual toll locations and the collective network effects of a proposal.
- Revenue generated by the tolls can only be used for financing costs and project costs related to the facility. Once project costs have been paid off and USDOT determines, on an annual basis, that the facility is being adequately maintained, revenue can be used for Title 23 eligible highway or transit projects that directly benefit the users of the tolled facility. Revenue from the lease or sale of an Interstate toll facility should also be subject to this requirement.
- The maximum toll rate for any vehicle class may not exceed any other toll rate by more than five times.
- Any toll discounts must be offered to all users, regardless of residency or the state a transponder was purchased from.
- At a minimum, the State's application, either through an EIS or separate documentation, should demonstrate the following:
  - There is a net congestion reduction, taking into consideration mobility on both the tolled route and any routes to which traffic diverts. There is also a net reduction in vehicle emissions on these routes.
  - The number and severity of crashes is not likely to increase.
  - If additional maintenance or capacity improvements on diversion routes are anticipated, the state must document these improvements and include a plan to implement them within a reasonable timeframe.
  - Environmental justice impacts of tolls and mitigation measures.

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[43] https://www.ctnewsjunkie.com/upload/2019/06/0619FinalPresentation.pdf, Slide 23.

[44] Holguín-Veras, J. (2008) "Necessary conditions for Off-Hour Deliveries and the Effectiveness of Urban Freight Road Pricing and Alternative financial Policies in Competitive Markets" Transportation Research Part A: Policy and Practice Vol. 42A(2), pp. 392–413.

- A cost-benefit analysis that includes the impacts of tolls on roadside businesses, commercial vehicle operators, and the impacts on businesses and consumers affected by tolls, both inside and outside the states where the tolls are located.
- A determination with regard to whether the location of tolls or the toll rate structure discriminates against interstate commerce.
- The state is required to submit a report to the Secretary every five years with an analysis of the above, and the Secretary is to determine whether the state continues to meet the requirements.

LESSONS FROM CURRENT TOLLING PRACTICES

We do not need to speculate about the potential abuses motorists could face from the further imposition of tolls on Interstate highways. There are current examples that illustrate how the public is harmed, and portends a horrifically damaging future should Interstate tolls become more widespread.

Northeast Corridor

Drivers who travel from Washington, D.C. to Boston encounter numerous toll roads, bridges and tunnels. On this 443-mile journey, motorists will pay tolls at least six times, on average a toll every 74 miles. For trucking companies this is a very expensive journey. A five-axle truck with a transponder will pay about $222 in tolls, with slight variations depending on whether the truck qualifies for any discounts and the time of day, or day of week, the driver travels through these tolled facilities.

It is helpful to put that figure into context. A $222 toll on a 443-mile trip adds up to a 50 cent per-mile charge. That's equivalent to a truck paying a $3.00 per gallon fuel tax—at current diesel prices a 100% sales tax. Fifty cents per mile for the trip represents 23% of that truck's operating costs, a higher share than the cost of fuel and nearly equal to the wages paid to the driver.[45] A truck that has a regular route along the Northeast Corridor could pay up to $50,000 in tolls each year. By comparison that truck, on average, pays approximately $3,900 in federal and state fuel taxes.[46]

Pennsylvania Turnpike

A 2007 state law required the Pennsylvania Turnpike Commission (PTC) to make substantial payments to the Pennsylvania Department of Transportation (PennDOT) for other projects. Thus far, much of the revenue has gone to transportation improvements that do not directly benefit Turnpike users. These types of transfers are authorized by 23 U.S.C. § 129, which allows toll revenue on federal-aid facilities to be used for any Title 23 eligible project if the state certifies annually that the facility is being adequately maintained. Incidentally, a recent lawsuit against the Turnpike Commission revealed that it has not complied with the certification requirement.[47] Nonetheless, USDOT has allowed the transfers to continue unabated.

The same lawsuit alleged that PennDOT has used toll revenue for projects whose benefits are completely unrelated to the Turnpike and are unlikely to benefit tollpayers, many of whom are simply passing through the state. Examples include:

- Development of a mixed-used residential, office and transportation facility in Pittsburgh;
- Replacement of a roof at a bus garage in Allegheny County;
- Sidewalk installation in Yardley and in a shopping center in Susquehanna;
- Improvements to the Erie International Airport terminal building; and
- Creation of a multi-use trail in Centre County.[48]

Under the 2007 law, the PTC will pay PennDOT a total of nearly $10 billion. As of May 2018, the PTC had paid the agency more than $6 billion. This year, and continuing through 2022, the PTC will transfer $450 million to PennDOT, which represents approximately 37% of the Turnpike's gross fare revenue.

Since 2009 the PTC has increased toll rates every year by an average of six percent. Today, a 5-axle truck traversing the Turnpike pays a $100 toll, or 52 cents

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[45] *An Analysis of the Operational Costs of Trucking: 2018 Update*. American Transportation Research Institute, Oct. 2018.
[46] *American Trucking Trends 2019*, American Trucking Associations.
[47] https://www2.ca3.uscourts.gov/opinarch/191775p.pdf, p. 20.
[48] *Ibid*, pp. 9–11.

per mile. By 2048 trucks are projected to pay more than $287 to cross the Turnpike, while the rate for cars will increase from $26 to $75.[49]

On March 1, 2019, Pennsylvania's Auditor General warned that the PTC "is facing 'a road to ruin' if it continues to rely on unfair and unsustainable toll increases to pay off $11.8 billion in debt." Furthermore, he stated that the PTC, " . . . once viewed by some as a cash cow, has been milked to the brink of collapse." He added that "Hiking tolls year after year while hoping that E–ZPass users won't notice is not a sustainable revenue plan and it causes a financial hardship for motorists."[50]

These examples should serve as a wake-up call. The exorbitant fees paid by motorists to support toll facilities are far in excess of the fuel taxes, registration fees and other revenue sources that support toll-free highways, bridges and tunnels. A large share of toll revenue goes not to infrastructure improvement, but to support the massive bureaucracies required for toll financing.

Furthermore, motorists who happen to be traveling on a particular highway should not be responsible for subsidizing projects or programs that they do not benefit from. The Interstate Highway System was built to facilitate the efficient movement of military and commercial traffic, not to become a cash cow for all manner of unrelated purposes. It is time for Congress to build guardrails that protect the public from these types of abuses. In addition to the reforms we have proposed for future toll roads, ATA suggests the following changes in law for existing Interstate toll facilities:

- Revenue generated by the tolls can only be used for financing costs and project costs related to the facility. Once project costs have been paid off and USDOT determines, on an annual basis, that the facility is being adequately maintained, revenue can be used for Title 23 eligible highway or transit projects that directly benefit the users of the tolled facility. Revenue from the lease or sale of an Interstate toll facility should also be subject to this requirement.
- The maximum toll rate for any vehicle class may not exceed any other toll rate by more than five times.
- Any toll discounts must be offered to all users, regardless of residency or the state a transponder was purchased from.[51]

Asset Recycling

Related to tolls, some have suggested using highway asset recycling to raise money for infrastructure investment. Asset recycling involves selling or leasing public assets to the private sector. Where asset recycling has been utilized on toll roads in the U.S., toll payers have seen their rates increase significantly, only to subsidize projects with little or no benefit to them.

One need only consider the recent 35% increase in truck toll rates on the Indiana Toll Road for an example of these abusive practices. The state got a single tranche of money, while in return the private operator of the highway reaps the profits for the next six decades. This most recent increase is costing the YRC Worldwide companies $1.3 million annually. As referenced earlier, instead of using that money to hire new drivers, increase salaries and benefits or buy safer, cleaner equipment, we are forced to subsidize improvements at the Indianapolis airport, rural broadband infrastructure, and hiking and biking trails, projects that have little or no benefit to my company or millions of other motorists who use the ITR. Furthermore, this latest increase is on top of the doubling of toll rates prior to the initial lease in 2006, and subsequent annual increases that have resulted in a 311% increase in truck toll rates over the past 13 years, with little or no benefit to toll road users. ATA is adamantly opposed to applying these types of forced subsidies to highway users.

Implications For The Federal-Aid Program

It is important to note that toll financing does not in any way address the fiscal crisis facing the Highway Trust Fund. Some may argue that toll revenue could offset shortfalls in funding from traditional state and federal sources. However, as CRS has noted, "While the amount of toll revenue has grown significantly in recent years, toll revenue as a share of total spending on highways has been relatively steady for more than half a century, in the range of roughly 5% to 6%."[52] According

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[49] https://www.paturnpike.com/pdfs/business/finance/AuditorGeneralsPeformanceAudit Mar2019.pdf.

[50] *Ibid*.

[51] This article describes why these practices are problematic: https://www.marylandmatters.org/2019/07/05/the-cost-of-that-toll-depends-on-your-e-zpass/.

[52] Congressional Research Service. *Tolling U.S. Highways and Bridges*, Aug. 4, 2017.

to the same report, toll-road mileage comprises just 0.6 percent of the total miles for all federal-aid eligible roads and " . . . imposing tolls on individual transportation facilities is likely to be of only limited use in helping states overcome reductions in federal grants . . . " Another CRS report concludes that "Many roads may not have enough traffic to make tolling worthwhile. Tolling is unlikely to expand on a scale that would allow for major reductions in federal grant spending in the near term."[53]

Tolls are a niche funding mechanism, and that is unlikely to change in the foreseeable future. Congress cannot and should not wash its hands of its responsibility to provide the revenue needed to address the nation's massive infrastructure funding deficit by simply expanding tolling authority. This simply will not work.

ATA has proposed a real solution to the highway funding crisis. Called the Build America Fund (BAF), it would initiate a new 20 cent per gallon fee built into the price of transportation fuels collected at the terminal rack, to be phased in over four years. The fee will be indexed to both inflation and improvements in fuel efficiency, with a five percent annual cap. We estimate that the fee will generate nearly $340 billion over the first 10 years. It will cost the average passenger vehicle driver just over $100 per year once fully phased in.[54] We also support a new fee on hybrid and electric vehicles, which underpay for their use of the highway system or do not contribute at all.

This approach would give state and local transportation agencies the long-term certainty and revenue stability they need to not only maintain, but also begin to improve their surface transportation systems. They should not be forced to resort to costly, inefficient practices—such as deferred maintenance—necessitated by the unpredictable federal revenue streams that have become all too common since 2008. Furthermore, while transportation investment has long-term benefits that extend beyond the initial construction phase, it is estimated that our proposal would add nearly half a million annual jobs related to construction nationwide, including nearly 2,000 jobs in Washington, D.C. and almost 7,000 jobs in Illinois (see Appendix A for a full list of state-specific employment figures).[55]

The fuel tax is the most immediate, cost-efficient and conservative mechanism currently available for funding surface transportation projects and programs. Collection costs are less than one percent of revenue.[56] Our proposal will not add to the federal debt or force states to resort to detrimental financing options that could jeopardize their bond ratings. Unlike other approaches that simply pass the buck to state and local governments by giving them additional "tools" to debt-finance their infrastructure funding shortfalls for the few projects that qualify, the BAF will generate *real* money that can be utilized for *any* federal-aid project.

While some have suggested that a fuel tax is regressive, the economic harm of failing to enact our proposal will be far more damaging to motorists. The $100 per year paid by the average car driver under this proposal pales in comparison with the $1,600 they are now forced to pay annually due to additional vehicle maintenance, lost time, and wasted fuel that has resulted from underinvestment in our infrastructure. Borrowing billions of dollars each year from China to debt finance the HTF funding gap—a cost imposed on current and future generations of Americans who will be forced to pay the interest—is far more regressive than the modest fee needed to avoid further blowing up our already massive national debt.

Forcing states to resort to tolls by starving them of federal funds is far more regressive than the $2.00 a week motorists would pay under our proposal. One needs to only look to I–66 in Northern Virginia, where tolls average more than $12.00 per roundtrip and can sometimes exceed $46.00, to understand the potential impacts on lower- or middle-income Americans.[57] To put this into perspective, even if motorists only paid the average toll, the cost of a 10-mile trip over an eight day period on I–66 would be equivalent to their cost for an entire year under ATA's BAF proposal for all roads and bridges.

There is a perception that the fuel tax is no longer a viable revenue source due to the availability of electric vehicles and improvements in vehicle fuel efficiency. This notion is belied by the facts. According to the Congressional Budget Office's latest estimates, revenue from fuel taxes will drop less than eight percent over the

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[53] Congressional Research Service. *Highway and Public Transit Funding Issues*, June 4, 2019.

[54] Federal Highway Administration, *Highway Statistics 2016*, Table VM–1. Average light-duty vehicle consumed 522 gallons of fuel.

[55] *A Framework for Infrastructure Funding*. American Transportation Research Institute, Nov. 2017.

[56] *Ibid*.

[57] http://www.66expresslanes.org/documents/66__express__lanes__january__2018__performance__ereport.pdf.

next decade, or about $3 billion.[58] A modest increase in the fuel tax, or a new fee on alternative fuel vehicles, can easily recover these lost revenues.

CONCLUSION

Thank you very much for the opportunity to testify today on this very important subject. We look forward to working with the subcommittee to address the inequities and hardships imposed on motorists and trucking companies who are being forced to pay exorbitant and wasteful tolls to fund unnecessary bureaucracies and subsidize projects that they receive little or no benefit from. We also look forward to working with you to produce real funding solutions to the infrastructure investment crisis.

APPENDIX A: FUNDING IMPACT MATRIX—ANNUAL STATE-LEVEL JOB AND REVENUE INCREASES RESULTING FROM FEDERAL FUEL TAX INCREASES

[58] Congressional Budget Office, *Budget and Economic Outlook: 2019–2029*, January 2019.

State-Level Job and Revenue Creation Associated with Federal Fuel Tax Increases

State	Current Annual Allocation		Twenty Cent-Increase Federal Motor Fuels Tax Annual Benefits				Twenty Five Cent-Increase Federal Motor Fuels Tax Annual Benefits			
	FAST ACT Apportioned Funds (in milions)	Percent of Total	Additional $30 Billion Federal Funding (in millions)	State Match (20%) (in millions)	Total New Funds (in millions)	# of Jobs	Additional $37.25 Billion Federal Funding (in millions)	State Match (20%) (in millions)	Total New Funds (in millions)	# of Jobs
ALABAMA	$ 770	1.9%	$ 581	$ 116	$ 697	9,067	$ 722	$ 144	$ 866	11,258
ALASKA	$ 509	1.3%	$ 384	$ 77	$ 461	5,992	$ 477	$ 95	$ 572	7,440
ARIZONA	$ 742	1.9%	$ 560	$ 112	$ 673	8,744	$ 696	$ 139	$ 835	10,857
ARKANSAS	$ 525	1.3%	$ 397	$ 79	$ 476	6,187	$ 492	$ 98	$ 591	7,682
CALIFORNIA	$ 3,723	9.4%	$ 2,812	$ 562	$ 3,374	43,862	$ 3,491	$ 698	$ 4,189	54,462
COLORADO	$ 542	1.4%	$ 410	$ 82	$ 492	6,390	$ 509	$ 102	$ 610	7,935
CONNECTICUT	$ 509	1.3%	$ 385	$ 77	$ 462	6,002	$ 478	$ 96	$ 573	7,453
DELAWARE	$ 172	0.4%	$ 130	$ 26	$ 156	2,022	$ 161	$ 32	$ 193	2,510
DIST. OF COL.	$ 162	0.4%	$ 122	$ 24	$ 147	1,907	$ 152	$ 30	$ 182	2,368
FLORIDA	$ 1,922	4.8%	$ 1,451	$ 290	$ 1,742	22,642	$ 1,802	$ 360	$ 2,163	28,114
GEORGIA	$ 1,310	3.3%	$ 989	$ 198	$ 1,187	15,430	$ 1,228	$ 246	$ 1,474	19,159
HAWAII	$ 172	0.4%	$ 130	$ 26	$ 155	2,021	$ 161	$ 32	$ 193	2,510
IDAHO	$ 290	0.7%	$ 219	$ 44	$ 263	3,418	$ 272	$ 54	$ 326	4,244
ILLINOIS	$ 1,442	3.6%	$ 1,089	$ 218	$ 1,307	16,990	$ 1,352	$ 270	$ 1,623	21,097
INDIANA	$ 967	2.4%	$ 730	$ 146	$ 876	11,387	$ 906	$ 181	$ 1,088	14,139
IOWA	$ 499	1.3%	$ 376	$ 75	$ 452	5,873	$ 467	$ 93	$ 561	7,292
KANSAS	$ 383	1.0%	$ 289	$ 58	$ 347	4,516	$ 359	$ 72	$ 431	5,607
KENTUCKY	$ 674	1.7%	$ 509	$ 102	$ 611	7,940	$ 632	$ 126	$ 758	9,859
LOUISIANA	$ 712	1.8%	$ 538	$ 108	$ 645	8,387	$ 668	$ 134	$ 801	10,414
MAINE	$ 187	0.5%	$ 141	$ 28	$ 170	2,206	$ 176	$ 35	$ 211	2,739
MARYLAND	$ 610	1.5%	$ 460	$ 92	$ 552	7,181	$ 572	$ 114	$ 686	8,917
MASSACHUSETTS	$ 616	1.6%	$ 465	$ 93	$ 558	7,258	$ 578	$ 116	$ 693	9,012
MICHIGAN	$ 1,068	2.7%	$ 807	$ 161	$ 968	12,582	$ 1,001	$ 200	$ 1,202	15,623
MINNESOTA	$ 661	1.7%	$ 500	$ 100	$ 599	7,793	$ 620	$ 124	$ 744	9,676
MISSISSIPPI	$ 491	1.2%	$ 370	$ 74	$ 445	5,780	$ 460	$ 92	$ 552	7,177
MISSOURI	$ 960	2.4%	$ 725	$ 145	$ 870	11,313	$ 900	$ 180	$ 1,081	14,047
MONTANA	$ 416	1.0%	$ 314	$ 63	$ 377	4,903	$ 390	$ 78	$ 468	6,088
NEBRASKA	$ 293	0.7%	$ 221	$ 44	$ 266	3,454	$ 275	$ 55	$ 330	4,289
NEVADA	$ 368	0.9%	$ 278	$ 56	$ 334	4,339	$ 345	$ 69	$ 414	5,388
NEW HAMPSHIRE	$ 168	0.4%	$ 127	$ 25	$ 152	1,974	$ 157	$ 31	$ 189	2,452
NEW JERSEY	$ 1,013	2.5%	$ 765	$ 153	$ 918	11,932	$ 950	$ 190	$ 1,140	14,816

NEW MEXICO	$ 372	0.9%	$ 281	$ 56	$ 338	4,389	$ 349	$ 70	$ 419	5,449
NEW YORK	$ 1,703	4.3%	$ 1,286	$ 257	$ 1,543	20,059	$ 1,597	$ 319	$ 1,916	24,907
NORTH CAROLINA	$ 1,058	2.7%	$ 799	$ 160	$ 959	12,464	$ 992	$ 198	$ 1,190	15,476
NORTH DAKOTA	$ 252	0.6%	$ 190	$ 38	$ 228	2,967	$ 236	$ 47	$ 283	3,684
OHIO	$ 1,360	3.4%	$ 1,027	$ 205	$ 1,232	16,019	$ 1,275	$ 255	$ 1,530	19,890
OKLAHOMA	$ 643	1.6%	$ 486	$ 97	$ 583	7,579	$ 603	$ 121	$ 724	9,411
OREGON	$ 507	1.3%	$ 383	$ 77	$ 459	5,973	$ 475	$ 95	$ 571	7,417
PENNSYLVANIA	$ 1,664	4.2%	$ 1,257	$ 251	$ 1,508	19,608	$ 1,561	$ 312	$ 1,873	24,346
RHODE ISLAND	$ 222	0.6%	$ 168	$ 34	$ 201	2,614	$ 208	$ 42	$ 250	3,245
SOUTH CAROLINA	$ 679	1.7%	$ 513	$ 103	$ 616	8,002	$ 637	$ 127	$ 764	9,936
SOUTH DAKOTA	$ 286	0.7%	$ 216	$ 43	$ 259	3,370	$ 268	$ 54	$ 322	4,185
TENNESSEE	$ 857	2.2%	$ 647	$ 129	$ 777	10,098	$ 804	$ 161	$ 965	12,539
TEXAS	$ 3,501	8.8%	$ 2,644	$ 529	$ 3,173	41,250	$ 3,283	$ 657	$ 3,940	51,219
UTAH	$ 352	0.9%	$ 266	$ 53	$ 319	4,150	$ 330	$ 66	$ 396	5,153
VERMONT	$ 206	0.5%	$ 155	$ 31	$ 187	2,425	$ 193	$ 39	$ 232	3,012
VIRGINIA	$ 1,032	2.6%	$ 780	$ 156	$ 935	12,161	$ 968	$ 194	$ 1,162	15,100
WASHINGTON	$ 688	1.7%	$ 519	$ 104	$ 623	8,101	$ 645	$ 129	$ 774	10,059
WEST VIRGINIA	$ 443	1.1%	$ 335	$ 67	$ 402	5,223	$ 416	$ 83	$ 499	6,485
WISCONSIN	$ 763	1.9%	$ 576	$ 115	$ 692	8,992	$ 716	$ 143	$ 859	11,165
WYOMING	$ 260	0.7%	$ 196	$ 39	$ 235	3,061	$ 244	$ 49	$ 292	3,801
TOTAL	$ 39,724	100.0%	$ 30,000	$ 6,000	$ 36,000	468,000	$ 37,250	$ 7,450	$ 44,700	581,100

Source: *American Transportation Research Institute. A Framework for Infrastructure Funding*, Nov. 2017

Ms. NORTON. Thank you, Mr. Hawkins.

We will hear next from Dr. Timothy Lomax, who is a Regents fellow at Texas A&M Transportation Institute.

Mr. LOMAX. Thank you, Madam Chair, Ranking Member Davis, Chairman DeFazio, distinguished members of the subcommittee. I appreciate the invitation to speak today regarding America's mobility and connectivity problems and some possible solutions.

TTI is the most comprehensive higher education-affiliated transportation research center in the United States. We have worked in all 50 States and in 51 countries, and last month we released the 24th edition of the national congestion estimate.

You have heard today our national congestion value of $166 billion. I would point out that that doesn't include safety effects, environmental effects, the business inefficiencies that also come along with that. That is just the value of the wasted time and fuel.

So how do we start to address these issues, the topic today? In a comprehensive analysis, you might look at five questions. What should we do? How much would it cost? How should we pay for it? What is the benefit of doing something? And what is the cost of doing nothing?

Far too often we agree that all strategies should be considered and that the solutions will cost a lot. When we ask how we should pay for solving the problem, we hear this. This is where the crickets are supposed to play.

There aren't enough conversations about how we would pay for the solutions. There isn't enough information about the benefits. And there certainly isn't enough discussion about the high cost of doing nothing.

The analysis we did for the State of Texas projected that the total cost to sustain the 2010 condition of Texas' roads and highways would be $273 million over the next 25 years. The economic impact of doing nothing was $989 million. That was the estimated effect of continuing to do the same things, the same funding sources, and the same policies. It is clear that doing nothing is not free.

I would like to summarize a few other points from my written testimony.

Congestion problems will continue to challenge metropolitan regions of all sizes. This is not just a big city problem. The projects, programs, and policies that each region uses to solve problems will be different.

This is a reflection, I think, of the creativity and diversity in our country and in our metropolitan regions. The strategies are going to be different from region to region. They are also going to be different between a suburban area and the downtown area within the same metropolitan region.

Just like a specific set of solution strategies are the result of a public engagement and technical design process, the level of congestion deemed unacceptable is also a local decision. One size doesn't fit all. For example, smaller urban areas are very likely going to expect higher average speeds on an urban freeway during rush hour than a larger urban area.

I would point out not all congestion is bad. Sometimes it is a reflection of a vibrant area. And no congestion isn't always a good

goal. But too much congestion makes it difficult to get from where you are to those vibrant activity centers.

I would point out that technology has a role. It may be showing commuters what their travel options are. It could be helping plan a trip. It could be allowing frequent bus riders to use a tollroad for a free trip every so often.

Several States and regions have had success with the difficult conversation around more funding, new options, or changing policies. These are usually a combination of doing a good job, making sure the public understands that you are doing a good job, having a clear plan for the additional spending, committing to an effort that engages the public on determining which projects, programs, and funding sources to pursue, and providing an accountable, transparent reporting of the schedules, budgets, and effects. These solutions work.

Almost every strategy works in some situation, and almost every strategy is the wrong treatment in some places and times. Anyone who tells you there is a single solution that can solve congestion, be publicly supported, and implemented everywhere is exaggerating the effect of their idea.

I would like to acknowledge the support of the University Transportation Centers program for the past "Urban Mobility Reports." We have been able to increase the number of urban areas analyzed, look at the economic effects of congestion on freight movements and the effect of transit on congestion levels. Our "2019 Urban Mobility Report" was sponsored by the Texas Department of Transportation as part of their benchmarking process to address their congestion problem.

Thank you for the opportunity to testify. There is more information about TTI on our website. I am happy to answer questions about the important task of helping Americans get to their job, school, shops, health facilities, and freight destinations to support a desirable quality of life and growth in economic opportunity.

[Mr. Lomax's prepared statement follows:]

Prepared Statement of Timothy J. Lomax, Ph.D., P.E., Regents Fellow, Texas A&M Transportation Institute

Chair Norton, Ranking Member Davis, Chairman DeFazio, Ranking Member Graves, and Members of the Subcommittee, thank you for inviting me to testify before the Subcommittee regarding the impact of congestion and possible solutions to address it. My name is Tim Lomax and I am a Regents Fellow at the Texas A&M Transportation Institute (TTI). Established in 1950 and part of the Texas A&M University System, TTI is a state agency and the largest and most comprehensive higher education-affiliated transportation research center in the United States. TTI has conducted work in all 50 states and in 51 countries.

The Texas A&M University System is one of the largest systems of higher education in the nation, with a budget of $4.7 billion. Through a statewide network of 11 universities and eight state agencies, the Texas A&M System educates more than 153,000 students and makes more than 22 million educational contacts through service and outreach programs each year. System-wide, research and development expenditures exceeded $996 million in FY 2017.

Last month, TTI released its *2019 Urban Mobility Report*. Funded by the Texas Department of Transportation and completed in cooperation with INRIX, the Urban Mobility Report examines traffic conditions in 494 urban areas across all states and Puerto Rico. While the Urban Mobility Report has been a showcase product of TTI for over two decades, the depth, breadth and comprehensiveness of the report was transformed with funding from TTI-led USDOT University Transportation Centers.

These UTC-sponsored improvements included the use of real-time travel speed data through a partnership with a private vendor (data provided at no cost to TTI)—a first-of-its-kind use that preceded a similar effort by the Federal Highway Administration by several years. TTI was also able to increase the number of urban areas analyzed, improve our estimates of the economic impact of congestion, freight movement effects, and the effect of transit on congestion levels.

The *2019 Urban Mobility Report* found that congestion is back to its growth pattern after the economic recession. The 8- to 10-year growing economy has brought traffic congestion to the highest measured levels in most U.S. cities. The myriad possible solutions—more highways, streets and public transportation; better traffic operations; more travel options; new land development styles; and advanced technology—have not been deployed in sufficient numbers to restrain the mobility degradation.

For more information and congestion data on the individual cities, visit: http://mobility.tamu.edu/umr.

The trends from 1982 to 2017 (see Exhibit 1) show that congestion is a persistently growing problem.

- The problem is larger than ever. In 2017, congestion caused urban Americans to travel an extra 8.8 billion hours and purchase an extra 3.3 billion gallons of fuel for a congestion cost of $166 billion.
- Trucks account for $21 billion of the cost, a much bigger share of the cost than their 7 percent of traffic.
- The average auto commuter spends 54 hours in congestion and wastes 21 gallons of fuel due to congestion at a cost of $1,010 in wasted time and fuel.
- The variation in congestion is often more difficult for commuters and freight shippers to accommodate than the regular, predictable back-ups. To reliably arrive on time for important freeway trips, travelers had to allow 34 minutes to make a trip that takes 20 minutes in light traffic.
- Employment was up by 1.9 million jobs from 2016 to 2017, slower growth than the 2.3+ million job growth in 4 of the previous 5 years, but substantial enough to cause congestion growth (1). Exhibit 2 shows the historical national congestion trend.
- More detailed speed data on more roads and more hours of the day from INRIX (2), a leading private sector provider of travel time information for travelers and shippers, were combined with travel volume estimates developed from the Federal Highway Administration's Highway Performance Monitoring System (3).

Each region should use the *combination of strategies that match its goals and vision*. There is no panacea. And the decade-long recovery from economic recession has proven that the problem will not solve itself.

Exhibit 1. Major Findings of the 2019 Urban Mobility Report (494 U.S. Urban Areas)

(Note: See page 3 for description of changes since the 2015 report)

Measures of ...	1982	2000	2012	2017	5-Yr Change
... *Individual Congestion*					
Yearly delay per auto commuter (hours)	20	38	47	54	15%
Travel Time Index	1.10	1.19	1.22	1.23	1 Point
Planning Time Index (Freeway only)	—	—	—	1.67	—
"Wasted" fuel per auto commuter (gallons)	5	16	20	21	5%
Congestion cost per auto commuter (2017 $)	$550	$860	$910	$1,010	11%
... *The Nation's Congestion Problem*					
Travel delay (billion hours)	1.8	5.3	7.7	8.8	14%
"Wasted" fuel (billion gallons)	0.8	2.5	3.2	3.3	3%
Truck congestion cost (billions of 2017 dollars)	$1.9	$7.1	$14.6	$20.5	40%
Congestion cost (billions of 2017 dollars)	$14	$71	$142	$166	17%

Yearly delay per auto commuter—The extra time spent during the year traveling at congested speeds rather than free-flow speeds by private vehicle drivers and passengers who typically travel in the peak periods.
Travel Time Index (TTI)—The ratio of travel time in the peak period to travel time at free-flow conditions. A Travel Time Index of 1.30 indicates a 20-minute free-flow trip takes 26 minutes in the peak period.
Planning Time Index (PTI)—The ratio of travel time on the worst day of the month to travel time in free-flow conditions.
Wasted fuel—Extra fuel consumed during congested travel.
Congestion cost—The yearly value of delay time and wasted fuel by all vehicles.
Truck congestion cost—The yearly value of extra operating time and wasted fuel for commercial trucks.

