WHEN UNLIMITED POTENTIAL MEETS LIMITED RESOURCES: THE BENEFITS AND CHALLENGES OF HIGH-SPEED RAIL AND EMERGING RAIL TECHNOLOGIES

(117–16)

REMOTE HEARING

BEFORE THE

SUBCOMMITTEE ON RAILROADS, PIPELINES, AND HAZARDOUS MATERIALS

OF THE

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

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U.S. House of Representatives
Washington, DC 20515

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MAY 3, 2021

SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Railroads, Pipelines, and Hazardous Materials
FROM: Staff, Subcommittee on Railroads, Pipelines, and Hazardous Materials
RE: Subcommittee Hearing on "When Unlimited Potential Meets Limited Resources: The Benefits and Challenges of High-Speed Rail and Emerging Rail Technologies"

PURPOSE

The Subcommittee on Railroads, Pipelines, and Hazardous Materials will meet on Thursday, May 6, 2021, at 11:00 a.m. EDT in 2167 Rayburn House Office Building and via Zoom to hold a hearing titled "*When Unlimited Potential Meets Limited Resources: The Benefits and Challenges of High-Speed Rail and Emerging Rail Technologies*." The hearing will explore the opportunities and limitations associated with high-speed rail and emerging technologies, including regulatory oversight, technology readiness, project cost, and available federal resources.

The Subcommittee will hear testimony from two different panels, focused respectively on the federal policy of high-speed rail and proposed projects. The first panel will include witnesses from former leadership of the United States Department of Transportation (DOT), the Seattle Metropolitan Chamber of Commerce, the Los Angeles County Metropolitan Transportation Authority, the International Brotherhood of Electrical Workers, an elected judge from Waller County, Texas, and the U.S. High Speed Rail Association. The second panel will include witnesses from Texas Central High-Speed Rail, Amtrak, Virgin Hyperloop, Hyperloop Transportation Technologies, Brightline Trains, and the Northeast Maglev.

BACKGROUND

While current global health events have reduced highway, rail, and air travel, future projections show that intercity travel will both rebound and increase from pre-pandemic levels, but mobility will be constrained by existing transportation capacity limitations. DOT estimates that by 2045, increased congestion will be experienced on intercity highways.[1] The costs of congestion have already increased almost 50 percent from the previous decade.[2] In 2017, traffic congestion cost $179 billion in our nation's urban areas, including 8.8 billion hours of delay and 3.3 billion gallons of wasted fuel.[3] Further estimates forecast that national congestion costs will grow from $179 billion in 2017 to $237 billion in 2025, a 32 percent increase.[4]

According to the 2019 United States Department of Energy *Data Book*, Amtrak is 47 percent more energy efficient than traveling by car and 33 percent more energy efficient than domestic air travel on a per-passenger-mile basis. Traveling on the electrified Northeast Corridor system emits 83 percent less greenhouse gas

[1] "Beyond Traffic 2045." The U.S. Department of Transportation. Accessible at https://www.transportation.gov/sites/dot.gov/files/docs/BeyondTraffic_tagged_508_final.pdf
[2] "Urban Mobility Report 2019." Texas A&M Transportation Institute, August 2019. Accessible at https://static.tti.tamu.edu/tti.tamu.edu/documents/mobility-report-2019.pdf
[3] Ibid.
[4] Ibid.

emissions than driving and up to 73 percent less than flying.[5] Brightline Florida is aiming to be carbon neutral with the use of biofuels, solar power at stations, and electric vehicle plug-in charging in its parking lots.[6]

One difference between our national transportation system and other leading industrial nations is the limited high-speed passenger rail service in the United States. Moreover, the United States invests only a fraction of what European and Asian countries have invested in the development of high-speed rail operations.

FEDERAL FUNDING FOR HIGH-SPEED RAIL AND EMERGING TECHNOLOGIES

There is a discrepancy in historical federal investment between highways, aviation, and intercity passenger rail. In terms of federal investment in transportation modes, between 1949 and 2017, more than $2 trillion in federal funds have been invested in our nation's highways and over $777 billion in aviation.[7] Federal investment in passenger rail began in 1971 with the creation of the National Railroad Passenger Corporation (Amtrak).[8] In contrast to highways and aviation, between 1971 and 2020, $96 billion in federal funds have been invested in Amtrak.[9]

The establishment of a national high-speed rail system in the U.S. poses opportunities as well as challenges. Congress has recognized that the development of a comprehensive high-speed rail network requires long-term planning and investment. However, to this end, legislation has historically provided sparse funding for high-speed rail. One such example is the High-Speed Intercity Passenger Rail (HSIPR) grant program.[10]

The foundation for the HSIPR grant program originates from the Swift Rail Development Act of 1994, which created the high-speed rail program (P.L. 104–440), the Passenger Rail Investment and Improvement Act of 2008 (PRIIA, P.L. 110–432) and the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111–5). PRIIA, passed in October 2008, established three new competitive grant programs for high-speed and intercity passenger rail capital improvements. In February 2009, President Obama signed ARRA into law, appropriating $8 billion for the PRIIA-authorized high-speed and intercity passenger rail grant programs. Then, in December 2009, Congress appropriated an additional $2.5 billion for the HSIPR grant program in the Fiscal Year (FY) 2010 Department of Transportation Appropriations Act. These funds were invested in new project planning and engineering, as well as large-scale service development programs, and it supplemented projects already funded under ARRA.

The majority of federal funding for high-speed and intercity passenger rail has focused on improving existing lines in five corridors: Seattle-Portland; Chicago-St. Louis; Chicago-Detroit; the Northeast Corridor (NEC); and Charlotte-Washington, DC.[11] Most of the remaining funds have been allocated to a largely new system dedicated to passenger trains between San Francisco and Los Angeles, the California High Speed Rail (CAHSR) project. The proposed line was originally estimated to cost roughly $33 billion and begin operating in 2020.[12] This project recently announced an $80 billion total cost to complete Phase I with a service start date of 2029.[13]

Cost estimates for constructing high-speed rail vary according to train speed, the topography of the corridor, the cost of right-of-way, and other factors. According to the Congressional Research Service (CRS), "few, if any, high-speed rail lines anywhere in the world have earned enough revenue to cover both their construction and operating costs, even where population density is far greater than anywhere in the United States."[14] Much like the federal investments made by the U.S. government

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[5] "Amtrak Sustainability Report FY2019," *Amtrak*. Available at https://www.amtrak.com/content/dam/projects/dotcom/english/public/documents/environmental1/Amtrak-Sustainability-Report-FY19.pdf.

[6] Brightline. www.gobrightline.com

[7] Committee staff calculations of annual appropriations bills, inflated to 2009 dollars.

[8] Rail Passenger Service Act of 1970, P.L. 91–518.

[9] Committee staff calculations of annual appropriations bills, inflated to 2009 dollars.

[10] "High-Speed Intercity Passenger Rail Program (HSIPR)." U.S. Department of Transportation, Federal Railroad Administration. Accessible at https://railroads.dot.gov/competitive-discretionary-grant-programs/high-speed-intercity-passenger-rail-program-hsipr/high

[11] "The Development of High Speed Rail in the United States: Issues and Recent Events." *Congressional Research Service*, December 2013. R42584.

[12] Ralph Vartabedian, *A 'low-cost' plan for California bullet train brings $800 million in overruns, big delays*, LOS ANGELES TIMES (Feb. 22, 2021), *available at* https://www.latimes.com/california/story/2021-02-22/california-bullet-train-dragados-design-changes.

[13] "2020 Business Plan, Recovery and Transformation." California High Speed Rail Authority. Accessible at https://hsr.ca.gov/about/high-speed-rail-business-plans/2020-business-plan/

[14] "The Development of High Speed Rail in the United States: Issues and Recent Events." *Congressional Research Service*, December 2013. R42584.

in highways, aviation, and transit, foreign governments have generally contributed to the cost of construction and in many cases the operating costs of high-speed rail as well.[15]

Current federal funding for all passenger rail is insufficient to meaningfully invest in high-speed rail projects. In FY 2021, the amount of federal funds available for all rail projects was approximately $2.5 billion, little of which was eligible for high-speed rail.[16]

On July 1, 2020, the U.S. House of Representatives passed with a bipartisan vote of 233–188 the Majority's H.R. 2, the Moving Forward Act, which proposed authorizing $60 billion over five years, with $19.2 billion over five years for the Passenger Rail Improvement, Modernization, and Expansion (PRIME) grant program. This grant program would fund intercity passenger rail projects, including high-speed rail projects.

In March of 2021, the Biden Administration released the *American Jobs Plan*, which proposed $80 billion over five years above baseline spending for rail projects. This request included $20 billion for the PRIME grant program.[17]

HIGH-SPEED RAIL AND EMERGING TECHNOLOGIES TODAY

Today, the world's high-speed rail systems fall into two categories—steel wheel-on-steel rail systems and magnetic levitation (maglev) systems. There is no operational hyperloop system moving passengers today.

The only magnetic levitation systems in current revenue operation are located in China, South Korea, and Japan, and these systems account for a small percentage of these countries' high-speed rail networks. China is the only country with high-speed maglev in operation for approximately 18 miles between the Shanghai airport and a terminus outside of downtown. Japan has plans to develop a high-speed maglev route between Tokyo and Nagoya.[18]

Steel wheel-on-steel rail high-speed rail systems are vastly more common and typically operate on exclusive, electrified rights-of-way.[19] These high-speed systems can attain performance well above what is capable of today's conventional American passenger rail service. High-speed rail can either be built by improving existing tracks and signaling to allow trains to reach high speeds, typically on track shared with slower-moving freight trains, or by building new tracks dedicated exclusively to high-speed service. The potential costs and benefits are relatively lower with the former approach and higher with the latter approach.[20]

In 1964, Japan became the first nation to develop a high-speed rail operation. First introduced with the Shinkansen, or so-called "bullet train," Japan began operating at speeds faster than 150 miles per hour.[21] In FY 2019, speeds reached over 310 miles per hour and ridership reached over 174 million people.[22] In 1981, France inaugurated a 255-mile high-speed rail line between Paris and Lyon, cutting rail travel time from four hours to two hours and creating a network that now spans 1,700 miles with trains reaching speeds of 320 miles per hour.[23] In FY 2019, ridership reached 5 million passengers per day.[24] In 1991, Germany unveiled a 203-mile high-speed rail service between Hanover and Wurzburg and a 62-mile line between Mannheim and Stuttgart. Since then, numerous other countries have created additional high-speed rail lines. In 1992, Spain and Italy launched their own high-speed rail systems. In 1998, Sweden upgraded its rail lines to accommodate high-speed rail, and in 2000, the Netherlands started service between Amsterdam and Brussels. In 2020, China announced plans to more than double its approximately 21,000 miles of high-speed rail by 2035, to 43,000 miles.[25]

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[15] Ibid.

[16] Public Law No: 116–260.

[17] "FACT SHEET: The American Jobs Plan," The White House. March 31, 2021. Accessible at https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/

[18] Makichuk, Dave. "China's 'floating' maglev train in testing stage," *Asia Times*. June 23, 2020. Accessible at https://asiatimes.com/2020/06/chinas-floating-maglev-train-in-testing-stage/

[19] "The Development of High Speed Rail in the United States: Issues and Recent Events." *Congressional Research Service*, December 2013. R42584.

[20] Ibid.

[21] "Annual Report 2019." Central Japan Railway Company. Accessible at https://global.jr-central.co.jp/en/company/ir/annualreport/__pdf/annualreport2019.pdf

[22] Ibid.

[23] "SNCF Group 2019 Annual Results". SNCF. Accessible at https://medias.sncf.com/sncfcom/finances/Publications__Groupe/SNCF__Group__Annual__Results__2019__Press__conf.pdf

[24] Ibid.

[25] Chen, Frank. "China sets railway building spree in high-speed motion." *Asia Times*. Accessible at https://asiatimes.com/2020/08/china-sets-railway-building-spree-in-high-speed-motion/

The U.S. has one high-speed rail corridor and multiple rail lines that operate with high-speed trainsets. Amtrak's Acela service is capable of traveling up to 150 miles per hour—between Washington, D.C. and Boston, MA—but it operates at slower speeds due to century-old deteriorated infrastructure, poor alignments, and capacity constraints that prevent the corridor from dramatically increasing speeds. Acela 2.0 is expected to operate up to 160 miles per hour.[26] Brightline Florida operates at 79 miles per hour but has plans to operate up to 125 miles per hour.

The focus of this hearing will center on six different projects or technologies; the Amtrak Acela, Texas Central High-Speed Rail, Brightline, Northeast Maglev, Virgin Hyperloop, and Hyperloop Transportation Technologies. Texas Central High-Speed Rail aims to build and operate high-speed rail service between Dallas and Houston using technology that is owned by the Central Japan Railway Company (JRC). Brightline currently offers high-speed service in southern Florida and is proposing to connect Las Vegas, NV, and Victorville, CA. Both Texas Central and Brightline are steel wheel-on-steel rail technologies. Northeast Maglev plans to develop along the Northeast Corridor, and its magnetic levitation technology is similarly owned and developed by JRC. Virgin Hyperloop has testing sites in California and Nevada, and it completed the first successful test run in history in November 2020. Hyperloop Transportation Technologies (HyperloopTT) is currently focused on the Great Lakes region, and aims to connect Chicago, Cleveland, and Pittsburgh. Virgin Hyperloop, HyperloopTT, and Northeast Maglev are licensing companies, and seek to sell the technology to a separate entity for construction and operation. Each of the project witnesses have been asked to provide total project costs and any requests for federal support in their testimony.

In 2019, DOT launched the Non-Traditional and Emerging Transportation Technology (NETT) Council, created to identify and resolve jurisdictional and regulatory gaps in the development of new transportation technologies.[27] As part of that work, in July 2020, the NETT Council released the Pathways to the Future of Transportation policy document, intending to serve as a clear roadmap for developers of cross-modal technologies.[28] The Pathways document determined the Federal Railroad Administration (FRA) has the necessary tools and authorities to regulate and manage the safety of emerging technologies like hyperloop and maglev technology systems.[29]

A Level Playing Field: Buy America and Labor Protections

Investment in high-speed rail provides opportunities not just for greater connectivity, but also for creating U.S. railroad and manufacturing jobs. Current statute authorizes several discretionary grant programs that are administered by the FRA to invest in passenger and freight railroad infrastructure. These grants include conditions; for example, a "Buy America" condition requires that 100 percent of the steel, iron, and manufactured goods used in a project funded by a FRA grant be made in the United States.[30] Such requirements help ensure that federal investments benefit U.S. manufacturers and their employees, rather than manufacturers overseas. FRA grant conditions also ensure workers are paid prevailing wages when a project funded by a FRA grant uses a railroad right-of-way.[31]

Statutes governing FRA grant programs also require that those conducting rail operations over rail infrastructure constructed or improved with funding provided in whole or in part by a FRA grant be considered a "rail carrier" for purposes of Title 49 of United States Code and certain railroad-specific statutes.[32] Among others, these statutes include the Railway Labor Act, which governs the relationship between rail carriers and their employees; the Railroad Retirement Act, which provides retirement benefits that are in lieu of Social Security benefits; and the Railroad Unemployment Insurance Act, which provides unemployment benefits in lieu of state-administered unemployment benefits, as well as sickness benefits. FRA

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[26] "Next Generation High-Speed Trains," Amtrak: The Northeast Corridor. Accessible at https://nec.amtrak.com/project/next-generation-high-speed-trains/

[27] "Overview of the NETT Council," United States Department of Transportation. Accessible at https://www.transportation.gov/nettcouncil

[28] "Pathways to the Future of Transportation: A Non-Traditional and Emerging Technology (NETT) Council Guidance Document." Office of the Secretary of Transportation, Department of Transportation. July 2020. Accessible at: https://www.transportation.gov/sites/dot.gov/files/2020-07/NETT__Pathways__jul20__final__3.pdf

[29] Ibid.

[30] 49 USC 29905(a)

[31] 49 USC 22905(c)(2)(A)

[32] 49 USC 22905(b)

grants are also conditioned on other requirements, some of which relate to conditions established decades ago.[33]

WITNESS LIST

PANEL I

- The Honorable John Porcari, Former Deputy Secretary, Department of Transportation
- Ms. Rachel Smith, President and Chief Executive Officer, Seattle Metropolitan Chamber of Commerce
- Mr. Phillip Washington, Chief Executive Officer, Los Angeles County Metropolitan Transportation Authority
- Ms. Danielle Eckert, International Representative, International Brotherhood of Electrical Workers
- The Honorable Carbett "Trey" Duhon III, Judge, Waller County, Texas
- Mr. Andy Kunz, President and Chief Executive Officer, U.S. High Speed Rail Association

PANEL II

- Mr. Carlos Aguilar, President and Chief Executive Officer, Texas Central High Speed Rail
- Mr. William Flynn, Chief Executive Officer, Amtrak
- Mr. Josh Giegel, Chief Executive Officer and Co-Founder, Virgin Hyperloop
- Mr. Andres de Leon, Chief Executive Officer, Hyperloop Transportation Technologies
- Mr. Michael Reininger, Chief Executive Officer, Brightline Trains
- Mr. Wayne Rogers, Chairman and Chief Executive Officer, Northeast Maglev

[33] Other conditions are provided in 49 USC 22905, including 22905(c)(2)(B) which relates to the conditions in Section 504 of the Railroad Revitalization and Regulatory Reform Act of 1976, 45 USC 836.