Exhibit 2. National Congestion Measures, 1982 to 2017

Year	U.S. Jobs (Millions)	Delay Per Commuter (Hours)	Total Delay (Billion Hours)	Fuel Wasted (Billion Gallons)	Total Cost (Billions of 2017 Dollars)
5-Year Change	8%	15%	14%	3%	17%
2017	153.3	54	8.8	3.3	$166
2016	151.4	53	8.6	3.3	$157
2015	148.8	51	8.4	3.3	$153
2014	146.3	50	8.2	3.2	$152
2013	143.9	48	8.0	3.2	$148
2012	142.5	47	7.7	3.2	$142
2011	139.9	45	7.5	3.2	$133
2010	139.1	44	7.2	3.1	$124
2009	139.9	43	6.9	3.1	$116
2008	145.4	42	6.8	3.2	$119
2007	146.1	43	6.8	3.2	$113
2006	144.4	42	6.7	3.1	$108
2005	141.7	42	6.6	3.0	$101
2004	139.2	41	6.3	2.9	$94
2003	137.7	41	6.1	2.8	$86
2002	136.5	40	5.9	2.7	$81
2001	136.9	39	5.6	2.6	$77
2000	136.9	38	5.3	2.5	$71
1999	133.5	37	5.1	2.3	$65
1998	131.5	36	4.8	2.2	$60
1997	129.6	36	4.6	2.1	$56
1996	126.7	34	4.3	2.0	$52
1995	124.9	33	4.1	1.9	$48
1994	123.1	32	3.8	1.8	$44
1993	120.3	31	3.6	1.7	$40
1992	118.5	30	3.4	1.6	$37
1991	117.7	29	3.2	1.5	$34
1990	118.8	28	3.0	1.4	$30
1989	117.3	27	2.9	1.3	$27
1988	115.0	26	2.7	1.2	$25
1987	112.4	25	2.5	1.1	$22
1986	109.6	24	2.4	1.1	$20
1985	107.2	23	2.2	1.0	$19
1984	105.0	22	2.1	0.9	$17
1983	100.8	21	1.9	0.9	$15
1982	99.5	20	1.8	0.8	$14

Note: See Exhibit 1 for explanation of measures. For more congestion information see Tables 1 to 4 in the report. For congestion information on individual cities, visit http://mobility.tamu.edu/umr.

CONGESTION PROBLEMS AND TRENDS

Rush-hour traffic jams are expected in big cities. When a large percentage of workers are on an 8 a.m. to 5 p.m. or 9 a.m. to 5 p.m. schedule, there will be travel delays on freeways, streets, and even public transportation. This results in a "rush hour" in the morning and afternoon. The problem obviously affects commuters, but it also affects many other trip types: manufacturers that rely on a reliable transportation system and companies who have delivery schedules and service calls. Some key measures are listed below. See data for your city at http://mobility.tamu.edu/umr/congestion_data.

Congestion costs are increasing. The "invoice" for only two of the congestion effects—the cost of extra time and fuel—in the 494 U.S. urban areas was (all values in constant 2017 dollars):

- In 2017—$166 billion
- In 2016—$157 billion
- In 2000—$71 billion
- In 1982—$14 billion

Congestion wastes a massive amount of time and fuel and creates more uncertainty for travelers and freight. In 2017:

- 8.8 billion hours of extra travel time (in that time, 124 million couples could binge-watch all eight seasons of Game of Thrones).

- 3.3 billion gallons of wasted fuel (equal to a line of 18-wheeler fuel trucks from Los Angeles to Boston).
- And if all that isn't bad enough, travelers and freight shippers making important trips had to add nearly 70 percent more travel time compared with light traffic conditions to account for the effects of unexpected crashes, bad weather, special events and other irregular congestion causes.

Congestion is also a type of tax

- $166 billion of delay and fuel cost (equal to the cost of about 163 million summer vacations)
- The negative effect of uncertain or longer delivery times, missed meetings, business relocations and other congestion-related effects are not included.
- 12 percent ($21 billion) of the delay cost was the effect of congestion on truck operations (equivalent to the average grocery bills of 2.7 million families); this does not include any value for the goods being transported in the trucks.
- The cost to the average auto commuter was $1,010; it was an inflation-adjusted $550 in 1982.

Congestion affects people who travel during the peak period. The average auto commuter:

- Spent an extra 54 hours traveling—more than a week of vacation—up from 20 hours in 1982.
- Wasted 21 gallons of fuel in 2017—a week's worth of fuel for the average U.S. driver—up from 5 gallons in 1982.
- In areas with over *1 million persons*, 2017 auto commuters experienced:
  - an average of 71 hours of extra travel time;
  - a road network that was congested for about 6 hours of the average weekday;
  - had a congestion tax of $1,330.

Congestion is also a problem at other hours.

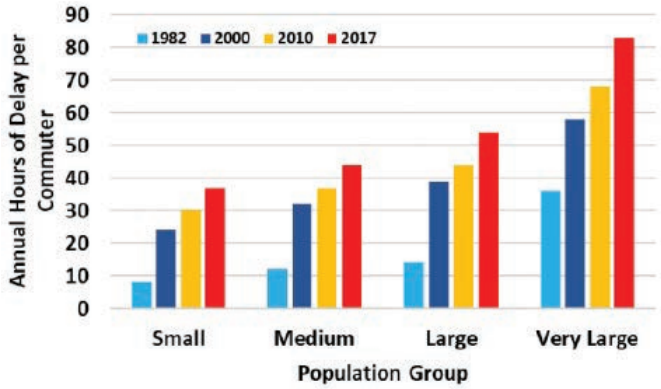
- Approximately 33 percent of total delay occurs in the midday and overnight (outside of the peak hours) times of day when travelers and shippers expect free-flow travel.

Congestion, by every measure, has increased substantially over the 36 years covered in this report. Almost all regions have worse congestion than before the 2008 economic recession which caused a decrease in traffic problems. Traffic problems as measured by per-commuter measures are worse than a decade ago. Since there are so many more commuters, as well as more congestion during off-peak hours, total delay has increased by two billion hours. The total congestion cost has also risen with more wasted hours, greater fuel consumption and more trucks stuck in stop-and-go traffic.

Congestion is worse in areas of every size—it is not just a big city problem. The growing delays also hit residents of smaller cities (Exhibit 3). The growth trend looks similar for 2000, 2010 and 2017, but that final period is only 7 years long, suggesting that if the economy does not enter another recession, congestion will be a much larger problem in 2020.

Both big towns and small cities have congestion problems. Every economy is different and smaller regions often count on good mobility as a quality-of-life aspect that allows them to compete with larger, more economically diverse regions. As the national economy improves, it is important to develop the consensus on action steps, as major projects, programs and funding efforts take 10 to 15 years to develop.

EXHIBIT 3. 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

THE TROUBLE WITH PLANNING YOUR TRIP

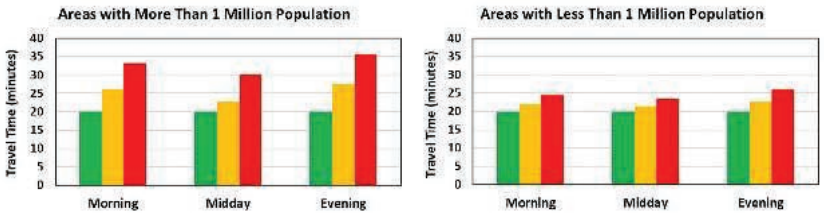
Many urban residents, travelers and freight movers have given up on having congestion-free trips in rush hours; they would just like some dependability in their travel times. The variation in travel time from day-to-day is often more frustrating than expected congestion. We know that for those urgent trips—catching an airplane, getting to a medical appointment or picking up a child at daycare on time—we need to leave a little earlier to make sure we are not late. And this need to add extra time is not just a "rush hour" consideration.

Exhibit 4 illustrates this problem. Say your typical trip takes 20 minutes when there are few other cars on the road. That is represented by the green bars. Your trip usually takes longer, on average, whether that trip is in the morning, midday or evening. This "average trip time" is shown in the yellow bars in Exhibit 10. In 2017, the average big city auto commute was 26 minutes in the morning and 28 minutes in the evening peak hours.

Now, if you must make a very important trip during any of these time periods there is additional "planning time" you must allow to reliably arrive on-time. As shown in the red bars in Exhibit 10, your 20-minute trip means you should plan for around 33 minutes in the morning, 36 minutes in the evening and 30 minutes during the midday when congestion is not usually a concern.

This is not just a "big city rush hour" problem; the planning time averages 24 minutes in the morning and 26 minutes in the evening for the smaller regions.

EXHIBIT 4. HOW MUCH TIME MUST YOU ALLOW TO BE 'ON-TIME' FOR A 20-MINUTE TRIP?



Green Bar—No congestion; Yellow Bar—Average congestion; Red Bar—Plan around this congestion if you're making an important trip

DELIVERING THE GOODS: AND YOUR ROLE IN THE CONGESTION IMPACTS ON TRUCKING

What causes all the trucks on the road anyway?

Do you eat anything or buy anything? Of course you do. We all do. And getting all that stuff to you requires trucks.

The consumer expectation to "get it now" has resulted in a boom in e-commerce. This e-commerce growth will continue. Booming economies and growing areas require goods and services, and the trucks to provide them.

What are the impacts of congestion on trucking and trucking on congestion?

The price tag for truck congestion cost is over $20 billion in wasted time and fuel. Truck congestion is 12 percent of the total congestion cost, but trucks are only 7 percent of the traffic. Only half of the $20 billion truck congestion cost is in the largest 15 urban areas, illustrating that truck congestion is a problem spread throughout all urban areas. Furthermore, the share of truck cost to the total congestion cost has gone up from 10 percent in 2012 to 12 percent in 2017.

Being on-time is particularly important for truck deliveries. Just-in-time manufacturing and on-time parcel deliveries make travel time predictability a critical need. On average in the 101 most congested urban areas, we find that to ensure an on-time delivery for the most important trips, truckers need to add 15 minutes to a trip that typically takes 20 minutes in light traffic (see Table 3). In Los Angeles, nearly 40 additional minutes are needed for urgent trips. This unreliability in the transportation system is especially detrimental for the trucking community and service companies.

There are many other costs incurred by shippers and carriers due to a congested and unreliable transportation system, which are not captured in our congestion costs. Companies need more trucks to make deliveries and service calls, they invest more time and technology to "beat the traffic" and more distribution centers are needed to fulfill demand.

What can be done?

In many dense urban areas, there is daily competition where the battle trenches are the curb space along our urban streets. It is here that freight delivery vehicles jockey with cars, buses, on-demand transportation services and other activities. The congestion, and the battle at the curb, puts a tremendous strain on shippers and carriers looking to gain any competitive edge, as well as motorists, cyclists and other users.

Managing the time spent in loading zones can help mitigate the problem; common delivery areas such as locked spaces where deliveries and pick-ups can be done at different times provide one possible solution in urban areas. Transportation providers are also testing technologies such as automated vehicles, delivery robots or drones for deliveries, as well as cargo cycles and other transport methods.

CONGESTION RELIEF—AN OVERVIEW OF THE STRATEGIES

We recommend a *balanced and diversified approach* to reduce congestion—one that focuses on more of everything; more policies, programs, projects, flexibility, options and understanding. It is clear that the solution investments have not kept pace with the problems. Most urban regions have big problems now—more congestion, poorer pavement and bridge conditions and less public transportation service than they would like.

What is the right solution to a specific congestion problem? The answer is usually found in one word: Context.

Almost every solution strategy works somewhere in some situation. And almost every strategy is the wrong treatment in some places and times. *Anyone who tells you there is a single solution that can solve congestion, be supported and implemented everywhere (or even in most locations) is exaggerating the effect of their idea*.

Some solutions need more congestion before they are fully effective, and some can be very useful before congestion is a big problem. There is almost always a role for providing more travel options and operating the system more efficiently. Their effects are important but, especially in growing regions, they will not be enough to meet community mobility goals. The private sector, the market and government regulations all play a role. Some cities see growth near downtowns that provide good home and work options, but rarely dominate the regional growth trends. Governments have been streamlining regulations to make near-town developing as easy as suburban developments.

More information on the possible solutions, places they have been implemented and their effects can be found on the website: https://policy.tti.tamu.edu/congestion/how-to-fix-congestion/

None of these ideas are the whole mobility solution, but they can all play a role.

- *Get as much as possible from what we have*—"Get the best bang for the buck" is the theme here. Many low-cost improvements have broad public support and can be rapidly deployed. These operations programs require innovation, new monitoring technologies and staffing plans, constant attention and adjustment, but they pay dividends in faster, safer and more reliable travel. Rapidly removing crashed vehicles, timing traffic signals so that more vehicles see green lights, and improving road and intersection designs are relatively simple actions. More complex changes, such as traffic signals that rapidly adapt to different traffic patterns, systems that smooth traffic flow and reduce traffic collisions, and communication technologies that assist travelers (in all modes) and the transportation network also play a role.
- *Provide choices*—"Customize your trip" might involve different travel routes, departure times, travel modes or lanes that involve a toll for high-speed and reliable service. These options allow travelers and shippers to make trips when, where and in a form that best suits their needs and wants. There are many sources of travel information involving displays of existing travel times, locations of roadwork or crashes, transit ridership and arrival information, and a variety of trip planner resources. The solutions also involve changes in the way employers and travelers conduct business to avoid traveling in the traditional "rush hours." Flexible work hours, internet connections or phones allow employees to choose work schedules that meet family needs and the needs of their jobs. Companies have seen productivity increase when workers are able to adjust their hours and commute trips to meet family or other obligations.
- *Add capacity in critical corridors*—"We just need more" in some places. Increases in freight and person movement often require new or expanded facilities. Important corridors or growing regions can benefit from more street and highway lanes, new or expanded public transportation facilities, and larger bus and rail fleets. Some of "more" will be better paths and routes for bicyclists and pedestrians. Some of the "more" will also be in the form of advancements in connected and autonomous vehicles—cars, trucks, buses and trains that communicate with each other and with the transportation network resulting in reduced crashes and congestion.
- *Diversify the development patterns*—"Everyone doesn't want to live in <fill in the blank>" is a discussion in most urban regions. It is always true—because there is no one-size-fits-all home type. The market is diverse for the same reasons as the U.S. culture, economy and society is varied. The "real market" includes denser developments with a mix of jobs, shops and homes (so that more people can walk, bike or take transit to more and closer destinations). Also, urban residential patterns of moderate density single-family and multi-family buildings, and suburban residential and commercial developments are popular today. Sustaining quality-of-life and gaining economic development without the typical increment of congestion in each of these sub-regions appears to be part, but not all, of the mobility solution. Recognizing that many home and job location choices are the result of choices about family, elementary and secondary education preferences, and entertainment and cultural sites allows planners to adjust projects and policies to meet these varied markets.
- *Technology advancements* also hold promise as solutions. While we are not yet at the "Meet George Jetson" level of technology, the technology disruptors coming to market every week will alter the urban mobility landscape. Crowdsourced data from INRIX has improved the report, and an increasingly connected world will offer more opportunities to understand and improve the movement of people, goods and the data itself. Connected vehicles "talking" to each other, such as traffic signals and other systems—and providing this information to decision-makers—will provide unprecedented data and insights to identify and fix mobility problems. Newer model vehicles sense and adjust to their surroundings, increasing safety and efficient movement of goods and people. Other technologies, such as The Internet of Things (IoT) ("connected things"), 3D printers, Blockchain, and Artificial Intelligence (AI) will impact transportation systems of the future. Will the mobility improvements of these technologies offset induced trips or other unforeseen mobility consequences? In many cases, it will. Again, context is the key, and the jury is still out on the evolving impacts.
- *Realistic expectations* are also part of the solution. Large urban areas will be congested. Some locations near key activity centers in smaller urban areas will also be congested. Identifying solutions and funding sources that meet a variety

of community goals is challenging enough without attempting to eliminate congestion in all locations at all times. Congestion does not have to be an all-day event, and in many cases, improving travel time awareness and predictability can be a positive first step toward improving urban mobility.

Case studies, analytical methods and data are available to support development of these strategies and monitor the effectiveness of deployments. There are also many good state and regional mobility reports that provide ideas for communicating the findings of the data analysis.

WHERE SHOULD THE CONGESTION SOLUTIONS BE IMPLEMENTED?

There will be a different mix of solutions in metro regions, cities, neighborhoods, job centers and shopping areas. Some areas might be more amenable to construction solutions, while other areas might use more technology to promote and facilitate travel options, operational improvements, or land use redevelopment. In all cases, the solutions need to work together to provide an interconnected network of smart transportation services as well as improve the quality-of-life.

There will also be a range of congestion targets. Many large urban areas, for example, use a target speed of 35 mph or 45 mph for their freeways; if speeds are above that level, there is not a "congestion problem." Smaller metro areas, however, typically decide that good mobility is one aspect of their quality-of-life goals and have higher speed expectations. Even within a metro region, the congestion target will typically be different between downtown and the remote suburbs, different for freeways and streets, and different for rush hours than midday travel.

Just like the specific set of strategies used to improve mobility is the result of a public engagement and technical design process, the level of congestion deemed unacceptable is a local decision. The 2019 Urban Mobility Report uses one consistent, easily understood comparison level. But that level is not "the goal," it is only an expression of the problem. The report is only one of many pieces of information that should be considered when determining how much of the problem to solve.

Better data can play a valuable role in all of the analyses. Advancements in volume collection, travel speed data and origin to destination travel paths for people and freight allow transportation agencies at all government levels and the private sector to better identify existing chokepoints, possible alternatives and growth patterns. The solution begins with better understanding of the challenges, problems, possibilities and opportunities—where, when, how and how often mobility problems occur. This evolves into similar questions about solutions—where, when, and how can mobility be improved. These data will allow travelers to capitalize on new transportation services, identify novel programs, have better travel time reliability and improve their access to information.

THE HIGH COST OF DOING NOTHING

Transportation solutions should involve a dialogue about five significant questions.

1. What should we do?
2. How much will it cost?
3. How should we pay for it?
4. What is the benefit of doing something?
5. What is the cost of doing nothing?

If you examine the public discussion about regional or national-level solutions, however, far too often the process stops after we agree that everything should be done and that it will cost a lot. Less often there are conversations about how we could pay for solutions, the benefits of doing something and the high cost of doing nothing.

Several analyses of Texas' transportation future conducted over the past two decades have consistently pointed to the need for additional funding to address the growth challenges. The *Texas 2030 Committee*, a blue-ribbon style committee of civic and business leaders, worked from 2008 to 2011 with researchers from TTI, the Center for Transportation Research at the University of Texas, and the University of Texas at San Antonio to examine future needs in urban mobility, rural connectivity, and bridge and pavement quality (4). The conclusion was that Texans would pay more in transportation costs over the next 25 years—either by suffering the consequences of doing nothing to address the transportation challenges, resulting in stop-and-go traffic, lost family and work time, and economic loss, or by paying additional taxes, fees, and licenses to reduce the scale of these types of problems.

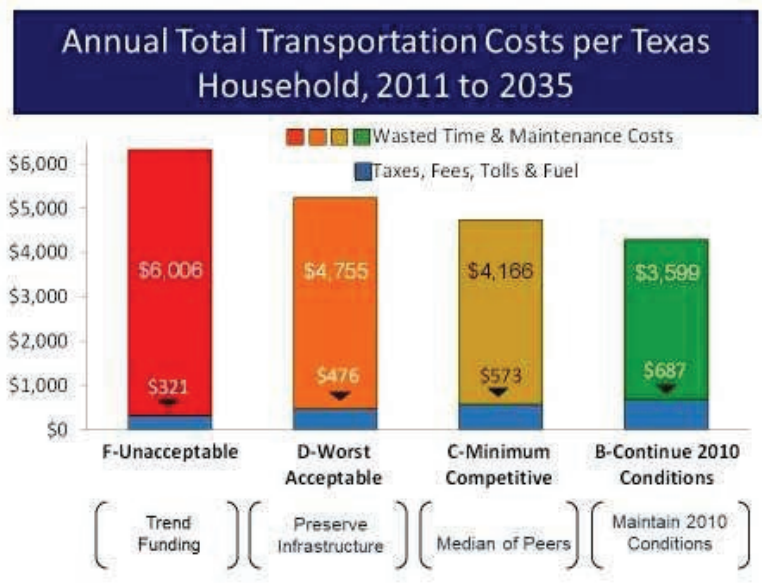
The data developed by the *Texas 2030 Committee* (Exhibit 5) clearly shows that living with the problem is more detrimental and more costly than tackling the prob-

lem with a variety of methods. The projected trend in population and job growth, as well as the expected funding levels and the resulting projects, policies and programs would see an average of $320 in transportation fees paid by the average household over the period from 2011 to 2035, while the value of extra travel time, wasted fuel, and vehicle maintenance would be about $6,000 per year. As more funds are invested in solving the problem, the lower the total costs—declining from $6,300 to $4,300 if 2010 conditions were maintained.

Five significant funding increases have been approved by the Texas Legislature and/or voters since this dialogue began 15 years ago. While congestion has increased since 2010, the conversation is about how much congestion to address and what types of solutions will be used. There is general agreement that the problem exists and must be addressed.

With Texas projected to add 1 million people every 3 years, the total cost to sustain 2010 conditions was estimated to be $273 million in 2010 dollars, while the economic impact of doing nothing other than the planned spending and policy program was $989 million. Doing nothing is not free.

EXHIBIT 5. AVERAGE YEARLY TOTAL TRANSPORTATION COST PER TEXAS HOUSEHOLD—2011 TO 2035



Source: Reference 4

CONCLUDING THOUGHTS

The national economy has improved since the *2015 Urban Mobility Report*, but unfortunately congestion has gotten worse. This has been the case in the past—the economy-congestion linkage is as dependable as gravity. Some analysts had touted the decline in driving per capita and dip in congestion levels that accompanied the 2008/2009 recession as a sign that traffic congestion would, in essence, fix itself. That has not happened.

The other seemingly dependable trend—not enough of any solution being deployed—also appears to be holding in most growing regions. That is really the lesson from this series of reports. The *mix of solutions* that are used is relatively less important than the *number of solutions* being implemented. All of the potential congestion-reducing strategies should be considered, and there is a role and location for most of the strategies.

- Getting more productivity out of the existing road and public transportation systems is vital to reducing congestion and improving travel time reliability.

- Businesses and employees can use a variety of strategies to modify their work schedules, freight delivery procedures, travel times and travel modes to avoid the peak periods, use less vehicle travel and increase the amount of electronic "travel."
- In growth corridors, there also may be a role for additional road and public transportation capacity to move people and freight more rapidly and reliably.
- Some areas are seeing renewed interest in higher density living in neighborhoods with a mix of residential, office, shopping and other developments. These places can promote shorter trips that are more amenable to walking, cycling or public transportation modes.

The *2019 Urban Mobility Report* points to national measures of the congestion problem for the 494 urban areas in 2017:

- $166 billion of wasted time and fuel,
- Including $21 billion of extra truck operating time and fuel,
- An extra 8.8 billion hours of travel, and
- 3.3 billion gallons of fuel consumed

The average urban commuter in 2017:

- Spent an extra 54 hours of travel time on roads than if the travel was done in low-volume conditions, and
- Used 21 extra gallons of fuel,
- Which amounted to an average value of $1,010 per commuter.

States and cities have been addressing the congestion problems they face with a variety of strategies and more detailed data analysis. Some of the solution lies in using the smart data systems and range of technologies, projects and programs to achieve results and communicate the effects to assure the public that their project dollars are being spent wisely. And a component of the solution lies in identifying mobility level targets and implementing a range of solutions to achieve them in service to broader quality of life and economic productivity goals.

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3. *Federal Highway Administration. "Highway Performance Monitoring System," 1982 to 2017 Data. November 2018. Available*: http://www.fhwa.dot.gov/policyinformation/hpms.cfm
4. *It's About Time: Investing in Transportation to Keep Texas Economically Competitive*. Texas 2030 Committee, March 2011. https://texas2030committee.tamu.edu/

Ms. NORTON. Thank you, Dr. Lomax.

Next, Marc Scribner, senior fellow, Competitive Enterprise Institute.

Mr. SCRIBNER. Chair Norton, Ranking Member Davis, Chair DeFazio, and members of the subcommittee, thank you for giving me the opportunity to testify before you today.

Congestion is a persistent and growing problem facing America's road networks, as Dr. Lomax just explained. The challenge facing policymakers is how to address it. Given that traffic congestion is inherently a local phenomenon, the Federal Government has a limited set of tools to address it.

Fortunately, in its role as a supporting partner to State and local transportation agencies, there are policy options available to Members of Congress to promote effective congestion mitigation and management. Even better, these tend not to involve increasing Federal-aid highway spending. Rather, modernizing Federal law to permit greater flexibility at the State and local level to price road use is the best way to address peak hour traffic congestion that plagues many of America's metropolitan areas.

Nobel Laureate economist William Vickrey, in a seminal 1963 paper, said of the then and still status quo of urban transportation management that, in quote, "no other major area are pricing practices so irrational, so out of date, and so conducive to waste," unquote.

The problem, as Vickrey and other economists saw it, was scare roadway space was inefficiently allocated by nonmarket means so that the practical result of unpriced urban roads was queuing and a degradation of the network. With traffic flows increasingly unstable, travel times would lengthen and travel time predictability would worsen.

In attempting to address this queuing due to a lack of pricing, policymakers would then make decisions to inefficiently expand physical roadway capacity, generally at great expense to society. This vicious cycle would then repeat itself.

To effectively address peak hour traffic congestion and efficiently allocate scare urban road space, Vickrey proposed an electronic variable pricing scheme to promote stable traffic flows, quite similar to today's electronic transponder systems used by tolling networks such as E–ZPass.

Variable road pricing is now generally viewed by economists as the most effective means to address peak hour traffic congestion. Policymakers select a desired average speed to maintain and then let rising prices do the rest.

Physical capacity expansions in the absence of pricing can temporarily reduce congestion and improve traffic flows, but such improvements may be fleeting due to what economist Anthony Downs calls triple convergence. Under triple convergence, traffic flows on recently expanded roads soon begin to trend toward their preexpansion state of congestion, albeit with greater traffic volumes and the resulting benefits of that additional travel.

In that sense, while roadway expansions can certainly benefit travelers in a given region, even at congested peak hours, in the absence of pricing many of the potential benefits may be unrealized due to persistent network congestion.

Section 166 HOV to HOT conversions are likely the most promising near-term vehicles for implementing road pricing. Historically, HOV lanes have suffered from chronic underutilization. Converting HOV lanes to HOT lanes allows road authorities to make better use of lane capacity while providing motorists traveling below minimum HOV occupancy requirements a choice to pay for shorter and more predictable travel times.

However, existing exemptions and pilot programs by themselves will not be able to address the related problems of growing traffic congestion and aging highway infrastructure. Reconstruction needs of the Interstate Highway System alone are estimated to be more than $1 trillion over the next two decades.

If Congress wishes to address both this fiscal challenge and traffic congestion, it must reconsider the general Federal tolling prohibition. It should also seek to harness innovative financing and management practices made available through public-private partnerships by expanding project eligibility and lifting the lifetime volume cap on private activity bonds.

Public acceptance of congestion pricing is crucial to its success. At a time when urban surface streets are riddled with potholes and other road infrastructure is being neglected, the first revenue priority of policymakers should be to be improve the Nation's tolled roadways to a state of good repair. Adherence to this fairness principle will do much to address public concerns that additional road charges will simply amount to more wasteful Government spending to benefit politically favored constituencies.

Road pricing generally and congestion pricing specifically will be valuable tools going forward. The primary Federal concern should not be the implementation of any given pricing project. Rather, Congress should focus on removing outdated barriers to road pricing and give States the flexibility to use these tools that best suit their own needs.

Thank you for the opportunity to testify before the subcommittee, and I welcome your questions.

[Mr. Scribner's prepared statement follows:]

Prepared Statement of Marc Scribner, Senior Fellow, Competitive Enterprise Institute

Chair Norton, Ranking Member Davis, and Members of the Subcommittee, thank you for giving me the opportunity to testify before you today. My name is Marc Scribner. I am a senior fellow at the Competitive Enterprise Institute (CEI), where I focus on transportation, land use, and urban growth policy issues.[1] CEI is a nonprofit, nonpartisan public interest organization dedicated to the principles of free enterprise and limited, constitutional government. CEI has consistently supported pro-market approaches to infrastructure investment and management through analysis and advocacy during its 35-year history.

Congestion is a persistent and growing problem facing America's road network. The *2019 Urban Mobility Report* from the Texas A&M Transportation Institute (TTI) estimates that traffic congestion resulted in 3.3 billion gallons of wasted fuel and 8.8 billion hours in wasted time per year in 2017. It estimates the nationwide cost at $166 billion, or $1,010 per rush-hour commuter. This represents an 83.6 percent increase in travel time delay and wasted fuel congestion costs per commuting motorist since 1982.[2]

However, the TTI congestion analysis looks only at commuting motorists travel time delay and wasted fuel costs. When considering the costs associated with productivity losses, unreliability losses, truck cargo delays, and safety and environmental costs, the total annual economic cost of traffic congestion was estimated by the chief economist of the U.S. Department of Transportation to be more than double the TTI estimate.[3]

The challenge facing policy makers is how to address this growing problem. Given that traffic congestion is inherently a local phenomenon, the federal government has a limited set of tools to address it. Fortunately, in its role as a supporting partner to state and local transportation agencies, there are policy options available to members of Congress to promote effective congestion mitigation and management. Even better, these tend not to involve increasing federal highway-aid program spending. Rather, modernizing federal law to permit greater flexibility at the state and local level to price road use is the best way to address peak-hour traffic congestion that plagues many of America's metropolitan areas.

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[1] My biography and writings are available at https://cei.org/expert/marc-scribner.

[2] David Schrank et al., *2019 Urban Mobility Report*, Texas A&M Transportation Institute, August 2019, https://static.tti.tamu.edu/tti.tamu.edu/documents/mobility-report-2019.pdf.

[3] Jack Wells, "The Role of Transportation in the U.S. Economy," PowerPoint presentation to the National Surface Transportation Policy and Revenue Commission, June 26, 2006, slide 21, https://web.archive.org/web/20090226032621/http://www.transportationfortomorrow.org/pdfs/commission__meetings/0606__meeting__washington/wells__presentation__0606__meeting.pdf.

UNLEASHING MARKETS TO MITIGATE TRAFFIC CONGESTION

Nobel-laureate economist William Vickrey, in a seminal 1963 paper, said of the then- and still-status quo of urban transportation management that in "no other major area are pricing practices so irrational, so out of date, and so conducive to waste." [4]

The problem, as Vickrey and other economists saw it, was scarce roadway space was inefficiently allocated by non-market means, so that the practical result of unpriced urban roads was queuing and a degradation of the network. With traffic flows increasingly unstable, travel times would lengthen and travel time predictability would worsen. In attempts to address this queuing due to a lack of pricing, policy makers would then make decisions to inefficiently expand physical roadway capacity, generally at great expense to society. This vicious cycle would then repeat.

To effectively address road traffic peak-hour congestion and efficiently allocate scarce urban road space, Vickrey proposed an electronic variable pricing scheme to promote stable traffic flows, quite similar to today's electronic transponder systems used by tolling networks such as E–ZPass in the United States. At the time, technology and budget limitations appeared prohibitive in carrying out this travel demand management vision, but today's modern and increasingly commonplace all-electronic tolling technology is relatively inexpensive and highly effective.

Variable road pricing is now generally viewed by economists as the most effective means to address peak-hour traffic congestion. Policy makers select a desired average speed to maintain and then let rising prices do the rest. Physical capacity expansions in the absence of pricing can temporarily reduce congestion and improve traffic flows, but such improvements may be fleeting due to what economist Anthony Downs labels "triple convergence." [5]

Triple convergence refers to the expected events following roadway expansion in the absence of pricing during peak hours. Imagine a congested urban highway segment sees its physical capacity doubled overnight. The next day, we would expect to see free-flowing traffic. But as word spreads and motorists in the region internalize this new information, it would prompt three types of travelers to flock to and clog the new lanes: 1) motorists who previously avoided peak-hour travel on the congested road would shift back to peak-hour travel, 2) motorists who took alternative routes during the peak would shift to the expanded road, and 3) travelers who took other transportation modes during peak hours would switch to cars.

Under triple convergence, traffic flows on recently expanded roads soon begin to trend toward their pre-expansion state of congestion, albeit with greater traffic volumes and the resulting benefits of that additional travel. In that sense, while roadway expansions can certainly benefit travelers in a given region—even at congested peak hours—in the absence of pricing, many of the potential benefits may be unrealized due to persistent network congestion.

To effectively address traffic congestion in many of America's largest metropolitan areas, policy makers need to embrace road pricing. This can come in several forms—from central city cordon pricing to high-occupancy toll lanes on urban Interstate segments—and each approach should be tailored to the local peculiarities of a given metropolitan area. Research has found that congestion pricing implementation is highly case specific and subject to public perceptions of value.[6] It follows that policy makers should be extremely concerned with the details of specific projects and in ensuring public trust in any implementation of congestion pricing. It also means the most successful congestion pricing regimes will be narrowly focused on improving traffic flows during peak hours, as opposed to providing governments with new general revenue sources to be appropriated to projects that do not directly benefit the paying users of the priced road.

FEDERAL POLICY AND ROAD PRICING

Federal law permits some congestion pricing on federal-aid highways, but can be improved to allow the states to fully take advantage of this tool. Under longstanding federal law, tolling is generally prohibited on the federal-aid highway system. However, in more recent times, Congress has enacted several exceptions to this rule:

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[4] William S. Vickrey, "Pricing in Urban and Suburban Transport," *The American Economic Review*, Vol. 53, No. 2, May 1963, pp. 452–465.

[5] Anthony Downs, "Traffic: Why It's Getting Worse, What Government Can Do," Brookings Institution, January 1, 2004, https://www.brookings.edu/research/traffic-why-its-getting-worse-what-government-can-do/.

[6] Diana Vonk Noordegraaf et al., "Policy implementation lessons from six road pricing cases," *Transportation Research Part A: Policy and Practice*, Vol. 59, 2014, pp. 172–191.

- *Section 129 general toll program exemptions.*[7] Initially codified to exempt pre-Interstate system toll facilities from the federal prohibition, Congress has gradually expanded Section 129 to include exemptions for:
  - Initial construction of highways, bridges, or tunnels;
  - Initial construction of new lanes on highways bridges, and tunnels as long as the number of toll-free lanes is not reduced;
  - Reconstruction or replacement of a bridge or tunnel;
  - Reconstruction of a non-Interstate highway; and
  - Reconstruction, restoration, or rehabilitation of an Interstate highway as long as the number of toll-free lanes is not reduced.
- *Section 166 HOV/HOT lane conversion exemptions.*[8] Section 166 permits the conversion of high-occupancy vehicle lanes to high-occupancy (HOV) toll lanes. High-occupancy toll (HOT) lanes are defined as high-occupancy vehicle lanes that allow vehicles traveling below the minimum occupancy requirement to use the lanes in exchange for paying a toll.
- *Interstate System Reconstruction and Rehabilitation Pilot Program.*[9] This pilot program allows three participating projects to impose tolls on existing Interstate lanes. Each of the three projects must be in different states. Section 1411(c) of the Fixing America's Surface Transportation (FAST) Act of 2015 added additional requirements on state legislative authority and a "use it or lose it" three-year time frame for participating states to complete the program's requirements.
- *Value Pricing Pilot Program (VPPP).*[10] In 1991, Congress established a congestion pricing program open to up to 15 projects. Since 2012, Congress has authorized no additional funding for the program and the Federal Highway Administration strongly encourages states seeking to impose tolls on federally aided highway segments to seek exemptions under Sections 129 and 166 rather than via VPPP.

While federal funding for VPPP projects has not been renewed for nearly a decade, VPPP can still be used to provide tolling authority to states and support innovative projects. But Section 166 HOV/HOT conversions are likely the most promising near-term vehicles for implementing road pricing. Historically, HOV lanes have suffered from chronic underutilization. Converting HOV lanes to HOT lanes allows road authorities to make better use of lane capacity while providing motorists traveling below minimum HOV occupancy requirements a choice to pay for shorter and more predictable travel times.

However, Section 166 HOV/HOT lane conversions by themselves will not be able to address the related problems of growing traffic congestion and aging highway infrastructure.

Reconstruction needs for the Interstate Highway System alone are estimated to be more than $1 trillion over the next two decades.[11] If Congress wishes to address both this fiscal challenge and congestion, it must reconsider the federal general tolling prohibition.

In addition, given the potential for dedicated revenue collection, transportation agencies can attract private investment and management to shifts costs and risks associated with these projects away from taxpayers and onto private investors. These public-private partnerships (P3s) have been used sparingly in the U.S., but are widely used internationally.

In countries as varied as Australia, France, China, and Chile, P3s have played major roles in the provision and management of transportation infrastructure.[12] Concession agreements under which the concessionaire designs, builds, finances, operates, and maintains the project over the long term have successfully reduced project costs, shifted costs and risks away from taxpayers and onto private investors

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[7] 23 U.S.C. § 129(a).

[8] 23 U.S.C. § 166(c).

[9] Federal Highway Administration, "Fact Sheet: Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP)," FHWA Center for Innovative Finance Support website, accessed September 5, 2019, https://www.fhwa.dot.gov/ipd/tolling__and__pricing/tolling__pricing/interstate__rr__fact__sheet.aspx.

[10] Federal Highway Administration, "Value Pricing Pilot Program," FHWA Office of Operations website, accessed September 5, 2019, https://www.fhwa.dot.gov/ipd/tolling__and__pricing/tolling__pricing/vppp.aspx.

[11] National Academies of Sciences, Engineering, and Medicine, *Renewing the National Commitment to the Interstate Highway System: A Foundation for the Future*, Transportation Research Board Special Report 329, 2019, p. 165, https://www.nap.edu/catalog/25334/renewing-the-national-commitment-to-the-interstate-highway-system-a-foundation-for-the-future.

[12] Robert W. Poole, Jr., *Rethinking America's Highways: A 21st Century Vision for Better Infrastructure* (Chicago: University of Chicago Press, 2018), pp. 52–66.

and users, and delivered projects in a more timely fashion.[13] In the U.S., several states have enacted robust P3 legislation and have entered into long-term leases with private concessionaires to build, modernize, and/or manage public-purpose tolled highways.[14] This has resulted in road users getting better infrastructure and taxpayers saving billions of dollars.

These P3 toll roads rely on a mix of equity and debt financing. Private activity bonds (PABs) play a key role, with toll revenue used to service this debt. PABs are tax exempt like traditional municipal bonds, leveling the playing field between the public and private sectors in financing infrastructure. Unfortunately, Congress created a national aggregate volume cap on PABs of $15 billion for surface transportation projects.[15] According to the latest data from the U.S. Department of Transportation, more than two-thirds of that $15 billion has already been issued or allocated.[16] If Congress wants to free the states and private sector to deliver better infrastructure value to the traveling public, this cap should be greatly increased or eliminated and project eligibility should be expanded.

But Congress shouldn't stop there. Looking to the future, new technologies may enable superior congestion management and revenue collection than is currently possible with all-electronic tolling. A number of states in recent years have been piloting new mileage-based revenue collection technologies and practices, which are variously known as mileage-based user fees, road usage charges, and vehicle-miles traveled taxes. All refer to the same approach, whereby road users are directly charged based on the distance (and perhaps weight of the vehicle) they drive.

Oregon has the most advanced pilot in operation, established by 2013 legislation. The program's volunteers can opt for two versions of mileage-recording technology: non-location-based supplementary odometers and a location-based option that can offer users more precision and add-on features such as geofenced alerts for parents of teen drivers. Participants are refunded their estimated fuel tax payments upon transmission of their mileage data.

Location-based systems can differentiate between roads by satellite, thereby allowing for dynamic pricing across the entire road network with less costly infrastructure investments. In the long run, Congress should consider a shift away from fuel taxation as the primary highway revenue source and toward mileage-based user fees. As was noted above, congestion is inherently a local problem and is best addressed locally through tailored pricing solutions and capacity enhancements. This means that while Congress should not seek to impose congestion pricing, it should consider how states can integrate their own congestion pricing programs into future mileage-based user fee systems.

Principles for Sound Road Pricing Implementation

For congestion pricing to be publicly acceptable, policy makers should focus on delivering value to those paying the charges. As such, they should not seek to divert toll revenue to address unrelated projects. To do so, they should first adhere to the longstanding users-pay/users-benefit principle that has guided U.S. highway policy for two generations, which offers the following advantages over alternatives:

- *Fairness:* Road users benefit from the improvements their user charges generate.
- *Proportionality:* Users who drive more pay more.
- *Funding predictability:* Highway use and highway user revenues do not fluctuate wildly in the short-run.
- *Signaling investment:* Because revenue roughly tracks use, the mechanism provides policy makers with an important signal as to how much and where infrastructure investment is needed to maintain a desired level of efficiency.

Policy makers will face persistent calls from special interest groups to impose congestion pricing and direct toll revenue to their favored projects, such as with New York City's cordon pricing plan to direct nearly all revenue from a Manhattan central business district congestion charge to mass transit improvements.[17] To be sure, congestion pricing revenue can—and in some places should—be used to support mass transit enhancements. However, New York City is an extreme outlier and

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[13] Ibid., pp. 96–135.
[14] Ibid., p. 104.
[15] 26 U.S.C. § 142(m)(2)(A).
[16] Build America Bureau, "Private Activity Bonds," U.S. Department of Transportation website, updated August 9, 2019, https://www.transportation.gov/buildamerica/programs-services/pab.
[17] Winnie Hu, "Confused About Congestion Pricing? Here's What We Know," *The New York Times*, April 24, 2019, https://www.nytimes.com/2019/04/24/nyregion/what-is-congestion-pricing.html.

should not be treated as a model for other U.S. cities. At a time when urban surface streets are riddled with potholes and other road infrastructure is being neglected, the first revenue priority of policy makers should be to improve the nation's tolled roadways to a state of good repair.

Public acceptance of congestion pricing is crucial to its success. Adherence to this fairness principle will do much to address public concerns that additional road charges will simply amount to more wasteful government spending to benefit politically favored constituencies. One way to better ensure public buy-in to a pricing regime—particularly when converting previously unpriced lanes to priced lanes—is for policy makers to adopt a proposal from transportation policy scholar Robert Poole, which he calls "value-added tolling."[18] Poole's five value-added tolling principles are:

1. Begin tolling only after major improvements are completed;
2. Prohibit toll revenue diversion to projects outside the facility or system where they are collected;
3. Toll rates should only be high enough to cover initial construction or rehabilitation, maintenance and operations, and needed improvements;
4. Motor fuel taxpayers should be reimbursed for the taxes they paid while using toll roads; and
5. Provide a better level of service on the facility after tolling is imposed.

If these principles are adopted by policy makers seeking to implement road pricing, they can lead to better informed infrastructure investment decisions. Policy makers would be able to learn both the revenue potential of a tolled roadway and the distribution of motorists' willingness to pay. This information can be used to conduct robust benefit/cost analyses and better target roadway expansions.

In conclusion, road pricing generally and congestion pricing specifically will be valuable tools going forward. The primary federal concern should not be the implementation of any given pricing project. Rather, Congress should focus on removing outdated barriers to road pricing and give states the flexibility to use these tools that best suit their own needs.

Thank you for the opportunity to testify before the Subcommittee, and I welcome your questions.

Ms. NORTON. Thank you, Mr. Scribner.

I want to thank all of you for your valuable testimony today.

And we are going to move now to Member questions. Each Member will have 5 minutes to ask questions. I begin by recognizing myself.

Mr. Gilbert, I notice you had an illustration in your testimony. You said that the lanes on the right—I mean, even people far away can see—the lanes on the right are nontolled and the lanes on the left are tolled. Is that right?

Mr. GILBERT. I believe it is correct.

Ms. NORTON. So I see a lot of congestion on the right. It looks like people are not willing to get into this lane. Is this only tolling that determines where people will go here?

Mr. GILBERT. There are toll lanes, and the one on I believe the left should be the toll lane.

We know that overall with regard to Miami-Dade County it has been successful in reducing congestion for both sides.

Ms. NORTON. So, this picture does not—see, this doesn't show reducing congestion. It shows people—it shows lots of room on the right here, my right, and it looks as though people are saying, no, thank you.

Are the tolls very high?

Mr. GILBERT. The tolls can be high. And let me just clarify also, reducing congestion doesn't mean eliminating congestion. We still

[18] Robert W. Poole, Jr., "Value-Added Tolling: A Better Deal for America's Highway Users," *Policy Brief* 116, Reason Foundation, March 2014, https://reason.org/wp-content/uploads/files/value__added__tolling.pdf.

have bad congestion. It just got a little better with bus express, rapid transit, and the express lanes.

Ms. NORTON. So they use this other side, though.

Mr. GILBERT. Yes.

Ms. NORTON. Can they use this road? Can they use this tollroad, buses, and——

Mr. GILBERT. If they pay the toll, they can, yes.

Ms. NORTON. Yeah. I mean, do they?

Mr. GILBERT. Oh, yes, yes, they do.

Ms. NORTON. They do. Because I don't see any of them. I feel it just happens to be when this picture was taken.

Mr. GILBERT. Well, no, Madam Chair, I assure you the toll lane gets pretty crowded also. We just have a lot of people and a lot of traffic in Miami-Dade County as a region. So we know that the times have gotten better, but still I think of the lost business hours, the lost production, the lost time you spend with your family.

We have to do something. The tolls have helped. We need more help. So people do use the toll lanes, and they do get very expensive.

Ms. NORTON. Mr. Hawkins, do you object to the use of toll lanes? We know that you testified against tolls. I don't know if trucks pay tolls or would pay tolls on such a lane. What is your view?

Mr. HAWKINS. My company alone pays $25 million annually in tolls across the United States. So certainly from a CEO perspective and an ATA perspective, we don't support new tolling on interstate highways.

Now, certain tolling can be appropriate to handle specific issues around the country in select cities, but overall we don't feel like it is the solution.

When I think of some of the opening comments, if we had been sitting in church this morning when Chair DeFazio made his opening comments, I would have said "amen" when he mentioned that not since 1993 has Congress increased our Federal fuel tax to invest in our infrastructure.

Just the nickel example that he gave, if we did that immediately, that would generate $340 billion in long-term predictable financing that would address a lot of these issues and expand current roads without tolling.

Ms. NORTON. Mr. Hawkins, a lot of us up here would agree with you and agree with Mr. DeFazio as well on that issue.

I do want to ask a question, though, of Ms. Chang.

I am very intrigued by the technologies and what they can do and believe, frankly, that they are going to be necessary if we are going to move these congestion issues.

How do we make sure they are going to be deployed with equity considerations in mind? I would be interested whether you all have thought that through as a part of your recommendation?

Ms. CHANG. Yes, thank you very much, Chair Norton.

This is a top concern for our local community and policymakers as well. We have seen that technology has come to a point where we can actually implement some of the policy responses on equity and features of programs that we have long wanted, but haven't been able to truly deploy cost effectively.

Examples would be the ability to more strategically target those types of road users who we believe need to have discounts and exemptions, enabling them to have accounts using their transponders, which are the electronic detection systems in the vehicles that allow the trip to be measured, to allow us to be able to connect that to a particular household and understand——

Ms. NORTON. Is any experimental work being done on that?

Ms. CHANG. Pardon me?

Ms. NORTON. Is there any pilot work being done on that to connect——

Ms. CHANG. I see. Elsewhere, absolutely. Certainly on the express lanes and express roads that have been discussed in other places, and in our own bay area region, yes. But we don't have that in San Francisco quite yet. We are still studying it for the downtown zone.

Ms. NORTON. Thank you very much.

I would move now to Mr. Davis, who I recognize for 5 minutes.

Mr. DAVIS. Thank you, Madam Chair.

And thanks again to the witnesses for your testimony, for being here.

Very important issue. As I said in my opening statements, congestion even hits a district like mine. It is rural and many urban areas. According to the TTI's report, in 2017 congestion in certain cities in my district, like Springfield, Illinois, cost residents about $300 a year; in Decatur, Illinois, about $240; and in Champaign, Illinois, $225.

North of me, north of my district a couple hours, is Chicago. Commuters there saw an average cost of $1,307 in 2017.

I recently have seen reports that the mayor of Chicago, Mayor Lightfoot, is considering a congestion pricing scheme to address traffic. Now, that may work in Chicago, but I am really not convinced it is going to work in the smaller cities that I represent.

And as we examine this issue of congestion, are there other ways besides congestion pricing schemes that we can use to address the problem?

And I will start with you, Mr. Lomax.

Mr. LOMAX. Strategies other than pricing, I think we are talking about using sort of the whole toolbox, if you will. We have got issues that Ms. Chang talked about of operations. We heard earlier about timing traffic signals, getting the crashes and stalled vehicles out of the way. These are kind of good Government basic policy kinds of approaches that everybody accepts.

Mr. DAVIS. There are some things that should be working right now in some of our smaller, many urban areas.

Mr. LOMAX. Exactly. They cut across all regions of all sizes. I think adding capacity where you have growth, where you have bottlenecks, is certainly a plus and certainly part of the toolbox, and that could be road capacity, transit capacity, more bike lanes, more pedestrian paths. It has to be tailored to the problem.

And certainly having additional conversations with employers and employees about, can I have flexible work hours, can I look at alternate commuting paths, things like that.

Technology has a role, as I said. Smartphone apps help you plan a trip. Well, maybe we could have that smartphone app push infor-

mation to you based on your calendar that says: Hey, you are just going to go to the office today, you don't have anything really chaotic, why don't you try to bus or try carpooling with somebody, and I can go out and match your carpool trips while you are taking a shower and report back to you when you are eating breakfast.

Mr. DAVIS. OK.

Anybody else? Any ideas? Want to take a crack at it?

Are you going to say "amen"?

Mr. HAWKINS. Amen.

Mr. DAVIS. All right. There you go.

Mr. HAWKINS. Good morning.

I think it is a wonderful point, especially when we think about Illinois. Just my company alone, we have got 16 terminals there and 3,000 employees.

And you mentioned in a more rural area about the cost being a couple hundred dollars annually for congestion. Chair Norton mentioned in her high density district of it being over $1,700. And if we average that across the United States, it is about $1,600 per person.

If we go with the fuel tax that we have talked about many times over and that hasn't been adjusted since 1993, we are talking about an annual impact of $100 per person.

So when we think about rural versus density and then congestion pricing, and the last thing on congestion pricing, everyone in this room and everyone in the United States has become accustomed to a point-and-click mentality. When you point and click and make a purchase, you expect your doorbell to ring with that product very quickly. And that tolling, other things, congestion pricing, is not going to impact what transportation companies have to do to meet the expectations of their customer base.

Mr. DAVIS. Great.

Ms. Chang.

Ms. CHANG. Yes, Ranking Member Davis. Thank you for the question.

I believe that the built-in solution that I mentioned of the revenues from a congestion pricing type of program are important to mention here. I mean, we all need better options as far as active transportation, public transit, new express buses. These are all things that revenues can help pay for. There are carpool incentives, vanpool incentives, employer-based programs, a whole host of very creative solutions on the public and private side.

Developers are now asking: Instead of building that parking, what if I invested in a system of shuttles? What if I incentivized bike sharing, car share? What if I partnered with the development down the street and we shared a micro transit?

So first/last mile solutions, the whole landscape of solutions is starting to change. And the idea of using proceeds not only for funding direct infrastructure, but also incentives to let people try these things out, maybe also a new opportunity.

Mr. DAVIS. I am glad you closed with incentives, because the problem we have here in Federal Government is we have a trust fund that doesn't keep up, so we are having to add money to it. But many States may have a surplus in some of their trust funds. So those user fees then get pulled out and used to fill other budget

holes. And that is something that I think the panelists and all of us in this committee ought to consider when we look at Federal solutions.

I am out of time. I yield back nothing. But thanks again for the opportunity to hear from you.

Ms. NORTON. Thank you very much, Mr. Davis.

In your answers you mentioned—both witnesses mentioned public transit. I know we don't have a public transit witness. I don't want anybody to think that we think that that alternative is outmoded. We think it ought to be used more than it is.

Of course, I speak from a region that has Metro and uses that. So the fact that we don't have a witness doesn't mean that we don't understand that transit and buses, rapid transit, still need to be a part of the solution. Expensive to build, but still need to be a part of the solution.

Mr. DeFazio.

Mr. DEFAZIO. Thanks, Madam Chair.

Just in response to the ranking member's comments, the Federal Highway Trust Fund moneys are not ever spent and never have been spent on anything other than transportation purposes. So diversion here is not a problem.

If you are concerned that if we increase Federal revenues that States would then choose to divert more of their funds to nontransportation purposes, we can certainly build in a maintenance-of-effort provision.

And also in terms of these optional tolling things we have allowed, we shouldn't allow any diversion of funds or the flexibility that is being granted beyond uses to benefit those users.

So I think there are ways to deal with that, but the bottom line is we need more investment.

Now, Dr. Lomax, I know TTI, I appreciate your work, I always quote it, use it in trying to justify to some people around here to move off of zero on funding. But this tolling, I am a little disturbed about all the obsession and talk about tolling and congestion pricing and all that. And I think since you are in Texas, haven't we seen a little bit of tolling fatigue in Texas? Didn't they just pass a moratorium on more tolling there?

Mr. LOMAX. Absolutely. That is what our State legislature did in response to some public comment about we are sort of tired of tolling as the solution that is being enacted.

Mr. DEFAZIO. Right. And it didn't solve the problems?

Mr. LOMAX. Well, we are early on, but, yeah, it hasn't solved the problems yet.

Mr. DEFAZIO. OK.

Mr. LOMAX. We are afflicted with economic prosperity, is the way we describe it.

Mr. DEFAZIO. Yeah.

Mayor Gilbert, you just said a couple of times, quite high, the tolls. Can you give me a number how high "high" was in those toll lanes to avoid the congestion?

Mr. GILBERT. It depends on the time of day. It can be upwards of $17, $18, $19 that people will pay in the toll lanes. And let me just say that——

Mr. DEFAZIO. How many miles is that for $18?

Mr. GILBERT. Well, that would be the entire length of the——

Mr. DEFAZIO. Yeah, but I don't know the length of it. I have only been on it a couple of times.

Mr. GILBERT. About 10 miles.

Mr. DEFAZIO. So, I mean, the question I have—and I would turn to Mr. Brouwer, because in his testimony he talks about HOT lanes won't provide enough congestion relief, and so we are talking about variable pricing. And, I mean, we are talking $1.70 a mile there. We have seen almost 5 bucks a mile in DC.

What kind of public acceptance do you think that is going to have? And how high do you have to price it to get to your targets to reduce congestion?

Mr. BROUWER. Chairman DeFazio, as we have done just our initial analysis of tolling, we are at a point of hypercongestion on the Portland system where we have so many vehicles at rush hour that the system is actually breaking down and the throughput collapses.

Our consultants have told us if we move a relatively small number of vehicles off the system at rush hour, it will flow much better and we could actually see out throughput increase greatly. We already see that effect in a number of places today where throughput is better before rush hour than it is at rush hour.

Mr. DEFAZIO. So you think there are a lot of people optionally jumping into the curves in backed-up traffic, they are not doing that because they have to get their kid to soccer at a certain time, they are not doing it because they have to get to work at a certain time, or they leave work at a certain time, it is just people who decide to go out, and therefore, they won't come anymore, and they will change their schedule?

So you think there is enough people that are just out there optionally, that don't have to go somewhere when I wouldn't want to try and go anywhere? Do you think that is going to solve this?

Mr. BROUWER. Chairman DeFazio, I think there is probably a relatively limited number of people who are in that situation, but if we can move a few of them off. We actually did some public opinion research, and people saw as one of the best arguments in favor of tolling with variable rates that there are some opportunities for people to change their schedules, to move by a different mode, or to telecommute or take other ways of getting to work.

Mr. DEFAZIO. Well, some people may have that flexibility, the question is how many.

We were very light here on the panel, I am very disappointed that we really didn't get very much into technology. I mean, and there is one company in my district called Connected Signals, they have a very simple system where basically in the car you know what—if you are on a road that has synchronized lights you are sometimes tempted to speed up to try and get to the next light or you are going to slow down. But this will tell you exactly like there is a sweet spot where you can drive that whole road and never hit a light. And they are estimating that there could be, if we did a lot more coordinated signalization, synchronized signalization, we could save probably another percent of fuel and mitigate congestion.

You know, again, as in Pittsburgh, smart traffic lights. You don't sit there when no one is coming. And then, when we ultimately get

to—and we are a ways away—driverless or substantially driver-assisted vehicles and you don't have the stop-and-go so much, I have seen estimates, so we can have twice the throughput on the existing roadways that we currently have.

So, I mean, I really think that we are awfully heavy here on pricing, and I think we are heavy here on pricing because of the failure of the Federal Government to partner with local jurisdictions and to hold up its end of the bargain for a national transportation system. It isn't State by State. I didn't bring my poster today, my famous poster of the brandnew Kansas turnpike, ending at the Oklahoma State line until we had the Eisenhower plan.

This needs to be a coordinated Federal system. We need to go heavily into the 21st century in new technologies and look at all the options before us.

So, with that, Madam Chair, I thank you for holding this hearing.

Ms. NORTON. Thank you very much, Chairman DeFazio.

Mr. Crawford, 5 minutes.

Mr. CRAWFORD. Thank you, Madam Chair.

Just a real quick question. Mr. Hawkins, in your written testimony you discuss the need to tax electric vehicles. Currently electric vehicle drivers are effectively paid by the American taxpayer to use roads through the Qualified Plug-In Electric Vehicle Tax Credit. Can you elaborate on why this is problematic, especially for commercial drivers?

Mr. HAWKINS. Well, when you look at it as a whole, and certainly some of the points that have already been made around the fuel tax and other pieces, and the longevity of that as technology changes.

I think a lot of times we overestimate what we can accomplish in the next year and we underestimate what can be accomplished in the next 5 years on many of these technology fronts, especially electrification, which personally, as CEO of YRC Worldwide and with the number of tractors that we have right now, diesel tractors, it is very important to us how that evolves over time.

And also for a company that spends north of $25 million a month on diesel, electrification can mean a lot to our industry and also a lot to the economy overall.

So a big fan of electrification and how that goes. And when I think about the Highway Trust Fund, myself and the ATA's opinion is the fuel tax is the appropriate measure for now because of the situation we are in and the urgency of the matter around the Highway Trust Fund with potential insolvency by 2021.

So, overall, electrification will be a wonderful solution over time.

Mr. CRAWFORD. So the fuel tax is what you would advocate for, increasing the fuel tax on gas and nonfarm diesel?

Mr. HAWKINS. Yeah, as we sit here today and what we are facing, and also what we forced individual States into doing from a tolling perspective and others to try and deal with the crumbling infrastructure we have around the United States. And that interstate commerce depends on this overall.

And as we think about our 45,000 miles of interstates in the United States and how we protect those and keep them open freely for free movement among States, if this continues on the path that

we are on, from what we have seen from three or four individual States, it could become an epidemic sooner than later.

So as we sit here today, I see it as an emergency, and because of that the fuel tax is the immediate remedy.

From a technology perspective and the other pieces, we have got some great information that is coming now through ELDs, through the Federal mandate on electronic logging devices in commercial vehicles.

I am also a member of the board of American Transportation Research Institute, and a lot of the staff that has been quoted here today, we are able to collect those because companies like mine and all others, FedEx, UPS, all of the big transportation players, are making their ELD data available.

So this committee will have a lot more data to work with moving forward from a technology standpoint on how we address this in certain pockets.

Mr. CRAWFORD. So you are saying right now fuel tax increase. As the chairman indicated before, the last time we messed with the fuel tax was 1993. I think one of the flaws that we didn't anticipate then was that it wasn't indexed, so it hasn't kept pace with the economy.