WHEN UNLIMITED POTENTIAL MEETS LIMITED RESOURCES: THE BENEFITS AND CHALLENGES OF HIGH-SPEED RAIL AND EMERGING RAIL TECHNOLOGIES

THURSDAY, MAY 6, 2021

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON RAILROADS, PIPELINES, AND HAZARDOUS MATERIALS,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to call, at 11:03 a.m., in 2167 Rayburn House Office Building and via Zoom, Hon. Donald M. Payne, Jr. (Chair of the subcommittee) presiding.

Members present: Mr. Payne, Mr. DeFazio, Mr. Malinowski, Mr. Moulton, Ms. Newman, Mr. Carson, Ms. Wilson of Florida, Mr. García of Illinois, Ms. Strickland, Mrs. Napolitano, Mr. Johnson of Georgia, Ms. Titus, Mr. Huffman, Mr. Auchincloss, Mr. Allred, Ms. Johnson of Texas, Mr. Crawford, Mr. Rodney Davis, Mr. Weber, Mr. LaMalfa, Mr. Westerman, Mr. Fitzpatrick, Mr. Burchett, Mr. Johnson of South Dakota, Mr. Nehls, and Mrs. Steel.

Mr. PAYNE. The subcommittee will come to order. I ask unanimous consent that the chair be authorized to declare a recess at any time during today's hearing. Without objection, so ordered. I also 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.

As a reminder, please keep your microphone muted unless speaking. Should I hear any inadvertent background noise, I will request that the Member please mute their microphone. To insert a document into the record, please have your staff email it to DocumentsT&I@mail.house.gov.

Well, good morning. And I am excited to kick off my second committee hearing of this Congress as the new chairman. Thanks to the bold vision of President Biden, we stand at the crossroads of a once-in-a-generation opportunity to transform the Nation's passenger rail network and bring it into the 21st century.

The title of today's hearing says it all: unlimited potential of emerging technologies in high-speed rail. From hyperloop to bullet trains to magnetic levitation, we will hear about transformative technologies from distinguished panels of policy experts and leaders of high-speed rail projects.

Imagine being able to hop on a train in Newark at 9 a.m. in the morning and make it to Washington in time for today's hearing at

11 a.m. High-speed rail could be the technology that fully unlocks the potential of passenger rail travel in this country.

Other countries have integrated high-speed rail systems into their transportation networks, and the United States has the opportunity to do the same. We have led the world in innovation from breaking the sound barrier to winning the space race. There is nothing stopping us from applying the same perseverance to high-speed rail.

But we also must confront the reality of limited resources. Even if we invested tens of billions of dollars that is in the American Jobs Plan, it will not be enough to fully implement every project that we will hear about today. That is why we must have today's conversation that could be the basis for tomorrow's solutions.

This is not to say Congress hasn't taken action to help spur high-speed rail to deliver on the benefits that are possible. Congress has made significant investments that have made Amtrak's high-speed Acela trains operational. Last year, Chairman DeFazio ushered H.R. 2 through the House to invest $60 billion in the U.S. rail system.

Given President Biden's call for even more rail funding, I am proposing to robustly fund high-speed rail planning and development in our surface transportation reauthorization package. It is time the United States makes a long-term bold effort to bring greater mobility to the Nation.

If we invest in easy access to an interconnected rail network, it will create thousands of jobs. Communities will benefit from the implementation of high-speed rail. However, we must ensure the benefits are equitably distributed and underserved communities are not left out in the cold.

Equity in high-speed rail also means a fair shot for minority-owned businesses to obtain work that comes from the implementation of these projects. We have assembled a wide roster of witnesses for a robust discussion of high-speed rail. I want to hear why it is good policy to invest in high-speed rail. I want to hear how these technologies could redefine short- and long-distance travel.

And I finally want to hear about how these technologies can be made available to all Americans. It is my hope that Members gain a better understanding of the promise that high-speed rail represents, and how it can be a positive force for change. So I hope you will join me in this subcommittee's effort to appreciate the rail technologies of the future.

[Mr. Payne's prepared statement follows:]

Prepared Statement of Hon. Donald M. Payne, Jr., a Representative in Congress from the State of New Jersey, and Chair, Subcommittee on Railroads, Pipelines, and Hazardous Materials

Good morning. I'm excited to kick off my second subcommittee hearing of this Congress as the new Chair.

Thanks to the bold vision of President Biden, we stand at the crossroads of a once-in-a-generation opportunity to transform this nation's passenger rail network and bring it into the 21st century.

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So I hope you will all join me in this subcommittee's effort to appreciate the rail technologies of the future.

Mr. PAYNE. Now, I call on the ranking member of the subcommittee, Mr. Crawford, for an opening statement.

Mr. CRAWFORD. Thank you, Mr. Chair. I appreciate you holding this hearing today and thank the witnesses for participating as well. Today's hearing will discuss the state of high-speed rail and other emerging technologies in our U.S. passenger rail networks.

Today's hearing will discuss investments and innovation in our rail infrastructure are essential to building a robust and competitive American transportation system. However, we must ensure that any Federal policies and funding are balanced with a realistic analysis of the needs, consumer demand, and the best use of taxpayer dollars.

There is no better example of these important factors not being properly considered than the California high-speed rail project that was originally proposed to run between Los Angeles and San Francisco.

The venture, once estimated to cost $33 billion and be completed in 2020, is now projected to cost over $100 billion with an esti-

mated completion date still over a decade away. The project has been plagued by a failure to account for actual cost and work associated with obtaining land to build a track, eminent domain, environmental concerns, and whether low consumer demand will require permanent Government subsidies to support the line.

While the California high-speed rail project shows the failures of poor planning, there are promising opportunities for the Federal Government to foster new rail technologies that are fiscally responsible and responsive to the needs of consumers. The Federal Government should look to leverage successful existing programs that support our rail system, such as funding the CRISI and section 130 grant programs.

The private sector also plays an important role in growing our rail network, and we will hear from witnesses about those promising efforts.

I look forward to discussing both the challenges and the opportunities of new rail transportation and technology, as well as how Congress can provide robust oversight and safeguard taxpayer dollars that support these projects.

[Mr. Crawford's prepared statement follows:]

Prepared Statement of Hon. Eric A. "Rick" Crawford, a Representative in Congress from the State of Arkansas, and Ranking Member, Subcommittee on Railroads, Pipelines, and Hazardous Materials

Thank you, Chair Payne, for holding this hearing, and thank you to our witnesses for participating today. Today's hearing will discuss the state of high-speed rail and other emerging technologies in our U.S. passenger rail networks.

Investments and innovation in our rail infrastructure are essential to building a robust and competitive American transportation system. However, we must ensure that any federal policies and funding are balanced with a realistic analysis of the needs, consumer demand, and best use of taxpayer dollars.

There is no better example of these important factors not being properly considered than the California High-Speed Rail project that was originally proposed to run between Los Angeles and San Francisco.

The venture, once estimated to cost $33 billion and be completed in 2020, is now projected to cost over $100 billion, with an estimated completion date still over a decade away.

The project has been plagued by a failure to account for actual costs and work associated with obtaining land to build the track, eminent domain, environmental concerns, and whether low consumer demand will require permanent government subsidies to support the line.

While the California High-Speed Rail project shows the failures of poor planning, there are promising opportunities for the federal government to foster new rail technologies that are fiscally responsible and respond to the needs of consumers.

The federal government should look to leverage successful existing programs that support our rail system, such as funding the CRISI and Section 130 grant programs.

The private sector also plays an important role in growing our rail network, and we will hear from witnesses about those promising efforts.

I look forward to discussing both the challenges and the opportunities of new rail transportation and technology, as well as how Congress can provide robust oversight and safeguard taxpayer dollars that support these projects.

Mr. CRAWFORD. Thank you to the witnesses for being here today, and I yield back the balance of my time.

Mr. PAYNE. The gentleman yields back. And now we will recognize the chairman of the whole committee, Chairman DeFazio.

Mr. DEFAZIO. Well, thank you, Mr. Chair. I appreciate the opportunity today. I am excited about the prospects for this hearing. Ba-

sically we are looking at I would say four categories of rail: one I call higher speed rail, high-speed rail, magnetic levitation, and then obviously new and innovative technologies like hyperloop.

They all hold promise in different applications and different places. Higher speed rail which would be basically existing Amtrak—I will use the example of Talgo train sets we run here between Oregon and Washington State. They can go 120 miles an hour.

I am 112 miles from Portland. Theoretically then I could be there in less than an hour. If you could get to Portland in less than an hour, I think you would see a massive hemorrhaging of people away from the overcrowded Interstate 5 which frequently is blocked with accidents or traffic jams onto a dependable service.

Now, we don't even have to realize the full potential of it. If I could reliably get there in 2 hours—because on a really good day I could get there in 1 hour and 50 minutes on I–5—then I would never ever, ever get on I–5 again.

And I know there are many thousands of other Oregonians—and this line—ultimately, this was one of the first designated under the Swift Act back in 1994—Al Swift, a colleague from Washington State, a wonderful old curmudgeon, created this program and one of the first high-speed rail routes in America.

And there are a couple of witnesses who are a little short on their testimony because they say Portland to Vancouver or Portland to Seattle. That route, which got designated in 1994, is Eugene, Oregon—the second largest city—to Vancouver, BC.

Precious little progress has been made particularly by my State who I don't think has even yet chosen a route. But there is tremendous potential in higher speed rail, let alone high-speed rail.

You know, many years ago when I was a younger man, I traveled a bit with less constraint than this job. I was in Spain, and they had trains essentially like ours—crappy, old, slow trains. Then they built one route. It ran from Madrid down to the coast. And after a while everybody in Spain rode on it once or twice. They said, yeah, I want that.

They now have a high-speed network, goes around the whole country, and has changed economics, demographics, and the economy phenomenally. People can live in an affordable place more than 100 miles outside of Madrid and reliably get to work in a very short period of time.

We have similar opportunities—and we will hear about one later today in the Los Angeles Basin linking a line out of L.A. to a high-speed line coming down from Las Vegas which has tremendous potential. There are other projects around the country that we will hear from today.

Rail could be a solution. VDOT—Virginia Department of Transportation—gave testimony I guess 6 or 7 weeks ago before the committee. The Secretary was very compelling. They evaluated 95 South, and they said wow, you know, the traffic is just always backed up.

We could add one lane each way—$10 to $12 billion. By the time we finish adding the lanes, congestion will be as bad as it is today. That would be about 10 years from now or we could look at somehow enhancing—it will be difficult—rail commuting. And they got

into discussions with CSX, and they came to an agreement. It is going to both enhance the CSX network and help with the commuter trains.

And they are actually going to build a new bridge over the Potomac River. Now—it is very expensive. This whole thing is going to cost $4 or $5 billion. Well, that is half the cost of adding the two lanes to the freeway that won't solve the problem, and this will provide much more benefit—benefit for commuters, benefit for the economy, benefit for the environment when we eliminate all those single occupancy automobiles.

So we have got to look around the country. And part of the bill is to make DOTs—because a lot of DOTs are stuck in the Eisenhower era. And it is like woah, well we will just lay more concrete. We will lay more asphalt. We will widen to eight lanes here. We will go to 10 lanes. And you build it, and they come. And then you are back where you started.

I have met with communities in Texas who believe that there are linkages between cities there that could solve some of their worst freeway problems and highway problems in Texas. And I have heard this echoed around the country. I mean Florida, they are looking at linking Miami to Orlando in the not too distant future with Brightline.

There are a lot of exciting things going on, but where is the Federal Government? Where has the Federal Government been? The Chinese are investing over $100 billion a year—of course a lot of it is our money for their trade deficit—so they can afford it—in their rail system for high-speed rail.

What are we investing? We are doing nothing. And when you invest nothing, you get nothing. We can't say oh, yeah, well back in the Obama era they put up all this money for high-speed rail and California screwed it up.

Well, yeah, I mean greenfield projects—they did not anticipate all the problems that would come with that. And they were very poorly managed to begin with. They have gotten their act together now, but there has been a lot lost there.

But that should not be the example for the country or we should say just because of one project that didn't proceed as projected that we are going to pin these hopes all around the United States. And investing once every other decade a small amount of money is not going to get us there.

I would like to see larger sums than have been proposed by the Biden administration in the high-speed rail category personally. But we also need to enhance the loan programs, the TIFIA programs, and others—the RRIF program—that we can look at investments in these areas.

We have put aggregate with essentially post-World War II—I want to say the Eisenhower program—$2 trillion—trillion—into highways invested by the Federal Government—a lot of money—put post-World War II $777 billion into aviation, airports, runways, air traffic control, et cetera. And we have put about $90 billion total into rail.

And so we wonder why we have a decrepit, pathetic network in this country—Amtrak struggling with infrastructure that is failing. I took the committee up to New York between Washington, DC,

and Boston, I think there's $48 billion of deferred maintenance, some of which could fail catastrophically—the tunnel under Baltimore is one example and replacing that tunnel.

And they have plans to do it with straighten line would increase speeds through that section, cut a significant amount of time off the road. But, hey, you know, we put a lot of money into that tunnel back in 1872. We can't just jump out there and build a new one, can we. Really? Great engineers in 1872, but it is time to get into the 21st century.

So that is what this hearing is about today. Let's talk about 21st-century technology, 21st-century solutions, not 1950s, not 1870s—the 21st century. And let's make America once again a world leader in all forms of transportation as we used to be.

[Mr. DeFazio's prepared statement follows:]

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

Thank you Chair Payne and Ranking Member Crawford for holding this timely hearing.

We are here today to discuss the once-in-a-generation opportunity we have before us. This hearing comes at a time when we can meaningfully invest in a truly transformative form of transportation—high-speed rail. You'll often hear me say that if I could count on the train trip being under two hours and on-time from Eugene to Portland, I would never fly that route or drive on I–5 again. I know it's the same for millions of people throughout this country.

For years the preferred solution to relieving traffic congestion was to add more highway lanes. But, as the Secretary of the Virginia Department of Transportation testified at the last rail hearing, it is far more impactful and less expensive to invest in passenger rail. And now we have a welcome and necessary development with high-speed rail—the next logical step in tackling congestion.

Unfortunately, the United States is far behind the curve. Our friends in Europe and Asia are decades ahead of us in developing high-speed rail. The Japanese have a train that travels over 300 miles an hour. And the Chinese are spending $115 billion dollars per year on high-speed rail. They claim they're going to complete 43,000 miles of high-speed track by 2035. We are investing a tiny fraction of that in all of our rail investments. If high-speed rail can work globally, we can make it work here.

We need to keep up with the competition. And the demand is there—people want to get back to riding the rails. Before the pandemic, Amtrak continually set new records for ridership—with more than 32.5 million passenger trips in fiscal year 2019 alone—a major feat considering how we force Amtrak to fight with one hand behind its back against freight congestion, knee-capped by embarrassingly low federal support. Lower trip times enabled by high-speed rail will induce even more demand.

And increased ridership will benefit our climate. Intercity passenger rail is inherently better for the environment than driving or flying. Traveling on the electrified Northeast Corridor system emits 83 percent less greenhouse gas emissions than driving and up to 73 percent less than flying. Investing in high-speed rail will contribute to lower emissions and a smaller carbon footprint. We need to start looking at rail as a central part of the solution to climate change.

We haven't made a meaningful investment in high-speed rail since 2009, and even those funds were spread too thin. Meager sums every few years is neither smart nor sustainable investing. Dedicated predictable funding is essential to bold infrastructure investment. That is why I am pleased that President Biden has called for more passenger rail funding in the next surface reauthorization.

Congress needs to remain focused on developing a national program. After all, it was a national vision that led to the creation of our highways and aviation networks, spurring unprecedented economic growth, connecting urban and rural communities alike, and creating millions of jobs. At the time, that was also a pie-in-the-sky undertaking. Now we can't imagine life without it. Rail is the next step.

I know we'll hear from today's witnesses about how federal investments in high-speed rail are also investments in the American workforce. To make sure that's the case, federal high-speed rail dollars will come with the same non-negotiable conditions that currently apply to other federal rail funding, such as Buy America. You won't find a stronger Buy America advocate than me, and I won't allow high-speed rail to be an exception to our domestic procurement rule.

These projects should support our nation's rail workforce, while expanding the reach of federal investments into the communities where workers spend their money. Any consideration of the economic benefits of high-speed rail must include downstream effects, as well as the many construction jobs created by rail expansion.

I look forward to hearing from our witnesses today on the opportunity we have before us to get high-speed rail right.

Mr. DEFAZIO. Thank you, Mr. Chairman.

Mr. PAYNE. Thank you, sir. We will now turn to our witnesses. We will be hearing testimony from witnesses on two panels today with each panel followed by questions from Members.

I would like now to welcome the witnesses on the first panel: the Honorable John Porcari, former Deputy Secretary, United States Department of Transportation; Ms. Rachel Smith, president and chief executive officer of Seattle Metropolitan Chamber of Commerce; Mr. Phillip Washington, chief executive officer of Los Angeles County Metropolitan Transportation Authority; Ms. Danielle Eckert, international representative of the International Brotherhood of Electrical Workers; the Honorable Carbett "Trey" Duhon III, judge, Waller County, Texas; and Andy Kunz, president and chief executive officer of the U.S. High Speed Rail Association. Thank you for joining us today, and I look forward to your testimony.

Without objection, our witnesses' full statements will be included in the record. Since your written testimony has been made part of the record, the subcommittee requests that you limit your oral testimony to 5 minutes.

Mr. Porcari, you may proceed.

TESTIMONY OF HON. JOHN D. PORCARI, FORMER DEPUTY SECRETARY, U.S. DEPARTMENT OF TRANSPORTATION; RACHEL SMITH, PRESIDENT AND CHIEF EXECUTIVE OFFICER, SEATTLE METROPOLITAN CHAMBER OF COMMERCE; PHILLIP A. WASHINGTON, CHIEF EXECUTIVE OFFICER, LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY; DANIELLE ECKERT, INTERNATIONAL REPRESENTATIVE, POLITICAL AND LEGISLATIVE AFFAIRS, INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS; HON. CARBETT J. "TREY" DUHON III, JUDGE, WALLER COUNTY, TEXAS; AND ANDY KUNZ, PRESIDENT AND CHIEF EXECUTIVE OFFICER, U.S. HIGH SPEED RAIL ASSOCIATION

Mr. PORCARI. Chairman Payne, Ranking Member Crawford, members of the subcommittee, Chairman DeFazio, thanks for the opportunity to testify today on this important topic. My name is John Porcari.

I have had the opportunity to serve in a number of transportation and economic development-related positions in the public and private sectors, including the honor of serving as Deputy Secretary of the U.S. Department of Transportation and twice serving as secretary of the Maryland Department of Transportation.

It is my strong belief that high-speed rail systems, higher speed city pairs, and emerging technologies all play an important part in a more equitable, climate-friendly transportation system that builds tomorrow's economy. If you wonder why America's transportation system is configured the way it is today, I would urge you to follow the money.

Allow me to illustrate the point from personal experience. The Maryland Department of Transportation is uniquely organized as a multimodal State transportation organization including highway, transit, aviation, passenger rail, and other components under one roof and served by a unified, flexible State transportation trust fund. That single trust fund provides funds for every transportation mode using revenues from every transportation source.

As I evaluated ways to increase capacity in the Baltimore-New York City corridor, these were my choices: I could add air capacity between BWI Thurgood Marshall Airport and New York with 90 percent Federal funding for runway and taxiway improvements; I could add highway capacity of I–95 to New York with 80 percent Federal funding; or add passenger rail capacity with zero Federal funding. For that 215-mile segment, a passenger rail trip makes far more sense than driving or flying, yet passenger rail capacity was the least likely alternative to be selected.

So if you wonder why we have the unbalanced transportation system we have today, follow the money. Seen in that light, it is an extraordinary statement of State priorities that the California High-Speed Rail Authority's 2030 business plan anticipates 85 percent of its funding from State sources and only 15 percent Federal funding for this project of national and regional significance.

This is a remarkable State financial commitment, and a clear declaration of the State's project priorities. Yet there is no ongoing sustained Federal financial partner of this multiyear program of projects.

To match the people-carrying capacity of phase 1 of the high-speed rail system, California would need to invest $122 to $199 billion towards building almost 4,200 highway lane-miles—the equivalent of a new six-lane highway—and the construction of 91 new airport gates and 2 new runways.

The San Francisco-Los Angeles air route is already the ninth busiest in the world and the busiest air route in America. Doesn't it make sense to prioritize this finite and expensive airport capacity for transcontinental and international flights? For California, the $122 to $199 billion of required highway and airport capacity as an alternative to high-speed rail is double the $69 to $99 billion cost estimate of phase 1 of the high-speed rail system.

The genius of federalism as it applies to our transportation system is that States and local jurisdictions make the project choices that are best for their particular needs. These local project choices aggregate into a national transportation system.

While States and local jurisdictions across the country have raised significant new revenues over the last decade, they still require a Federal funding partner for any significant capital project. Providing real transportation choices at the local and State level requires the establishment of a passenger rail trust fund on par with our Highway Trust Fund and Airport and Airway Trust Fund.

A rail trust fund will solidify and encourage local decisionmaking and project choices for those jurisdictions that choose to prioritize passenger rail.

Decades of multiyear Federal funding gave America the world's best aviation system. Likewise, our Interstate Highway System grew from initially disconnected city pairs into today's national network only with the guaranteed financial contribution of the Federal Government.

A passenger rail trust fund would do the same for community growth and development in towns and cities across the country while building U.S. manufacturing and technological leadership. There are public- and private-sector passenger rail projects currently being proposed in every region of the country.

A consistent, predictable Federal funding partner will jumpstart those projects encouraging new technologies, mutually beneficial collaborations with our freight railroads, and innovations in investment, construction, and operations models.

A high-speed rail network built on local choices requires a level financial playing field. Establishing a passenger rail trust fund is the way to do it. Thank you for the opportunity to testify today. I will be happy to answer any questions.

[Mr. Porcari's prepared statement follows:]

Prepared Statement of Hon. John D. Porcari, Former Deputy Secretary, U.S. Department of Transportation

Chairman Payne, Ranking Member Crawford, members of the subcommittee:

Thank you for the opportunity to testify today on this important topic. My name is John Porcari and I have had the opportunity to serve in a number of transportation and economic development-related positions in the public and private sectors, including the honor of serving as Deputy Secretary of the United States Department of Transportation and twice serving as Secretary of the Maryland Department of Transportation.

You are all well aware of the external forces driving unprecedented change in our transportation system, including the existential threat of climate change, the imperative to build a more equitable transportation system for all Americans, the greater appreciation of how transportation projects are a foundational investment in a stronger economic future, and the growing recognition that a balanced transportation system with a variety of mobility choices is an integral component of our quality of life.

It is my strong belief that high speed rail systems, higher speed intercity rail city/town pairs, and emerging technologies must all play an important part in our future transportation system.

If you wonder why America's transportation system is configured the way it is today, I would urge you to follow the money. Allow me to illustrate the point from personal experience.

The Maryland Department of Transportation is uniquely organized as a multimodal state transportation organization including highway, transit, aviation, passenger rail and other components under one roof and served by a unified, flexible state transportation trust fund (TTF). That single TTF provides funds for every transportation mode, using revenues from every transportation source.

As I evaluated ways to increase capacity in the Baltimore-New York City corridor, these were my choices:

- Add air capacity between BWI Thurgood Marshall airport and New York, with 90% Federal funding for runway and taxiway capacity improvements;
- Add highway capacity on I–95 to New York, with 80% Federal funding;
- Add passenger rail capacity, with *zero* Federal funding.

In other words, I had to find either 10%, 20% or 100% of the project funding from the state's transportation trust fund, depending on the transportation mode I chose.

For that 215-mile segment, a passenger rail trip makes far more sense than driving or flying, yet passenger rail capacity was the least likely alternative to be selected.

If you wonder why we have the unbalanced transportation system we have today, follow the money.

Seen in that light, it is an extraordinary statement of state priorities that the California High Speed Rail Authority's 2030 business plan anticipates 85% of its funding from state sources, and only 15% Federal funding (from one-time sources) for this project of national and regional significance. The state of California has designated a quarter of all of their statewide cap-and-trade revenues for the project. This is a remarkable state financial commitment, and a clear declaration of the state's project priorities. Yet there is no ongoing, sustained Federal financial partnership for this multi-year program of projects, which also features significant economic development components such as local employment, skills training, support of US manufacturing, has immediate economic benefits for the Central Valley, and longer term economic benefits for the state and country.

California's carefully considered choice, endorsed by citizen referendum, to build high speed rail between the Los Angeles and San Francisco Bay regions makes eminent sense, yet has to move forward without the same kind of Federal commitment that ultimately built an aviation system that is the envy of the world and an interstate system that provided the foundation for a generation of economic prosperity.

According to the California High Speed Rail Authority's business plan, to match the people-carrying capacity of Phase 1 of the high speed rail system, California would need to invest $122 to $199 billion toward building 4,196 highway lane miles (the equivalent of a new, six lane highway), and the construction of 91 new airport gates and 2 new runways. The San Francisco-Los Angeles air route is already the 9th busiest in the world, and the busiest route in America. Doesn't it make sense to prioritize this finite (and expensive) airport capacity for transcontinental and international flights?

For California, the $122–199 billion of required highway and airport capacity as an alternative is double the $69–99 billion estimate for Phase 1 of the high speed rail system. Yet this clear state policy choice has to run against the headwinds of existing Federal transportation funding. Other proposed high speed rail projects throughout the country face the same fundamental imbalance in transportation funding.

The genius of federalism as it applies to our transportation system is that states and local jurisdictions make the project choices that are best for their particular needs. These local project choices aggregate into a national transportation system. We fully expect Mississippi and Michigan, Colorado and Connecticut to choose project priorities that make the most sense for them. In practice, however, project choices by states and regions are limited to those that have a Federal funding component. While states and local jurisdictions across the country have raised significant new revenues over the last decade, they still require a Federal funding partner for any significant capital project.

Providing real transportation choices at the local and state levels requires the establishment of a *passenger rail trust fund* on par with our highway trust fund and airport & airway trust fund. For those of us who strongly believe that project choices should be made at the state and local level, the establishment of this third trust fund would for the first time enable local jurisdictions to advance projects that are truly their priorities for the future. A rail trust fund will solidify and encourage *local*—not Washington-based—decision making and project choices for those jurisdictions that choose to prioritize passenger rail.

Decades of multi-year funding certainty gave America the world's best aviation system, with local, regional and state decision-makers able to plan, design and construct airport projects with the certainty of a continuing Federal funding partner. Likewise, our interstate highway system grew from initially disconnected city pairs into today's national network only with the guaranteed financial contribution of the Federal Government. These two ongoing commitments have, in turn, built the airlines, air freight and trucking industries that have helped transform America's economy. The consistency and predictability of a passenger rail trust fund will do the same for community growth and development in towns and cities across the country, while building US manufacturing and technological leadership.

We should welcome and encourage passenger rail system growth at the local and regional level where it makes sense for those jurisdictions. States and the private sector are evaluating or moving to design and construction of projects like Cascadia high speed rail to serve Portland, Seattle and Vancouver, B.C.; Texas high speed rail between Dallas and Houston; high speed passenger service on the east coast of Florida; and additional city/town pairs for Amtrak's cross country network. A consistent, predictable Federal funding partner will encourage new technologies, mutu-

ally beneficial collaboration with our freight railroads, and innovations in investment, construction and operations.

A high speed passenger rail network built on local choices requires a level playing field. We need to acknowledge this fundamental imbalance in our available transportation choices, and correct it for the benefit of our nation's continued growth and prosperity for generations to come.

Thank you for the opportunity to testify today. I will be happy to answer any questions.

Mr. PAYNE. Thank you. I know that our subcommittee vice chair, Ms. Strickland, would have liked to extend an extra warm welcome to Ms. Smith who succeeded the congresswoman as the president and CEO of the Seattle Metro Chamber of Commerce.

It is great to see your leadership here. And please provide us with your testimony, Ms. Smith.

Ms. SMITH. Well, good morning and thank you, Chairman Payne, Ranking Member Crawford, distinguished members of the committee, and Chairman DeFazio. I am grateful for the opportunity to speak today on the enormous potential of high-speed rail across the country and specifically the benefits of Cascadia Ultra-High-Speed Rail connecting riders in one of the fastest growing regions in North America, from Vancouver, BC, to Seattle to Portland, and ultimately to other points south—Salem, Eugene, and northern California.

My name is Rachel Smith, and I am the president and CEO of the Seattle Metropolitan Chamber of Commerce. The Seattle Metro Chamber is the largest and most diverse business association in the Puget Sound region representing over 2,500 companies and a regional workforce of approximately 750,000.

Our region is a deeply interconnected one. The nearly 9 million people living in the Cascadia Corridor, up to BC, through Washington State, and south to Oregon, do not live their lives—or do their business—by city, county, or even national boundaries. And the way we address challenges and seize opportunities for more equitable transportation, land use, housing, and economic centers should and does reflect that.

For our region's business community, those challenges and opportunities are why we believe in the transformative power of rail and why the Seattle Metro Chamber has been an early supporter of high-speed rail in the Cascadia Corridor.

Fast, frequent, and reliable rail is an economic competitiveness tool for any region. Providing people with alternatives to sitting in traffic, mobility options to move seamlessly from work to home to reactional activities, and building community around modern transit technology helps attract talent and adds to the vibrancy of the community. It also frees up precious highway and road space for the movement of goods from our farms and manufacturing centers to the hearts of our cities and towns.

Rail is also a significant tool in our efforts to combat climate change, reducing emissions from cars. In our region, rail is often powered by clean hydro or other renewable energy sources. It also impacts land use. The transportation you build defines the land use you will live with, and rail is a tool for supporting growth where we want it and creating connections to job centers for everyone.

Investment in rail, and transit generally, is also fundamentally an investment in equity. It provides access for historically

underresourced communities to educational and job opportunities. It also allows for the creation of equitable transit-oriented development—using a station as an anchor for mixed-use, mixed-income development where everyone has mobility opportunities whether they live in affordable or market-rate housing units.

And finally, high-speed rail can provide the physical manifestation of the three things the Seattle Metro Chamber, our region, and this country, are laser-focused on: innovation, green jobs, and economic recovery. A project like this creates thousands of jobs; not just jobs that require an engineering degree, but also construction jobs that come with training and transferable skills for people to make a living wage for themselves and their families.

Not every corner of the country is ready for high-speed rail right now, but in the Puget Sound region and the Cascadia Corridor, we are. And we have already got a head start. In my former role as deputy county executive for King County, we had the opportunity to work with one of our biggest and best local companies, Microsoft, who has been a champion for the Cascadia Corridor Ultra-High-Speed Rail idea.

After securing funding for initial studies from the Washington State Legislature, which confirmed feasibility, viability, and demand for the project, we are on our way, and what our region learns can be used by other regions around the country.

This project can serve as a model for how high-speed rail can help a region grow affordably and sustainably, and it would also serve as an important step towards building a domestic capability for high-speed rail and the good jobs this industry could generate.

And to paint the picture more clearly, the Cascadia Ultra-High-Speed Rail would make connections at speeds of up to 250 miles per hour. Conservative estimates put ridership at between 2 to 3 million riders annually with a reduction of 6 million metric tons of CO2 emissions over the first 40 years. Three hundred fifty-five billion dollars in economic growth is projected with 200,000 new jobs related to construction and ongoing operation.

We are prepared to build a coalition of support, refined vision, and secure early funding and agreements to make this picture a reality. We have a strong foundation to build on with support from the Governors of Washington and Oregon as well as the Premier of British Columbia. We also appreciate the interests in the promise of high-speed rail from Members of the Washington delegation, including Vice Chair Strickland and Representative Rick Larsen as well as Representatives Suzan DelBene who has been one of the original sponsors of the American High-Speed Rail Act.

We have a history in the Seattle region of working together to deliver on big ideas. And we believe that high-speed rail is a key ingredient in fulfilling that vision—a vision of a region full of economic opportunity for all. Thank you very much for the opportunity to testify, and I will be happy to answer questions.

[Ms. Smith's prepared statement follows:]

Prepared Statement of Rachel Smith, President and Chief Executive Officer, Seattle Metropolitan Chamber of Commerce

Good morning and thank you, Chairman Payne, Ranking Member Crawford and distinguished Members of the Committee. I am grateful for the opportunity to speak today on the enormous potential of high-speed rail across the country, and specifically, the benefits of a Cascadia Ultra High Speed Corridor rail line connecting riders in one of the fastest-growing regions in North America, from Vancouver BC to Seattle to Portland, and ultimately to other points south: Salem, Eugene, and northern California.

My name is Rachel Smith and I am the President and CEO of the Seattle Metropolitan Chamber of Commerce. The Seattle Metro Chamber is the largest and most diverse business association in the Puget Sound region, representing over 2,500 companies and a regional workforce of approximately 750,000.

Our region is a deeply interconnected one. The nearly 9 million people living in the Cascadia corridor, up to BC, through Washington state, and south to Oregon, do not live their lives—or do their business—by city, county, or even national boundaries. And the way we address challenges and seize opportunities for more equitable transportation, land use, housing, and economic centers should and does reflect that.

For our region's business community, those challenges and opportunities are why we believe in the transformative power of rail, and why the Seattle Metro Chamber has been an early supporter of high speed rail in the Cascadia Corridor.

Fast, frequent, and reliable rail is an economic competitiveness tool for any region. Providing people with alternatives to sitting in traffic, mobility to move seamlessly from work to home to recreational activities, and building community around modern transit technology helps attract talent and adds to the vibrancy of a community. It also frees up precious highway and road space for the efficient movement of goods from our farms and manufacturing centers to the hearts of our cities and towns.

Rail is also a significant tool in our efforts to combat climate change, reducing emissions from cars. In our region, rail is often powered by clean hydro or other renewable energy sources. It also impacts land use; the transportation you build defines the land use you live with, and rail is a tool for supporting growth where we want it and creating connections to job centers for everyone.

Investment in rail, and transit generally, is also fundamentally an investment in equity. It provides access for historically under-resourced communities to educational and job opportunities. It also allows for the creation of equitable transit oriented development—using a station as an anchor for mixed use, mixed income development, where everyone has mobility opportunities, whether they live in affordable or market-rate housing.

And finally, high speed rail can provide the physical manifestation of three things the Seattle Metro Chamber, our region, and this country, are laser-focused on: innovation, green jobs, and economic recovery. A project like this creates thousands of jobs: not just jobs that require an engineering degree, but also construction jobs that come with training and transferable skills for people to make a living wage for themselves and their families.

Not every corner of the country is ready for high speed rail right now—in the Puget Sound region and the Cascadia Corridor, we are.

And we've already got a head start. In my former role as Deputy County Executive for the King County Executive, we had the opportunity to work with one of our biggest and best local companies, Microsoft, who led the inception of the Cascadia Corridor high speed rail idea. After securing funding for an initial study from the Washington State Legislature, followed by feasibility work confirming the demand for high speed rail and the viability of the project, we are on our way to this idea becoming a reality, and what our region learns along the way can be used in other regions around the country.

This project can serve as a model for how high speed rail can help a region grow affordably and sustainably—and it would also serve as an important step toward building a domestic capability for high-speed rail and the good jobs this industry could generate.