What does it look like? To your mind, what is the appropriate action to take with regard to a fuel tax?

Mr. HAWKINS. When we look at that, our recommendation would be a 5-cent increase per year over the next 4 years, and that is the $340 billion long-term number that I mentioned. And then also the impact would be $100 per year when we think about the congestion stats.

Now, certainly, I know that all constituents would say: $100 a year, are you kidding? That comes directly out of my grocery bill and other places. And I understand that, as fuel prices have a direct impact on the pocketbook of every American. I understand the sensitivity. But also every American, I believe, is also witnessing firsthand the infrastructure trouble that we have with bridges and roads all over.

I traveled here from Baltimore this morning, and the situation from Baltimore to DC, if you haven't done it in a car recently, it is tough, and there is a lot of opportunity that could be addressed.

Mr. CRAWFORD. So you are suggesting, if I am clear, a 5-cent-per-gallon increase on gasoline and on nonfarm diesel?

Mr. HAWKINS. Yes.

Mr. CRAWFORD. And that would increase 5 cents every year over a period of 4 years.

Mr. HAWKINS. Yes.

Mr. CRAWFORD. So in 5 years we would have an increase of 20 cents a gallon?

Mr. HAWKINS. That is correct.

Mr. CRAWFORD. I just want to make sure I am understanding you clearly on that and what your recommendations are and appreciate your comments.

And I will yield back.

Ms. NORTON. Well, I appreciate, Mr. Crawford, that you drew out the witness on this matter.

I am interested, you said this fuel tax, maybe $100 a year? It is not as if we hadn't had an experiment already in this. The States are already doing it. What are we afraid of?

Whatever happened to that $100 a year, people have clearly measured that against getting to work late and other impediments on the road, and they have accepted it in the States. The only people who haven't accepted it are sitting in this building, the Congress of the United States.

Going next to Mr. Johnson.

Mr. JOHNSON OF GEORGIA. Thank you, Madam Chair.

And thank the witnesses for your testimony today.

Mr. Scribner, you are with CEI, which is a nonprofit, nonpartisan public interest organization supporting promarket approaches to infrastructure investment and management. Do you have any problems with raising the gas tax or is that against free market principles?

Mr. SCRIBNER. I testified at a hearing in March before the Ways and Means Committee, and I was the only witness to oppose raising the Federal gas tax.

I think there are a lot of problems with the Federal programs, and I think that we could better align incentives properly if we were to keep the fuel tax at the same level and focus on reforms in other areas, specifically getting rid of the prohibitions on tolling and expanding opportunities for private financing.

Mr. JOHNSON OF GEORGIA. Yeah, not just tolling, which tends to be everybody paying a fee to drive on a highway, but actually kind of HOT lanes, is what you promoted. Is that correct?

Mr. SCRIBNER. HOT lanes, I think, if they fit the right purpose, that is great. I also think in the long term we should be looking towards a replacement for fuel taxation through mileage-based user fees. I strongly support an effort of this Congress to do that.

Mr. JOHNSON OF GEORGIA. Basically, congestion pricing is what you advocate for?

Mr. SCRIBNER. I think congestion pricing can be a valuable tool in areas where it is too expensive to expand capacity.

Mr. JOHNSON OF GEORGIA. Let me ask you this. Can you shed some light on how congestion pricing alleviates congestion in metropolitan areas?

Mr. SCRIBNER. So if you saw at the I–66 lanes inside the beltway that have been brought up here that have the kind of notorious high tolls——

Mr. JOHNSON OF GEORGIA. And the HOT lane looks good when it is, what, $42 for a 10-mile segment. In Georgia, in Atlanta last week, we got up to $17 for a 12-mile stretch of road and it was like big news. But here for $42 for 10 miles, I mean, I bet you that that HOT lane was pretty much empty, but there was congestion in the two or three lanes on the other side of that HOT lane.

So my question is, given if what I said is true, how does the HOT lane or congestion pricing alleviate traffic congestion?

Mr. SCRIBNER. So when you are talking about those very high prices, the 40-some dollars on I–66, you are talking about a handful of people who actually pay that.

Mr. JOHNSON OF GEORGIA. Even if it is only $1, even if it is only a $1.50 for 10 miles, you are still going to see that lane relatively

easy flow, but the three lanes to the side are still congested. How does the HOT lane cure that traffic congestion?

Mr. SCRIBNER. The idea is, within the HOT lane, the idea——

Mr. JOHNSON OF GEORGIA. I understand the idea, but in effect it has not worked.

Mr. SCRIBNER. So it causes—often you run into problems if you have too many exemptions, for instance. So if you say you don't have——

Mr. JOHNSON OF GEORGIA. OK. All right. Thank you. I am running out of time.

Mr. Hawkins, what are your thoughts on these HOT lanes and how they can actually cure the issue of traffic congestion in urban areas at all times of the day? We have congestion in this area 24/7 in some places.

Mr. HAWKINS. Well, Congressman, Atlanta, specifically, the ATRI board that I am on, as you know, two of the worst congestion areas in the country are both in Atlanta. So because of that, addressing Atlanta—and I will also say, in my opening comments, when I said 71 percent of the Nation's goods come by truck, in Atlanta it is 85 percent because of the geography of that area.

So Atlanta is crucial. And it is a wonderful city for our business, our business there is great. But the congestion in Atlanta and some of the work we are doing right now around hours of service and other things actually are triggered toward the Atlanta market and at us taking more trucks off the road during those congestion periods so that we can enter and exit that city appropriately by working with technology to not make the situation worse.

But, overall, I think the investments that Atlanta has made are to be commended, and that also rebuilding and extending and expanding the infrastructure in Atlanta is crucial because the city is just such a powerhouse in the Nation, especially for transportation.

Mr. JOHNSON OF GEORGIA. Thank you. I yield back.

Ms. NORTON. Thank you very much, Mr. Johnson.

Mr. Gibbs.

Mr. GIBBS. Thank you, Madam Chair.

I should address the full committee chair, my friend, Chairman DeFazio. I have been on this committee for 9 years. For 8 of those years I had to hear my good friend from Oregon rail on us about not doing anything. And in his opening statement he railed again. I only assume that maybe he is railing not on us anymore, because we are in the minority, he must be railing on leadership, because, Mr. Chairman, just put a bill out there. Let's have a bill to talk about.

And I think it is interesting that your top 10 bills in the majority, 1 through 10, H.R. 1 through 10, none of them address infrastructure, 3 don't have a topic in them. So put one of those in one of those 1 through 10 bills, Mr. Chairman, put a bill out there.

So I just remind you, you are on the majority now. I kind of thought maybe I was back in another twilight zone, because I have heard the same thing for the last 8 years.

To the panel, a couple thoughts. Once in a while I do drive back to Ohio, and I try to avoid rush hour on the outer belt, as it can add a couple hours to my 6-, 7-hour drive.

My experience during rush hour, the HOV lanes I think are a joke. I think it is just our behavior, our culture, that we don't carpool or we are too independent, it doesn't work. I have seen stop-and-go in the outer belt and the HOV lanes that hardly have any traffic.

Now this new concept, the tolling on these other lanes. And Madam Chair raised the picture there about congestion on the three lanes and the other two, about utilization. In industry if you a manufacturing facility, if you are not operating at at least 80 percent, you got a problem.

I guess my question is, on those other lanes when you are doing—I guess this would be to Mr. Gilbert and Mr. Brouwer of Oregon—have you ever experimented around during rush hour to just open up everything to everybody and see what happens? And then figure out then also if you are still going to toll in those other lanes, where is that sweet spot so people still use it, so you are getting a certain percentage of utilization.

Because if you are only getting 40 or 50 percent utilization on the tolling lanes, probably your fee is not high enough, you have got a problem. So you have got to get this balanced here.

Does that make sense? Have you ever opened up all the lanes just to see what happens?

Mr. GILBERT. I don't think we actually do that.

I think what we are also missing from that picture are the buses. So when I gave the statistic that ridership increased 46 percent over the first 2 years, what that tells us is that some people got out of their cars, got on the bus, express rapid transit, and took it down there.

And the fellow panelist was right, you don't have to take a lot of cars off to make a difference. So what we know from data is that the time got better because of bus express rapid transit and the HOT and——

Mr. GIBBS. I got that. But another observation I have made, especially here in the outer belt or Columbus, Ohio, in their outer belt, during the peak periods, the rush hour periods, all those lanes, there might be five, six, seven lanes, are congested. But then nonpeak hours there is a lot of room out. So we just can't build a bunch more capacity to meet a certain amount of time. That is why we need to be adopting more technology and other things.

But I am kind of intrigued with this concept of what you call the HOT lanes, but I don't want to make them—some people, I think my friend here from Florida, calls them Lexus lanes. So you have got to get a balance there.

So the goal should be that you are getting maximum utilization out of all the lanes. That is why I hate the HOV concept, because I think that is a failure. When you have got stop-and-go over here, and you got an HOV lane that is 10 percent or 20 percent utilization, or you took a four-lane highway and you made it an HOV lane, so you cut 25 percent of the lanes, probably 20 percent of the capacity, that is a problem. We are not thinking straight.

So that is why I think we need to do more research on this concept, because we can't—I don't think we can build a whole bunch of capacity—additional capacity—to address a few hours Monday through Friday without addressing trying to change behavior or in-

centives to make people change their work habits or whatever. That is what I am thinking about.

So I think it would be an interesting experiment to see what you do when you open up all the lanes and see what happens during rush hour, and then see how you do a variable pricing scheme.

Mr. GILBERT. Congressman, we will look at it. I will say that I don't think that tolling is necessarily the answer. I think it is one of the answers.

So we are talking about these issues as though it is either tolling or something else. It is probably some tolling, it is probably the gas tax, it is probably rapid transit, it is probably bus rapid transit.

The problem with the system is that everyone has a pedestrian view of what they want to accomplish with it. Right now we are talking about tolling, and I don't think anybody up here just really wants to have more tolling. Tolling was responsive to an absence of funding in the system and a lot of congestion.

Mr. GIBBS. My time is up, so I will interrupt you and take my time. I just want to make sure that our capacity we have, we are getting maximum utilization. I am not so sure some of the things we are doing are doing that.

I yield back.

Ms. NORTON. Thank you very much, Mr. Gibbs.

I appreciate your rendition, Mr. Gilbert, of the combination of strategies we will need as opposed to one size fits all.

Mr. Brown.

Mr. BROWN. Thank you, Madam Chairwoman.

In Maryland there are several ongoing efforts to expand and toll high-commuter roadways, most notably I–495, known as the Capital Beltway, as well as the Baltimore-Washington Parkway, which is owned by the National Park Service.

I have opposed these efforts to widen and to toll these roads. I support tolling more in the case of new facilities, not in existing facilities, and I don't view expanding existing facilitate as a new facility. But I also think, as Chairman DeFazio and others mentioned, it falls disproportionately on particularly working families who don't have the flexibility in their commute.

Mayor Gilbert, two of the original alternatives put forward in the NEPA study for this Capital Beltway project I just mentioned included dedicated bus managed lane and fixed guideway bus rapid transit alternatives. Unfortunately, they were not included in the list of screened alternatives. In fact, none of the transit alternatives were included in the final list.

And you say in your written testimony, and I wanted you to have an opportunity to expand on this because you were about to do that in response to the last question, you said that electronic tolled "express lanes are essential, but we believe the best long-term alternative to highly congested roadways in Miami-Dade is to expand our rapid transit network."

Seems like, and I think Dr. Lomax agrees as well in his written testimony, you have to provide choices. Can you just talk about that combination and the real value added with your express bus system?

Mr. GILBERT. Express bus, it has to be an option, and tolls have to be an option. But it only really works right if you actually have

rapid transit that is available. If you don't, you are actually—you are starting to price people out of the ability to get places very quickly.

So the system isn't meant to be a one-off system. And right now that is what we are all trying to do. We are trying to find this silver bullet to actually—this is what is going to happen, this is what is going to fix it.

Bus rapid transit is going to be important on 95 in those express lanes, but it is not going to be the answer because we still have the first and the last miles.

So we know that rapid transit down our major corridors is going to be important, but it is not going to be the answer because those are just the major corridors. We need a system that actually addresses all of the needs. And if we are going to fund that system, that is probably going to take some type of tolling. It is probably going to take adjusting the gas tax.

Mr. BROWN. Let me ask you, though, on that first/last mile. So are the buses only traveling on the interstate highway or have you also expanded bus service into the communities?

Mr. GILBERT. We have an extensive bus service, but the bus express rapid transit is primarily in those areas. What we have done, for instance, in my hometown and a lot of the cities in Miami-Dade is we have free shuttles. The Miami Gardens Express that Congresswoman Wilson referenced was actually our effort to actually take people from the major corridors into the interior areas of the city where buses don't necessarily take you very often.

And so we didn't want people sitting out there waiting, for instance, to get to an internal park. So we put all of those things on a free shuttle. And that is our answer to that last mile, and the first mile because it actually takes you to the major commercial corridors. A number of cities in south Florida have that. But let me just say, those are built out through a half penny that we actually started collecting, I guess, 30 years ago, 20, 30 years ago, and the city's portion of it, that is how we provide those shuttles.

Mr. BROWN. And let me ask you this. Would the express lanes, the electronic tolled express lanes, would that work? I mean, would you be achieving the kinds of successes that you are achieving without express bus if you didn't include the express bus in it?

Mr. GILBERT. No, I don't believe we would. I believe the increase in that ridership over the first 2 years shows us that people do want an option to getting out of their vehicle, and they don't necessarily want to pay the prices that are associated with the express lanes.

Mr. BROWN. Thank you.

Dr. Lomax, is there anything that you want to expand on in terms of diversifying travel options?

Mr. LOMAX. I think it is key that all the strategies are going to be needed.

I think maybe another component of this is the public engagement process. We have had some discussion about that. I think part of the issue of resolving the funding crisis is going to be to make sure that people understand what the money is going for. I don't think they get a real sense of what the value proposition is. And in the cases where funding has been increased, there is a very

clear connection between what you are paying and what you are getting.

Mr. BROWN. I know you have, in the mobility report, you looked at the DC region and you have seen the cost of doing nothing. So do you think it makes sense to expand the 495 system without including at least a look at bus rapid transit or other transit options?

Mr. LOMAX. In general, I think transit options are a great part of the express lane system. I haven't studied the 495 Capital Beltway in detail.

Mr. BROWN. Thank you.

I yield back nothing as well, Madam Chair.

Ms. NORTON. Thank you very much, Mr. Brown.

Mr. Katko.

Mr. KATKO. Thank you, Madam Chair.

And, Mayor Gilbert, you were cut off from what your last statement was with Mr. Gibbs, but I think you were saying that congestion pricing is a product of us not properly funding the Federal highway fund and having the money to make these roads. Is that correct?

Mr. GILBERT. Not just you. No, it is not just you all not funding it. It is the product of a lot of things. That is a part of it, the system, the roads not being wide enough, in some places the road not being able to be wide enough, the absence of rapid transit. There is not one single cause to the problem. There are a lot of causes to the problems, and how we address it and how we solve there are going to be a lot of different solutions.

So I wouldn't, by any means, say that it is just on you all. Some might say that. I wouldn't say that. I say that it is a big part because you all have the ability to affect a lot of—well, every State. You have the ability to move projects along.

So it is not your fault solely, but we all need to do better in addressing the congestion, because congestion—look, we don't talk about this in terms of just time sometimes. Think about it in terms of people and the time they are spending with their family and people growing their businesses and commerce. It actually has a cost.

We are losing money with our families, we are losing money with your jobs and our industry. We are losing everything because we don't address this.

Mr. KATKO. Yeah. In 2017, the annual estimated cost of congestion was approximately $166 billion. And I don't know all the factors that went into it, but that doesn't seen unrealistic to me, given what some of these cities go through, like you mentioned.

I want to talk about, take a step back, because it is clear to me that the Federal highway fund is a huge component of any cure to this matter. Let's not forget that 20 percent of the funding goes to mass transit. And if the Federal highway fund isn't being properly managed, there are less funds going for mass transit, and that puts even more pressure on the State and local governments. You are not going to develop your mass transit if you don't have a steady stream of funding, and that is a big concern to me.

So I want to take a step back and kind of look at some other components of our failure as a country, no matter what the reason, of having proper infrastructure. The wear and tear on vehicles is something that people need to estimate into this.

So can anybody give me an idea of the estimates on the wear and tear of vehicles, both personal and trucks?

Ms. Chang and then Mr. Hawkins.

Ms. CHANG. Yes, Congressman. Last year when we were looking at SB–1, our California gas tax increase, there were estimates of about $800 to $900 per year per household vehicle as far as the cost of repairs from potholes and road maintenance.

Mr. KATKO. What type of repairs are we talking about, just the wear and tear in tires and all the other things? Struts?

Ms. CHANG. It could be—I am sorry, I don't have the details, but that was the overall estimate for the cost of repairing a vehicle.

Mr. KATKO. Per household?

Ms. CHANG. Per household.

Mr. KATKO. OK. And, Mr. Hawkins, I know there is some in the trucking industry.

Mr. HAWKINS. Yeah, absolutely. And outside of commercial vehicles, those numbers we were quoting earlier around rural and high density areas. The $1,600 annually, that estimate includes vehicle maintenance and congestion cost per household. So that was the estimate that included the cost of maintaining a vehicle on roads that are crumbling.

Mr. KATKO. So I am just wondering if that is factored in enough in the discussion here of the cost estimates, doing something with the highway fund. The highway fund has not been indexed for inflation, so therefore it is woefully short. And we have seen estimates as much as $171 billion shortfall over the next 10 years.

So something has to be done to at least plug that gap. And we have to account for the fact that more vehicles are not gasoline burning vehicles. I know UPS and FedEx, for example, are ordering fleets of electric vehicles, and they are going to be riding the roads and not paying anything from a gas tax standpoint. So I am concerned about that as well.

Mr. HAWKINS. And, Congressman, that is why I spoke in terms of the next 4 years for that piece.

And just take New York, for instance, 93 percent of the goods for the people of New York come by truck. So because of that, that is not going to change any time soon, and we have to invest in that.

And for my opinion, taking on the Highway Trust Fund and doing the right thing is really an investment in our economy. And if we continue to ignore it and not make those investments, then what we are doing is saying it is going to be OK to put our economy in continued decline because we don't have adequate infrastructure for the movement of goods across our country.

Mr. KATKO. And if these repair estimates are actually legit, and I have heard it from a lot of different sources and companies in general, if they are legit, I am not sure that doing something with the funding stream is going to be an increased cost to the consumer. It may end up being an ultimate net savings.

And so I am just not sure why we haven't done this. We didn't do it when we were in the majority, so I don't fault the Democrats for not doing it now. But I think we need to get together on this. This is a quintessentially bipartisan issue, and we should get together on this and stop the discussion and just acknowledge that we are probably going to save consumers and businesses a lot of

money in the long run if we have the political courage to do what we need to do to fix the revenue stream. And part of it has to address the alternative fuel component, which is a big part of it.

Mr. HAWKINS. Amen, Congressman.

Mr. KATKO. Thank you. I yield back.

Ms. NORTON. I appreciate the Member's questions and remarks.

Mr. Malinowski.

Mr. MALINOWSKI. Thank you. Thank you, Madam Chair.

I represent a district in New Jersey from which a number of my constituents commute to New York City, so congestion pricing is a very big issue for us.

A lot of folks commute by train, but that option is not available to everybody because of decades of underinvestment by both regional governments and the Federal Government. And so a lot of people are driving their cars to New York City, and they are worried about New York City's proposed congestion pricing plan.

I absolutely get that New York has a problem and that they need to look for solutions to address that problem, but I am obviously concerned, as are my constituents, about the impact that is going to have.

So let me start with questions to some of the local officials who have been through this, maybe Mr. Brouwer, Ms. Chang, Mayor Gilbert.

When you are thinking about congestion pricing, the various ideas that we have discussed here, are you doing this or conceiving of it to encourage drivers to take different routes or not to get in their cars at all?

Mr. BROUWER. Congressman, really when you are looking at tolling and congestion pricing you are trying to find a multitude of ways to change behavior. One would be for people to perhaps not drive at rush hour, drive at a different time. Another would be to take a different mode, bike to work, walk to work, take transit, or perhaps carpool.

There is also the potential for people to take a different route that would be untolled, and perhaps ideally that is a better route as opposed to one that creates diversion.

So in reality it is really all of the above, multiple options for people to find different ways to not use those extremely congested routes, and then, ideally, improve the transportation system as a whole for all people.

We in the Portland metro region have a great transit system for a city of its size, about 45 percent of commute trips in the central business district are by transit. And we hope that the I–5 proposal that we are moving forward would help provide an additional incentive for people to use transit to get into the central business district. God and the FTA willing, we will have light rail, one more leg into the central business district in the next few years. That will help with that.

Mr. MALINOWSKI. Understood. Well, for my folks, hundreds of thousands of people in New Jersey, there are basically three options. You either drive across a bridge or a tunnel, you take the train, or you swim across the Hudson River. So not a lot of options there. And so that leads to my next question.

If public transit is the option, which in many cases really will be the only option, and we do go towards congestion pricing, shouldn't some of those revenues be used to support expansion of public transit? That can be for anybody.

Mr. GILBERT. Yes.

Mr. MALINOWSKI. Thank you.

Does anyone disagree?

And I think, Mr. Scribner, you noted the New York area——

Mr. SCRIBNER. I have a "yes, but."

Mr. MALINOWSKI. I will take the yes part of that at least.

And for me this gets back ultimately to where Chairman DeFazio was, because even the question I just asked suggests that the burden is entirely on the shoulders of local and regional authorities. And to the extent that they share that burden, I believe certainly in the case of New York that some of those funds need to be spent to help New Jersey Transit and regional rail networks bring people into the city.

But it can't just be that. And I think this is more than just about money, this is a dignity question. I mean, whether it is Government or the private sector, in so many areas we are seeing people being asked to pay more for services for things that used to be taken for granted. Whether you want to take a bag on a plane or not waste your life in traffic, you are being asked to pay more.

And I wonder, are we solving problems here or just finding new ways to divide our fellow Americans based on income? Are we finding new ways to remind some of our fellow Americans that they are worth less?

And if there is not Federal investment, if there is not a policy that is based on the American people sharing this burden in an equitable way, aren't we in effect having that impact on our fellow Americans?

For anybody.

Ms. CHANG. Congressman, I really appreciate that sentiment. I think that we all feel that the Federal role over the past now 40 years has reduced so much to the point where all of us do need to reach for this new tool in the toolbox. The technology is there if we wish to do it. But these are hard decisions. These are difficult and complex challenges.

The solutions are there and we are being creative and we are learning from cities around the world and one another about how to do it. But I do think we are very, very keenly in need of the significant Federal role in transportation and infrastructure and transit and all the rest in order to really have a resilient and sustainable national infrastructure.

Mr. MALINOWSKI. Thank you. I yield back.

Mr. HAWKINS. Can I comment quickly, Congressman?

Mr. MALINOWSKI. Certainly.

Mr. HAWKINS. Excellent point. And I think it is important to separate the Federal interstate piece from a local city or opportunity, when you think about Newark to New York or Atlanta, Houston, some of the really tough density problems with congestion, but then separate from a Federal aspect, protecting interstate commerce on the 45,000 miles of interstate I do believe is a Federal issue.

Mr. MALINOWSKI. Thank you.

Mr. GARCÍA [presiding]. Next we will hear from Mr. Meadows.

Mr. MEADOWS. Thank you, Mr. Chairman.

I thank each of you for your testimony.

So it is very difficult for me to go back to North Carolina, where a congestion problem in North Carolina is very different than it might be in some of your cities, and suggest that what we are going to do is raise taxes so that you can have less congestion in your cities.

So how do I sell that? Mr. Mayor, how would I sell that? And I came from Florida, so I know your area extremely well. So how do I convince people that they need to raise their taxes so that you can have less congestion in Miami-Dade?

Mr. GILBERT. You don't start by saying it like that. You don't do that.

Mr. MEADOWS. But that is what it is.

Mr. GILBERT. I don't know that it is. I think you actually humanize it first. And I am not suggesting that you sell it. I am not suggesting that everything is right for every area.

Mr. MEADOWS. But why don't you just raise your taxes to take care of your—why is it a Federal responsibility?

Now, I get back to the interstate commerce side of it, and I am all in from a Federal standpoint. But with all due respect to my friend from New Jersey, why do you think the people of North Carolina should pay more taxes so that he can have a better commute into the city?

Mr. GILBERT. Well, first, we are in it together, we are the United States of America. That is going to be the first thing.

The second thing is when trucks get off of the interstate, they can't drive on dirt roads on our streets. That has an effect on interstate commerce.

Mr. MEADOWS. Listen, we can have hyperbole all day. You are a smart guy and this isn't my first rodeo, so let's don't start talking about dirt roads in New York City or even in Miami.

So if we are looking at this—here is the problem we have got, is it is either a fee to keep people from using the roads—because if we are talking about changing behavior, all of you have an app on your phone that you already use that changes your behavior, because you have GPS that has Waze or anything else in it. It changes. I mean, I can drive out in Washington, DC, today and it will tell me which way to go to the same location depending on traffic.

So we don't need a financial model to do that unless it is going to say, "Well, Mark, you need to get up at 6 o'clock or 5 o'clock," and change my behavior that way.

So how do we do that? Because it is a tough sell in North Carolina to say raise taxes to help you in Miami or anyone else unless it is dealing with interstate commerce and our truckers. So how do we do it? I mean, because if not, this is all happy talk, guys.

Mr. GILBERT. I think you are limiting what interstate commerce is to interstate highways, and I don't think that that is actually true. I think interstate commerce, if you look at all types of, whether it be the rulings from the courts or just as a practical matter, interstate commerce exists not just on I–95, but when you get off

on Northwest 8th Street. I don't think you can disconnect those things. And I think if you start to parse out your part of the system, then it kind of diffuses the idea that we are actually in this together.

I by no means would ask you to ask your residents to raise taxes for us. What I would ask them to do is, is understand that as go one part of this country goes every part of this country.

Look, when we are trying to bring in goods and services and our port is busy in Miami-Dade County, that is not just good for Miami-Dade County, that is not just good for Florida.

Mr. MEADOWS. I agree, Mayor.

Mr. GILBERT. It is good for America.

Mr. MEADOWS. Yeah, so I agree with that. But when you talk about a Federal role for airports, seaports, and interstate, that is very different than a meter for congestion on commuter traffic in and around major metropolitan cities. It is very different.

Now, I don't deny that there is commerce going on there, but what I am telling you is, is that when you look at it, when you look at commuter congestion—we already have Federal dollars that go disproportionately to major metropolitan areas for mass transit, don't we?

Mr. GILBERT. I don't know that it is disproportionate.

Mr. MEADOWS. Yeah, 82 percent of our mass transit dollars goes to major metropolitan cities, none of which are in North Carolina or even Georgia.

So when you look at that, when we are looking at that fair share, what I would ask each of you to do, and I will yield back with this, I would ask each of you to do, is look at it from a standpoint of a rural area and State, what should be their appropriate contribution from a Federal standpoint to help you deal with an issue that many view as a local issue, unless they happen to be traveling to Miami or New York or Los Angeles or wherever it may be.

Would you come back with recommendations for me, each one of you, three recommendations on how I can sell it in North Carolina?

And I will yield back.

Mr. GILBERT. Absolutely, Congressman.

Mr. GARCÍA. Thank you.

Ms. Davids.

Ms. DAVIDS. Thank you.

And I would like to start off by expressing appreciation to the chairwoman and to the ranking member for holding this hearing today.

Also, I would like to say that I appreciate Chairwoman Norton for highlighting in her opening statement the tolling and congestion strategies that are inherently linked to issues of equity and that are oftentimes adversely affecting lower income communities and communities of color.

Kansas has for a long time taken pride in our infrastructure; the roads, bridges, railways, and ports that our State provides means that transportation of the food and a lot of goods that feed the world and are put out through the rest of the country and internationally come through our State.

A number of the corridors in the Kansas Third Congressional District, which I represent, badly need investment to expand the

number of lanes to ease heavy congestion, to adopt new designs that require less expansion, and implement modern safety measures.

My constituents consistently tell me that they want to see smart, sustainable, and resilient infrastructure so we can build the foundation for economic growth for the future. I am here on the Transportation and Infrastructure Committee to make that happen.

I also want to highlight that I did have the chance not too long ago to host Chairman DeFazio in our district to tour Highway 69, which is a major thoroughfare in our district, and we had the chance to talk about the infrastructure needs there.

YRCW, which I highlighted earlier, is a really good example of a corporate and civic citizen in our district, and we need to make sure that we highlight the good work that you are doing. But also I want to talk about the massive swings that YRCW is all too familiar with. And when I say that, I mean, you know what it is like to go through a downturn and then come out of that a much stronger company.

And so I just want to make sure that if you have a chance after when I am asking the question, if you could speak to that.

I am particularly interested in your approach, though, for my question, your approach to tolling and congestion charges. And you touched on this in your remarks, but there is a common misconception that trucking companies don't want to pay their fair share. And you spoke to that and indicated it is not the case.

And I would like to hear you expand on how the existing and future tolling mechanisms and schemes that we have heard about affect a company like yours, whether that is the positive effects or the negative effects.

Mr. HAWKINS. Thank you, Congresswoman Davids.

And quickly, when I mentioned earlier, YRCW, we pay $25 million a year in tolls. At our company, we are a $5 billion company, so if you look at it from an operating standpoint, that is half of an operating point just in tolls that we are paying.

Now as far as transportation companies paying their fair share, trucks are about 4 percent of registered vehicles, 9 percent of miles traveled in the United States, but we pay about 42 percent of the Federal highway users fee. So, when I make a case for increasing the fuel tax, that certainly has both barrels pointed at the trucking industry, but we are well aware, just like in the State of Kansas, that 90 percent of everything that goes into Kansas from a goods-used standpoint comes by truck. And we have to preserve this great heritage we have in the Nation of adequate infrastructure that, unfortunately, has been underinvested in over a longer period of time.