And to paint the picture more clearly: the Cascadia Ultra High Speed Corridor rail line would connect riders from Vancouver BC to Seattle to Portland at speeds of up to 250 miles per hour. Conservative estimates place ridership at between 2–3 million riders annually with reduction of 6 million metric tons of CO2 emissions over the first 40 years. $355 billion in economic growth is projected with 200,000 new jobs related to construction and ongoing operation.

We are prepared to build a coalition of support, refine the vision, and secure early funding and agreements to make this picture a reality. We have a strong foundation to build on, with support from the governors of Washington and Oregon as well as the premier of British Columbia. We also appreciate the interest in the promise of high speed rail from members of the Washington delegation, including Rep. Suzan DelBene, who is one of the original sponsors of the American High Speed Rail Act.

We have a history in the Seattle region of working together to deliver on big ideas. With the need for recovery, it is more important than ever that we continue building a more deeply interconnected region full of economic opportunity for all. We believe that high speed rail is a key ingredient in fulfilling that vision.

Mr. PAYNE. Thank you for your testimony.

And now we recognize Mr. Washington for 5 minutes.

Mr. WASHINGTON. Subcommittee Chair Payne, thank you. Subcommittee Ranking Member Crawford, Chairman DeFazio, and all the honorable members of the subcommittee, it is a genuine honor to join you today at this important hearing.

As a young man growing up in the Midwest and specifically on the South Side of Chicago, the story of the first transcontinental railroad was enough to capture my imagination of a vast America being connected for the first time by mighty rail engines. A connection that would enhance commerce, the ability of businesses and their employers to prosper from coast to coast, and also the ability for America to move across our great Nation with ease and comfort.

For me, this moment in American history is best captured in a PBS show, "American Experience," which included an article entitled "The Impact of the Transcontinental Railroad": "The world was put on notice: the transcontinental railroad was completed and America was moving to the forefront of the world's stage."

With respect to the American experience with rail, whether it is light rail, heavy rail, commuter rail, freight rail, long-haul rail, or short-haul rail, it still has the power to move America to the forefront of the world stage and to enhance our Nation in any number of ways.

I say this because as the chief executive officer of the Los Angeles County Metropolitan Transportation Authority and before that the leader of Denver's Regional Transportation District, I have seen with my own eyes the power of rail to transform cities and bring a renewed quality of life and new business to areas once left for dead.

There are four key benefits of high-speed rail if done right: number one, connecting rural areas with the urban core. Starting with the first Union Station built in 1851, major railroad stations have served to connect America and all Americans.

With the advent of new technologies that offer both a faster rail system and safer rail system, high-speed rail can, and I believe will, serve to leverage the legacy of Union Stations across America and renew their purpose by offering a direct connection to the jobs that are often situated in urban cores across the United States.

Today, in Los Angeles, our economic growth is compromised because access to jobs is sharply constrained—not because individuals do not have the skill sets needed for the job, and not because they don't have the education—it is usually because they do not have a way to get to those urban cores where the jobs are.

Number two, renewing the American dream in the form of affordable, equitable housing. I am proud to share that L.A. Metro is a

national leader in growing our transit system alongside transit-oriented communities. In recent years, scarce housing and limited transportation options have put the squeeze on working Americans resulting in rising housing costs and longer commutes.

The good news is that through passage of Measure M here in Los Angeles County in 2016, we are building more mobility-enhancing projects. The second solution, in addition to providing more mobility, Metro is also building housing around this growing system.

To date, we have built more than 2,100 housing units on Metro-owned land, 34 percent of which are affordable. This tells me that if we have a high-speed rail system, for example, the High Desert Corridor intercity rail project in northern Los Angeles County that can connect Apple Valley, unincorporated Los Angeles County, and Palmdale with our urban core and beyond, it would offer a chance for the American dream to be in reach again for a whole new generation of Americans.

A high-speed rail project along the High Desert Rail Corridor would dramatically reduce commute times by connecting some of the fastest growing residential, commercial, and industrial areas in southern California.

And number three, almost 2 years ago to this date on May 16, 2019, I testified before the full committee of the House Committee on Transportation and Infrastructure at the invitation of Chairman DeFazio to discuss Metro's goal of establishing a rolling stock industrial park in L.A. County or what I have referred to as a "Center for Transportation Excellence."

And in conclusion, a final point I would like to make is that if high-speed rail is done right, I believe that Congress can smartly use Hamiltonian means to achieve Jeffersonian ends. That is, we can use the power of the Federal Government to adequately finance these great public works projects.

Thank you so much for having me, and open to questions later on. Thank you so much.

[Mr. Washington's prepared statement follows:]

Prepared Statement of Phillip A. Washington, Chief Executive Officer, Los Angeles County Metropolitan Transportation Authority

INTRODUCTION:

Chairman DeFazio, Ranking Member Graves, Subcommittee Chair Payne and Subcommittee Ranking Member Crawford and honorable members of this subcommittee—it is a genuine honor to join you today at this important hearing.

RAIL CONNECTING AMERICA:

As a young man growing up in the Midwest—and specifically on the south side of Chicago—the story of the first transcontinental railroad was enough to capture my imagination of a vast America—being connected for the first time by mighty rail engines. A connection that would enhance commerce—the ability of businesses and their employees to prosper from coast to coast and also the ability for Americans to move across our great nation with ease and comfort. When Leland Stanford struck the "last spike" on May 10, 1869—which connected the Central Pacific Railroad with the Union Pacific Railroad—it was a historic event. Historic because this rail line would serve as a great bridge across America, a great bridge connecting America.

For this reason, in 1957, Congress wisely established the Golden Spike National Historic Site and later authorized for Federal ownership and administration the

area in and around Promontory Summit in Utah by an act of Congress on July 30, 1965. For me, this moment in American history was best captured in a PBS show the American Experience—which included an article entitled "The Impact of the Transcontinental Railroad" stating that "The world was put on notice: the transcontinental railroad was completed and America was moving to the forefront of the world's stage."

THE AMERICAN EXPERIENCE WITH RAIL CONTINUES:

I wanted to begin my testimony with a historical reference because I believe in William Faulkner's prescient words—"The past is never dead. It's not even past."

And that, I believe, is so very true with respect to the American experience with rail—whether it is light rail, heavy rail, commuter rail, freight rail, long haul rail or short haul rail—it still has the power to move America to the forefront of the world stage and to enhance our nation in any number of ways. I say this because as the Chief Executive Officer of the Los Angeles County Metropolitan Transportation Authority and before that the leader of Denver's Regional Transportation District—I have seen with my own eyes the power of rail to transform cities and bring a renewed quality of life—and new businesses—to areas once left for dead.

For today's hearing, I want to lay out in a clear and concise manner why I believe high-speed rail—if done right—can serve our nation as well as the transcontinental railroad did in the mid-19th century. Done right, I believe high-speed rail can achieve four specific and worthy goals—goals that I believe can appeal to—if not unite—all Americans—irrespective of political beliefs, economic status, or geographic location.

FOUR KEY BENEFITS OF HIGH-SPEED RAIL DONE RIGHT:

Number One: Connecting Rural Areas with the Urban Core:

Starting with the first union station built in 1851 (Columbus Union Station in Ohio) and continuing to this day—major railroad stations have served to connect America and all Americans. With the advent of new technologies that offer both a faster rail system and a safer rail system—high-speed rail can—and I believe will—serve to leverage the legacy of union stations across America and renew their purpose by offering a direct connection to the jobs that are often situated in urban cores across the United States. Today, in Los Angeles, our economic growth is compromised because access to jobs is sharply constrained—not because individuals do not have the skill sets needed for a job—not because they lack the education. No, in many instances individuals simply cannot get to a job location within a reasonable amount of time. And while COVID–19 has certainly changed where people work for now—I think it is reasonable to assume that many offices will be welcoming their employees back in the near future and that the issue of being able to get to the urban core for jobs is not a matter that is all together in our rearview mirrors. This is where I believe high-speed rail and especially its ability to deliver hundreds of thousands of people to urban cores—like Los Angeles—is vital to America's future economic growth.

Number Two: Renewing the American Dream in the Form of Affordable/Equitable Housing:

I am proud to share that LA Metro is a national leader in growing our transit system alongside Transit Oriented Communities. In recent years, scarce housing and limited transportation options has put the squeeze on working Americans resulting in rising housing costs and longer and longer commutes. The Center for Neighborhood Technology's nationwide Housing and Transportation Affordability index indicates that Angelenos spend over 50% of their income on housing and transportation expenses.

A study by the McKinsey Global Institute made three major findings:

One, Los Angeles residents pay nearly half of their income to rent, on average.

Two, housing costs depress Los Angeles County's GDP by nearly 5%, which is over $30 billion per year.

Three, Los Angeles County would need to build housing 4.5 times faster than current rates to meet its current Regional Housing Needs Assessment requirements.

The good news is that through passage of Measure M in 2016, Metro is building more mobility enhancing projects. The second solution, in addition to providing more mobility—Metro is also building housing around this growing system. To date, we have built more than 2,100 housing units on Metro-owned land—34% of which are affordable housing units and we have another 3,200 units of housing under negotiation with developers. Looking forward, we are poised in the years to come to deliver

over 10,000 new housing units—many of them affordable units—around our expanding transit system.

What this tells me is that if we have a high-speed rail system—for example the High Desert Corridor intercity rail project in northern Los Angeles County that can connect Apple Valley, unincorporated Los Angeles County and Palmdale with our urban core and beyond—it would offer a chance for the American Dream to be in reach—again—for a new generation of Americans. A high-speed rail project along the High Desert Rail Corridor would dramatically reduce commute times by connecting some of the fastest growing residential, commercial and industrial areas in Southern California, such as the cities of Palmdale, Lancaster, Adelanto, Victorville and the Town of Apple Valley and offer a potential future linkage to Las Vegas via the planned Brightline West high-speed rail project. In addition, the High Desert Rail Corridor would also connect with the California High-Speed Rail system—connecting Los Angeles to the Central Valley and the San Francisco/Bay Area.

In Los Angeles County, the median home price is approximately $715,000 and with housing costs so much more reasonable outside of Los Angeles—it is a matter of equity that we offer a chance for families and individuals to be able to afford a home outside the urban core and be able to enjoy a quality of life where half their income is not spent on housing and transportation costs. And I should add, according to the State of California's Office of Business and Economic Development, much of the area where the High Desert Rail Corridor would run has been designated as a high poverty area—making the economic development that will result from this project all the more important. High-speed rail can serve to improve housing issues facing American families—if done right.

Number Three: Restoring America's Leadership in Building Rolling Stock:

Almost two years ago to this day, on May 16, 2019, I testified before the full committee of the House Committee on Transportation and Infrastructure—at the invitation of Chairman DeFazio to discuss Metro's goal of establishing a rolling stock industrial park in Los Angeles County or what I have referred to as a Center for Transportation Excellence.

At the time I noted that—and I quote from my testimony—"for reasons that are both very complex and very simple—there are no American manufacturers of mass transit railcars."

This status quo—whether for light rail, heavy rail or high-speed rail—of only being assembled in America—not really made in America—is totally unacceptable.

I view congressional consideration of funding high-speed rail as a perfect opportunity to restore America's role in building—from the ground up—the new rail cars—including locomotives—that will be needed once the track is laid down for new high-speed rail routes.

For Metro—we are prepared to move on our Center for Transportation Excellence—having worked with the City of Los Angeles and County of Los Angeles to identify an area that could host a vast complex where manufacturers and suppliers can work together—using American labor—to build the machines that will deliver 21st century mobility to our citizens.

Number Four—A Safer Way To Travel:

If designed and engineered properly—high-speed rail offers a welcome opportunity to move hundreds of thousands of people across America—daily—in one of the safest modes of travel.

According to the Central Japan Railway Company, their bullet train in over five decades of operation—having carried over 10 billion passengers, has had no passenger fatalities due to train accidents—such as derailments or collisions.

If done right in America—why can't we achieve an identical safety record and in effect do the same here across our great land—as they have done in Japan? After all—all of us have families—and who amongst us do not want to create a safer way for our families to travel—whether that travel is on a daily basis or not.

I believe a high-speed rail route along the High Desert Corridor—which would connect Los Angeles with Apple Valley and Las Vegas holds the promise to offer a remarkably safe travel alternative in a corridor that today sees approximately 56 million annual trips—by air and automobile. In fact, according to a report prepared for the High Desert Corridor Joint Powers Authority, it is estimated that a rail connection between the Apple Valley and Los Angeles would start at a ridership level of 10.8 million annually. Moving this number of people safely and swiftly is—as I see it—sound public policy and a solid investment of Federal dollars.

CONCLUSION:

The final point I would like to make is this—if high-speed rail is done right—I believe this Congress can smartly use Hamiltonian means to achieve Jeffersonian ends. That is, we can use the power of the Federal Government to adequately finance these great public works projects—while allowing local, county and statewide officials to ensure these projects and the manner in which they are built—serve the greatest public good. Clearly, those who favor a strong central government—will appreciate this Congress and the President pressing forward on high-speed rail. However, I think it is also worthwhile to consider the equal opportunity for individuals that high-speed rail can provide—by giving our citizens a level playing field when it comes to the ability—I might even say the freedom—to work and live in a place of their choosing.

Chairman DeFazio, Ranking Member Graves, Subcommittee Chair Payne and Subcommittee Ranking Member Crawford and honorable Members of this Committee—on behalf of the Los Angeles County Metropolitan Transportation Authority—I want to thank you for giving us this opportunity to discuss our views on the timely and important subject raised by this hearing.

I look forward to seeing rail—in all its forms—continue to provide more mobility to millions of Americans and enhance commerce across America in the years ahead. With leadership from Congress—I am confident that the ceremony marked on Promontory Point in Utah will be replicated again and again across America—as we capture the power of rail to transform our great nation for the better.

Mr. PAYNE. Thank you, Mr. Washington, for your testimony.

We will now hear from Ms. Eckert. You have 5 minutes. You are recognized for 5 minutes. Thank you.

Ms. ECKERT. Thank you. Chairman Payne, Ranking Member Crawford, and members of the committee, thank you for inviting me to today's legislative hearing. My name is Danielle Eckert, and I am a representative of the International Brotherhood of Electrical Workers. Our president, Lonnie Stephenson, has asked me to speak on behalf of the IBEW today.

I came to my position through my service as a railroad electrician where I lived and worked in a community put on the map and developed around the railroad industry. The IBEW has 775,000 members across various sectors. Our members work in construction, building high-speed rail systems, and on various railroads throughout the U.S., building, maintaining, and installing infrastructure and equipment for our Nation's rail network.

We are currently onsite at the California high-speed rail project, and one of our signatory contractors will be working with Texas Central and their high-speed rail line. We support robust investments in transportation modes including electrified high-speed rail.

We supported efforts in last year's H.R. 2 that would provide new passenger rail improvement grants and historic funding levels for Amtrak, and most recently the $80 billion investment for rail in President Biden's American Jobs Plan. We firmly believe the expansion of high-speed rail is an answer to addressing several hard questions Americans face.

High-speed rail can offer a cleaner alternative in the pursuit of reduced greenhouse gas emissions. It could provide access to opportunities and vital services for those in rural America who have suffered from de-industrialization.

Congress must ensure that we continue to create good jobs in this industry. This can be achieved by upholding hard-fought labor protections that have been in place for almost a century by designating providers as rail carriers with a workforce covered under railroad labor laws.

Congress must ensure that contractors will compete for work based on who can best train, equip, and manage a construction crew, by requiring Davis-Bacon prevailing wages, upholding Buy America's standards, establishing strong regulatory regimes and safety cultures surrounding new operations and technology, and fostering innovative strategies to deliver economic benefits to local communities.

These kinds of standards are proven strategies to provide America's workforce with a better way of life. Despite wage stagnation, railroad workers have sustained their middle-class wages, healthcare benefits, and a dignified retirement. These are benefits that my family and I have enjoyed.

My own hometown has suffered from the loss of industry similar to many communities throughout America. Unionization peaked in the State in 1989 and reached its lowest point in history in 2019.

Today the median household income in my hometown is $40,000, and the poverty rate is 23 percent. After working for years to get an advanced degree, I made a career change to pursue a future as a railroader. I knew when I got the job the railroad was my home.

Even with a formal education as well as technical military training as an Army reservist, being a railroad electrician was never easy. There were times that I did come home and tell my husband I didn't think I was smart enough to make it through my apprenticeship, but my mentors, my brothers and sisters made sure that I did.

Despite those challenges, being able to pay for my daughter's karate classes and afford our groceries and utility bills while working one steady job was worth all of it. The track was laid by generations before me: wages, benefits, and safer working conditions thanks to the high union density and the rich history of the union workforce's efforts for fair treatment and collective bargaining.

We should honor the dignity of work by ensuring that all current and future railroaders have these fundamental protections. Current construction labor standards, Buy America, and Davis-Bacon ensure that materials used are produced in the United States and that wages and benefits are determined by matching workers in that area.

This coverage is critical in growing high-quality jobs in the cities and towns where the project is built. The benefits of these labor protections are included in the agreement between the State Building and Construction Trade Council of California and the California High-Speed Rail Authority.

This ensured that the jobs created went to workers living in disadvantaged areas. Those workers are receiving the highest level of apprenticeship training, an entry point to careers that expand beyond a single project.

Focusing just on California, agreements like this, both private and public sector, support an industry-funded labor-management apprenticeship system. And 92 percent of all construction apprentices participate in it.

The programs are extremely diverse. In fact, 96 percent of women are in union apprenticeship programs. Seventy-two percent of all union apprentices are people of color. And one in five have exited the foster care system, are emancipated youth, or were pre-

viously incarcerated. Registered apprenticeships give transformative opportunities to communities that need them the most.

Thank you for the opportunity to testify this morning, and the IBEW looks forward to working with the committee to ensure that labor standards are set to uplift and level the playing field and to make a better opportunity for all America. I look forward to answering any questions.

[Ms. Eckert's prepared statement follows:]

Prepared Statement of Danielle Eckert, International Representative, Political and Legislative Affairs, International Brotherhood of Electrical Workers

Chairman Payne, Ranking Member Crawford and Members of the Railroads, Pipelines, and Hazardous Materials Subcommittee thank you for inviting me to today's legislative hearing.

BACKGROUND

My name is Danielle Eckert, and I am an International Representative of the International Brotherhood of Electrical Workers Political/Legislative Department. Our International President, Lonnie Stephenson, has asked me to speak on behalf of the IBEW. I became an International Representative through my service at a class I freight carrier as an IBEW railroad electrician. I lived and worked in a community put on the map and developed around the railroad industry.

With 775,000 active members and retirees across various sectors, The International Brotherhood of Electrical Workers (IBEW)—represents nearly 400,000 members who work in construction or are employed by railroads. These members construct, build, maintain or install infrastructure and railroad equipment for our nation's rail transportation network.

The IBEW supports robust investments in maintaining, modernizing, and diversifying transportation modes available for use, including electrified high-speed rail. In particular, we strongly support efforts the Committee took in last year's version of H.R. 2, the Moving Forward Act, that would provide $19 billion in new Passenger Rail Improvement, Modernization and Expansion (PRIME) grants, and historic funding levels for Amtrak that would allow it to embark on ambitious capital projects both on and off the Northeast Corridor. We also applaud the inclusion of $80 billion for rail projects in President Biden's American Jobs Plan, which would usher in a new dawn of rail modernization.

The IBEW firmly believes the expansion of high-speed rail is an answer to addressing several of the hard questions Americans currently face. The reality is that there are constraints that limit what our current transportation options can provide, and we need to diversify the modes Americans use. High-speed rail can offer a cleaner alternative in the pursuit of reduced greenhouse gas emissions. It can provide access to opportunities and vital services for those in rural America who have suffered from deindustrialization and underinvestment. Members of the IBEW have been at the forefront of addressing these challenges. IBEW construction members are currently on-site at the California high-speed rail project. IBEW railroad members have been maintaining rail systems throughout the U.S. since before the first World War.

The federal government's role in achieving significant advancements in the build-out of infrastructure we rely on is undeniable. Even at the early onset of railroad expansion, building a rail system that would span the United States required federal support through the Pacific Railway Act.[1] The federal government is still instrumental in facilitating the adoption of bold transportation projects. Although, we are falling behind today, primarily due to the lack of predictable and sustained federal investment, causing us to rely on rail infrastructure built decades or even a century ago. For far too long, the answer to addressing the needs of our rail infrastructure has been to repair just enough of what we need in order to just get by. Globally, the high-speed rail industry is a mature one. In fact, 32,612 miles (52,484 km) of track designated as high-speed is currently in use throughout the world. The

[1] https://www.ourdocuments.gov/doc.php?flash=false&doc=32

United States ranks 9th with only 456 miles (735 km) of track.[2] The U.S. is 55 years behind our biggest global competitors when it comes to the development of high-speed rail.

Highway and road traffic congestion is a severe issue in many of the cities where the alternative of high-speed rail has been adopted or explored. Even with the early embracement of high-speed rail, the surrounding areas can still suffer from lack of useable infrastructure, high-speed rail along the Northeast Corridor operates in one of the most congested rail territories on earth. Systems rely on infrastructure well past its prime, and that has reached the limits of its capacity many years ago. Despite these challenges, 260 million passenger trips are made on the Northeast Corridor yearly with the expectation that this demand will only rise.[3] Without expanded capacity, the only alternative for commuters will be an already crowded stretch of highway to get to work.[4, 5] This solution would only add to the greenhouse gas emissions released by the transportation sector, which is already the largest emitter of greenhouse gases in the U.S. The transportation sector accounts for 28 percent of total emissions. Fifty-nine percent of which is due to light-duty vehicles.[6]

Finally, the development of high-speed rail brings the promise of job creation and economic growth. This includes both good-paying middle-class jobs directly tied to the railroad, including constructing, operating, and maintaining networks as discussed below, but also in the communities that benefit from greater connectivity. Expanded high-speed rail would provide a viable third mode of transportation for many Americans living in outlying and rural communities. Regions that continue to suffer from the consequences of deindustrialization would have meaningful access to urban centers. That means access to jobs that can pay higher wages and the ability to be treated by specialized healthcare professionals. It is for this reason that the American Public Transit Association reports that every $1 invested in high-speed rail will generate $4 in economic impacts, and every billion dollars invested will create 24,000 skilled jobs.[7] With measurable benefits like relieving congestion in densely populated areas, reducing greenhouse gas emissions from the transportation sector, providing access and economic opportunity, it is hard to understand why we are so far behind and why we would be willing to fall even further behind.

LABOR PRINCIPLES FOR HIGH-SPEED RAIL

To fully unlock the economic promise of high-speed rail, Congress and the executive branch must ensure that investments in high-speed rail continue to create good jobs and support local communities. While the future of high-speed rail and other new entrants like Hyperloop and Maglev are exciting, we cannot lose sight of the importance of the standards and protections that have worked so well for so long. This includes:

- Avoiding the circumvention of hard-fought labor protections that have been in place for almost a century by stopping the intentional carving out of railway labor laws;
- Ensuring that contractors must compete for work based on who can best train, best equip, and best manage a construction crew and by continuing to require Davis-Bacon prevailing wages on projects;
- Spurring domestic industry in the United States by enforcing Buy America conditions on the procurement of materials;
- Establishing strong regulatory regimes and safety cultures surrounding new operations and technologies;
- Fostering innovative strategies to deliver economic benefits to local communities and economically disadvantaged workforces.

IBEW RAILROAD

Despite wage stagnation in the United States, railroad workers covered under the Railway Labor Act have sustained their middle-class wages, healthcare benefits, and dignified retirement. These are benefits that my family and I have enjoyed. My own hometown has suffered from the loss of industry. The rate of union workers in my state peaked in 1989 and was at its lowest point in history in 2019.[8] The

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[2] https://uic.org/IMG/pdf/20200227__high__speed__lines__in__the__world.pdf
[3] https://nec.amtrak.com/about-the-nec/
[4] http://nec-commission.com/app/uploads/2018/04/NEC-American-Economy-Final.pdf
[5] https://www.fra.dot.gov/necfuture/about/
[6] https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions
[7] https://www.apta.com/research-technical-resources/high-speed-passenger-rail/benefits-of-high-speed-rail-for-the-united-states/
[8] https://www.bls.gov/regions/mid-atlantic/news-release/unionmembership__pennsylvania.htm

median household income in my hometown is $40,000 and the poverty rate is 23 percent. Unexpectedly, after working for years to get an advanced degree, I knew when I got the job, the railroad was my home. Even with all the formal education, military occupational specialties in chemical, biological, radiological and nuclear materials and in small arms repair, being a railroad locomotive electrician was never easy. There were times that I came home and told my husband that I didn't think I was smart enough to get through my apprenticeship, but my mentors, my brothers and sisters, made sure that I did. Despite those challenges, being able to provide karate classes for my daughter, never having to worry if we could afford our groceries that week, that a utility was going to be shut off or that I would have to piece together a million different "entry level" jobs that would never add up to a career, it was worth all of it. The track was laid by generations before me: wages, benefits, and safer working conditions thanks to high union density and the rich history of the union workforce's efforts for fair treatment and the collective bargaining agreements negotiated by railroad workers.

Although we have achieved remarkable progress in the industry's economic and safety conditions in the last 100 years, there is still considerable work to be done—and ample opportunity for ill-considered policy to take us backward.

First, it is essential that entities providing high-speed rail and materially similar operations are considered rail carriers under the existing statute.[9] This ensures these entities are covered under the Railway Labor Act, Railroad Retirement Act, and Railroad Unemployment Insurance Act. This coverage is critical to maintaining high-quality jobs in the industry, and entities wishing to provide service should not be permitted to skirt these requirements due to novel aspects of new technologies and operations.

Wages

Through collective bargaining agreements, union railroad electricians like myself have earned the right to middle-class wages, healthcare benefits, and a voice in adopting work rules. High-speed rail, when done right, can create good union jobs with good wages. Recent comparative studies of wage stagnation in the United States have found that unionized workers earn an average of 11.2 percent more in wages than nonunion peers.[10] Although it is challenging to identify a peer group when it comes to the performance of traditional railroad work, to offer a comparison, we can use the wages rates to a similar workforce in the railroad industry, workers performing the same or similar tasks but not covered under rail labor laws. The IBEW is losing members due to an increasing trend to transfer work historically performed by railroaders to outside contractors, resulting in a suppression of wages in the industry. This reality is demonstrated by comparing the wages of workers who perform the duties of *installation maintenance and repair occupations* under the designation of "rail transportation," a highly unionized force with those falling under the definition of "support activities for rail transportation."[11, 12] The "rail transportation workforce" earns on average $16,900 more a year than the latter. In economically depressed areas, an extra *$16,900* means having money for mortgage payments, groceries, healthcare expenses, and equipment for your kids' participation in sports, especially if the only jobs left are railroad jobs.

Railroad Retirement

IBEW railroad workers are covered under the Railroad Retirement Act and draw their retirement benefits from an independent agency created in the 1930s. The design of this system was to ensure that the railroad workforce could retire with dignity, and benefits are funded solely through taxes that the workers and the employers of those workers pay into the system.[13] By continuing to define high-speed rail operators as rail carriers, employees will continue to have access to the occupational benefits Congress intended.

Safety

Unionized rail labor has played a fundamental role in adopting safety practices and training standards in the industry and has been central in raising awareness of ongoing safety issues. Rail labor has also long advocated before Congress, and the executive branch on rail safety issues, including on the Federal Railroad Adminis-

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[9] 49 U.S.C. Section 10102

[10] https://www.epi.org/publication/why-unions-are-good-for-workers-especially-in-a-crisis-like-covid-19-12-policies-that-would-boost-worker-rights-safety-and-wages/

[11] https://www.bls.gov/oes/current/naics3__482000.htm#00-0000

[12] https://www.bls.gov/oes/current/naics4__488200.htm

[13] https://rrb.gov/OurAgency/AgencyOverview#:~:text=Financing%20%2D%2D%20Payroll%20taxes%20paid,on%20a%20two%2Dtier%20basis.

tration's Railroad Safety Advisory Committee (RSAC) as critical stakeholders in the drafting of new regulatory standards. Finally, our organizations are integral in educating members of their rights to access statutory safeguards from dangerous practices and discrimination by their employers.[14]

We will continue to play an essential role in the safe deployment of new operations and networks. We recognize that these networks may require new regulatory approaches, such as the Rule of Particular Applicability granted to Texas Central Railroad.[15] However, the answer to new technologies cannot be an abdication of federal safety oversight. Put another way, simply because a new operation does not fall within the confines of existing regulation does not mean that it should remain unregulated. Entities who share characteristics with more than one mode of transportation, like rail and transit, cannot use this ambiguity to evade the regulatory oversight of either modal agency. More than anyone, labor knows that failures to regulate safety and fair working conditions result in accidents, injuries, and even deaths and open the door to abuses of employees. We firmly reject the argument that the only way to foster innovation and growth is a dangerous hands-off approach and call on the members of this Committee to be in opposition to any such efforts.

IBEW CONSTRUCTION

The IBEW represents both members covered under the Railway Labor Act and those who work with signatory contractors who build high-speed rail systems.

For construction, it is essential that entities providing high-speed rail service and benefitting from grants provided under Chapter 229 are subject to existing grant conditions, including Buy America and prevailing wages.[16, 17] In turn, this ensures that materials used are produced in the United States and that wages and benefits are paid to the various job classifications of construction workers in the community without regard to union membership—instead of who provides the cheapest labor. This coverage is critical in maintaining high-quality jobs in the industry and prevents a race to the bottom in wages that do nothing to support the local community's economy or provide its residents with careers that last a lifetime.

Unfortunately, when data points are quantified to demonstrate the value of a project, the last one considered is providing access to the economic benefits of the people living there. Access can mean providing an affordable option to commute to growing economic centers and vital healthcare hubs. Having access also means providing a means to learning a skilled trade and a pathway to the middle class, achieved through participation in registered apprenticeship programs.

The California high-speed rail project has made opportunity a reality for the workers currently constructing the line. The impact of the success of California high-speed rail project on the Central Valley community is not solely due to the Davis-Bacon prevailing wage standards applied federal grant dollars. We can make high-speed rail work by ensuring that the benefits from the investment reach members in the community where the project is built. The State Building and Construction Trade Council of California partnered with construction contractors and the California High-Speed Rail Authority to reach a community benefits agreement, which ensured that the jobs created on the project went to disadvantaged areas. The community benefits agreement has a targeted hiring program requiring that workers from economically disadvantaged areas, earn between $32,000 to $40,000 annually, with a minimum of 10 percent being comprised of workers facing traditional barriers to employment.[18] The agreement has opened opportunities to participate in high-standard registered apprenticeship programs, proper worksite safety standards, fair compensation, benefits, and an entry point on the road to the middle-class through high-skill careers that expand beyond a single project.

To date, more than 5,500 construction workers have been dispatched to the California high-speed rail site, with more than 35 construction sites active today.[19] Almost 73 percent of the workers dispatched to the project live in the Central Valley

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[14] http://www.ibew.org/articles/14ElectricalWorker/EW1408/RailWorkerRights.0814.html

[15] https://www.federalregister.gov/documents/2020/11/03/2020-20388/texas-central-railroad-high-speed-rail-safety-standards#:~:text=This%20final%20rule%20of%20particular,speed%20rail%20(HSR)%20system.&text=The%20TCRR%20HSR%20system%20is,%2Fh%20(205%20mph).

[16] 49 U.S.C. Section 22905.

[17] 49 U.S.C. Section 24312.

[18] https://hsr.ca.gov/business-opportunities/general-info/community-benefits-agreement/#:~:text=The%20Community%20Benefits%20Agreement%20(CBA,live%20in%20economically%2Ddisadvantaged%20areas.

[19] https://hsr.ca.gov/2021/03/16/video-release-high-speed-rail-releases-march-2021-construction-updat/

and more than 400 are disadvantaged workers.[20, 21] Projects like California high-speed rail have shown proven success in removing the barriers that many Americans face reaching the middle class.

In 2017, the State Building and Construction Trades Council of California reported that 92 percent of all construction apprentices in California participated in a union/joint labor-management apprenticeship program. Union programs produced 95 percent of all graduates in the state, with 68 percent of the participants coming from communities of color, and 96 percent of all women in state-approved apprenticeship training were in union programs.[22] These numbers have only grown since then. Currently, 71 percent of apprentices participating in union programs are people of color, and one-in-five apprentices have exited the foster care system, are emancipated youth, or were previously incarcerated. In a six-year time frame, the number of union apprenticeships has grown in the state from 40,000 participants to almost 70,000. Registered apprenticeships give transformative opportunities to communities most in need of first and second chances.

Moreover, due to standards placed on the materials purchased and the California High-Speed Rail Authority's small business policy, more than 613 certified small businesses have contributed to the work on the project, 195 are owned by economically disadvantaged individuals, and 68 are owned by a disabled veterans.[23, 24] The California high-speed rail project has invested $195 million in companies in the U.S. but headquartered outside of the state.[25] In compliance with the Buy America standards, the girders for the high-speed rail bridges were manufactured in California and made from steel produced in the U.S. and required materials from all over the country. The concrete comes from the state as well.[26]

CLOSING

Throughout history, the federal government has been an essential partner in supporting the development of bold solutions to our transportation problems. New projects must adhere to the appropriate safety standards and worker protections set for the rest of the industry regardless of federal support. When we use federal resources to deliver these projects, they must include the proper labor standards to create the good jobs we desperately need.

On behalf of the IBEW, I thank the Committee for the opportunity to testify this morning and take steps to resolve our nation's transportation needs. We look forward to working with the Committee to ensure that labor standards are set to uplift and level the playing field for better opportunities for all Americans.

Mr. PAYNE. Thank you, Ms. Eckert.

We will now turn to Mr. Duhon for 5 minutes.

Mr. DUHON. I would like to thank Chairman Payne, Ranking Member Crawford, Chairman DeFazio, and the members of the committee for allowing me to speak on behalf of my constituents today. My name is Judge Trey Duhon, and I serve as county judge for Waller County, Texas. Neighboring Houston, we are both suburban and rural and a minority-majority county which creates a diverse and unique set of impacts on our citizens related to growth and infrastructure.

I am here today to provide a real-world perspective on the Texas high-speed rail project promoted by Texas Central Railway. I am not opposed to high-speed rail, but if you believe high-speed rail can provide the American people with a cheaper and greener method of mass transit, please listen to me that Texas high-speed rail project does none of those.

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[20] https://www.buildhsr.com/press__center/news__releases/news__release__highspeed__rail__95532.aspx

[21] https://hsr.ca.gov/high-speed-rail-in-california/statewide/

[22] https://cabuildingtrades.org/the-facts-about-apprenticeship-programs-in-california/

[23] https://hsr.ca.gov/2021/01/29/news-release-first-graduating-class-of-central-valley-training-center-in-selma-ready-to-work-on-high-speed-rail/

[24] https://hsr.ca.gov/business-opportunities/small-business-program/

[25] https://hsr.ca.gov/wp-content/uploads/2021/04/National__Impact__Map.pdf

[26] https://www.buildhsr.com/hsrinvestment/pdf/California__Economy__2017.pdf

Since 2014, Texas Central has promised landowners and elected officials that no tax dollars will be needed for its private project; that it would only cost around $10 billion to construct; and it would be operational by 2021. Texas knew better so it passed a law in 2017 prohibiting the use of State funds for private high-speed rail which is still in effect today.