The best way I can make this point—and we have had a lot of conversation about individual cities but when we talk about interstate commerce, when one State is forced to take action for whatever reason to put toll gantries on a Federal interstate just because they happen to have a few miles of that interstate in their State, and then all users, including my company and many others, are taxed through a very small State that we do very little business in. Those types of situations endanger companies, and it endangers free enterprise, because any State that has an interstate running

through it could actually have one of these hostage centers where all linehaul traffic is going.

There is a company that is not here today that went out of business earlier this year, a unionized company based in New Jersey; and in the public statements they made around their closing, they mentioned the tolls in the Northeast area of the country where they operate.

So, I think that is the ultimate example of what can happen if we don't take this seriously and also look at the Highway Trust Fund as an investment in our economy moving forward and certainly in the free enterprise of the United States.

Ms. NORTON [presiding]. Thank you very much. Your time has expired.

Next is Mr. Babin.

Dr. BABIN. Thank you, Madam Chair. I thank you, all the expert witnesses and for your testimony.

Mr. Scribner, thank you for being here today as well. This entire committee, myself included, is eager to address the issue of dwindling resources of our Highway Trust Fund. However, as we work to solve this issue, I want to be sure that we have parity in the contributions made to the fund across all users; and I have two points that I would like to make here.

Texas is the only donor State to the Federal Highway Trust Fund. We get 95 percent back—95 cents back for every dollar that we put in, which costs Texans roughly $900 million a year. Every other State gets more than they put in, resulting in Texas basically subsidizing every other State in this Union. Other States get from 101 percent to 685 percent back on their contributions.

I would like to introduce a letter, Madam Chair, which was submitted from our Texas delegation here in the House and Senate jurisdiction.

Ms. NORTON. So ordered.

Dr. BABIN. Thank you.

[The information follows:]

Letter of March 26, 2019, from Hon. John Cornyn, U.S. Senator from the State of Texas, et al., Submitted for the Record by Hon. Brian Babin

MARCH 26, 2019.

Hon. JOHN BARRASSO
Chairman
Senate Environment and Public Works Committee, U.S. Senate, Washington, DC 20510

Hon. TOM CARPER
Ranking Member
Senate Environment and Public Works Committee, U.S. Senate, Washington, DC 20510

Hon. PETER DEFAZIO
Chairman
House Transportation and Infrastructure Committee, U.S. House of Representatives, Washington, DC 20515

Hon. SAM GRAVES
Ranking Member
House Transportation and Infrastructure Committee, U.S. House of Representatives, Washington, DC 20515

DEAR CHAIRMEN AND RANKING MEMBERS:

We write to bring attention to a long-standing problem with federal transportation funding: the flawed and outdated apportionment of highway funding that has resulted in Texas standing alone as the last "donor" state. Relative to the federal highway gas taxes that Texans pay, we have historically received a disproportionately small share of federal transportation funding.

By the will of Texas voters, we have added long-term state transportation funding solutions that dedicate new state transportation dollars to build more roads and improve our existing infrastructure without raising taxes, fees, tolls or debt The Texas voters overwhelmingly supported these increases on two different statewide propositions by over 80 percent. Although this is a giant stride to ensuring that Texas infrastructure can keep up with our growth, our work is not done.

According to the Federal Highway Administration, in FY 2019, Texas remains the only "donor" state, when considering funds contributed directly to the Highway Account of the Highway Trust Fund versus apportionments received. In fact, Texas only receives 95 cents back for every dollar it sent to Washington in federal fuel taxes. Texas contributed 11.17 percent of all federal fuel taxes paid into the Highway Trust Fund, yet only received back 8.95 percent of the total apportionments, equating to just an 80 percent return on a percentage basis. By this calculation, Texas is shortchanged by up to $940 million in FY 2019. This imbalance is exacerbated by the fact that when Congress last developed funding formulas, 2000 Census data was used to calculate funding. In 2000, the Texas population was 20 million. However, our population has grown nearly 50 percent and is now estimated at over 29 million. These metrics must be brought current. Without using current data, we simply fail to have a true formula distribution.

As Congress continues discussions on new infrastructure legislation, we hope that a fair, equitable and logical approach to federal transportation funding is considered.

Thank you for your consideration of this important issue and for your continued service on behalf of our nation on transportation issues.

Sincerely,

John Cornyn
United States Senator

Ted Cruz
United States Senator

Eddie Bernice Johnson
Member of Congress

Sylvia R. Garcia
Member of Congress

Louie Gohmert
Member of Congress

Pete Olson
Member of Congress

Joaquin Castro
Member of Congress

Randy K. Weber, Sr.
Member of Congress

Kevin Brady
Member of Congress

Michael Cloud
Member of Congress

Roger Williams
Member of Congress

K. Michael Conaway
Member of Congress

John R. Carter
Member of Congress

Ron Wright
Member of Congress

Lance Gooden
Member of Congress

Lizzie Fletcher
Member of Congress

Kenny Marchant
Member of Congress

Chip Roy
Member of Congress

Kay Granger
Member of Congress

Jodey C. Arrington
Member of Congress

Sheila Jackson Lee
Member of Congress

Vicente Gonzalez
Member of Congress

Henry Cuellar
Member of Congress

Mac Thornberry
Member of Congress

Dan Crenshaw
Member of Congress

Veronica Escobar
Member of Congress

Michael T. McCaul
Member of Congress

Filemon Vela
Member of Congress

Van Taylor
Member of Congress

Marc A. Veasey
Member of Congress

Will Hurd
Member of Congress

Al Green
Member of Congress

Bill Flores
Member of Congress

Brian Babin
Member of Congress

Colin Z. Allred
Member of Congress

John Ratcliffe
Member of Congress

Michael C. Burgess
Member of Congress

Lloyd Doggett
Member of Congress

Dr. BABIN. But there was another point I would also like to make. Any proposal considered on changes to the Highway Trust Fund contributions should also recognize that, even though there are more and more high-efficiency electric vehicles on the road, these cars are still pounding the pavement as well. The same as gas-powered vehicles.

So, those are two points that I would like to ask you. Could you please share with us how you believe that we can ensure parity on our surface transportation system, not only for drivers on the road, but also State apportionment, and how all should contribute equitably, reliably, and sustainably?

Mr. SCRIBNER. Yeah, thank you for those questions.

Yeah, the donor/donee State issue went away for a while, since the bailouts began in 2008; but as you said, it is now back a little bit now that Texas is, once again, a net donor State.

And I think that is, you know, we can tweak the formula all we want, and there have been battles over that in the past, but at the end of the day, we just have to recognize that the way the Federal program works is you collect money and send it to DC just to send it back. That is primarily what it does, and it is also important to put it in context. Seventy-five percent of our surface transportation spending is State and local, not Federal. So, the Federal is a—it plays a smaller role than the States and locals.

And I think going forward, especially when we are looking at replacing the fuel tax with something viable for the long term, I think revisiting the broader Federal role, I do think that there is a Federal role in policing interstate commerce concerns; but in terms of spending and taxation, yeah, going forward, I think those are very reasonable questions to ask, and potentially rethink on how we do things.

And then in terms of the electric vehicles, as long as the fuel tax is the primary method of collecting revenue for road projects, that is how we are going to do it. I think there are better ways to address that than others. I think you should charge by use rather than slapping big fees on them. But, yeah, we need to find a solution, because eventually, the internal combustion engine and the fuel tax will not be very valuable to this discussion.

Dr. BABIN. OK. And then a followup question about that. Texas adds about 1 million people every 3 years to our population. In your expert opinion, how can Congress focus Federal investment on our surface transportation system that actually maximizes economic growth, not only in Texas but everywhere else as well, and, also, promotes global competitiveness. If you would——

Mr. SCRIBNER. I mean, I think——

Dr. BABIN [continuing]. Short answer, please.

Mr. SCRIBNER. Pricing is really key. I mean, we have—you could think of traffic congestion as bread lines in the Soviet Union. It is the same problem. It is a misallocation of resources because we are not doing the price signal, and what we end up doing is spending a lot of time to basically try to replicate the information we can get through pricing, through bureaucratic and engineering means.

So, if we had pricing, we could know where to better invest going forward. I think we just have a much more efficient system overall.

Dr. BABIN. OK. I am about out of time.

And, Mr. Lomax, you are a fellow Texan here, and really quick—it is no—she is cutting me off. I guess my time has expired.

Thank you.

Ms. NORTON. Thank you, Mr. Babin. Thank you for those questions.

Ms. Davids.

I am sorry. Mr. García.

Ms. Davids has already spoken.

Mr. García.

Mr. GARCÍA. Thank you, Madam Chair Norton and Ranking Member Davis for putting this hearing together, and my appreciation to all of the expert panelists.

I would like to begin with some local context. In 2018, a study entitled, "Global Traffic Scorecard," Chicago was ranked as the third most impacted city in the country when it comes to traffic congestion. The previous year, by the same metric, we ranked eighth. So, it is a significant bump up, and it is getting worse. Individual drivers, the Chicagoland area, lose up to 138 hours per year in traffic. Nationally, the average is 97 hours lost per year for an average loss of $1,348. For someone making the Federal minimum wage of $7.25 an hour, working 40 hours a week, all 52 weeks of the year, that is almost 10 percent of the $15,000 annual income.

There is a lot wrong with this picture, but the picture I am trying to paint is, one, traffic congestion is costing our economy and our constituents significant sums of money; and, two, congestion has severely disproportionate effects on working-class families struggling to make ends meet.

Many of my constituents suffer every day in Chicago congestion, and there are growing talks about introducing a congestion fee in our downtown area. While this had positive results throughout Europe, I caution diehard advocates to keep in mind the unintended consequences of flat fees on congestion. Flat fees without respect to vehicle type, type of travel and location can easily erect financial barriers for lower income individuals and their access to good jobs throughout the city.

Right now, rideshare consumers of services like Uber and Lyft pay a $.72 fee entering in Chicago's downtown. We should look at that pricing. We should look at a congestion fee and various models, but it will take years of study, in my opinion, if we are to properly implement a fee.

If any, we need to get it right. What I want to focus on is deeper and at the route of congestion, land-use policy. That is why I am working on legislation to promote more equitable transit-oriented development, affordable housing, and more economic development around transit corridors so that those who need it most have the best access to transit options.

I would like to ask a question and direct it to Ms. Chang. The Texas Transportation Institute testimony mentions diversifying development patterns as a potential solution to congestion. Zoning, job location, and schools play a large role in where people live, and the density of their neighborhood. Encouraging mixed use and

higher density neighborhoods that naturally reduce the need for travel can improve congestion.

Can you address the role of zoning and development in improving congestion, and what do you think that Congress should do to incentivize denser housing to help resolve the housing crisis without adding to congestion?

Ms. CHANG. Congressman, thank you so much for your question and your leadership.

In San Francisco, transportation and congestion are intricately tied to the land-use question, and I think the transit-first policy for the last 40 years has recognized this, starting with our original downtown plan, which kept parking low, densities high, and invested heavily in BART and heavy rail, Muni, BART systems. So, that formula has been proven time and again. I think the Federal role can really be to help fund the transit, fund the sustainable and complete streets, fund the infrastructure so that communities can be able to have a comprehensive approach to the land use and the transit-oriented development.

There has to be a partnership, a State, local, Federal partnership. We all do our role. It is a very important question, and, I think, one of the ways that we have been able to succeed is to, for example, even bring value capture into that conversation. So that the Federal investment in things like our Transbay Transit Center really brings dividends back to the national investment, sort of, formula.

We are definitely leveraging local funds. We are bringing greater development opportunities and growing sort of the economic pie, and really showing what it—the powerful synergy between the land use and the transportation, especially when the local/Federal partnership happen together.

Mr. GARCÍA. Thank you.

I yield back.

Ms. NORTON. Thank you very much, Mr. García.

Mr. Palmer.

Mr. PALMER. Thank you, Madam Chairman.

One of the things I want to point out as we get started with this and we have talked a lot about the fact that the gas tax hasn't been raised since the 1990s. Congress was—at the same time we passed the last gas tax, we started passing these corporate auto fuel economy standards, and there is such things as the law of unintended consequences. As we passed the CAFE standards, raising the miles-per-gallon requirements for automobile manufacturers, we didn't take into account that as the fuel efficiency increased, fuel consumption would go down, and thus, the revenues would go down. So Congress is somewhat—I won't say somewhat, but very complicit in the problem that we are experiencing right now. We didn't take that into account.

The other thing that I think we have to take into account—and there is a report from the Texas Transportation Institute, which I believe you are affiliated with—that points out the problem with delay costs. The report cites three projects: a small project, which was a rural road; a medium-size project with U.S. Highway 59; the large project, which was an interchange on I–10 and I–410 near San Antonio. It is in the San Antonio district. The total of those

delay costs was over $26 million. That is money that comes out of your transportation funding. That is not something that a construction company absorbs. And we are literally wasting billions of dollars in our transportation funding, paying delay costs because of activist lawsuits blocking projects and permitting issues. So, that is another issue that I think we need to address.

I want to speak to Mr. Hawkins about, you know, you said a couple of times that your company paid $25 million in tolls, and I am sure that is true, but that $25 million was passed on to the ultimate consumers of the products or goods and services that your trucks were transporting. So, the burden of tolls, one way or the other, is going to get passed on to consumers. It is the same way with the gas tax. Whether the individual is paying it in their personal passenger vehicle, or it is a trucking company paying it or anybody else, it gets passed on. It gets added to that burden.

I want to talk about some solutions, and I am sorry that Chairman DeFazio has left because he hit on a key point about how cyber and high tech can help reduce congestion.

The University of Alabama has a cyber unit where they are able to monitor traffic flow and control traffic lights. If they see that, say, the east/west traffic is low, they are able to keep the north/south corridors open. We need to take advantage of the technology we have in the immediately, and can immediately do some of these things to reduce congestion.

And then another thing that we need to talk about is most of the discussion we have had here today has been in regard to urban congestion. And I was in Miami earlier this year, and I thought, I will never go back. It was unbelievable. There are other places that I literally try to avoid driving through. I am from Birmingham, and we have some congestion, but nothing like Atlanta, Miami, and some other places I have been.

One of the things I think we need to talk about, Madam Chairman, is a paper that came out from the Obama administration. It is in the archives now, and it was entitled, "Rural Means Business," and its subtitle was "Bringing Tech Jobs to Rural America." With the technology we have today, and particularly with the opportunity to expand broadband, that needs to be part of our infrastructure discussion, expanding broadband to rural areas so that there is an opportunity for companies to locate out. Miami could be a hub for a much broader economic region. Atlanta could be, Birmingham could be, so that people don't have to live in close proximity to these urban areas.

I think we have had a lot of discussion here, but I think we really need to double-down on coming up with some ideas to reduce traffic congestion and move more businesses and more people out away from these areas so you don't have that problem.

With that, Madam Chairman, I yield back.

Ms. NORTON. Thank you, Mr. Palmer.

The next Member, Mr. Rouda.

Mr. ROUDA. Thank you, Madam Chair.

And thank you all of the witnesses for being here today.

Mayor Gilbert and Mr. Brouwer, thank you for your comments and testimony as well. I am from Orange County, California, and

I am really proud of the Orange County Transportation Authority and the job they are doing.

And, Ms. Chang, you, as well, your comments are very similar to what we are trying to accomplish in Orange County.

And I am proud of them, because right now, to the best of my knowledge, they are running the largest highway project in the country, about a $2 billion project to expand the 405 in one of the most congested areas in the country.

And interestingly, I know one of the Representatives here asked about the reason rural communities should care about what is going on in the cities. One of the things that is interesting to note in the $2 billion project that we are doing in Orange County, there is only $46 million in Federal funds. That is about 2½ percent of the overall costs. Approximately half of it is being funded by the taxpayers of Orange County. So, we are addressing those issues with a lot of locally raised tax dollars, but would certainly be nice to have more support from the Federal Government in that respect.

And one of the areas that is important is the TIFIA loans, and I am just curious from Ms. Chang and Mr. Brouwer, and perhaps, Mayor Gilbert. I know they are important to you, but can you espouse a little bit more on what you would like to see from a process-oriented standpoint to make it occur faster, easier, less bureaucratic?

Mr. BROUWER. Congressman, we have not yet used the TIFIA program; and I emphasize the word "yet," because I do expect we will be. We are looking to replacing the interstate bridge between Oregon and Washington. It is about a $3.5 billion project. We were achingly close to getting that project across the finish line a few years ago, and we were looking at $1 billion TIFIA loans, which had incredible terms, very low interest rates, very low coverage rates, which means you can leverage more dollars there.

And so, we see the TIFIA program as a likely source of great funding for projects going forward. The Federal Government has been very helpful in working through those. It is a lengthy process, and the Federal Government has to do their due diligence. We would hope over time, they would be able to expand the percentage of the project that that program can cover, and make sure that we can take advantage of those at the right timing.

Mr. ROUDA. Thank you.

And Ms. Chang and Mayor Gilbert, I apologize. I am going to shift a little bit just to try and cover a couple of other areas.

Dr. Lomax, I really enjoyed the presentation you provided us and the background information, and I want to make sure I understand this right. It is $166 billion in cost associated with lost time, and that is just gasoline and time and calculating that cost, and I believe you had mentioned also environmental costs, health cost, business loss is not in that number. And I pulled from Google that the EPA says there is 5.5 pounds of CO2 per gallon—that is before it is combusted—and over 19 pounds when combustion occurs. So that is 63 billion pounds of CO2 per year going into the atmosphere with the fact we have this massive amount of congestion.

Does that sound about right?

Mr. LOMAX. I am not sure about the science behind combustion.

Mr. ROUDA. Well, trust me on the EPA.

And I guess that is another reason to my friend from North Carolina as to why it would be good for us addressing this issue overall, correct?

Mr. LOMAX. Certainly there are a lot of other facts beyond what we measure.

Mr. ROUDA. A lot of reasons. And, in fact, of that $166 billion, it is fairly safe to assume that we are all paying for that $166 billion in increased costs of goods and services. Is that a safe statement?

Mr. LOMAX. I think my colleague with YRCW would confirm that, too, yes.

Mr. ROUDA. And I have had the privilege of touring the Port of Long Beach. And the Port of Long Beach and the Port of Los Angeles account for 40 percent of all goods shipped in to the United States, and those goods are delivered to every single district in the United States. So, when we talk about how important it is to have quality infrastructure even in the cities, because typically, ports are associated with cities, the cost of transporting those goods has a direct impact on every community in the country including rural communities.

Is that a safe assumption?

Ms. CHANG. Yes.

Mr. BROUWER. Yes.

Mr. ROUDA. You would agree with that?

And then the last thing I will ask with my remaining time to Dr. Lomax is, again, I think your testimony and the data and information you have provided us is so important. You use Texas as a model that the do-nothing-versus-do-something, it is a 4-X cost increase in not doing anything versus doing something. Is that a fairly consistent statistic across the United States?

Mr. LOMAX. The analysis that we have done show that it is, yes.

Mr. ROUDA. Thank you very much.

And I yield back.

Ms. NORTON. Thank you very much for those questions.

Mrs. Miller.

Mrs. MILLER. Thank you, Chairwoman Norton and Ranking Member Pence.

And thank all of you all for being here today.

Developing our highway infrastructure is essential for the continued development of my home State of West Virginia. While a major focus of today's hearing is on urban traffic congestion, I do believe that there are aspects that can be applied to roadway construction and repair across our country.

Mr. Hawkins, tolling disproportionately affects the trucking industry that delivers the largest portion of our Nation's goods. What is the most effective way that the Federal Government can fund highway construction and repair initiatives that is fair to both commuters and industry?

Mr. HAWKINS. Congresswoman, I think that is an excellent question, and it really gets to the heart of the matter of the way this discussion has taken place today, urban versus rural. From the ATRI standpoint, the American Transportation Research Institute, when we talk about technology and what it can tell us, that tech-

nology tells us that 87 percent of freight congestion on our National Highway System is just in 17 percent of the system,

So, for example, California, where we have got a huge presence—we have got more terminals there than any other State, but we are a national carrier. So, we are represented in every State.

The ATA's solution to that is that we take a portion of the Highway Trust Fund and dedicate it to this 17 percent—that is where the big trouble is in all of the public transit and the areas where congestion is really hampering the overall economy. But for the other percentage of the system that we dedicate it appropriately by showing all Americans that we are going to rebuild the infrastructure that really built this company.

When Dwight Eisenhower had the vision to push through 45,000 miles of interstate across our country, it opened up the whole country and it opened up commerce with it and protecting that is how we do it.

The Highway Trust Fund is not perfect, the fuel tax is not perfect, but for the immediate need that we all have, it is the solution we need to do today. And then, also, we can protect this infrastructure while we are figuring the rest out but a portion of that fund does need to go to these urban areas that have these tremendous congestion problems. But overall, we can't ignore the rural areas that many of us are from and that our country depends on, especially from a manufacturing standpoint.

Mrs. MILLER. Thank you.

Mr. Lomax, while a fuel tax is an obvious cost on commuters, what are the unseen prices of underfunding highway construction and repair?

Mr. LOMAX. I think certainly you see the vehicle maintenance go up when you have bad roads; but in addition to that, you see business inefficiencies. The YRCW trucks can carry less goods and services. When they can't go over load-zone bridges, you see schoolbuses having to route around county bridges that have load deficiencies. So, there is a whole range of costs and effects on economic opportunity and quality of life.

Mrs. MILLER. What costs do rural commuters face compared to urban commuters?

Mr. LOMAX. Particularly for rural commuters who are going to bigger cities, going to the bigger economies, you see much longer travel distances. I think West Virginia has the longest average commute of any State because of the distances that many of your constituents travel. Certainly, the travel options are also not there. It is much harder to find bus service or train service from any of the rural communities in urban areas.

Mrs. MILLER. That is correct.

Mr. Scribner, how do the public—I will start that again.

Do the private-public partnerships for infrastructure projects tend to lower costs for commuters?

Mr. SCRIBNER. They can certainly lower costs for taxpayers by shifting that risk off of the public and onto private investors. They have a much stronger—to get the job done right and cheaper than conventional procurement. So, I think often it is the case that you see substantial savings to both the users, given what they are getting in terms of the quality of the asset that they are—they have

now paid for, as well as the taxpayers who are no longer shouldering the burden of the project.

Mrs. MILLER. Thank you so much.

I yield back my time.

Ms. NORTON. I thank the gentlelady.

Finally, Mr. Pence.

Mr. PENCE. Thank you, Madam Chair Norton and Ranking Member Davis, for holding this committee meeting and the witnesses for being here today.

Recently, the American Transportation Research Institute found that highway congestion is negatively impacting our economy by staggering numbers. According to the study, congestion on our Nation's highways costs the trucking industry $74 billion, which has the same impact as if 425 truckdrivers sat idle for an entire year.

The Texas A&M Transportation Institute produced a study that shows in 2017 Americans lost a total of 8.8 billion hours of productivity due to congestion. Over 1.2 billion hours of lost productivity were attributed to the trucking industry alone.

As the crossroads of America, my home State, Indiana, is home to three of the country's worst bottlenecks, with the 11th worst chokepoint at I–65 and I–80 which I am sure many truckers know very well.

Today, we have heard about the benefits of share riding, technology, tollroads, HOV, or express lanes.

Mr. Hawkins, as a fellow trucker for many, many years and, frankly, all my life, I was particularly interested in your testimony. I wish this hearing and more of the industry would highlight, include, and consider, the benefits of truck-only lanes or critical commerce corridors to physically separate cars and trucks in congested areas or the 17 percent of the system, as you mentioned.

CCCs utilized the existing interstate for truck lanes, which are constructed with increased pavement depth, reducing the amount of repairs that have to be done. Passenger traffic would be rewarded with new roadways and the right of way, which require thinner pavements and cost less to build. Truck traffic would benefit from dedicated lanes where predictability of shipments would be greatly enhanced with the potential for drafting and tuning, not to mention the safety separating the cars and the trucks.

There is a growing interest in finding creative ways to pay for CCCs, including a diesel tax increase that would be dedicated to truck lanes. I am aware that truckers already pay more than any other entity using our highways.

Mr. Hawkins, have you or the American Trucking Associations considered utilizing CCCs, and, if we were able to wall off these funds and dedicate them exclusively to CCCs, would the ATA consider supporting this option?

Mr. HAWKINS. Congressman, our distribution center in Indianapolis is one of our largest in the Nation; and I agree. It is a critical point just from your home State; but overall, when we think about trucking and also its impact on Americans, I think it is important to protect that. Through the Highway Trust Fund and the recommendations we have made, I am not an expert on all infrastructure in the United States or the appropriate way to fund that.

The points I have tried to make, and me taking a day away from running the fifth largest trucking company in the United States to be here was all about that, to just increase awareness, but also to make a plea that action needs to be imminent on the subjects to protect our overall economy across the United States.

So, to answer your question, certainly I am a fan of any opportunity for us to make sure that 71 percent of our Nation's goods and the delivery mechanisms for those goods are protected over a long period of time; and I think just what you have talked about would accommodate that. I do realize that we have to work across all aisles to make sure that what we do is not just good for truckers, that it is good for the environment and good for the country overall, but at the end of the day, I think solutions like that would help move us down the road.

Mr. PENCE. Thank you, Mr. Hawkins.

Just a few seconds left. Anyone have a comment about that? No?

Madam Chair, I yield my time.

Ms. NORTON. Thank you very much for those questions.

Mr. Smucker.

Mr. SMUCKER. Thank you, Madam Chair, Ranking Member.

It has been a long hearing, but I think an excellent discussion about some of the needs in our highway transportation system, and I very much appreciate all of the testimony of everyone here today.

Mayor Gilbert, I am going to read from your testimony, because I think, perhaps—this is the end of the hearing here, but I think this perhaps provides some perspective. You said "Roads are pathways to something greater. They are instruments of economic development and job creation." Then you go on further to say, "I stand before you today, in large part, because someone invested in meaningful and efficient transportation systems."

And that is so true. I was a business owner myself for years in construction, and saw the impact on the economy and on my business, the ability to grow the business, after investment in infrastructure that provided additional ways to get around congested cities and so on. It opened up entire new markets for us.

Do you think the public, do you think, the people in your community, the people in your State, understand the impact of Government investment in infrastructure and understand what it would look like if those investments had not occurred in the past?

Mr. GILBERT. I think that they are being made to understand, and it is coming to their awareness now.

One of the things we have been talking about in south Florida is transit-oriented development and how different communities can look and how we need to have good conversations with business owners, not just residents, about how mass transit is going to operate up and down those corridors.

We know that, if done right, it is not just the money we spend. It is all the money we are going to get back and all the opportunities we are going to create. So, I would be remiss if I didn't point that out, that we have an opportunity to, in a lot of ways, reshape south Florida but reshape America with how we do transit. We can use it as a tool to do something more than just take us from point A to point Z.

Mr. SMUCKER. Yes.

Mr. Hawkins, I think all of you have mentioned an interstate system, the investment, but you just a few questions ago answered that and talked about the economic opportunity that has created. Do you think people take a minute to step back and think how things would look if that had not occurred?

Mr. HAWKINS. I think from a transportation aspect, we are the largest employer in many States, and when you look at 29 of our States, transportation can be the leading employer in most cases and, because of that, people understand that over a long period of time, the infrastructure has been what has allowed this country to thrive as we have, and that the underinvestment for many of us that have—I have been in this industry for 32 years. And because of that, I have watched what has happened, and my growing concern, and also the reason I am here today is just that, that I believe Americans do understand and then overall, they understand the bottlenecks, they understand the congestion. And they are experiencing this on a daily basis, regardless of what else they are seeing on the news, they are living it. Even in rural areas, they are seeing bridges that have been affected by flooding and other areas over the last couple of years that is worse than we have seen in the last 20.

Mr. SMUCKER. I could tell you—and I am running out of time, but I can tell you in my district, and in my State of Pennsylvania, people understand that investment in infrastructure is a core function of Government and is important to our economic growth, important to each one of them.

I know that because Pennsylvania was one of the States that implemented an increase in the gas tax. I was in the Pennsylvania State Senate at that time, advocated for that, helped to build the support for it. It was done with the public support who really understood the cost of congestion, and the cost of impact on vehicle maintenance, as you had just described.

Mr. HAWKINS. And we just did the National Truck Driving Championship in Pittsburgh 2 weeks ago.

Mr. SMUCKER. Yes. However, we haven't seen the public support yet for an additional Federal investment. I don't have a lot of people calling my office yet, and I am not sure why that is. But I can tell you two concerns that we heard in Pennsylvania that I think we can learn from.

One is, they want to ensure that, if we are going to do additional investment for transportation, if there is going to be additional user fees, that it is used for that. It is very, very important. It can't be diverted to something else. It has got to be used for that.

Secondly, it has to be used efficiently. And as a part of what we passed in Pennsylvania, we made some significant changes to the permitting process and to the way projects were delivered that resulted in cost savings. I think that has not yet been part of the conversation here, very, very important.

And then, finally—and this point was raised by several others, Mr. Meadows and Mr. Babin—you have to understand, you have to know that it is going to affect, if the money is coming from our area, it is going to impact. I have to go back to people in my district. Every Member here has to go back and say, this is a problem we have in the district that will be addressed.

And I am not—I won't have time for you to answer this question, but I am not sure that we have addressed that yet either. I think there are—it is time we step up. It is time we get this done. Legislators need to hear from the public on this issue, because it is an important issue. But I think we also have to address those very, very important questions about how we will spend that funding, and how those dollars will be efficiently invested.

And just one other point. Thank you, Madam Chair.

You know, a State like Pennsylvania that has made the commitment to invest in infrastructure, we have a fairly high gas tax. There are a number of reasons for that, but the biggest reason is because we recognize the need to do that. I want to know as well, that if there are dollars coming from Pennsylvania into the Federal system, that Pennsylvania will receive credit for the investments they have already made, and for what we have already asked for from taxpayers.

So, just some random thoughts. I wish we had a little more time to address some of those issues.

But, again, thank you for each of you for being here.

I thank you, Madam Chair.

Ms. NORTON. I want to thank you, Mr. Smucker, for that very thoughtful line of questions. I was intrigued to hear that when you were in the, I think it was the Pennsylvania Legislature, you voted for an increase in the gas tax.

I don't know what happens when they kick people upstairs, but I understand that in the States you are closer to the people, and I think it is informative, and I would like to hear more from Members what their own experience has been.