Then just last year, Texas Central's chairman, Drayton McLane, admitted in a letter to a Texas State senator that the project had turned into a $30 billion project, meaning costs have tripled without even putting a shovel in the ground. He also admitted that the project would not be privately financed, sharing that they were going after stimulus money to fund the project.

Why the sudden change? Because over the past 7 years, Texas Central has secured only $450 million to our knowledge in private financing which includes a $300 million loan from the Bank of Japan, just 1.5 percent of the project's $30 billion current price tag.

Even if Texas Central had $30 billion, they do not have authority under Texas eminent domain law to acquire the 240 miles of private property along the proposed route, an issue that is still being litigated before the Texas Supreme Court.

In addition, when the Surface Transportation Board took jurisdiction over the project 10 months ago, it made clear that Texas Central cannot begin any construction or operation unless and until it submits a full application for a construction permit, which TCR has to file. Assuming it ever does, this hard [inaudible] application process will take years to complete.

In the final days of the Trump administration, the Federal Railroad Administration for the first time in its history issued a Rule of Particular Applicability creating a carve-out for the Japanese high-speed rail technology TCR wants to use for the project, but again the FRA said this does not grant authorization to construct or operate the project either. To put it bluntly, Texas Central is in no better position to build the project today than it was before the STB and the FRA rulings.

Then there is the issue of feasibility. As I speak here today, not one Government agency has evaluated whether the project is economically viable. In fact, during the EIS process, the FRA removed economic viability from the project's purpose altogether and proceeded with the study feasibility absent.

What is worse, Texas Central has overstated ridership while underestimating cost, a recipe for disaster. As one expert put it, quote, "Based on our experience and analysis, we are concerned that Texas Central's project will fail so spectacularly that privately financed U.S. high-speed rail lines may never be given a second chance."

So I am urging you to pursue it with extreme caution. Before you decide to give billions of taxpayer dollars to build this private project, consider why you should simply take this company's word that construction is around the corner and the project is financially feasible when history has proven that their words mean nothing.

What is the benefit? The project is not interoperable. It is totally incompatible with and disconnected from any other existing and future rail lines, and the exclusivity doesn't end with its tracks. Ticket prices will not be like the Metro. It will be for the business class.

If the goal is to build connected rail systems accessible to all travelers to strengthen the national rail network, this project is not the answer.

If it is built, the project will hit rural and minority communities along the proposed route—like mine—the hardest, including at the other end of the proposed route in South Dallas where entire low-income and minority neighborhoods will be displaced because only one route was ever considered. The Department of Transportation recently halted expansion of I–10 and I–45 near downtown Houston due to similar concerns.

In closing, I urge this Congress to invest our precious and limited tax dollars in infrastructure projects that would benefit all Americans. Have we not learned anything from the taxpayer-backed disaster in California? Texas Central promised its project was privately financed, and everything they have done to date, including the EIS, was based on that.

So we say let it live or die in the free market. Invest our tax dollars in more equitable transportation solutions. We should not have to pay for another train to nowhere while having our communities destroyed by the very tax dollars that we work hard to contribute. Thank you again for the opportunity to speak on behalf of the people of Waller County.

[Mr. Duhon's prepared statement follows:]

Prepared Statement of Hon. Carbett J. "Trey" Duhon III, Judge, Waller County, Texas

I'd like to thank Chairman Payne and Ranking Member Crawford for allowing me to speak on behalf of my constituents today. My name is Judge Trey Duhon and I serve as the County Judge for Waller County, Texas. Neighboring Houston, we are both suburban and rural and a minority majority county, which creates a diverse and unique set of impacts on our citizens related to growth and infrastructure.

I'm here to provide a real-world perspective on the Texas HSR project promoted by Texas Central Railway. I'm not necessarily opposed to HSR in general, but if you believe that HSR can provide the American people with a cheaper, greener way to move around, please listen to me that the Texas HSR project does none of those.

Since 2014, Texas Central has promised landowners and elected officials that no tax dollars would be needed for its private project; that it would only cost around $10B to construct; and it would be operational by 2021. Texas knew better, so it passed a law in 2017 prohibiting the use of State funds for private HSR, which is still in effect today.

Then, just last year, Texas Central's Chairman, Drayton McLane, admitted in a letter to a Texas State Senator that "the project has turned into a $30B project," meaning costs have already tripled without even putting a shovel in the ground yet . . .

He also admitted the project would *not* be privately financed, sharing that they were going after stimulus money to fund the project.

Why this sudden change? Because over the past 7 years, Texas Central has secured only $450 million in private financing, which includes a $300 million loan from the Bank of Japan . . . just 1.5% of the project's $30B+ current price tag.

Even if Texas Central had $30B, they do not have authority under Texas eminent domain law to acquire the 240 miles of private property along the proposed route, an issue still being litigated before the Texas Supreme Court.

In addition, when the Surface Transportation Board took jurisdiction over the project 10 months ago, it made clear that Texas Central cannot begin *any* construction or operation unless and until it submits a full application for a construction permit, which TCR has yet to file. Assuming it ever does, this "hard look" full application process will take years to complete.

In the final days of the Trump administration, the Federal Railroad Administration, for the first time in its history, issued a "Rule of Particular Applicability," cre-

ating a carve out for the Japanese HSR technology TCR wants to use for the project. But, again, FRA said this does *not* grant authorization to construct *or* operate the project either. To put it bluntly, Texas Central is in no better position to build the project today than it was before the STB and the FRA rulings.

Then there is the issue of feasibility. As I speak here today, not one government agency has evaluated whether the project is economically viable. In fact, during the EIS process, FRA removed economic viability from the project's purpose altogether and proceeded with the study, feasibility absent.

What's worse, Texas Central has overstated ridership while underestimating costs—a recipe for disaster. As one expert put it, "based on our experience and analysis, we are concerned that Texas Central's project will fail so spectacularly that privately financed U.S. high-speed rail lines may never be given a second chance."

So I am urging you to proceed with extreme caution. Before you decide to give billions of taxpayer dollars to build this "private" project, consider why you should simply take this company's word that construction is around the corner and that the project is financially feasible, when history has already proven their word means nothing.

What is the benefit? The project is not "interoperable." It is totally incompatible with, and disconnected from, any other existing and future rail lines. And the exclusivity doesn't end with its tracks. Ticket prices will not be like the Metro . . . it'll be for the business class. So if the goal is to build connected rail systems accessible to all travelers, to strengthen the national rail network, this project is not the answer.

If it is built, the project will hit rural and minority communities along the proposed route, like mine, the hardest . . . including, at the other end of the proposed route in South Dallas, where entire low-income and minority neighborhoods would be displaced because only one route was ever considered. The DOT recently halted expansion of Interstate 10 & 45 near downtown Houston due to similar concerns.

(In closing) I urge this Congress to invest our precious and limited tax dollars in infrastructure projects that would benefit *all* Americans. Have we not learned anything from the taxpayer-backed disaster in California? Texas Central promised its project was privately financed and everything they have done to date, including the EIS, was based on that. So we say let it live or die in the free market. Invest our tax dollars in more equitable transportation solutions. We should not have to pay for another train to nowhere while having communities destroyed by the very tax dollars they worked hard to contribute.

Thank you again for the opportunity to speak on behalf of the people of Waller County.

Mr. PAYNE. Thank you, sir.

Now we will have Mr. Kunz for 5 minutes.

[Pause.]

Mr. PAYNE. Mr. Kunz, can you hear us?

You are muted, sir.

Mr. KUNZ. Am I on now?

Mr. PAYNE. Yes.

Mr. KUNZ. Thank you, sir.

I would like to thank Chairman Payne, Chairman DeFazio, Ranking Member Crawford, and the other members of the subcommittee for holding this important hearing today.

America is one of the last remaining industrialized nations that does not have high-speed rail. The rest of the world has embraced this technology and for decades has benefitted greatly from it. High-speed rail offers an exceptional transport mode that can efficiently carry 20,000 people per hour without congestion, hassles, or delays. High-speed rail not only adds major new capacity to the transportation mix, but also alleviates intercity congestion on both highways and airport runways.

High-speed rail can unlock numerous ridership opportunities. Essential workers like teachers, police, and firemen in the high-priced Silicon Valley could find affordable housing options with a short train ride to Merced or Fresno in California's Central Valley.

Residents of Eugene, Oregon, could access jobs in Portland's tech sector or booming recreational industry with a 35-minute commute.

A Houston salesperson could prepare for an important client meeting in Dallas with dedicated Wi-Fi and ample workspace, while gliding past the notorious congestion on I–45.

A college student in Atlanta could make it home for Thanksgiving in Charlotte, while picking up grandma along the way in Greenville, South Carolina.

International tourists visiting Disney World in Orlando could extend their vacation with a day trip to the gulf beaches of the Greater Tampa Bay area.

High-speed rail will directly create scores of well-paying, family-supporting jobs in the construction, operation, and maintenance of a modern transportation network.

This will also spur a new American manufacturing renaissance centered on rail development. Envision our vast Great Lakes region, with its powerhouse experience in manufacturing, being transformed from the rust belt of America to the new rail belt of our Nation. High-speed rail decreases regional disparities by stitching together economic growth capitals with underdeveloped population centers and revitalizing neglected urban cores with transit-oriented development.

One tragic legacy of expanding our highway system is the demolition of urban neighborhoods that disproportionality affects communities of color and low-income residents. High-speed rail reverses this trend, reconnecting communities, and offers a more equitable access to transportation.

High-speed rail has an unmatched track record of safety. Japan, with the world's first high-speed rail network, has carried millions of people over 50 years without a single fatality. In comparison, as many as 40,000 Americans are killed every year in auto accidents on our highways.

As an all-electric system, high-speed rail provides a major climate solution by decarbonizing a large portion of our transportation sector, and thus ensuring a sustainable environment for future generations.

Over 20 nations around the world, including Europe, Asia, the Middle East, and North Africa have benefitted from robust and consistent levels of Government investment in advanced, high-speed rail networks. China has invested over $1 trillion in high-speed rail, allowing them to build a world-class, 22,000-mile network in 14 years. Not taking a pause, China plans to construct another 21,000 miles of track over the next 9 years. Modern infrastructure like this fuels China's explosive economic growth, making it challenging for us to compete with them in the 21st century.

On the other side of the globe, the United Kingdom is currently doubling their rail network with a $120 billion investment. France has invested over $160 billion in constructing their system. Spain's 2,000-mile high-speed rail network is the largest in Europe, costing more than $175 billion. These are considerable investments by nations that are similar in size to Texas.

With this in mind, we concur with Secretary Buttigieg's recent statement: "I just don't know why people in other countries ought

to have better train service or more investment in high-speed rail than Americans do."

A Nation that has undertaken bold infrastructure projects in the past, such as the Erie Canal, transcontinental railroad, and Interstate Highway System can surely realize the vision of a national high-speed rail network. So we offer these four recommendations for making high-speed rail a success in America:

Number one: A national plan of action, which includes establishing a new high-speed rail development agency within DOT, with the task of advancing project corridors, administering funds, expediting permitting, and sharing connectivity, and adopting safety standards.

Two: Immediate and large-targeted investments to fast-track the development and construction of the top five projects of national importance. Completion of these projects will build the momentum and competence to build out a national high-speed rail network.

Three: The establishment of a rail trust fund to ensure completion of individual high-speed rail project corridors. Dedicated, robust, and consistent funding will not only reduce project costs and development timelines but unlock sources of private capital with a reliable Federal partner.

Number four: Adopt best practices, global standards, principles, and system governance structures that have been proven in half a century of high-speed rail operations around the world.

In summary, we believe one of our Nation's greatest opportunities of the 21st century can be realized by this committee. We urge you, without delay, to invest substantially in high-speed rail and help write America's next great chapter for this country.

Thank you for your time and inviting me to testify today, and I welcome questions.

[Mr. Kunz's prepared statement follows:]

Prepared Statement of Andy Kunz, President and Chief Executive Officer, U.S. High Speed Rail Association

I'd like to thank Chairman DeFazio, Chairman Payne, and Ranking Member Crawford and the other Members of the Subcommittee for holding this important hearing today.

We have before us a unique opportunity to remake our nation by investing in high speed rail—an incredible mode of transport proven to deliver multiple benefits across a number of sectors. The rest of the world has embraced this technology and for decades has benefitted greatly from it. America is one of the last remaining industrialized nations that doesn't have high speed rail.

The benefits are many and include the following:

MOBILITY & JOBS BENEFITS

High speed rail offers a new very high-capacity transport mode that can efficiently carry 20,000 people per hour without congestion, delays, or hassles. High speed rail not only adds major new capacity to the transportation mix, but also takes the strain off both highways and runways making both of those modes function better as a secondary benefit. High speed rail shortens commutes and makes it easy to apply for jobs in a much larger region, and for employers to draw from a larger geographic area.

Imagine the benefits to residents of Houston who could get to jobs in Dallas in an hour and 15 minutes by high speed rail. This would be a game changer. Residents of Detroit could get to jobs and business opportunities in Chicago in an hour and a half. Atlanta residents could have easy access to Charlotte with 1 hour and 10 minute train rides. Residents of Eugene, Oregon could work in Portland's tech

sector or its booming outdoor gear industry with 35 minute trains between those cities.

High speed rail will also directly create millions of good paying permanent jobs across multiple sectors and at every skill level building, operating, and maintaining the new high speed rail network. This will also spur a whole new American manufacturing industry centered on rail development—creating millions of permanent jobs including fabrication, steel making, concrete tie production, and the many components that make up a modern train.

Economic Development, Equity, & Affordable Living

High speed rail stimulates economic development in multiple ways and spreads it to cities and regions left behind—connecting them with major employment centers and all the opportunities that brings. HSR also lowers the cost of both transportation and housing for millions of people while providing vast access to miles of entire affordable communities. High speed rail can help repair damage done to minority communities from the build out of our interstate highway system which separated communities. High speed rail ties communities together providing affordable, clean transportation.

Safety Benefits

High speed rail is the safest form of transportation possible. The longest operating HSR network in Japan has been carrying billions of people for 50 years without a single fatality. In comparison, as many as 40,000 Americans are killed every year in auto accidents on our highways.

Climate Solution

HSR can rapidly decarbonize a large portion of our transportation sector—the #1 sectoral cause of climate change. High speed rail is electric so can be powered by clean domestic sources of energy, including renewables.

Global Levels of HSR Investment

High speed rail is a mature, proven technology currently in operation in more than 20 countries including many nations that are far smaller than the U.S., with a fraction of our GDP.

The reason so many nations have advanced high speed rail networks is because their governments invested heavily in these new systems as sustained investments over several decades.

- The United Kingdom is currently doubling their high speed rail network, investing another $120 Billion dollars on High Speed 2 expanding to the northern cities.
- France has invested well over $160 Billion into the construction of their network and is still adding new lines to more cities.
- Italy built a new network connecting their nation, investing around $75 Billion so far.
- Spain built the largest high speed rail network in Europe spanning nearly 2,000 miles—investing more than $175 Billion.
- (Keep in mind each of these nations are similar in size to a single U.S. state like Texas, California, or Florida.)
- The largest global investment to date in high speed rail is in China. Over the last 14 years, the Chinese government invested more than $1 Trillion dollars building a brand-new, 22,000 mile, world-class HSR network that is now fully operational, transporting billions of people all over their nation. This is more new high speed rail miles than the rest of the world combined. On top of that, China has an additional 21,000 miles currently under construction to complete their full national high speed rail network of 43,000 miles by 2030—only 9 years from now.

Of special note, China's economy is on track to be bigger than ours by 2028. The only way we'll be able to compete is by having the same highly efficient national transportation system underlying our economy. As we all know, transportation dictates the entire functioning and cost of running a nation. Countries that have a fast, delay-free transport system will outcompete others that don't.

AMERICA CAN HAVE THIS TOO

We agree with Secretary Buttigieg's recent statement: "I just don't know why people in other countries ought to have better train service or more investment in high speed rail than Americans do". There really is no good reason. High speed rail has been built in every type geography, climate, and government structure. We can do this! Building our national high speed rail network should be as important and historic as Eisenhower building the interstate highway system back in the 1950s which created the framework for our continued prosperity we all enjoy today. It's our responsibility now to do the same level of generational investments for future generations coming along behind us.

4 RECOMMENDATIONS FOR MAKING THIS A SUCCESS IN AMERICA (based on case studies around the world)

1) National Vision & Plan of Action

Establish a new *High Speed Rail Development Agency* within the USDOT tasked with the mission to work with states to plan out national network, lead projects, standardize the development and construction processes, bring down costs and project development timelines, and offer one-stop permitting.

2) Immediate, Large Targeted Investments

Fast-track all of the top 5 projects by designating them projects of national importance, accelerating their development and construction to completion, so the public can get relief with a fast new mode of transport.

3) Establishment of Rail Trust Fund

We need a capital fund to build the new high speed rail network, project by project to full build out by 2035. This includes the establishment of Project Trust Funds for each of the leading HSR projects to draw from through project development and construction phases—saving time and development costs.

4) Enacting Global Standards, Principles, System Governance Structure

We should use principles of system design and operational standards garnered from 50 years of high speed rail development wisdom and experience from more than 20 nations.

CONCLUSION

The House Transportation and Infrastructure Committee has the power to transform America with 21st century transportation—setting into motion a new direction unleashing layers of benefits, solutions, and improvements to all our lives, and our future. We urge you to invest heavily in high speed rail starting today and help write America's next chapter of greatness.

Thank you for your time and for inviting me to testify today. I'm happy to answer any questions you may have.

Mr. PAYNE. Thank you, Mr. Kunz, for your testimony.

We will now move on to Member questions. Each Member will be recognized for 5 minutes. I will start by recognizing myself.

Mr. Porcari, the current rail system in the United States is based on centuries' old methods of transportation. High-speed rail can dramatically change the way that Americans travel, and it really could open doors to a whole set of possibilities for regular travel and commuting that were thought not to be possible.

What would be the benefits of a fully integrated high-speed rail network in the United States?

Mr. PORCARI. Mr. Chairman, it is a great question.

There would be multiple benefits from a fully integrated high-speed rail system in the United States, starting with the effect on the local economies. History has shown throughout the world and in the United States, that as you build higher speed rail and build ridership in that virtuous cycle, it has local spinoff economic development benefits. Not just in the station areas, but for the local economy as well.

It also can connect major metropolitan regions with less populated parts of the country, enabling them to benefit from economic development as well.

Finally, the U.S. manufacturing, U.S. employment, and other secondary and tertiary economic benefits are really important here as well because we can literally build an industry that has good-paying, family-supporting jobs. And as you heard from Ms. Eckert, for example, skilled trade opportunities for the future.

So building the economy of the future, I believe, requires a diverse and balanced transportation system where high-speed rail is an integral component of it and local jurisdictions have the ability to build on those plans.

Mr. PAYNE. Given the high cost of a network, and the lack of immediate identifiable sources of funding, what are your thoughts on how to fund high-speed rail? Quickly.

Mr. PORCARI. Mr. Chairman, as I testified, I believe a passenger rail trust fund should be our ultimate goal here. And without that consistent funding year after year, which is what it takes to build a program of projects around the country, we simply won't get the national system that we need. Every transportation revenue source should be a candidate for that passenger rail trust fund.

Mr. PAYNE. Thank you.

Mr. Washington, it is good to talk to you again. I had a quick conversation with you during the transition time, a call that we had. But equity in rail is one of my top priorities as chairman of this subcommittee.

Your testimony states that high-speed rail can connect rural areas to urban cores, opening the door for new, innovative ways for people to travel, and expanding their potential commuting range. High-speed rail has the potential to deliver serious benefits to Americans, and we must ensure that all Americans stand to benefit from such a network.

How would we implement high-speed rail so that all Americans can equitably benefit from it?

Mr. WASHINGTON. Well thank you, Mr. Chair. And great to talk with you again.

One of the examples that I put in my testimony was high-speed rail from rural areas. There is one of the highest poverty areas northeast of Los Angeles that is affordable. Houses there are $250,000 to $300,000 a year, whereas in Los Angeles, they are about $700,000 a year. And so high-speed rail can really play a role in bringing folks from those rural areas to the urban core. And the ridership for that is about 10 million people on an annual basis.

And so I think in terms of equity, and in terms of quality of life, and in terms of people being able to fulfill the American dream, I think high-speed rail can do that. If you can get on a high-speed rail and be from that high-poverty area to Los Angeles urban core in 40 minutes, that is a game changer for families, and that is an opportunity for them to fulfill the American dream.

Mr. PAYNE. Thank you very much.

And I will yield back.

And we will now recognize the ranking member, Mr. Crawford, for 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman, I appreciate it.

I wanted to talk to County Judge Duhon and get some insight from you. Judge, if you would, can you talk about, in some detail, the ways that the proposed Texas high-speed rail project impacts landowners and the environment?

Mr. DUHON. Thank you, Ranking Member Crawford, for the question.

We have been trying to, for many years now, trying to have a very substantive conversation with the Federal Railroad Administration regarding a lot of the impacts that this project could have on our community in Waller County. The list, it is probably too long to really go into detail here, and I have got materials in my appendix.

But for example, if this is built on a berm through Waller County, it is going to severely impact drainage and flooding in this area of the county. This part of the county has been impacted. We have had four FEMA floods in this part of the county in the last 4 or 5 years; emergency routes for our emergency response, our school-bus routes.

We have raised a public safety issue. There is a natural gas compressor station that will be just a few hundred feet from this high-speed rail line that periodically releases gas into the—when the mine becomes over pressurized. And that is just a few feet away from a high-speed rail line with an overhead electric line.

And these are just a few of the examples where we have tried to sit down with the FRA, numerous times, to have these conversations and be treated as equal partners. And we have been refused at every step. And that is why we have a very serious issue with the process that has been used with Texas Central Railway.

I would encourage anyone, on any project going forward, please do not use the same process that has been used in Texas Central Railway because our communities are being disregarded.

Mr. CRAWFORD. I appreciate the insight, Judge, and I have one more question for you. [Inaudible} high-speed rail projects, do you think it is—would be self-sustaining or would it be——

Mr. PAYNE. Mr. Crawford, we cannot hear you.

Mr. CRAWFORD. I was asking the Judge if he thinks that there is sufficient demand to warrant this project, or would it be self-sustaining, or would it require Government funding to support it?

Mr. DUHON. There is no doubt in my mind this project will have to be subsidized. I mean, let's just be honest. There are very few high-speed rail lines in the world that run in the black, and the two that do are very heavily subsidized.

And so, you know, we have had an environmental impact process that we have gone through for many years with public input, but it was all predicated on the fact that this line would be privately financed. I think the results of the EIS could have been drastically different if they had said, "This is going to use public money."

But all that being the case, that is also why the FRA never looked at the feasibility of this project. And honestly, there has been several independent studies. The Reason Foundation—and this is detailed in my appendix—the Reason Foundation took a very hard look at the numbers and they found that the ridership was substantially overstated. They are saying—you know, they are looking at getting 16,000 trips a day between Houston and Dallas.

Right now, flights alone, just the flights are at 2,000 and some change, and that is declining. So you would have to get everybody off an airplane to get on this train, and then you would still have to get 13,000 to 14,000 people out of their cars, onto a train. And I am just going to tell you, in Texas, that is going to be impossible.

So this budget will never cash flow. It just—the numbers do not work.

Mr. CRAWFORD. Well Judge, I appreciate your insight.

And Mr. Chairman, I will yield back the balance of my time.

Mr. PAYNE. The gentleman yields back.

We now recognize the chairman of the full committee, Mr. DeFazio, for 5 minutes.

[Pause.]

You are on mute, sir.

[Pause.]

Mr. PAYNE. You are still on mute.

Mr. DEFAZIO. There we go. All right.

Mr. PAYNE. Now you are on.

Mr. DEFAZIO. I did not mute myself, so you guys must have muted me. Thank you.

To Mr. Porcari: I had mentioned the example of Virginia DOT looking at not high, but a higher speed rail connection in lieu of an expansion of I–95, which had more than a 100-percent cost saving. And they figure they can get even better, more efficient throughput.

You mentioned going from DC to New York, and you used examples of how there was no money available in terms of rail, and the percentages that would go for aviation or highway. But has anyone costed out what it would actually cost to expand, adequately, highway capacity from DC to New York the way Virginia DOT did from Richmond to DC and/or—I don't know where the heck you would get the airport capacity. I don't think—you cannot land any more planes at LaGuardia, and Kennedy obviously is a bit distant.

Could you cost that out? Did you compare it?

Mr. PORCARI. Mr. Chairman, for the Maryland portion of I–95, we did, at the time, take a look at some preliminary costs. And there were some environmental hurdles in a prospective NEPA process that actually, at the time, led us to abandon that process. It would also require a kind of multistate cooperation—which is very difficult in the best of times—and a series of coordinated projects between multiple States between Maryland and New York in that example.

By contrast, what we have today in the Northeast Corridor passenger rail system is cooperation among the Northeast States. We have a well-established pattern of increasing service, whether it is commuter rail or mainline Amtrak service.

And the Virginia example that you cite is, I think, a very good one and very instructive, in that you have a partnership of CSX, the Commonwealth of Virginia, and Amtrak that actually came to an agreement on badly needed improvements that will serve both the freight and the passenger rail network. And it is a bit of a misnomer at this point to call that the Northeast Corridor when it is being extended through Virginia and there are projects right behind that in North Carolina.

I think the pattern has been set in a positive way for cooperation on core multistate corridors like that. What we are missing is the consistency and predictability of multiyear funding and a Federal partner if the States are willing to put up their share.

Mr. DEFAZIO. Yeah, got that. There has been criticism of high-speed rail or even higher speed rail once constructed, or novel, will require subsidies. Are you aware of any high-speed rail project in the world that is not Government subsidized? I know Virgin in Great Britain says, "Well, we make money."

Yeah, you make money. You don't to have maintain the railbed, the Government does that. All you do is a put a train set on it and run it.

Mr. PORCARI. Yeah, that is a really important point, Mr. Chairman.

Virtually everyone that I am aware of in the world has had a very big public investment in the infrastructure itself. The operation by a private operator can be very profitable. I would point out that is no different conceptually from our airway system, for example, where Federal taxpayer investments make possible the operations of our airlines, which in turn are profitable. And no different than that, there's a very profitable trucking industry in the U.S., which is enabled by the public infrastructure investment of the highway system itself.

Mr. DEFAZIO. Great.

To Mr. Washington: The High Desert Rail Corridor you are talking about, you know, obviously that California high-speed rail, for whatever reason, started in the valley instead of going into the urban areas on either end or out of the urban areas on either end. I have never understood that.

How are you going to get out of L.A., and do you have right-of-way for that? And then what is the potential for connecting to the private project projected out of Las Vegas?

[Pause.}

Mr. DEFAZIO. You are muted, Phil. They muted you. Yeah, there you go.

Mr. WASHINGTON. Thank you.

The potential is very, very good to make that connection with the private railroad. And actually, that is the plan, and we are working with that private railroad right now to do that. And that connection, with the help of a twin-bore tunnel, will allow train speeds to be at anywhere from 180 to 200 miles an hour, getting from that High Desert Corridor to Los Angeles. And so it is a huge effort; it links up with high-speed rail from the North as well, with the link-up coming into Union Station as well.

So I think the potential to link up both of these are very, very great. And we are working with both entities.

Mr. DEFAZIO. And what about the right-of-way issue? Do you have right-of-way for the L.A. section?

Mr. WASHINGTON. Yes. We have some of the right-of-way and we are working on some of the other. But I think the high possibility of acquiring what we do not have is very possible.

Mr. DEFAZIO. OK. All right. And then one other thing you have talked about previously. You did not get much chance to talk about it, and this will be the last thing, because I am going to run out

of time, would be the Center for Transportation Excellence. I want to see the value added and the manufacturing jobs here, in the United States of America. We are trying to get rid of the Chinese Communist government-owned CRRC, and the very, very heavily subsidized BYD.

Mr. WASHINGTON. Right.

Mr. DEFAZIO. Tell us a little bit about the Center for Excellence and the prospects there.

Mr. WASHINGTON. Well one of our ideas, very quickly, is right now we have, as you know, Mr. Chairman, assembly plants. Assembly plants all over the country. What we are proposing is a soup-to-nuts, all-included manufacturing outfit in this country that manufactures trains from the ground up: forging steel, all of those things.

So we have proposed an industrial park with suppliers onsite as well to actually build, again, from the ground up, passenger rail car vehicles and locomotives. It is the return of manufacturing to this country as we see it.

We can be that. We can be the Center for Transportation Excellence in the largest county in America and bring in people. Low-income, foster care kids is what we are thinking about, to help educate them to build trains in this country. We have the land. We have the willingness from our elected officials to do that.

There is a great demand for railcars in this country, as you know. And so we are leaning forward in the foxhole to stand up an industrial park in this country.

Mr. DEFAZIO. Great. Thank you.

Thank you, Mr. Chairman.

Mr. PAYNE. Thank you, Mr. Chairman. The gentleman yields back.

And now I recognize my good friend, the gentleman from Illinois, Mr. Davis, for 5 minutes.

Mr. DAVIS. Thank you, Chairman Payne. And always great to see you, even though we are halfway across the country right now. With the expensive high-speed rail system, maybe one day we could get back and forth from DC to Illinois in a very fast and effective manner.

But right now we have got to look at the reality of how do we build any of these projects that my colleagues have been talking about, and the witnesses have been talking about, without investing in new technologies in high-speed rail. Look, I have got the high-speed rail corridor between Chicago and St. Louis that runs right through my district. We have used it as an opportunity to combine tracks and combine opportunities so that some of our urban areas are not cut off by multiple rail lines within the same community.

And given your background, Mr. Porcari, with DOT, is there anything from a policy's perspective that we can do to encourage adoption of newer technologies when it comes to high-speed rail?

Mr. PORCARI. Yeah, it is a great question, Congressman Davis. And the short answer is yes, there are things that we can do to encourage it. The Federal research enterprise, the R&D investments that are made by various Federal agencies, including the Department of Energy, can be valuable parts of this. And the

transfer of manufacturing technologies through the manufacturing extension partnership in the Department of Commerce, and other part of the Federal enterprise can be a vertically integrated pipeline, if you will, to take this technology, pilot manufacture it, and then make sure that we have a private-sector industry that actually manufactures it here in the U.S.

We have never in an integrated way, tried to capitalize on the economic potential across the board, including manufacturing and R&D, and that is clearly an unrealized potential of high-speed rail.

Mr. DAVIS. Great. I am glad you agree. I learned before I even got to Congress, when I worked on rail projects along that corridor as a congressional staffer, that even some of the underpass projects that we needed, and overpass projects that we needed implemented that were tertiary to the operation of the rail system, they were more costly and more delayed because of a regulatory environment that encouraged long and cumbersome environmental reviews. Mr. Porcari, this is why I introduced the One Federal Decision Act that would limit all of the environmental reviews and other—what I consider the paperwork processes—to 2 years.

Now as we look ahead and we talk about high-speed rail projects that will hopefully get to the speeds that we have witnessed over in other countries, but how does that regulatory process, from your experience at DOT, how does it slow down the ability to actually achieve the goals that are being discussed here today versus just talking about them in perpetuity into the future?

Mr. PORCARI. The regulatory process, Congressman, can clearly be a burden and get in the way; it puts a premium on frontloading the process. I am thinking right upfront about how you do that.

One example is actually California high-speed rail, where the delegation of the NEPA process to the State level; it is the first time it has happened with a rail project from the Federal level, has resulted, in my opinion, and I think if you look at the numbers, in a much more streamlined process with better environmental outcomes.

So this is not an either/or issue. There have previously been highway projects where the NEPA process was assigned to the State level from the Federal Government. It has now been done for the multiple EISs and EAs that are required for the California high-speed rail project. And I think that should be a model for the future, because one of the things that you do as part of that process is you get all of the environmental review agencies around the table in day one. Not sequentially, but concurrently.

Mr. DAVIS. No, that is a very good point. I agree with you. I certainly hope that all of us on this committee realize as we look ahead at policy proposals, that we take what has been successful, like you just mentioned, and then not have it as an exception. If it is working as an exception, then why in the world wouldn't we make every State and every project eligible for the same thing?

So I look forward to working with you in the future, Mr. Porcari, and the rest of the witnesses, too, and my colleagues, to implement some good policies much like you have mentioned.

And I yield back the balance of my time.

Mr. PAYNE. The gentleman yields back.

We now recognize my colleague from New Jersey, Mr. Malinowski, for 5 minutes.

Mr. MALINOWSKI. Thank you, Mr. Chairman.

Thanks to our witnesses.

I want to start by reinforcing the point that Chairman DeFazio made that demand would follow supply for efficient high-speed rail. I represent, and our chairman represents, as a State, New Jersey, where people crowd onto trains every day. At least they did before the pandemic. Even though those trains take about as long to get them from New Jersey to New York City as they did 100 years ago when part of the trip involved getting on a passenger ferry to cross the Hudson River. That's how little progress we've made, and yet we still had standing room only until recently. If we had better, faster train service, absolutely the demand would follow, and I think that's true in many parts of the country.

So to understand the program as you said, Mr. Porcari, we have to follow the money. We heard that since 1949, the Federal investment in our highway system has been around $2 trillion. So we didn't let our highway system live or die on the free market, did we, to borrow a phrase from Judge Duhon.

Mr. PORCARI. No, Congressman, we did not. What we actually provided in that example is consistent multiyear funding with essentially guaranteed cost to complete the interstate system.

Mr. MALINOWSKI. Right. And had we not done that, I would imagine that the United States would look a heck of a lot different than it does today. In fact, we'd probably have radically different population totals in States that overwhelmingly rely on the highway system.

Meanwhile, train investment, Federal investment in rail has been around $96 billion, just $96 billion since then. Compare that to China where in just the last 14 years, you've had about $1 trillion of Government investment in building up a high-speed rail network. The United Kingdom, my understanding is that they're investing about $120 billion just now in expanding their existing network. So just now, a current investment in the U.K. that is greater than the sum total of all of our investments since 1949.

Let's talk a little bit about the brass tacks of how this works on the Northeast Corridor, which of course, you know very well. We have Acela trains, of course, that theoretically can run up to 150 miles an hour; in reality, that would be still pathetic compared to France and Germany and China, but in reality we don't come close to that. So my question for you is as a practical matter, why can't we have nice things? What are the physical, practical impediments to achieving higher speeds? Is it the tracks? Is it the catenary? Is it something else? What are the political and regulatory obstacles? And are these obstacles surmountable in your view?

Mr. PORCARI. Congressman, we certainly have technical obstacles. You mentioned catenary, the right-of-way itself, the alignment of it. None of those are insurmountable. We have a 111-year-old tunnel in New York. We have a B&P tunnel in Baltimore that's Civil War era. Those are not the biggest obstacles. It is more a question of will. What we want to do as a country in infrastructure, we do. And we've never made rail really the priority that I think it needs to be. And we've never provided meaningful choices for the

States to select rail and build a multiyear rail program because we don't have the funding part of it.