You raised certain issues, and I wanted to assure you that we will follow up on those issues you raised. Certainly open to ways to increase revenue besides the old-fashioned ways.

We are concerned that the States are leading the Federal Government when our bill will show that 80 percent of the funds are Federal, and there is a match of 20 percent from the States. So, the ball really is in our court. It looks like Members are from States that have valuable information to give to us as we try to figure out what to do.

I indicated already that the Senate has passed a bill—sorry, that is incorrect—have a draft bill which increases revenue. They are not prepared yet to make that visible. They have an appropriator to work with, and they have got to make sure that happens. In our case, Ways and Means has had a hearing and we have got to wait to see what they do about revenue.

But I want to assure Members that we are open to their suggestions and ideas as we try to figure out how to do a new bill, a 2020 bill, that is nowhere like what our last bill was, which was no revenue increases at all.

I want to thank Members on the other side for working with us, because what we did, of course, as I indicated at the opening of this hearing, was to make a 6-year bill a 5-year bill.

So, I was pleased to have them work with us to get some increased revenue. I don't think anybody wants to do that next time, and I think the witnesses today have helped us to understand the urgency and the differences that we have to take into account in

coming forward with a new bill that, in many ways, it must look very different from the FAST Act. Very valuable testimony.

Are there any further questions from the subcommittee?

Seeing none, I want to thank, again, our witnesses for the many contributions you have made today to our thinking.

I ask unanimous consent that the record of today's hearing remain open until such time as our witnesses have provided answers to the questions that may be submitted to them in writing, or have been submitted from the dais, and unanimous consent that the record remain open for 15 days for any additional comments and information submitted by our Members or witnesses to be included in the record of today's hearing.

Without objection, so ordered.

If no other Members have anything to add, the subcommittee stands adjourned.

Thank you very much.

[Whereupon, at 12:45 p.m., the subcommittee was adjourned.]

SUBMISSIONS FOR THE RECORD

Prepared Statement of Hon. Eddie Bernice Johnson, a Representative in Congress from the State of Texas

Thank you, Madam Chairwoman.

It is with great appreciation that I thank the Chairwoman for holding this hearing today, as it allows us to discuss solutions to congestion on America's roads.

Most Americans deal with congestion on a regular basis. Today, I am eager to hear from the witnesses on the possible solutions to addressing congestion on America's roads and possible technological strategies that can assist.

We have so many goods flowing through my home state of Texas, and so many people who are dependent on our transportation network to get to their destinations. North Texas is a transportation hub for the entire country.

For instance, a new high-speed passenger rail line is in the works, which will connect Dallas and Houston, the fourth and seventh largest economies in the country, in less than 90 minutes.

Currently, I–45 connects Dallas and Houston. The drive is about 4 hours and with traffic it is even longer. By using the high-speed rail, riders will save time and reduce congestion on I–45.

I recognize that solutions for congestion need to be tailored to the community and that a "one-size fits all solution" is not the answer.

I am ready to work with my colleagues in examining ways we can help relieve congestion.

I look forward to hearing the testimony and solutions from all the witnesses today.

Thank you. I yield back.

Letter of September 10, 2019, from Charlie Kiefer, Director of Membership and Operations, Alliance for Toll-Free Interstates, Submitted for the Record by Hon. Peter A. DeFazio

SEPTEMBER 10, 2019.

Hon. ELEANOR HOLMES NORTON
Chair

Hon. RODNEY DAVIS
Ranking Member
Subcommittee on Highways and Transit, Committee on Transportation and Infrastructure, U.S. House of Representatives, Washington, DC 20510

RE: September 11, 2019 Hearing titled "Pricing and Technology Strategies to Address Congestion on and Financing of America's Roads"

DEAR CHAIR NORTON AND RANKING MEMBER DAVIS:

The Alliance for Toll-Free Interstates (ATFI) is a growing alliance of individuals, businesses and organizations advocating for long-term, sustainable, efficient, equitable, and sensible highway infrastructure funding solutions. ATFI applauds the renewed public emphasis on infrastructure funding coming from Congress but wishes to register our opposition to tolling on existing interstates. We are particularly concerned that Congress may even consider expanding tolling authority during the surface transportation reauthorization process, as evidenced by a provision in the Senate's "America's Transportation Infrastructure Act of 2019 (S. 2302, "ATIA").

Implemented properly, infrastructure funding can provide meaningful employment opportunities to those individuals and communities that need it the most, while also modernizing the transportation system to improve the free flow of people and goods throughout the country. At the same time, poorly conceived infrastructure

legislation can be counter-productive, causing negative unintended impacts on transportation networks, economies and local communities.

Keeping these principles in mind, ATFI opposes expansion of Interstate tolling authority. ATIA's Congestion Relief Program (Sec. 1404) enables states to more easily toll existing interstates. We hope that the subcommittee will reject similar expansion of this authority, and we urge Congress to eliminate programs such as the ISRRPP altogether. That specific program has been in effect since 1998 and has never been successfully implemented in its 21-year history.

History has shown that, when given full consideration, states recognize what all the impacted industries have always known—that tolling interstate lanes which drivers now freely access is not only unpopular, it is an inefficient financing mechanism that is the worst possible approach to raising transportation revenue. Imposing tolls on existing interstates will increase shipping costs for goods, suppress consumer activity, waste revenues on bureaucratic administration, double-tax businesses, divert traffic onto local roads, and negatively impact residents and communities located around toll facilities. Efforts to make tolling easier will hurt America's economic future and reroute prosperity around the communities where tolls are located.

Hardest hit by tolls will be America's small businesses and their employees. Tolls raise business costs for moving goods through the supply chain, hurting the competitiveness of local companies. Restaurants, convenience stores, travel plazas and gas stations operating near the newly tolled interstate will face higher costs from manufacturers and shippers, who will be forced to charge more to transport goods by truck. Everyday consumers will be shouldering the burden by paying more for goods, demonstrating the fact that the toll is nothing more than an underhanded tax on the general public.

In addition, tolling is fiscally irresponsible and financially inefficient. Toll gantries cost millions of dollars to build and maintain. Even with the latest technology, collection costs alone are at least 8 to 11% of revenue collected, according to the Congressional Budget Office. Toll management, enforcement and operations total a significantly larger portion of revenues that do not go to actual road maintenance. In 2018, the all-electronic North Carolina Triangle Expressway spent 36.8% of annual revenue on toll operating costs; those are funds that could go toward road improvements with more efficient funding mechanisms. For example, increasing fuel taxes, which have a less than 1% administration fee, and registration fees do not increase collection costs, so nearly 100% of revenue can go toward infrastructure improvements. America's interstates were built using tax revenue, and fuel taxes have paid to maintain them since. Because tolls are generally upheld as a 'user fee' for the roads traveled, diverting these funds away from infrastructure improvements is a violation of the public trust. Quite simply, the fuel tax is the ultimate user fee, and it is already in place.

Not only are the financial ramifications of tolls unfair to the public, but the social costs are discriminatory. Tolls devour take-home pay for drivers and are especially oppressive to low-income Americans. They would make driving on interstates simply unaffordable for some families. Additionally, electronic tolling discriminates against the tens of millions of financially vulnerable Americans who do not have bank accounts. This places the heaviest burden from tolls on the backs of those least able to afford it, who, lacking the financial instruments of a debit or credit card, are sent a bill in the mail charging them the toll plus a fee and a stamp. Tolls are expensive for all drivers, but especially costly for drivers without bank accounts.

To toll drivers on top of these fuel taxes is double taxation. Since the inception of the Federal Interstate Highway System, the federal gas tax has always been the primary source of revenue for the construction and maintenance of federal interstate lanes. Every time a motorist puts gas in his vehicle, he is upholding his end of the deal for interstate maintenance. A new toll on an existing interstate, even when combined with a congestion relief effort, forces drivers to pay two taxes for that same road: a gas tax and a toll tax.

Furthermore, tolls will force drivers to use secondary roads to avoid these new taxes. This diversion causes congestion and delays response times for emergency personnel who rely on these secondary routes to quickly get to and from accidents and emergencies. A 2013 study on the consequences of tolls in North Carolina, a state which held but did not use an ISRRPP tolling slot for 18 years, predicted that tolls would divert up to 36% of traffic to alternate routes, contributing to delays, traffic accidents, and wear and tear on smaller secondary roads that were not built to handle high traffic levels.

Voters and state-level policymakers continue to reject tolling existing interstates because they understand tolling is bad public policy with myriad negative consequences, both economic and social. We appreciate you taking into account your

constituents' vocal opposition to tolling existing interstates. As we have seen with the failed ISRRPP, when states learn the true impacts of tolling existing interstates, they reject this option. The reasonable response to that failure is to eliminate it and move on to more viable revenue generation ideas.

As reauthorization is discussed, the thousands of private citizens and numerous businesses and organizations that make up ATFI urge you to fully reject tolling existing interstates. Americans need sustainable investment in our infrastructure, not discriminatory, ineffective policies that take more and more money from hard-working motorists and businesses. The needs of America's transportation network are vast and deserve serious attention without the distraction of tolls.

We appreciate the opportunity to offer these comments and ask they be submitted for the official record. We thank you for your consideration and look forward to working with you to move forward this important legislation. Should you have any additional questions, please contact me.

Sincerely,

CHARLIE KIEFER
Director of Membership & Operations, The Alliance for Toll-Free Interstates

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Statement of Matthew Ginsberg, D.Phil., CEO, Connected Signals, Inc., Submitted for the Record by Hon. Peter A. DeFazio

INTRODUCTION

Chair DeFazio, Ranking Member Graves, Chair Norton, Ranking Member Davis, and Members of the Subcommittee, thank you for the opportunity to provide a statement on Pricing and Technology Strategies to Address Congestion on and Financing of America's Roads.

My name is Matt Ginsberg, and I am the CEO of Connected Signals, Inc., an Oregon startup dedicated to improving traffic safety, throughput, fuel consumption, and emissions by connecting vehicles to traffic lights.

The idea of connected vehicles, and especially a Vehicle-to-Infrastructure (V2I) connection, has gained tremendous momentum in the last few years. The expectation has been that we can deploy communications infrastructure at traffic signals and other locations, and that that infrastructure can then relay valuable information to vehicles and drivers. If cars knew the color of upcoming signals, they could operate more efficiently while reducing red light running and the attendant carnage. If signals knew what vehicles were approaching, they could adapt to improve traffic flow and give appropriate priority to buses, ambulances, bicycles and others.

A studies have shown that providing traffic light information to vehicles leads to significant improvements in safety, throughput, fuel efficiency, and emissions production. Vehicles with access to such information can be expected to operate 8-15% more efficiently, according to independent estimates from automakers such as BMW [1, 2] and Audi [3, 4], as well as from the National Renewable Energy Laboratory [5]. The USDOT reports that in 2014 two trillion vehicle miles were travelled on US urban roadways, two thirds of all miles driven nationwide [6]. Meanwhile, red light incursions accounted for over 250,000 accidents in 1999, with over 40% resulting in injury or death [7]. V2I systems are believed capable of addressing about 25 percent of all these crashes [8, 9]. Our best estimates are that if every vehicle on the planet knew what every traffic light was doing, human carbon production would fall by 1.3%. Similar and additional savings would correspond to the traffic lights being aware of the vehicles.

CURRENT V2I APPROACHES

DSRC

To help achieve the goals of improving traffic safety, efficiency, and throughput, government and industry have committed to an ambitious program of installing special- purpose communication equipment in vehicles and encouraging the deployment of V2I infrastructure at intersections nationwide. The proposed mechanism has been to use Dedicated Short-Range Communication (DSRC) devices operating in a spectrum block reserved for traffic safety applications.

The use of DSRC is intended to allow vehicles and signals to share the information needed to optimize both vehicle and signal behavior. Vehicles can report their location and speed to nearby signals, while signals can report their state and anticipated future behavior to vehicles. Vehicles could then adjust their speed to avoid

delays at signals, increasing throughput and fuel efficiency. Signals can adjust their timing to speed as much traffic as possible on its way as quickly as possible.

Unfortunately, there are two significant impediments to the widespread deployment of DSRC-based technology. The first is cost, and the second is spectrum.

The cost of DSRC appears to be prohibitive on a large scale. While the technology offers many benefits, it requires a significant investment in new infrastructure and will take decades to be deployed on a scale that would have a significant impact on US fuel consumption, emissions, and safety. The cost of DSRC roadside equipment installation at one intersection is on the order of $13–21K,[1] with attendant annual maintenance costs of $1950–$3350/year.[2] In its Letter Report, *Review of the Status of the Dedicated Short-Range Communications Technology and Applications [Draft] Report to Congress* [10] the Transportation Research Board (TRB) of the National Academy of Sciences notes that:

> As USDOT is undoubtedly well aware, funding for the deployment, operation, and maintenance of the roadside hardware and software necessary for V2I communication is unresolved. Congress has struggled to find ways to fund the upkeep of the existing highways and bridges on the federal-aid system, and DSRC will add new, more sophisticated technologies that will require ongoing upkeep expenditures. Moreover, many of the nation's busiest intersections that would be priority candidates for V2I infrastructure and applications may not even be on the federal-aid system, and a new financial burden on county and municipal governments that can barely afford to retime traffic signals on a regular basis would be imposed. Until these issues are addressed, rollout of V2I applications on a broad scale appears questionable.

Moreover, there are significant and growing concerns that DSRC may not be up to the proposed task at all. The TRB report further observes that there are significant concerns with DSRC's ability to handle the volume of communications that could be expected in V2I applications in high-traffic areas. Specifically:

> The DSRC report notes that unpublished NHTSA and CAMP research demonstrates that V2V communications "perform reliably" with up to 200 vehicles and that ongoing research will estimate the number of vehicles at which channel congestion would be significant. Without access to the results of the CAMP research, the committee is not in a position to verify this conclusion. The NHTSA Readiness report (page 109) provides an example indicating that up to 800 vehicles could be within DSRC range on a congested freeway.

The TRB report covers a number of other concerns. In addition, there is the question of whether the DSRC specification itself, which is nearly two decades old, is sufficiently rich to support the burgeoning array of V2I applications that have been proposed. For example, DSRC's message formats do not support the type of rich predictive information, such as distinguishing between expected, minimum, and maximum time to signal change.

Cellular Roadside Equipment

Between the time of DSRC's development and today, the potential drawbacks of DSRC have become apparent as cellular technology has become ubiquitous. This has led to numerous calls to replace DSRC with CV2I (Cellular V2I). These suggestions have been buttressed by the fact that cellular radios are becoming a universal fixture in modern vehicles, eliminating the need for each vehicle to have a special-purpose radio solely for V2I applications. The broader range of cellular spectrum available, and the advent of 5G technology based on microcells have given further impetus to these ideas. The European Union, for example, appears poised to mandate cellular over DSRC communication for V2I applications.

Nevertheless, a significant cost issue remains. Installing cellular roadside equipment at every signalized intersection shows little prospect of being less expensive or easier to deploy than DSRC itself.

Use of Existing Infrastructure

Most—perhaps all—of the expected benefits of V2I can be achieved without the deployment of new and expensive infrastructure. Connected Signals and other companies are pioneering a technology that connects vehicles to traffic signals using ex-

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[1] http://www.itscosts.its.dot.gov/ITS/benecost.nsf/SummID/SC2014-00325?OpenDocument&Query=Home

[2] http://www.itscosts.its.dot.gov/ITS/benecost.nsf/SummID/SC2014-00329?OpenDocument&Query=Home

isting infrastructure. Specifically, a combination of existing traffic management networks, Internet connections, and cellular communications has been shown to provide the significant safety, fuel-efficiency, emission, and traffic benefits of the sort previously envisioned for DSRC systems. Such systems can be deployed citywide in weeks at virtually no cost to a city, can be made highly secure, and can provide benefits both to specially equipped vehicles and to anyone with a smart phone and a fixed mount.

Connected Signals has already deployed such a system at over 18,000 intersections on 3 continents, including in 4 of the 10 largest US cities. The installations require minimal effort and virtually no expense on traffic agencies' part and require no hardware installation at intersections.

In a study conducted by Argonne National Laboratory (Etherington, Rousseau, Sokolov, & Schmid, 2016), this technology was demonstrated to have a positive safety impact on the behavior of drivers approaching traffic signals. A Transit Signal Priority system deployment in Arcadia, CA has been shown to provide reduced bus waiting times at signals and more consistent speed profiles for buses [12] [13].

In order for this approach to succeed, each agency (municipality, state DOT, etc.) that controls traffic lights must provide access to the signal status feed from its traffic management system. Securing agency participation typically encounters one of three difficulties.

First, an agency must be contacted and persuaded that its residents will benefit if real-time signal information is made available. This is becoming progressively easier as the concept and potential benefits of V2I technology become more widely known and as an increasing number of government agencies deploy cloud-based V2I systems such as Connected Signals'.

Second, agencies are often concerned about the security impact of allowing any connection to their Traffic Management System at all. Every traffic engineer is rightly worried about possible abuse of his or her network. This concern is typically addressable by a detailed explanation of the security protocols that are incorporated into the mechanisms that provide data access to and from city networks.

Finally, municipalities are concerned about the possibility of incurring liability by providing signal information to drivers. Might those drivers then blame the agency for the consequences of their actions? This specific obstacle is often insurmountable, as it is impossible to convince a city attorney that their city won't get sued, and the fear of such an eventuality can overwhelm the potential benefits to their residents, their commuters, and the environment.

How Can This Subcommittee Help?

This subcommittee and Congress could do two things that would help to maximize the availability and utility of traffic-signal V2I in the US. The first is to recognize that DSRC may not be the most effective way to provide V2I capabilities, and to move to encourage the consideration of other technologies that can offer cheaper, more easily deployed, and more universal solutions. We believe that approaches that do not require new infrastructure offer the greatest chance to achieve the widest possible distribution of the technology and the greatest net benefit in the shortest possible time.

Second, the subcommittee could consider supporting legislation that would immunize government bodies that provide real-time traffic-related information to drivers. There are precedents in terms of providing manufacturers immunity from liability for the uses to which their products are put, and it seems clear that the benefits achievable through V2I provide a sufficient public good to justify such action in this case.

Thank you for your consideration and for the opportunity to provide you with this statement.

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Statement of International Bridge, Tunnel and Turnpike Association, Submitted for the Record by Hon. Eleanor Holmes Norton

On behalf of the International Bridge, Tunnel and Turnpike Association (IBTTA), we are pleased to submit this Statement for the Record to the House Transportation and Infrastructure Committee's Subcommittee on Highways and Transit (Subcommittee).

IBTTA is the worldwide association for the owners and operators of toll facilities and the businesses that provide products and services to the industry. Our mission is to advance transportation solutions through tolling. Founded in 1932, IBTTA has more than 60 toll agency members in the United States and hundreds more in 20 countries on six continents.

We commend you, Chairman Norton, Ranking Member Davis, and the subcommittee for working to develop a thoughtful successor to the FAST Act that considers ways to manage congestion and generate additional revenues to maintain and improve the nation's surface transportation infrastructure.

While IBTTA supports increasing the fuel tax to pump additional revenue into the Highway Trust Fund, no level of increase will likely be enough to address the large and growing investment needs across transportation modes among all the states. Therefore, road operators should have access to as many funding tools as possible to manage their transportation assets. While tolling is not the solution to every transportation problem, it is a very powerful and effective tool now used to support more than 6,000 miles of the most heavily traveled highways in 34 states and Puerto Rico.

Congress has been instrumental in the exploration of congestion management through pricing with the establishment of the Congestion Pilot Pricing Program in 1991. The program was renamed the Value Pricing Pilot Program in 1998 and it has allowed many states and local governments to research, explore and implement different ways in which road pricing could be introduced to meet transportation demands.

Because the subject of this hearing is "Pricing and Technology Strategies to Address Congestion on and Financing of America's Roads," we would like to make the Subcommittee aware of the current use of tolling systems along with other innovative methods and technologies that are now being used to reduce congestion and improve vehicle throughput in congested urban areas. Toll agencies have been intimately involved in developing and implementing many of these systems and innovations.

CONGESTION PRICING

During the hearing, there were statements suggesting some confusion about the goals of congestion pricing and how it works. We will attempt to clear up some of the confusion.

Congestion pricing is different from traditional tolling. The toll on a typical toll road like the New Jersey Turnpike is a fixed price and is used to retire the debt on that road and pay for the ongoing maintenance (pavement repair) and operation (snow removal, etc.) of the toll road.

The I–66 Express Lane facility in Northern Virginia outside Washington, DC is one example of congestion pricing that was mentioned in the hearing. The I–66 Express Lanes are known as "priced managed lanes." They are not typical toll lanes. These priced managed lanes were designed for the specific purpose of reducing congestion in the lanes to ensure that traffic flows smoothly at a minimum speed of 50 mph or higher. In this case, the toll increases as congestion increases and falls as congestion falls. Increasing the toll discourages some motorists from entering the lane so that those who remain are able to drive under "free flow" conditions. When congestion in the priced lane dissipates, the toll decreases. This is called dynamic pricing. The $47 figure that is often cited is the peak charge that very few people pay. In fact, only .08 percent of express lane trips paid a toll higher than $40.

Data from the Virginia Department of Transportation show that the average round-trip price on the I–66 Express Lanes for the month of January 2018 was $12.37, $8.07 eastbound and $4.30 westbound. Out of 594,381 trips in January, only 461 trips were priced at $40 or more, or 0.08 percent of all express lane trips.

An important distinction to keep in mind is that HOV and bus traffic remains free or discounted on the I–66 Express Lanes, preserving an incentive for drivers to consider changing their travel mode by adding passengers and thereby increasing corridor throughput. Express lanes are charging for available space in otherwise exclusive HOV lanes and tolled traffic could be entirely excluded if HOV demand ever becomes high enough to make full use of that space. Very high toll rates suggest that at certain times such space is, in fact, scarce which should be viewed positively as an indicator of high HOV use. When HOV traffic volume is low and dedicated space is otherwise unused, allowing single occupancy vehicles (SOV's) to make use of that space for a fee (regulated to ensure consistent rate of travel) is an efficient use of space that would otherwise be unused. When the Express Lanes are functioning at high capacity, this also benefits the non-toll payers by reducing some of the traffic load in the general purpose lanes.

The 91 Express Lane facility which opened in Orange County, California in December 1995 is another example of priced managed lanes. The Express Lane facility consists of two reversible lanes in the median of SR 91 which has two general purpose lanes in each direction, for a total of six lanes. The price to ride in the Express Lanes changes by time of day to ensure free-flow travel through the Express Lanes. The two Express Lanes represent 33% of the lane capacity in the corridor (2 lanes/6 lanes = 33%). However, because of the free-flow characteristics enabled by variable pricing, during the afternoon peak, the two Express Lanes handle more than 40% of throughput.

The 91 Express Lane facility was the first Priced Managed Lane facility in the U.S. Because of their success, many other states have followed suit. Today, there are 51 priced managed lane facilities in 11 states that operate 718 center line miles of roadway as noted in the following chart.

Chart 1. Express Lanes by US State as of August 15, 2019

California
- 91 Express Lanes—Orange County
- 91 Express Lanes—Riverside County
- I–10 Express Lanes
- I–110 Express Lanes
- I–15 Express Lanes
- I–580 Express Lanes
- I–680 Contra Costa Express Lanes
- I–680 Sunol Express Lanes
- Silicon Valley Express Lanes (I–880/237 Express Lanes)

Colorado
- I–25 Express Lanes
- I–70 Mountain Express Lanes
- US 36 Express Lanes

Florida
- I–595 Express
- I–75/Palmetto Express Lanes
- I–95 Express
- Veterans Expressway (SR 589) Express Lanes
- I–295 Express Lanes
- Beachline Expressway (SR–528) Express Lanes

Georgia
- I–75 South Metro Express Lanes
- I–85 Express Lanes

Georgia (con't)
- Northwest Corridor Express Lanes
- I–85 Express Lanes Extension

North Carolina
- I–77 Express

Maryland
- John F. Kennedy Memorial Highway—Express Toll Lanes (ETL)

Minnesota
- I–35E Express Lanes
- I–35W Express Lanes
- I–394 Express Lanes

Texas
- 635 East HOV/Express Lanes (TEXpress Lanes)
- 71 Toll Lane
- DFW Connector (SH–114) TEXpress Lanes
- I–10 West (Katy Managed Lanes) HOV/HOT Lane
- I–30 TEXpress Lanes
- I–35E TEXpress Lanes
- IH 45 North (Gulf Freeway) HOV/HOT Lane
- IH 45 South (Gulf Freeway) HOV/HOT Lane
- LBJ Express TEXpress Lanes
- MoPac Express Lanes

Texas (con't)
- North Tarrant Express (NTE) I–35W TEXpress Lanes
- North Tarrant Express (NTE) I–820/SH121/18 3 TEXpress Lanes
- SH–114 TEXpress Lanes (Midtown Express)
- US 290 (Northwest Freeway) HOV/HOT lane
- US 59 (Eastex Freeway) HOV/HOT lane
- US 59 (Southwest Freeway) HOV/HOT lane
- SH 183 TEXpress Lanes (Midtown Express)
- Loop 12 TEXpress Lanes (Midtown Express)

Utah
- I–15 Express Lanes

Virginia
- 495 Express Lanes
- 64 Express Lanes
- I–66 Express Lanes Inside the Beltway
- I–95 Express Lanes

Washington
- I–405 Express Toll Lanes
- SR 167—HOT Lanes

Source: IBTTA TollMiner™

Express lanes offer numerous benefits including:
- *Trip Time Reliability*: The traffic metering function of variable pricing promotes predictable travel times.
- *Travel-Time Savings*: By managing traffic flow, express lanes allow higher speeds than congested general-purpose lanes.
- *Enhanced Corridor Mobility*: Improved trip-time reliability, higher speeds, travel-time savings, and possible transit improvements all lead to greater mobility at the corridor level.
- *Environmental Advantages*: Compared to general-purpose lanes, express lanes limit greenhouse gas emissions caused by stop-and-go traffic.
- *Travel Options*: Express lanes provide Single Occupancy Vehicles (SOV) motorists with the option of paying for a congestion-free, dependable, and faster trip.
- *Efficient Use of Capacity*: Express lanes provide an opportunity to improve the efficiency of HOV lanes by filling "excess capacity" that would not otherwise be used.

There are many different tools that can be used to reduce congestion and improve mobility in congested urban areas. Priced Managed Lanes, which are enabled by electronic toll collection, are one of those tools.

Several of the witnesses made statements about congestion and pricing with which we agree, and we would like to highlight them here:

> Given that traffic congestion is inherently a local phenomenon, the federal government has a limited set of tools to address it. Modernizing federal law to permit greater flexibility at the state and local level to price road use is the best way to address peak-hour traffic congestion that plagues many of America's metropolitan areas.—*Competitive Enterprise Institute*

AASHTO represents states with a range of viewpoints on tolling and pricing, and as a result, the association supports increased tolling flexibility to states to allow those states that so choose to maximize revenue-raising opportunities in light of federal funding challenges. Greater flexibility would allow states to work with their communities to use tolling to help improve their transportation systems. ODOT also supports this increased flexibility.—*Oregon DOT*

Almost every solution strategy works somewhere in some situation. And almost every strategy is the wrong treatment in some places and times. Just like the specific set of strategies used to improve mobility is the result of a public engagement and technical design process, the level of congestion deemed unacceptable is a local decision.—*Texas A&M Transportation Institute*

INNOVATIONS IN THE TOLLING INDUSTRY

The core issue associated with urban traffic congestion is the difficulty of expanding facilities and capacity to accommodate current or future travel demand. Even with adequate funding the acquisition of additional right of way ranges from extremely difficult to impossible, forcing any road operator to consider ways to make the most efficient use of already existing access.

As already discussed, managed lanes are one response, including High Occupancy Vehicle (HOV) lanes. Ramp metering using traffic lights to allow vehicles access at limited rates to preserve the rate of travel on a main roadway is another response. Coupling these methods with pricing has been successful in boosting the effectiveness of traffic management.

The tolling industry continues to lead the way in transportation innovations both in the implementation of transportation programs and in the use of technology. IBTTA members are involved in several programs that encourage greater transit use as well as higher density (and higher speed) commutes in congested areas.

Examples include:

The Reversible Express Lanes (REL), operated by the Tampa Hillsborough Expressway Authority in Florida, was a first-of-its-kind facility combining the innovations of concrete segmental bridges, reversible express lanes, and all electronic tolling. As in many urban areas, purchasing the additional land needed in this corridor to accomplish a typical highway widening was neither physically nor financially feasible. To minimize the footprint of the expressway, most of the project was constructed as a concrete segmental bridge using only 6 feet of space within the existing median. The REL provides quality service with an aesthetically pleasing structure and reduced impacts to the community and the environment.

The REL provides a direct connection between Brandon and downtown Tampa, allowing for express travel of people in cars and buses. It is an innovative project that has won approximately two dozen awards by local, state, national and international organizations.

Coordination with transit services. In 2014, the state of Georgia embarked upon a strategic integration of two of its major transportation agencies—the State Road and Tollway Authority (SRTA) and the Georgia Regional Transportation Authority (GRTA). By integrating organizations responsible for financing road construction projects and operating toll facilities (SRTA) and administering a regional network of express commuter buses (GRTA), the state aimed to more efficiently address the state's transportation issues by identifying opportunities for shared infrastructure, operations and costs. Since this integration, the combined agencies have successfully applied innovative approaches to achieve their common goal of improving regional mobility in Metro Atlanta.

As a newly consolidated transportation agency, both entities benefited from efficiencies in shared operational and organizational resources. This included the formation of a single, unified customer service operation. Additionally, seeking to take advantage of the shared infrastructure, SRTA introduced the Commuter Credits Program to help commuters think about their transportation options in a more integrated way. The stated goals of the program were to:

1. Promote alternate transportation modes for Peach Pass users traveling Georgia's Express Lanes (Peach Pass is the electronic tolling program in Georgia);
2. Provide an incentive for Peach Pass users to change their driving behavior and shift some SOV usage away from peak periods;
3. Increase usage of express commuter transit service in the I–85 corridor;
4. Offer options that offset the costs of increasing tolls due to increasing demand; and
5. Reinforce the "4Ts Strategies" of congestion reduction:

- Transit
- Teleworking
- Tolling
- Technology

The Commuter Credits program focuses on providing alternatives to travelling solo during the peak periods on Atlanta's congested I–85 corridor. The program has three components:

- Shift Commute—The goal of this program was to reduce southbound congestion on I–85 during the morning peak period (7 am to 8 am). The program was by invitation only, to Peach Pass customers who commute four to five times per week during this period. These customers were offered $3 per week if they reduced their peak period commutes to three times or less in the Express Lanes (for a total of up to $50 over six months).
- Start a Carpool—The goal of this program was to attract carpools to the Express Lanes. The program was open to carpools with at least one Peach Pass customer and offered multiple incentives including $3 per day toll credits (up to $100) and monthly drawings for $25 in toll credits.
- Ride Transit—The goal of this program was to shift auto trips during the peak periods to Xpress bus trips. The program awarded toll lane credits to people who used GRTA Xpress routes instead of utilizing their Peach Pass toll accounts during commute periods. Individuals who rode Xpress buses along the I–85 Express Lanes were eligible for a monthly toll credit of $2 per trip for up to five trips per month equaling a total of up to $60 over six months.

CONCLUSION

There are many other instances of toll agencies across the nation stepping up to address congestion and transportation investment needs. There is no single "answer" or "one size fits all" approach that works in all places across the country.

As we look to the future of a growing population, changing mobility patterns, and technological advances, it is important that states and local governments responsible for meeting transportation demands have maximum flexibility to address their challenges.

Thank you for the opportunity to submit written testimony for the record. Pricing and technology strategies to address congestion are complex topics that cannot be easily described or understood in a single public hearing. At IBTTA, we want to continue to be a resource to you and, therefore, look forward to working with members of the Subcommittee and the Transportation and Infrastructure Committee as you continue to work on the reauthorization of the FAST Act.

Letter of September 11, 2019, from Michael W. Johnson, President and CEO, National Stone, Sand and Gravel Association, Submitted for the Record by Hon. Sam Graves

SEPTEMBER 11, 2019.

Hon. ELEANOR HOLMES NORTON
Chairman
House Transportation & Infrastructure Subcommittee on Highways and Transit, 2136 Rayburn House Office Building, Washington, DC 20515

Hon. RODNEY DAVIS
Ranking Member
House Transportation & Infrastructure Subcommittee on Highways and Transit, 1740 Longworth House Office Building, Washington, DC 20515

DEAR CHAIRMAN HOLMES NORTON AND RANKING MEMBER DAVIS:

The National Stone, Sand & Gravel Association (NSSGA) welcome the Transportation & Infrastructure's Highway and Transit Subcommittee's September 11 hearing titled, "Pricing and Technology Strategies to Address Congestion on and Financing of America's Roads." Congestion is a national problem that impacts commuters and drivers in and around virtually every urban center and stretch of federal interstate, directly impacting our nation's daily production and economic well-being.

NSSGA is the leading advocate and resource for the aggregates industry, who provide the critical raw materials found in virtually every surface transportation project; roads, highways, bridges, runways, pipelines and much more. Our membership represents more than 90 percent of the crushed stone and 70 percent of the sand and gravel produced annually in the United States.

NSSGA supports the committee's willingness to work with stakeholders to identify needs and emerging technologies that may ultimately help reduce congestion. However, NSSGA also supports traditional road and highway lane-widening, which may be utilized for high-occupancy vehicle (HOV) users; trucks and heavy vehicle traffic; or facilitate dynamic commuting that can alleviate traffic depending on that day's needs. Lane-widening has been a successful tool on I–95 in Virginia, south of the metro Washington DC corridor between Fredericksburg, Virginia and Arlington. Widening I–95 has allowed for new HOV and toll lanes, as well as creating additional lanes that may be used for either north-bound or south-bound traffic, depending on the time of day. Though NSSGA supports all available tools to provide a more efficient and safer commute for road and highway users, we ask the committee continue to recognize traditional methods, like lane-widening and extensions, which are proven solutions across the country.

I appreciate your committee's leadership on efforts to enhance the commuter experience for drivers in every Congressional district, and I thank you for your work on this hearing. As you continue to examine congestion, infrastructure funding and other matters relevant to the aggregates industry, please consider NSSGA as a resource. Thank you again for your time and interest on this critical issue.

Sincerely,

MICHAEL W. JOHNSON
President and CEO, National Stone, Sand and Gravel Association

cc: Members of the House Transportation & Infrastructure Committee

Letter of September 10, 2019, from Todd Spencer, President and CEO, Owner-Operator Independent Drivers Association, Inc., Submitted for the Record by Hon. Sam Graves

SEPTEMBER 10, 2019.

Hon. PETER DEFAZIO
Chairman
Committee on Transportation and Infrastructure

Hon. SAM GRAVES
Ranking Member
Committee on Transportation and Infrastructure

Hon. ELEANOR HOLMES NORTON
Chairwoman
Subcommittee on Highways and Transit

Hon. RODNEY DAVIS
Ranking Member
Subcommittee on Highways and Transit

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

DEAR CHAIRMAN DEFAZIO, CHAIRWOMAN NORTON AND RANKING MEMBERS GRAVES AND DAVIS:

The Owner-Operator Independent Drivers Association (OOIDA) represents over 160,000 small-business truckers and professional drivers. Because truckers make their living on the road, OOIDA members rely on Congress to ensure our highways receive the federal investment necessary to keep them efficient and safe for all users.

We greatly appreciate your efforts to craft a robust surface transportation reauthorization bill that meets these needs, and understand one of your greatest challenges will be developing policies that generate reliable and sustainable revenue for the Highway Trust Fund (HTF). We also commend your commitment to address the growing problem of congestion, which studies reveal is disproportionately more costly to truckers than other highway users. However, we have serious concerns about proposals to introduce congestion pricing in communities across the country.

Small-business truckers have long favored traditional user fees as a means of funding infrastructure development and support reasonable increases to the federal gasoline and diesel fuel taxes. These user fees are the most equitable and efficient means for addressing our nation's highway funding needs and should remain the primary source of revenue for the HTF under the next surface transportation reauthorization. Nevertheless, we understand that a lack of political support for increasing revenue through these traditional means has forced Congress to explore new funding mechanisms, including congestion pricing.

Our greatest concern with congestion pricing is the resulting introduction of tolling on vital segments of the Interstate system. OOIDA has consistently opposed any federal expansion of tolling policies, including Section 1404 of S. 2302, which would allow up to 10 urbanized areas to utilize tolling as a part of their congestion reduction strategies. Research has shown that tolling of any variety is an extremely wasteful method of funding compared to fuel taxes. Additionally, tolled roads consistently fail to meet revenue projections, creating unanticipated funding shortfalls and inevitable rate increases. Furthermore, congestion pricing would simply impose yet another fee on truckers, who already pay more than their fair share for infrastructure investment through federal and state fuel taxes, International Registration Plan taxes, federal excise taxes on new trucks, trailers, and tires, existing toll road taxes and numerous other state and local levies.

Because they often have very little control over their schedules, congestion pricing is particularly problematic for owner-operators and independent drivers. Due to the unnecessary rigidity of current hours-of-service requirements, truckers routinely have no other choice than to drive through metropolitan areas during periods of high congestion. Shippers and receivers also have little regard for a driver's schedule, frequently requiring loading and unloading to occur at times when nearby roads are most congested. Additionally, unlike other highway users, truckers often lack the ability to choose alternate routes to avoid congestion due to size and weight restrictions, heavy vehicle prohibitions and other limitations on ancillary roads.

Again, we appreciate your efforts to provide ample funding for infrastructure investment and advance policies that will reduce the growing problem of congestion. However, we remain skeptical that congestion pricing will achieve these goals without negatively impacting our members. We encourage you to instead pursue funding solutions that are more efficient and fair to all highway users.

Thank you,

TODD SPENCER
President & CEO, Owner-Operator Independent Drivers Association, Inc.

Letter of February 27, 2019, from J. Bruce Bugg, Jr., Chairman, Texas Transportation Commission, Submitted for the Record by Hon. Brian Babin

FEBRUARY 27, 2019.

Hon. JOHN CORNYN
United States Senate, Washington, DC 20510

DEAR SENATOR CORNYN,

As Texans, we share a natural bond in trying to find a solution to a long-standing problem with federal transportation funding: the inequity that Texas continues to endure by receiving less than its fair share of federal transportation dollars. According to the Federal Highway Administration, in FY 2019, Texas is the only "donor" state, receiving only 95 cents back for every dollar it sent to Washington in federal fuel taxes. Other states received far more than their fuel tax contributions. For example, Alaska received $6.78, New York received $1.33, and California received $1.16 per dollar paid into the Highway Trust Fund. This inequity amounted to a loss of almost $200 million in federal motor fuel taxes paid by Texas motorists in FY 2019 and forces Texas taxpayers to subsidize the infrastructure of other states. Furthermore, in FY19 Texas was the only state not to receive the benefit of any part of the $6.6 billion in general fund revenue transferred to the Highway Trust Fund.

As Texas experiences historic economic growth and population growth, we collectively face great challenges in providing a safe and efficient transportation system for the citizens we serve. Our vibrant economy is attracting top companies and some of the greatest talent in the nation. As a result, Texas must continue to expand its transportation infrastructure.

Because of the work of Governor Greg Abbott with the State Legislature and the will of the voters, Texas has developed long-term transportation funding sources from the State of Texas that dedicated an additional $7 billion in state transportation funding in the last four years.

Although this represents a giant stride towards addressing Texas' infrastructure needs, Texas continues to be shortchanged in the distribution of federal transportation dollars due to the structural inequality in formulas used for distributing federal aid apportionments and allocations to states out of the Highway Trust Fund account.

This imbalance weakens our ability to develop and build local projects, address traffic congestion, move freight efficiently across our state, and maintain the infrastructure our citizens deserve. While our congressional delegation has worked to protect our state's dollars and improve Texas' "rate of return" for many years, the days of Texas taxpayers funding projects in other states must come to an end. We owe it to our taxpayers to begin a long-term focus to ensure that Texas taxpayers' dollars return to our state to build and maintain the Texas transportation system.

As Congress continues discussions on new infrastructure legislation, I hope that a fair, equitable, and logical approach to federal transportation funding is considered. I am including with this letter a white paper prepared by the Texas Department of Transportation (TxDOT) that will provide more detail on the impact of federal rate of return on our state.

Thank you for your consideration of this important issue and for your continued service on behalf of our nation and our state.

Sincerely,

J. BRUCE BUGG, JR.
Chairman, Texas Transportation Commission

cc: Governor Greg Abbott
Lieutenant Governor Dan Patrick
Speaker Dennis Sonnen, Texas House of Representatives Texas Transportation Commission
James M. Bass, Executive Director
Marc Williams, Deputy Executive Director
Andrea Lofye, Federal Affairs Director

ATTACHMENT

FEDERAL RATE OF RETURN—FY 2019 UPDATE

TEXAS DEPARTMENT OF TRANSPORTATION—FEDERAL AFFAIRS

TEXAS HIGHWAY TRUST FUND HIGHWAY ACCOUNT RATE OF RETURN

Texas has historically been, and continues to be, the biggest donor to other states when it comes to federal highway funding. Texas contributes more than any state and gets back proportionately less than every state. Even in an era where Congress is supplementing the federal Highway Trust Fund Highway Account (HTF) with general fund revenue, in FY 2019 Texas is the only state that fails to at least receive a full return of motor fuel tax dollars that are sent to Washington.

Why does this happen? Funding formulas for the federal-aid highway program were historically based on performance and equity related metrics and data that were updated on a yearly basis. Those metrics included:

- Total lane miles per state.
- Vehicle miles travelled on federal-aid highways.
- Number of fatalities on federal-aid highways.
- A state's contribution to the HTF and population data.

However, since the passage of the Moving Ahead for Progress Act (MAP–21), changes were put into place and continued under the current authorization legislation, the Fixing America's Surface Transportation Act (FAST Act) that ceased annual updates to the inputs for funding formula metrics. Per the current FAST Act, the base calculation for a state's apportionment is "the share for each State, which shall be equal to the proportion that—(I) the amount of apportionments that the State received for FY 2015." While the year is set at 2015, funding is tied to the amount states received in 2009, the last year the Federal Highway Administration (FHWA) used formulas set out in the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU) Act. In addition to the base amount being set from 2015 funding amounts, the Metropolitan Planning and CMAQ set-asides are determined by multiplying the amount of the base apportionment remaining for the State by the proportion that was apportioned to the State for FY 2009.[1]

Additionally, SAFETEA–LU contained $4.4 billion in "above the line" earmarked funds for some states and these earmarks are used to compute the share each state continues to receive. Instead of the earmarks being given to states one time under SAFETEA–LU, the proportional share of federal highway funding that each state

[1] 23 U.S. Code § 104

has received each year since 2009 is adjusted up to reflect the impact of these old earmarks.

Starting in 2008, Congress authorized transfers of general fund revenue to the HTF to allow the HTF to remain solvent. With the passage of the FAST Act, Congress authorized a transfer of $52 billion in FY 2016 to allow the fund to remain solvent through the life of the legislation.

To summarize, the current formula distribution of over $42 billion dollars in annual transportation funding apportionments to states are derived from formula data that was frozen in 2009 and continues to reflect additional funding levels that states received from congressional earmarks in 2009 as well.

How does this impact Texas in FY 2019?

- Texas Will Give: $3.99B of fuel taxes + a proportional amount of the general fund taxes transferred to the HTF.
- Texas Will Receive Back: $3.79B in HTF fuel tax revenue + $0 in general fund revenue.
- FHWA will use over $6.6 billion of general fund revenue to support the HTF apportionments. Texas will effectively receive none of these funds.
- Our proportional rate of return is just slightly over 80%. This is the lowest of every state.

Unless Congress elects to use current data inputs when calculating highway formula funding and discontinues the payouts for old earmarks that have existed since 2009, the issue and impact on Texas will be further compounded. As Congress considers transportation funding measures in 2019, including looking toward reauthorization of the Federal Highway Program that will expire in 2020, Texans can help inform our Congressional members understand the impact this has to our state's transportation system.

Below are a set of tables for FY 2019 that show the impact of rate of return (ROR) on states.Table one shows the ROR for HTF payments and ignores how the ROR would potentially be impacted if proportional general fund transfers were also accounted for. As a result, all states but Texas see a positive ROR over their HTF payments thanks to receiving a portion of general fund transfers.

Table two attempts to account for the impact of general fund transfers by comparing the percentage of total payments into the HTF versus percentage of total apportionments received. Under this comparison half the states receive a ROR greater than 1.0 and half the states receive a ROR less than 1.0.

Table One: FY 2019 Rate of Return

Dollar In vs. Dollar Out

State	Most Recent Available HTF Deposits	Total FY 2019 Apportionment	Difference Between Dollars Contributed and Dollars Apportioned	Rate of Return For FY 2019
Texas	$3,989,970,000	$3,790,153,846	($199,816,154)	95%
Colorado	$570,991,000	$577,491,739	$6,500,739	101%
North Carolina	$1,100,108,000	$1,126,340,465	$26,232,465	102%
South Carolina	$695,633,000	$723,164,614	$27,531,614	104%
Mississippi	$499,956,000	$522,315,485	$22,359,485	104%
Minnesota	$668,259,000	$704,218,954	$35,959,954	105%
Iowa	$497,525,000	$530,753,979	$33,228,979	107%
Nebraska	$292,462,000	$312,152,604	$19,690,604	107%
Tennessee	$850,633,000	$912,597,876	$61,964,876	107%
Maryland	$604,381,000	$648,985,389	$44,604,389	107%
Utah	$348,461,000	$375,004,692	$26,543,692	108%
Michigan	$1,049,060,000	$1,137,059,218	$87,999,218	108%
Florida	$1,883,588,000	$2,046,152,544	$162,564,544	109%
Arizona	$721,748,000	$790,164,053	$68,416,053	109%
Ohio	$1,315,911,000	$1,447,595,770	$131,684,770	110%
Washington	$663,434,000	$732,116,601	$68,682,601	110%
Alabama	$739,213,000	$819,342,189	$80,129,189	111%
Massachusetts	$590,892,000	$655,906,449	$65,014,449	111%
Kansas	$364,714,000	$408,111,707	$43,397,707	112%
Indiana	$916,449,000	$1,029,037,366	$112,588,366	112%
Virginia	$978,663,000	$1,098,983,043	$120,320,043	112%
New Jersey	$957,343,000	$1,078,291,390	$120,948,390	113%
Maine	$175,987,000	$199,353,478	$23,366,478	113%
Oklahoma	$590,928,000	$684,920,955	$93,992,955	116%
California	$3,419,670,000	$3,963,775,130	$544,105,130	116%
Georgia	$1,184,158,000	$1,394,443,871	$210,285,871	118%
Kentucky	$604,845,000	$717,553,931	$112,708,931	119%
Illinois	$1,276,932,000	$1,535,424,089	$258,492,089	120%
Missouri	$843,508,000	$1,022,378,386	$178,870,386	121%
New Mexico	$325,342,000	$396,589,381	$71,247,381	122%
Wisconsin	$660,769,000	$812,589,995	$151,820,995	123%
Oregon	$430,645,000	$539,793,595	$109,148,595	125%
Arkansas	$440,851,000	$559,139,513	$118,288,513	127%
New Hampshire	$140,511,000	$178,434,523	$37,923,523	127%
Louisiana	$576,705,000	$757,969,743	$181,264,743	131%
New York	$1,363,793,000	$1,812,763,333	$448,970,333	133%
Nevada	$290,529,000	$392,152,854	$101,623,854	135%
Pennsylvania	$1,262,665,000	$1,771,930,508	$509,265,508	140%
Idaho	$216,744,000	$308,890,799	$92,146,799	143%
North Dakota	$160,846,000	$268,117,851	$107,271,851	167%
Wyoming	$165,755,000	$276,667,268	$110,912,268	167%
Connecticut	$324,764,000	$542,422,487	$217,658,487	167%
Delaware	$99,078,000	$182,684,447	$83,606,447	184%
South Dakota	$149,432,000	$304,560,005	$155,128,005	204%
Hawaii	$88,684,000	$182,657,719	$93,973,719	206%
West Virginia	$221,135,000	$471,957,562	$250,822,562	213%
Montana	$166,929,000	$443,100,699	$276,171,699	265%
Vermont	$71,476,000	$219,182,269	$147,706,269	307%
Rhode Island	$76,353,000	$236,184,138	$159,831,138	309%
Alaska	$79,923,000	$541,507,940	$461,584,940	678%
Dist. of Col.	$25,160,000	$172,317,254	$147,157,254	685%
Total	$35,733,511,000	$42,355,403,696		

Table Two: FY 2019 Rate of Return

Percentage In vs. Percentage Out

State	Most Recent Available HTF Deposits	Percent of Total Deposits	Total FY 2019 Apportionment	Percent of Total Funding	Difference Between Percent Contributed and Percent Apportioned	Rate of Return For FY 2019
Texas	$3,989,970,000	11.17%	$3,790,153,846	8.95%	-2.22%	80.14%
Colorado	$570,991,000	1.60%	$577,491,739	1.36%	-0.23%	85.33%
North Carolina	$1,100,108,000	3.08%	$1,126,340,465	2.66%	-0.42%	86.38%
South Carolina	$695,633,000	1.95%	$723,164,614	1.71%	-0.24%	87.70%
Mississippi	$499,956,000	1.40%	$522,315,485	1.23%	-0.17%	88.14%
Minnesota	$668,259,000	1.87%	$704,218,954	1.66%	-0.21%	88.91%
Iowa	$497,525,000	1.39%	$530,753,979	1.25%	-0.14%	90.00%
Nebraska	$292,462,000	0.82%	$312,152,604	0.74%	-0.08%	90.05%
Tennessee	$850,633,000	2.38%	$912,597,876	2.15%	-0.23%	90.51%
Maryland	$604,381,000	1.69%	$648,985,389	1.53%	-0.16%	90.59%
Utah	$348,461,000	0.98%	$375,004,692	0.89%	-0.09%	90.79%
Michigan	$1,049,060,000	2.94%	$1,137,059,218	2.68%	-0.25%	91.44%
Florida	$1,883,588,000	5.27%	$2,046,152,544	4.83%	-0.44%	91.65%
Arizona	$721,748,000	2.02%	$790,164,053	1.87%	-0.15%	92.36%
Ohio	$1,315,911,000	3.68%	$1,447,595,770	3.42%	-0.26%	92.81%
Washington	$663,434,000	1.86%	$732,116,601	1.73%	-0.13%	93.10%
Alabama	$739,213,000	2.07%	$819,342,189	1.93%	-0.13%	93.51%
Massachusetts	$590,892,000	1.65%	$655,906,449	1.55%	-0.11%	93.65%
Kansas	$364,714,000	1.02%	$408,111,707	0.96%	-0.06%	94.40%
Indiana	$916,449,000	2.56%	$1,029,037,366	2.43%	-0.14%	94.73%
Virginia	$978,663,000	2.74%	$1,098,983,043	2.59%	-0.14%	94.74%
New Jersey	$957,343,000	2.68%	$1,078,291,390	2.55%	-0.13%	95.02%
Maine	$175,987,000	0.49%	$199,353,478	0.47%	-0.02%	95.57%
Oklahoma	$590,928,000	1.65%	$684,920,955	1.62%	-0.04%	97.79%
California	$3,419,670,000	9.57%	$3,963,775,130	9.36%	-0.21%	97.79%
Georgia	$1,184,158,000	3.31%	$1,394,443,871	3.29%	-0.02%	99.35%
Kentucky	$604,845,000	1.69%	$717,553,931	1.69%	0.00%	100.09%
Illinois	$1,276,932,000	3.57%	$1,535,424,089	3.63%	0.05%	101.44%
Missouri	$843,508,000	2.36%	$1,022,378,386	2.41%	0.05%	102.26%
New Mexico	$325,342,000	0.91%	$396,589,381	0.94%	0.03%	102.84%
Wisconsin	$660,769,000	1.85%	$812,589,995	1.92%	0.07%	103.75%
Oregon	$430,645,000	1.21%	$539,793,595	1.27%	0.07%	105.75%
Arkansas	$440,851,000	1.23%	$559,139,513	1.32%	0.09%	107.00%
New Hampshire	$140,511,000	0.39%	$178,434,523	0.42%	0.03%	107.14%
Louisiana	$576,705,000	1.61%	$757,969,743	1.79%	0.18%	110.88%
New York	$1,363,793,000	3.82%	$1,812,763,333	4.28%	0.46%	112.14%
Nevada	$290,529,000	0.81%	$392,152,854	0.93%	0.11%	113.88%
Pennsylvania	$1,262,665,000	3.53%	$1,771,930,508	4.18%	0.65%	118.39%
Idaho	$216,744,000	0.61%	$308,890,799	0.73%	0.12%	120.23%
North Dakota	$160,846,000	0.45%	$268,117,851	0.63%	0.18%	140.63%
Wyoming	$165,755,000	0.46%	$276,667,268	0.65%	0.19%	140.82%
Connecticut	$324,764,000	0.91%	$542,422,487	1.28%	0.37%	140.91%
Delaware	$99,078,000	0.28%	$182,684,447	0.43%	0.15%	155.56%
South Dakota	$149,432,000	0.42%	$304,560,005	0.72%	0.30%	171.95%
Hawaii	$88,684,000	0.25%	$182,657,719	0.43%	0.18%	173.76%
West Virginia	$221,135,000	0.62%	$471,957,562	1.11%	0.50%	180.06%
Montana	$166,929,000	0.47%	$443,100,699	1.05%	0.58%	223.94%
Vermont	$71,476,000	0.20%	$219,182,269	0.52%	0.32%	258.71%
Rhode Island	$76,353,000	0.21%	$236,184,138	0.56%	0.34%	260.97%
Alaska	$79,923,000	0.22%	$541,507,940	1.28%	1.05%	571.61%
Dist. of Col.	$25,160,000	0.07%	$172,317,254	0.41%	0.34%	577.81%
Total	$35,733,511,000		$42,355,403,696			

APPENDIX

QUESTION FROM HON. TROY BALDERSON TO HON. OLIVER GILBERT III, MAYOR, CITY OF MIAMI GARDENS, AND CHAIRMAN, MIAMI-DADE TRANSPORTATION PLANNING ORGANIZATION

Question 1. I want to discuss the need for innovative solutions to reduce congestion relief. This past August, I had the opportunity to ride on Columbus Ohio's CMAX rapid bus line. The CMAX offers service on one of the city's busiest bus lines. CMAX provides dedicated lanes during rush hours and has a transit signal priority system to help decrease wait times at traffic lights. These new technologies cut transit times for Buckeyes trying to get home during rush-hour.

What kind of new and innovative approaches are you currently working on to reduce congestion and traffic in urban areas?

ANSWER. Thank you again for the opportunity to testify before the House Subcommittee on Highways and Transit on September 11, 2019. Your Subcommittee's attention to this important matter of congestion relief is very much appreciated. The Miami-Dade Transportation Planning Organization (TPO) has established that expanding mobility options, including the Strategic Miami Area Rapid Transit (SMART) Plan, is our highest priority. As a result, several innovative projects have been implemented in Miami-Dade County to relieve our congested roadways as follows:

- Implementation of regionally comprehensive SMART Plan Demonstration projects, including on-demand and fixed-route services with emphasis on first/last mile connectivity to increase access to transit, as well as transit-gap focus areas. Since 2018, the TPO has worked to fund over thirty new pilot projects with local and state funds that will provide us with critical ridership data, as well as proof of concept on various strategies for new stations/hubs that have been deployed.
- Implementation of bus lanes in the downtown core in order to provide greater improved travel time, schedule reliability, and other operational benefits with low cost improvements. Other related improvements include additional canopy and improved crosswalks to encourage more biking, walking, and transit use.
- Miami-Dade County has implemented various technological improvements to enhance the transit rider experience such as the use of contactless payment that allows the rider to tap-on/tap-off on the Metrorail system without going through a kiosk to buy a ticket, mobile apps allowing for real-time arrival information, and carsharing options for riders traveling to the same station to continue on to the Metrorail system. In addition, an electronic transit rider alert system has been initiated that notifies passengers about transit service delays, detours, route changes, and updates on routes, as well as service interruptions for Metrorail, Metromover, and Metrobus.
- As part of the SMART Plan, a Bus Express Rapid Transit (BERT) network has been approved, which will utilize the existing and future express/managed network along major highways in Miami-Dade County. This BERT system represents an unprecedented system of its kind and builds upon the success of the 1–95 Express routes, which were initiated through the Federal Urban Partnership Pilot Program a decade ago.

QUESTIONS FROM HON. SALUD O. CARBAJAL TO TRAVIS BROUWER, ASSISTANT DIRECTOR FOR PUBLIC AFFAIRS, OREGON DEPARTMENT OF TRANSPORTATION

Question 1. Mr. Brouwer, thank you for coming before our subcommittee to discuss some of the strategies Oregon has taken to address congestion and ways to finance improvements to our aging infrastructure. In your testimony you go into great detail regarding Oregon's experience with toll roads. You also mention the impor-

tance of having a strategy to mitigate the possible impacts to low-income communities.

Would you be able to elaborate further on that issue?

ANSWER. The potential for negative impacts on low income communities is a frequent concern Oregonians express when they talk about congestion pricing. It is a concern and priority shared by the Oregon Department of Transportation (ODOT) and the Oregon Transportation Commission. At the beginning of our feasibility analysis in 2017, the Commission was clear in its direction that ODOT identify strategies to address such impacts, and that we engage community members and representatives to inform our work.

To that end, ODOT has been studying recent research conducted by the National Academy of Sciences regarding the relationship between transportation pricing and equity.[1] This has informed ODOT's desire to prepare a strategy for mitigating impacts and improving outcomes for low income individuals.

THE CONCERN FOR EQUITY

ODOT has explored the use of congestion pricing because of its potential to improve system performance, reduce travel times, and improve travel reliability on Oregon's transportation system as well as provide revenue. Congestion pricing requires system users pay an out-of-pocket cost. Depending on a traveler's income and value-of-time (as well as other demographic characteristics), these costs may be prohibitive, meaning low income drivers may be less likely to use the priced infrastructure and benefit from improved travel to work, home, and recreational activities. Agencies implementing tolling systems assess potential impacts and strategies to reduce negative impacts to promote usage of the facility.

MITIGATING CONCERNS FOR EQUITY

ODOT will examine congestion pricing, along with transportation investments, and equity-oriented policies to determine benefits and costs to user groups. The national research indicates that the most common equity-oriented policies relate to access for unbanked and low income populations, either differential toll rates or the use of revenue for targeted investments.

- *Differential Toll Rates*. Agencies may offer incentives to make tolling more affordable to low income travelers such as toll credits for transit usage, which allow travelers to use transit and accrue credits that can be used for toll road usage when needed. Agencies may also consider direct supplements to toll accounts or discounting transponder purchase costs. Finally, many agencies look to remove barriers to access, such as cash payment options for unbanked communities.
- *Use of Revenue*. A key component of equity policies is how revenues are used for broad transportation investments. ODOT heard from the stakeholders that improved transit is essential to the success of congestion pricing. Additionally, most pricing projects have included increased public transportation, carpool/vanpool, and/or active transportation facilities and services in their equity programs. Oregon has a constitutional restriction prohibiting highway funds to be used for transit operations, but other states that have directed this type of investment (such as used extensively in Southern California) do not have this restriction or were funded by previous federal programs.

OREGON'S NEXT STEPS

ODOT is still developing its overall congestion pricing and tolling strategies, policies, and approach. Our feasibility analysis was completed in 2018, which identified two freeway locations for potential tolling and identified issues to mitigate including traffic diversion, transit service, and equity. We are now preparing to conduct refined analysis and project development, which will include extensive public involvement and specific attention to enhancing equity through the congestion pricing program, including complementary investments in infrastructure and policies.

We intend to use the equity framework developed by TransForm in their 2019 report "Pricing Roads, Advancing Equity" to help inform our work going forward.[2]

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[1] National Academies of Sciences, Engineering, and Medicine. 2018. *Assessing the Environmental Justice Effects of Toll Implementation or Rate Changes: Guidebook and Toolbox*. Washington, DC: The National Academies Press. http://www.trb.org/Publications/Blurbs/177062.aspx

[2] Transform. 2019. *Pricing Roads, Advancing Equity*. http://www.transformca.org/transform-report/pricing-roads-advancing-equity

Next week TransForm will offer equity training to the ODOT congestion pricing team, including both ODOT staff and consultants.

Question 2. Based on your experience, what are some of the lessons learned that we should keep in mind when discussing potential measures to address congestion?

ANSWER. ODOT's outreach to peer agencies and communities have offered the following lessons learned:

- *Congestion Pricing Can Be Effective at Congestion Relief*. Most US citizens experience toll facilities that were created to pay for large capital projects. What makes congestion pricing different is its ability to reduce congestion throughout the day, as it is the only available mechanism to adequately manage demand across all users. Reducing congestion can not only yield a better experience for travelers and goods movement, but it can also restore the functionality of the freeway investment. Congestion slows traffic speeds, it also reduces vehicle throughput. In other words, at the time we need our freeways to perform at their best, they are performing at their worst.
- *Proactive Public Engagement is Vital*. ODOT has consistently heard from other agencies that public engagement is critical to the process, no matter the scale of the project. In the initial feasibility analysis, eight in-person community conversations were held throughout the Portland metro area which attracted over 440 in-person attendees. Winter and spring online open houses were held that attracted over 13,000 visitors. A successful effort was made to bring environmental justice and Title VI perspectives into the conversation through surveys, discussion and focus groups which accounted for hundreds of citizen perspectives. We have taken the lesson of purposeful and proactive engagement to heart and will continue to do so as the process continues.
- *Equity Concerns Can Be Addressed Through Policies and Strategies*. Resolving equity concerns is not just a theoretical concept, but rather a practical strategy from which we can learn from other agencies. ODOT has learned from multiple examples of pricing projects that implemented strategies to mitigate impacts to people with low income and disadvantaged communities, including in California. These include:
  - *I–10/I–110 Los Angeles, CA*: Low income travelers receive transponders with $25 credit and monthly fees waived. Approximately 3,000 low income accounts were opened in each of 2016 and 2017. This type of credit can introduce new users to the lanes and allow them to make emergency trips that might otherwise be unaffordable.
  - *I–10 San Bernardino, CA*: Low income transponder account travelers will not incur monthly maintenance fees, allowing transponder use for infrequent high-value occasions.

QUESTIONS FROM HON. TROY BALDERSON TO TRAVIS BROUWER, ASSISTANT DIRECTOR FOR PUBLIC AFFAIRS, OREGON DEPARTMENT OF TRANSPORTATION

Question 3. In Mr. Scribner's testimony, he recommends that Congress shift away from fuel taxation as the primary highway revenue source and move towards a mileage-based user fee, such as a vehicle-miles traveled (VMT) tax. As you know, Oregon has the most advanced VMT pilot program in the United States.

Can you please provide us with an update on the current state of the pilot program?

ANSWER. Oregon's per-mile road usage charging pilot, named OReGO, went live on July 1, 2015 and has collected revenues from more than 1600 users. Since that time, it has made significant progress by leveraging federal dollars through FHWA's Surface Transportation System Funding Alternative grant program to evaluate different technologies, study enforcement, and educate the public.

Based on the guidance of the Road User Fee Task Force (ODOT's multi-stakeholder Road Usage Charge policy advisory body), the Oregon State Legislature has expanded the OReGO program. In 2017, electric vehicles that enrolled in OReGO were allowed to forego paying the newly enacted vehicle registration surcharge for electric and highly fuel efficient vehicles. In 2019, all passenger vehicles with a combined MPG rating greater than 40 mpg were granted this same option.

ODOT does not provide account management services for OReGO participants. The billing, revenue collection, and user interface are handled by private sector account managers. Currently those private sector account managers provide the mileage reporting devices that go into the on-board diagnostic port of the participating vehicles. There are options with full GPS capability and without—participants can choose the level of services they want to receive; most choose the GPS option because it provides them an opportunity to avoid paying for out-of-state miles.

We are currently looking for ways to migrate from mileage reporting devices to other technologies, such as getting the necessary data directly from the vehicle using on-board telematics. We will also be exploring ways to enroll new participants at dealerships when they are purchasing new cars.

Question 4. Do you both believe it is realistic for the United States to implement a VMT tax nationwide in the next 5–10 years?

ANSWER. The technology and the concept of a per-mile fee has been proven. Additionally, new vehicles have the built-in capability to provide the necessary data for operating a distance-based tax. Despite this, the Road Usage Charge is not yet ready for full nationwide deployment today. There are remaining issues that need to be tested and demonstrated (public acceptance and public education among them) in a federal pilot before this can be deployed on a national level. The next logical step is a national pilot to test and vet those remaining issues that have not been addressed by state programs and research.

Question 5. What do you both believe Congress needs to do in the coming years to get us past the initial steps and towards a full implementation?

ANSWER. As with any new program, Congress will need to educate the public on the issue of declining gas tax revenues it is addressing with the new program as well as the impact of that decline on roads and bridges. Public education about the issue could occur before the program design is complete because it is critical that the public understand the challenge and how a distance-based tax could be the answer. Oregon's experience is that people respond well to an approach that builds on their reliance on roads as a way to take them to places they need or want to go.

Congress may ultimately need to provide direction to the original equipment manufacturers to produce consistent standardized data sets from vehicles, so those data sets can be used for administering the tax. Congress will need to address the public's privacy concerns by specifying the purposes for which vehicle data can be used and by whom; Oregon's statute places explicit and narrow limits on the availability and use of this data. Cybersecurity will be another public concern to address.

Before undertaking a national pilot, Congress should ensure the pilot is developed and provided guidance by experts in the field. To do this, an advisory group with broad representation and understanding of the problem should be established. The members should be selected based on their relevant expertise and perspective. This advisory group could be tasked with developing rates, addressing privacy and cybersecurity concerns, overseeing development of standards and a certification process for entities that will be involved in the program, defining the revenue collection and distribution process, and proposing enforcement mechanisms. The advisory group could also be tasked with developing an approach to phasing in the tax based on model year, efficiency, or other factors. The Oregon State Legislature chartered an advisory committee—the Road User Fee Task Force—to work on these issues, and ODOT has found this group highly valuable and effective.

Congress has a wealth of information available to it based on the Surface Transportation System Funding Alternatives grant recipient reports to FHWA. That information could be synthesized to minimize the repetition of previous efforts and to maximize the efficiency in setting up a new program.

QUESTIONS FROM HON. SALUD O. CARBAJAL TO TILLY CHANG, EXECUTIVE DIRECTOR, SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY, ON BEHALF OF THE INTELLIGENT TRANSPORTATION SOCIETY OF AMERICA

Question 1. Ms. Chang, thank you for your leadership in California. As you know, congestion is a serious issue in California. Not only does it impact our economy—costing city-dwellers nearly $1,000 just for sitting in traffic—but also our public health. In your testimony you discuss some of the environmental benefits to addressing congestion that you experienced in San Francisco.

Would you be able to discuss these benefits in further detail?

ANSWER. There are many environmental and health impacts of congestion that concern us, ranging from air pollution (particulate matter from fossil-fuel use and tire/brake dust) and chronic health ailments (asthma), to global warming effects (heat/flooding vulnerability). Increased vehicle congestion also contributes to increased conflicts and traffic collisions, with national and local statistics indicating a troubling upward trend for crashes resulting in pedestrian fatalities.

Generally, the benefits we expect from reducing congestion include:

- Reduced greenhouse gas emissions from lowered vehicle miles traveled

- Smoothing out the flow of traffic (avoiding gridlock stop and go conditions) reduces emissions.[1] [2]
- Reduced health impacts and premature deaths from particulate emissions [3]
- Reduced noise, safety and improved quality of life [4]
- Fewer crashes/collisions [5]

In San Francisco, transportation accounts for nearly half of all greenhouse gas emissions, with 91 percent of vehicle emissions generated by the combustion of fossil fuels that fuel the sector's cars, trucks and other private vehicles.[6] Reducing vehicle miles of travel can both improve congestion and provide important climate protection benefits. The San Francisco Department of Public Health, among other sources, provides a robust accounting of the benefits of climate protection.[7]

The 2013 San Francisco Climate Action Strategy called for shifting 50 percent of trips to non-automobile trips by 2017 and 80 percent by 2030. Based on the 2017 Travel Decision Survey, 52 percent of trips now use non-automobile modes (transit, walk and bicycle) and 48 percent are by automobiles (drive alone, carpool and TNCs). The city's new goal is to achieve 80 percent mode share by non-automobile modes. This will require robust investments (Rail upgrades and extensions, Bus Rapid Transit, increased on-street transit priority, biking and walking facilities) and demand management strategies, such as development- and employer-based trip reduction programs, curb management and congestion pricing.

Our success to date is a product of implementing our 45-year Transit First strategy. As San Francisco grows, the city's investments in transit, biking and walking are paying off. The U.S. Census Bureau's 2015 American Community Survey showed that, even as SF's economy boomed over the prior decade, the vast majority of new commute trips were made without a car. From 2006 to 2015, San Francisco added roughly 100,000 new commuters, and 85 percent of the additional trips were car-free. Just over half (53,000) were made by transit, and the combined growth in commutes by foot (13,000) and bike (12,000) is nearly double those by car (15,000). Prioritizing walking, bicycling and transit over private car usage has enabled San Francisco to substantially mitigate the impacts of congestion on our economy and quality of life.

Despite these gains, vehicle miles of travel continue to rise due to population and employment growth and increased ride hailing (Uber/Lyft) trips.[8] Continued investment in our transit, biking and walking networks will be essential. We are also evaluating new, innovative techniques, such as congestion pricing, to help us better manage the flow of traffic and provide new sources of revenue to continue to improve the quality and accessibility of our transportation options. Research from the San Francisco Department of Public Health identifies significant public health benefits from a potential congestion pricing pilot including reduced congestion, increased active transportation (walking and cycling), reduce air pollution, decreased noise, and reduced pedestrian and bicyclist injuries.[9]

Question 2. As technology continues to improve, what role can automated vehicles play in addressing this issue?

ANSWER. AVs present an opportunity to ensure that vehicles travel at safe speeds, stop at signals and stop signs, yield appropriately to other vehicles and road users (as detection ability improves), and comply with curb management and parking regulations. Improved compliance with these regulations could free up curbside space for transit access, bike lanes, and other sustainable modes and improve the efficiency of transit only lanes and other similar infrastructure.

Some additional ways automated vehicles can potentially help with emissions and safety are:

1. Crash avoidance—several technologies that have been developed to support autonomous vehicle mobility have already found their way into many of today's vehicles—such as lane departure warnings, automatic braking, and others—

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[1] https://www.accessmagazine.org/fall-2009/traffic-congestion-greenhouse-gases/

[2] https://www.sciencedirect.com/science/article/abs/pii/S1352231011000586

[3] https://usatoday30.usatoday.com/news/nation/2011-05-25-traffic-pollution-premature-deaths-emissions__n.htm

[4] https://ops.fhwa.dot.gov/congestionpricing/resources/enviro__benefits.htm

[5] https://www.researchgate.net/publication/50386965__The__relationship__between__traffic__congestion__and__road__accidents__an__econometric__approach__using__GIS

[6] https://www.sfmta.com/sites/default/files/reports-and-documents/2017/12/cap__draft__full__doc-accessible-1.01.pdf (pp 21–25)

[7] https://sfclimatehealth.org/health-impacts-of-climate-change/

[8] https://www.sfcta.org/projects/tncs-and-congestion

[9] https://www.sfdph.org/dph/files/opp/SFroad-pricing-fullreport.pdf

and more features are on the horizon. However, these technologies will take time and have almost exclusively focused on vehicle to vehicle interactions.
2. Increased mobility for individuals with disabilities or who are elderly and unable to drive
3. Reduced drunk driving
4. Opportunity to more effectively manage streets and highways by smoothing traffic flows through coordinated speed control and reduced braking events
5. Reduced parking needs and requirements could free up street space for other use (widened sidewalks, bicycle lanes)
6. Improved compliance with general traffic laws and city specific operating environments.

However, San Francisco is concerned about the risks of negative outcomes of AV adoption as well:

- Safety of vulnerable users. While we hope that automated vehicles can one day demonstrate they can decrease collisions with pedestrians, bicyclists, and other road users, there is no conclusive evidence yet that this is the case. In fact, a recent AAA Foundation study indicated how far autonomous technologies have yet to go to sufficiently identify pedestrians and predict their behavior.[10] Continued independent research and validation, as well as appropriate regulation, is critical as AV solutions are developed and commercialized.
- Public health. Autonomous vehicles also have the potential to drastically increase traffic congestion and vehicle miles traveled, which has significant public health impacts with respect to pollution and safety. It is important that AVs are deployed as Electric Vehicles (EVs) and most industry sponsors are planning to do this. However, even if the future autonomous vehicles are electric, that doesn't mitigate the particulate matter emissions that drive negative health outcomes such as asthma and other lung diseases, especially with respect to freight vehicles that travel more frequently through our most disadvantaged and vulnerable communities.
- Mode shift/Induced travel. One significant risk of autonomous vehicles is the potential for the reduced cost and convenience of driving in the future to result in declining mode shares for public transit and active transportation (biking, walking). Recent research by UC Davis on ride hail companies in 7 cities showed that between 49 and 61 percent of ride hail trips shifted from walking, biking and transit, or would not have been made at all.[11] Further, an experimental analysis conducted by UC Santa Cruz demonstrated that as few as 2,000 self-driving cars in downtown San Francisco will slow traffic to less than 2 miles per hour, and estimated that autonomous vehicles may more than double the current amount of traffic in cities if congestion pricing and other user-based fees are not employed.[12]

At SFCTA, our hope is that AVs will be deployed as shared, zero-emission services and fleets (e.g. autonomous shuttles) that can play a first/last mile role to transit hubs and provide local circulation access for lower density neighborhoods. This is widely regarded as the "heaven" scenario of AV adoption. In contrast, we are concerned that AVs could continue to be marketed and adopted as private vehicles, similar to today. With reduced time and money costs of automated driving, there is significant risk that private vehicle miles traveled will increase significantly (the "hell" scenario).[13] Our regional MPO, the Metropolitan Transportation Commission evaluated this risk in its Autonomous Vehicles Perspective Paper, as part of its long-range planning Horizon this past summer.[14]

QUESTION FROM HON. TROY BALDERSON TO TILLY CHANG, EXECUTIVE DIRECTOR, SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY, ON BEHALF OF THE INTELLIGENT TRANSPORTATION SOCIETY OF AMERICA

Question 3. I want to discuss the need for innovative solutions to reduce congestion relief. This past August, I had the opportunity to ride on Columbus Ohio's CMAX rapid bus line. The CMAX offers service on one of the city's busiest bus lines. CMAX provides dedicated lanes during rush hours and has a transit signal priority

[10] https://www.aaa.com/AAA/common/aar/files/Research-Report-Pedestrian-Detection.pdf
[11] https://steps.ucdavis.edu/new-research-ride-hailing-impacts-travel-behavior/
[12] https://news.ucsc.edu/2019/01/millardball-vehicles.html
[13] https://www.planningreport.com/2018/03/21/dan-sperling-three-revolutions-transforming-cars-and-transportation
[14] https://mtc.ca.gov/sites/default/files/2018-06-25__Autonomous__Vehicles__Perspective__Paper.pdf

system to help decrease wait times at traffic lights. These new technologies cut transit times for Buckeyes trying to get home during rush-hour.

What kind of new and innovative approaches are you currently working on to reduce congestion and traffic in urban areas?

ANSWER. Our city's Transit First policy has guided our approach to congestion management since the early 1970s. This policy is our "north star" and provides durable guidance amidst all the changes in growth and technology and demographic changes. In our experience, reducing congestion requires a combination of traditional transit-oriented infrastructure investments, along with coordination of supportive land use and transportation policy and implementation of a suite of community-wide transportation demand management strategies.

For downtown San Francisco and new growth areas, this included keeping densities high and parking provision low, building the initial regional BART system and the Muni tunnel and light rail network, as well as several generations of investment in connecting regional rail (BART and Caltrain commuter rail) and bus services. Most recently we have added new initiatives to our congestion management toolkit including updated environmental analysis metrics, development mitigation policies, transit lane and signal priority treatments and the use of incentives and rewards to shift travel choices to off-peak times or sustainable modes.

Increasing capital investment has focused on providing excellent public transit options and expanding rail and bus capacity, as well as creating safe and comfortable active transportation alternatives to driving, including:

- Improving the speed and reliability of transit in San Francisco through Muni Forward and creation of car free/restricted streets (e.g., Better Market Street), prioritizing transit through transit signal priority, queue jumps, and bus only lanes, maintaining the transit vehicle fleet in a state of good repair, and investing in system resiliency (e.g., providing battery back-ups for San Francisco system of electric-powered buses).
- Prioritizing streets for the safe, comfortable movement of people through pedestrian and transit curb bulb outs, lengthening pedestrian crossing times and adding leading pedestrian intervals on signals, providing new bicycle infrastructure, such as protected bike lanes or 'green wave' signal timing for bikes, and others.

Another critical element to our success is the coordination of Land Use and Transportation Policy. This has included:

- Focusing growth and investment around transit (transit-oriented development) and priority development areas that consider available transportation and land availability.
- Managing parking in San Francisco and other urban areas, including low parking requirements, removing parking requirements from the planning code, operating active parking management programs that help use curb space efficiently and dynamically to address changing needs throughout the course of a day.
- Transitioning the measure of transportation's environmental impact from level of service (which focuses on vehicle delay) to vehicle miles traveled (which provides a more multimodal focus and is consistent with California's emphasis on reducing greenhouse gas emissions).
- Trip reduction policies and programs for large employers and developers including trip caps. These have been implemented in San Francisco and for major employers on the Peninsula, including Stanford (Santa Clara County), Google (Mountain View) and Facebook (Menlo Park). Employers/developers have used a variety of strategies that include operating shuttles, providing transit passes to employees or residents, building new bicycle infrastructure, providing education and encouragement for their employees to walk, bike, or take transit, and many other strategies.

In recent years, we have been especially focused on near term, low-cost transportation travel demand management and system management techniques that include:

- Transportation Demand Management ordinances that require all employers to provide transit and other similar benefits to their employees (Employer Commuter Benefits ordinances, Guaranteed Ride Home programs).
- A proposal to tax ride hail/TNC trips that would help fund projects to mitigate the congestion recently estimated to be caused by TNCs as found in recent SFCTA research.
- Implementation of high occupancy toll lanes on significant links in the regions freeway system, including US 101, I–880, I–680 and I–580. We are currently evaluating these strategies in San Francisco in order to better manage available

highway capacity while also providing support for local and regional express buses that use this network
- Using dynamic pricing and incentives to manage the use of the multimodal transportation system to achieve efficient outcomes. This includes dynamic parking pricing (SF Park), a proposed congestion pricing system, and several incentive programs, including a recent incentive program pilot project (BART Perks) that demonstrated a 10 percent shift in travel to the off-peak period.
- SFCTA is also studying a downtown congestion charging system and has been leading mobility management and congestion pricing on Treasure Island.

QUESTIONS FROM HON. PETER A. DEFAZIO TO DARREN D. HAWKINS, CHIEF EXECUTIVE OFFICER, YRC WORLDWIDE INC., ON BEHALF OF THE AMERICAN TRUCKING ASSOCIATIONS

Question 1. Mr. Hawkins, your testimony highlights the results from the State of Indiana's "asset recycling" experience with the Indiana Toll Road. Indiana leased the road for 75 years to a private operator and increased truck tolls by 311 percent over the last 13 years. These tolls cover lease payments provided to the State, which then diverts the revenue to a variety of infrastructure—including non-surface transportation projects, such as airport improvements and rural broadband.

Can you explain why ATA strongly opposes this scheme and strongly supports an increase in motor fuel taxes?

ANSWER. Toll road user fees have high administrative costs compared to collection of the fuel tax. The cost of collecting the federal fuel tax is less than one percent of revenue, and there are no administrative costs for payers, including trucking companies. Furthermore, almost all of the revenue generated by the federal fuel tax is dedicated to the Highway Trust Fund and invested in projects and programs that benefit the motorists who contribute to the Fund. On the other hand, a significant share of revenue from tolls is used for administrative and collection costs, and in some cases, projects that have little or no benefit for highway users. In addition, trucking companies must bear the cost of managing multiple toll facilities' billing systems. At a time when the highway system is in poor repair and is highly congested, all user fee revenue should be directed to roads and bridges, not toll road bureaucracies or superfluous projects.

Toll roads are also very exclusive in their resource allocation. While one can pay an extraordinarily high toll for a short—but critical—stretch of Interstate, that small segment of the road could be over supported while nearby highways go without basic upkeep and repairs due to lack of resources. That is entirely out of sync with our Interstate System, which was designed with uniform standards to ensure a seamless exchange from one highway to another and one state to another.

The Build America Fund will cover the highway funding gap, and then some. To fix the highway infrastructure crisis, the American Trucking Associations proposes a 20 cents per gallon user fee on all transportation fuels, including diesel, gasoline and natural gas. The fee will be applied at the wholesale terminal rack, before fuel reaches the retail gas pump, and indexed to inflation and improvements in fuel efficiency. The Build America Fund will generate an estimated $340 billion over the course of a decade, which will not only cover the highway funding gap, but will also create an account to invest in the nation's most urgent infrastructure needs, including projects at state and local levels. The Build America Fund will provide highway funding resources for states and localities from coast to coast and it will do so with a steady stream of revenue which at this time has been proven to be the most efficient means of collection.

Question 2. The Indiana Toll Road is prime example of a State targeting, as you say, "motorists with little political power" such as non-residents and trucks. Your testimony includes a quote from the Indiana Governor promoting the fact that "We're capturing other people's money". Do you think this undermines the spirit of the Interstate system?

ANSWER. The recent 30% fee increase for trucks on the Indiana Toll Road runs counter to the interdependency that weaves its way mile by mile through each state, coast to coast. The Indiana Toll Road is a 156-mile stretch of road that connects Chicago to Ohio. This is a major artery for commercial freight flow that begins in Ohio or Illinois as well as for a significant amount of freight that passes through all three states.

By targeting trucks only for the increase, the Indiana Toll Road is essentially placing a user fee on the nation's commerce for the privilege of passing through the state. If this scheme is extended to other states and a truck passes through several jurisdictions, with each imposing a prohibitively high user fee, like Indiana, then the supply chain is at risk. Due to resources being concentrated on small segments

of the system, trucking companies could be forced to travel on long stretches of roads that have not been improved, resulting in diminished customer service and higher costs. Furthermore, because trucking companies typically operate on razor-thin margins, there is a strong likelihood that some could fold. This is especially true of smaller carriers that do not have a large pool of accounts to spread the costs.

In the spirit of the Interstate System, fuel tax user fees should be anchored by the Federal Government and matched by the states with a fuel tax. The fuel tax does not focus on a small stretch of road like the toll; rather it captures revenue from all users relatively equally. The Indiana Toll Road is taking a disproportionate share of finite resources from truckers. To make matters even worse, not all of the revenue from the Indiana Toll Road increase goes to highway improvements; in fact, it has truckers picking up the tab to subsidize international outbound flights at the Indianapolis airport and to improve rural broadband access in the state. Diverting funds from highways at a time when our roads and bridges are in need of substantial investment is not only outside the spirit of the Interstate System but extremely poor public policy. Furthermore, it violates the concept of the promotion of interstate commerce, a Constitutional requirement that the federal government must uphold.

QUESTION FROM HON. GREG STANTON TO DARREN D. HAWKINS, CHIEF EXECUTIVE OFFICER, YRC WORLDWIDE INC., ON BEHALF OF THE AMERICAN TRUCKING ASSOCIATIONS

Question 3. Mr. Hawkins, your testimony raises concerns with pricing strategies that some States have pursued which disproportionately affect, or in some cases specifically target, truck drivers. You also note that while whether the driver or the trucking company absorbs toll costs can vary, these costs are almost never passed through or borne by shippers.

What steps should Congress consider to ensure that people who drive for a living, such as truck drivers, aren't disproportionately affected by—or have to wholly absorb—toll costs?

ANSWER. Passage of ATA's Build America Fund, which calls for an increase in the fuel tax of 20 cents over four years, will inject $340 billion into the Highway Trust Fund over the next decade. The ensuing transfer of funds to the states will alleviate the need for high administrative cost options like toll roads. While ATA flatly opposes tolls on existing Interstates and would prefer the elimination of all related federal tolling authority, we recognize that there is an interest in allowing tolls for certain purposes, specifically for very expensive bridge and tunnel projects and congestion management. ATA recommends several changes to federal law that will protect the public from tolling abuses.

First, it is clear that the Interstate System Reconstruction and Rehabilitation Pilot Program, which was created in 1998 and has not produced a single project, has failed, and it should end.

Second, state authority to toll new or reconstructed bridges or tunnels should be limited to projects with a cost of at least $2 billion.

We also recommend that whenever an Interstate is proposed to USDOT for tolling, the state should be required to look at the impacts on congestion and air quality, safety, environmental justice, economics, and infrastructure improvement costs related to traffic diversion. The state should also be required to look at other funding mechanisms to determine whether there is a better alternative to tolls. Furthermore, any excess toll revenue should benefit the users of the toll facility. In addition, toll rate discrimination based on vehicle class or state of residence should be outlawed. These are reasonable requirements that are essential to prevent the negative impacts of Interstate tolls.

QUESTIONS FROM HON. TROY BALDERSON TO DARREN D. HAWKINS, CHIEF EXECUTIVE OFFICER, YRC WORLDWIDE INC., ON BEHALF OF THE AMERICAN TRUCKING ASSOCIATIONS

Question 4. In your testimony, you mention the drastic impact that tolls can have on the trucking industry. As we know, truck drivers are already stressed by hours of service mandates and the major shortage of truck parking.

Can you provide details on how tolls, such as the Rhode Island bridge tolling program, have negatively impacted your drivers?

ANSWER. Our drivers are not subject to personally paying for the tolls because the company pays them. However, that is not the case with independent owner operators who have to pay the tolls and often absorb the costs. These smaller carriers might not have the market leverage to pass the expense along. More than 90% of trucking companies have six or fewer trucks but play a critical role in the supply

chain. These companies are just as—or even more—vulnerable to the burden that tolls like those in Rhode Island place on the industry.

Question 5. Have tolls forced your drivers to change their routes?

ANSWER. We will continue to assess routes based on safety, efficiency and sustainability. If we can avoid the toll and meet the three-pronged assessment protocol, then we will take the route without the toll. From an industry standpoint, it is important to note that routing guides and GPS software are programmed to highlight toll avoidance options. This gives truck drivers a tool to bypass tolls and take trucks off the very roads that were engineered and designed to transport our nation's commerce.

Question 6. Does this cause the drivers to feel the need to make up lost time in other ways?

ANSWER. Our trucks are governed at approximately 63 mph so any effort to make up lost time on the Interstate will be restricted by that internal policy. However, with the introduction of electronic logging devices, truck drivers are now on a digital time clock and their hours of service are clearly recorded. For industry drivers, lost time due to toll avoidance will place further stress on meeting their pickup or delivery times. Having to take a circumferential route to avoid tolls would likely add additional time to a delivery. In an environment where shippers increasingly demand ever tighter delivery schedules, some drivers may choose to drive too fast for conditions in order to meet their schedules. Compounding this, truck drivers already face significant delays on the Interstate System, including in Rhode Island. The American Transportation Research lnstitute's most recent data shows Rhode Island ranked ninth in the nation on the total cost of congestion on National Highway System miles in the state.

QUESTIONS FROM HON. TROY BALDERSON TO MARC SCRIBNER, SENIOR FELLOW, COMPETITIVE ENTERPRISE INSTITUTE

Question 1. In your testimony, you recommend that Congress shift away from fuel taxation as the primary highway revenue source and move towards a mileage-based user fee, such as a vehicle-miles traveled (VMT) tax.

Oregon has the most advanced VMT pilot program in the United States. What are your thoughts on the current state of that pilot program?

ANSWER. Oregon's road usage charge program, OReGO, remains an important case study. This is particularly true in the context of recent efforts in the states to impose higher vehicle registration fees for highly fuel efficient or electric vehicles that are aimed to make up for lost fuel tax revenue. At most, attempting to recover road revenue through annual registration surcharges due to reduced collections per mile driven should be treated as temporary measures until future usage-based revenue schemes are available. Oregon H.B. 2017 (2017) admirably allowed plug-in electric vehicles to avoid the higher registration fees by entering into the OReGO road usage charge program. Other states currently imposing or considering registration fee surcharges on fuel efficient and electric vehicles should consider this approach.

Question 2. Do you both believe it is realistic for the United States to implement a VMT tax nationwide in the next 5–10 years?

ANSWER. This would be a highly ambitious phase-in schedule and is unlikely to occur beyond a transitional pilot phase. Other than providing states with assistance for their own pilots, federal action has been virtually nonexistent to date. Congress should continue providing assistance to states for their individual road usage charge pilot programs while focusing on areas where the federal interest is strongest: interoperability between the states and interactions between payment processors and the federal treasury.

Question 3. What do you both believe Congress needs to do in the coming years to get us past the initial steps and towards a full implementation?

ANSWER. Congress should establish a voluntary, nationwide mileage-based user fee pilot program in the next surface transportation reauthorization. This program need not be a top-down federal program imposed upon the states; rather, Congress could opt for a federated state-based program and focus on coordinating state transportation and revenue departments on implementation, collection, processing, and fuel tax rebates.

Interoperability between the states remains a significant challenge and Congress should also avoid any potential "poison pill" proposals involving the Internal Revenue Service being the direct revenue collection entity (the prospect of receiving a monthly bill from the IRS for one's driving would almost certainly render the pilot

a political nonstarter). Road user privacy should also be protected by strict data access and retention requirements, preventing unbridled government and law enforcement access to personally identifiable information while balancing the need of road usage charge program participants to challenge erroneous charges. The trusted third-party approach to payment processing adopted by Oregon is very promising and should be examined in the context of an interoperable nationwide pilot.

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