There are other regulatory and other issues, but I would say that the passenger rail system in the U.S. is moving from a survival mode to a growth mode, and I think that's a very healthy thing for the country, whether you're talking about our cross-country service, one of the coastal corridors, or the Midwest service. All of that is really important.

In just the same way we built the interstates, city pairs aggregating into a national system, we can really do that with the passenger rail system if we have the will.

Mr. MALINOWSKI. Thank you so much, and you know, just to close, for me this is a practical question. It's a matter of competitiveness. It's about whether the United States can do and be seen to do great things again. But it's also a question of freedom. I want my constituents, I want all my colleagues' constituents to have the greater freedom to choose to live where they want to live, to be able to get to work in a variety of different ways that people all around the world have and Americans do not. And I hope that's something we can come together around on this committee. Thank you so much. I yield back.

Mr. PAYNE. Thank the gentleman. It is duly noted that it's not a mistake that four Members in the New Jersey delegation are on the Committee on Transportation and Infrastructure. We are bound by railroads in our State coming from every direction in every community. So this is a very important topic for us.

Now, I recognize Mr. Weber for 5 minutes.

[Pause.]

I believe you're muted, sir.

[Pause.]

You're still muted. OK, we will move on. We will recognize my good friend, the gentleman from California, Mr. LaMalfa.

[Pause.]

I believe you're muted, sir.

[Pause.]

OK, next we'll try Mr. Fitzpatrick.

[Pause.]

OK. We'll move on to Mr. Stauber.

[Pause.]

Oh, Mr. LaMalfa is——

Mr. LAMALFA. Mr. Chairman, I appreciate——

Mr. PAYNE. Hey.

Mr. LAMALFA. Good to see you. I'm a little tied up right now. Can I defer to a little later on this panel, please?

Mr. PAYNE. The gentleman can defer.

Mr. LAMALFA. Thank you.

Mr. PAYNE. We will try Mr. Burchett. Did I say it right? Burchett.

[Pause.]

Ms. Steel.

Mrs. STEEL. Thank you, Chairman Payne——

Mr. PAYNE. All right.

Mrs. STEEL [continuing]. Ranking Member.

Mr. PAYNE. Please proceed.

Mrs. STEEL. Thank you. Thank you, all the witnesses today. The original price tag for California high-speed rail, I've been talking about California's high-speed rail, was supposed to be $33 billion. Over the past decades, the price has exploded to more than $100 billion and keeps going up with no deadline for completion. This project is unpopular in California and Governor Newsom has stated that there simply isn't a path to get from Sacramento to San Diego let alone from San Francisco to Los Angeles.

As mentioned by Judge Trey Duhon in this hearing, this is taxpayer-backed disaster with no expectations of it working today, tomorrow, or next year. The failed project has also replaced farms, small businesses, and houses with the half-built train tracks and has ruined rural and suburban communities.

In 2019, the Department of Transportation stopped payment of $929 million to California and ended its agreement with the State for high-speed rail because of their continued failures on the project. When Secretary Buttigieg testified before this committee and I raised these concerns, he said we have not had the type of resources or commitment that other countries have. One hundred billion dollars is a lot of resources. My constituents are already taxed enough with California State and local taxes and skyrocketing gas prices making it unaffordable to live. I just came back from Texas. Their gas price was $2-something and we are paying over $4 in California. We must preserve our local economy by lowering taxes, not raising them. And we must not continue throwing tax dollars into a high-speed money pit.

As I stated, Judge Duhon, like you, I have a question. I'm not opposed to high-speed rail. California's high-speed rail has failed, and the Texas high-speed rail project is supposed to be privately funded. I am concerned about taxpayer subsidies going to this project if it continues to follow California's track record for mass delays and cost overruns. What are some of the lessons we learned from both of these projects? Is it fair to compare Japan's successful high-speed rail system to this project we are talking about in the United States today? Since I've been riding the high-speed rail in Japan, I was raised in Japan. You know what, it's a very reasonable price and you can go really fast. So I'm not really against it the same as you, but just give us those lessons, what we can do in the United States.

Mr. DUHON. Thank you, Congresswoman, for that question. And you know, that really gets to the heart of the matter if we're going to do successful high-speed rail. We have to really look at the factors, the real factors that make high-speed rail work, and what are those factors.

There have been a lot of folks that simply take the position because you have a densely populated area in Houston and Dallas that if we draw up a high-speed rail line in between those two, that everybody all of a sudden is going to go to this high-speed rail line and ride it. And that's simply not true.

There are so many things that go into what makes high-speed rail successful. I'll give you one example. The Reason Foundation has done studies where they have found that where you put in high-speed rail where there was previously existing trains in service, where you're replacing an older mode with a newer mode, and

people were already used to using transit. And the example in Japan that you gave is a perfect example. A lot of people in Japan don't own their own vehicles. Their employers pay and subsidize for them to get on that high-speed rail. Between Houston and Dallas, we have maybe 2,000 to 3,000 flights a day that go between Houston and Dallas and a lot of those are business travelers. So when you compare it, it's just not apples to apples. And that's why this project, we've said from day one would never cashflow.

You know, where's the end terminus? For example, the station in Houston is still 9 miles away from downtown. So how do your business travelers get to the station rather than just go down to Houston Hobby Airport and fly to Love Field which puts them 5 minutes from downtown Dallas? So these are all the kind of factors that go into—I can just tell you this. When you're looking at high-speed rail, and you're looking at costs that have gone from $10 billion to $30 billion and it really didn't cashflow at $10 billion, and then you have $30 billion, and you've got these very high projected ridership numbers, I just can tell you this. The folks in Waller County, the folks that I know, a family of four is not going to pay $1,000 to ride a train between Houston and Dallas when they can get there on a $50 tank of gas 1½ hours later. It's just not going to happen. So it's not a mass transit solution, at least not for this corridor.

And I think we've got to be real careful because otherwise it will—you know, having a project like this fail will hurt projects where they should go, like on the Northeast Corridor where you already have people that are using transit and we need better transit in those areas. But this project, for a lot of reasons, does not fit the mold for successful high-speed rail.

Mrs. STEEL. Thank you, Judge Duhon. I yield back.

Mr. PAYNE. The gentlelady yields back. I now recognize Mr. Moulton for 5 minutes.

Mr. MOULTON. Thank you, Mr. Chairman. I'd like to direct another question to the judge. I spent some time living in Dallas, and I'm very familiar with Texas and appreciate all the uniqueness of that State. You stated that you don't believe, in your personal belief at least, that Texas Central Railway will make an operating profit, that it will require continued subsidies after construction is complete. Does your highway system and airport system require continued subsidies?

Mr. DUHON. Congressman, thank you for your question, first off, and of course, highways and airlines and the airports, I'm sure receive—I mean highways in Texas, of course, are primarily built by TxDOT along with Federal funds. So absolutely there's no doubt about that.

Mr. MOULTON. We've actually—Judge, we've actually transferred about $158 billion in general funds, so you know, not quite twice as much but almost twice as much as we've invested in Amtrak in its entire history into the Highway Trust Fund. Those are not user fees. That's general funds transfers just since 2008. So actually, there's a lot of operating subsidies that go in there, and that's not even talking about the operating subsidies that go to things like the highway patrol and emergency services. There's a lot of support structure required to subsidize these highways as well.

We did a study in Massachusetts that looked at the subsidies that taxpayers pay for our highway infrastructure here in Massachusetts. It was $60 billion a year, whether or not you own a car because that's not in user fees. And I know that I–45 between Dallas and Houston is the second deadliest stretch of highway in the entire country. So you look at what they're planning to build there, it's pretty significant.

Are you familiar with the plans to widen I–45 and make other highway improvements between Houston and Dallas and how much those will cost?

Mr. DUHON. Yes, Congressman, I am familiar with the projected costs of the expansions. And you know, there is a cost to transportation, there's no doubt, and subsidies. I just would remind everyone that this project, Texas Central Railway, was never predicated on public dollars. It was predicated on a privately financed system. So——

Mr. MOULTON. I understand that, Judge, and I agree that that is how the project was initially sold. It's interesting, you know, you never hear of a highway project being sold on private investment because frankly, the business community does not see a return on investment for highway projects except in very rare circumstances with toll roads.

And so, it's actually a remarkable testament to the innate efficiency of high-speed rail that you can get a positive return on the investment. Infrastructure funds invest in high-speed rail systems all over the world for construction, but there are a number of high-speed rail systems that actually operate at a profit whereas it's very hard to find highway systems that operate at a profit at all, even after the infrastructure is built, when you look at the system, that is, not just the companies that travel over it.

When Microsoft looked at the Cascadia Corridor up in the Pacific Northwest, and we've heard testimony from Washington DOT there too, they determined that to build the high-speed rail line would cost half as much as expanding the highway by just one lane in either direction. And of course, if you just expand the highway, no one goes any faster. Lots of studies and experience have shown that congestion actually just increases over time.

But even in a perfect scenario, driving in the middle of the night, you might go 80 miles an hour, which is a far cry from 250 miles per hour on ultra-high-speed rail in the Cascadia Corridor. Because of that travel speed difference and the time difference, you also get all these additional benefits that you wouldn't get from expanding the highway because businesses, travelers, families, are much closer. You can live in many more places—and still work downtown—than you could before. They've estimated about $350 billion in economic benefits if you build that high-speed rail system. And so just do the math, I mean, if you want to build high-speed rail for half the cost and you get $350 billion in additional benefits, that seems to make a lot of sense.

But there's another thing that—and then by the way, the same estimates apply to California where it looks like about twice as much money to expand highway and airport capacity. It also takes less space.

Mr. Porcari, last question. We just have a few seconds. How much do you have to expand highway lanes to accommodate the capacity of a single high-speed rail line? In other words, how many highway lanes does it take?

Mr. PORCARI. In the California example, Congressman, it's 6 lanes and 91 airport gates and 2 new runways.

Mr. MOULTON. OK. So that's going to take a lot of space.

Mr. PORCARI. Yes, it is.

Mr. MOULTON. And a lot more farms and houses, as my colleague from California was mentioning, than building high-speed rail.

Mr. PORCARI. That's correct.

Mr. MOULTON. Mr. Chairman, I yield back.

Mr. PAYNE. I thank the gentleman and after I recognize the next Member on the other side of the aisle, Mr. Moulton will take the gavel for a set period of time. I now recognize Mr. Burchett for 5 minutes.

Mr. BURCHETT. Thank you, Mr. Chairman. I appreciate you very much to allow me to be here. My first question is for Mr. Washington. You discussed some of the benefits of high-speed rail done right with extra—seems like you had an extra emphasis on the "done right" portion of it, but your State's high-speed rail project currently underway has already more than doubled in cost, and its completion date has been delayed nearly 10 years. And I'm wondering how is this an example of what you would consider to be a high-speed rail "done right"?

Mr. WASHINGTON. Well, thank you for the question, Congressman. I understand the concerns and the reservations that some Members of this body have with California high-speed rail. The best I can do though is speak on behalf of my agency, which has jurisdiction over rail across the largest county in America, that is, L.A. County.

But we're confident that if given the appropriate resources and the best practices that we have employed, that we can dramatically improve the lives of people in our county. And some of those are, you know, property acquisition done right, limited change orders, decentralizing decisionmaking, partnering with the contractor and the various cities. This template has worked for us, and I think it can be replicated around the country. And I think that doing it right—and I had an emphasis on "doing it right" that includes the things I just mentioned, I think we can build high-speed rail all over this country.

Mr. BURCHETT. Secretary Porcari, you talked about the need for us to create a passenger rail trust fund, much the same as our current Highway Trust Fund. How do you propose generating revenue for that, and can it be done without raising or creating new taxes?

Mr. PORCARI. Congressman, thanks for the question. A passenger rail trust fund should be eligible for every transportation revenue source that we currently have. And there are ones on the horizon that potentially may raise revenues as well like highway-based user fees. But the real point is that any form of surface transportation should be on a level playing field for Federal funding whether it's rail, highway, or other, and let the local jurisdictions decide what is the right mix for them.

Mr. BURCHETT. Judge, let me ask you, many of the high-speed rail projects seem to favor the urban areas over the rural areas of America, and based on your experience, what do you think we can do at the Federal level to make sure that taxpayer dollars be wisely spent on projects that will benefit everybody? Is that even possible?

Mr. DUHON. Thank you, Congressman. I really do appreciate that question because that is the one thing that has struck me having dealt with the proposed project between Houston and Dallas for several years and having interactions with the Federal Railroad Administration. You know, we just ask that local communities be treated as equal partners. That is the biggest thing I can emphasize to have meaningful and substantive conversations where we can talk about how this will impact our community and how can we either work around that or work through it.

The city of Waller, which is partly in Waller County, they've been working for decades to build the city center. It's really going to be a beautiful concept. The high-speed rail line blows right through the middle of it and completely destroys it. We wanted to sit down and have some conversations, can the route be adjusted? Can they look at other routes other than the one that was preselected?

And the FRA really refused to engage with us. And it was so disappointing. I was also president of the Waller County Subregional Planning Commission. This was a group we put together for the purpose of engaging in coordination with both Federal and State agencies. We could not get anywhere with the FRA. We requested to coordinate with Texas Department of Transportation because they are a State agency. They are also required to coordinate. And they met with us once, and we went through and told them all the impacts that this could have and please give this to the FRA, please make sure they are aware of these. And then when we tried to have a second meeting with them, they refused. And they refused because they were being instructed by the FRA not to meet with us. If you can believe that. They were instructed—that's what they said: We are being told not to meet with you.

Mr. BURCHETT. What does the FRA stand for?

Mr. DUHON. Federal Railroad Administration.

Mr. BURCHETT. OK, OK. I was just making sure it wasn't some Texas deal.

Mr. DUHON. I'm sorry, I'm sorry.

Mr. BURCHETT. That's all right. I'm from Tennessee. We know about TVA and——

Mr. DUHON. OK, I gotcha.

Mr. BURCHETT. The IRS and the rest of those.

Mr. DUHON. We had to sue TxDOT in State court. We won. We had to take it up on appeal. We still won. And then when they sat down with us and we said, OK, so tell us what's going on with this project, they said, we're no longer an accredited agency, and we're not in the loop anymore. So it was almost a concerted effort to keep us from engaging and having any input in the project. So please, any successful project has to have meaningful engagement with the local communities that you are going to substantially impact when you bring a project like this through the middle of their community.

Mr. BURCHETT. I appreciate you saying that. I mean, it goes back to what Mr. Washington had said about the template that you have in place, have to get it upfront. A good lawyer friend told me one time good fences make good neighbors.

Mr. DUHON. That's true——

Mr. BURCHETT. You all didn't have the good fences.I——

Mr. DUHON [continuing]. Twenty-five years, I can say that as absolutely true.

Mr. BURCHETT. Right on. Chairman Moulton, I yield the rest of my time back to you, brother, and it's good seeing you, my friend.

Mr. MOULTON [presiding]. Good seeing you, too, sir. Thank you very much.

Mr. BURCHETT. Thank you for serving our country, brother.

Mr. MOULTON. And you, too. And you, too. Great to have you on, great to be on the committee here, with you.

So next we are going to go to Congresswoman Newman of Illinois.

Ms. NEWMAN. Thank you, Chairman.

Mr. MOULTON. You are very welcome.

Ms. NEWMAN. And thank—there we go. Thank you, Chair, and thank you, Ranking Member.

Today, this has been a very informative day. Really, all over the place, around higher speed rail and high-speed rail. And I have some macro questions—and then if anyone wants to elaborate behind them—and they are focused at Mr. Porcari, Mr. Washington, and Mr. Kunz. Because I would like a macrolevel look at it. But also, perhaps Mr. Washington could give us more of a microlevel look at it. And so it is fairly simple.

So in my district—well, ironically, I have more lines of track than any other district in our Nation. We have several transportation deserts; it is fascinating, right, and they have to do with connecting commuter lines so people can get from point A to B. There are these big gaps where shift workers have to walk for several miles across counties, or string together bus, rail, walking, and other. And we have come up with some unique solutions. There are some public transit on-demand ideas, what have you.

But what would solve that is some higher speed rail programs that were very short in nature, like less than 20 miles of a stretch. And I can think of two or three areas where literally thousands of folks go from point A to B that are shift workers that would really benefit from high-speed rail. There are also some wide-open spaces.

Now, I know that we have NEPA regulations that, you know, phase 1 and the beginning of phase 2, very tough with regard to displacement, and finding the space, and all of that. There is no shortage of issues. But the question then becomes how expensive is it to not do this? How hard is it on the environment to not do this? And how deadly is it to not do this?

And my question for Mr. Porcari, I will start with him, is that has it been studied, the impact of not doing higher speed rail and high-speed rail?

Mr. PORCARI. It is a great question, Congresswoman.

There is certainly an opportunity cost in not doing this work. And you are seeing some of those calculations being done by metro-

politan planning organizations around the country right now on different modal choices.

And for example, adding commuter rail, adding better transit service. What that means in environmental terms—and it is very project specific, obviously. But if you look at the growth of the country on the long-term basis, it is clear that we need to balance our transportation system with better rail choices, with both new and emerging technologies, if we are going to do it.

And in environmental terms, if you look, for example, at California's Cap-and-Trade Program, emissions reductions, and the drive towards emissions reductions, are changing policies around the States. And so I believe that is something you are going to see more States doing in the future because of those avoided emissions.

Ms. NEWMAN. Thank you.

And then if Mr. Kunz or Mr. Washington have any other comments. I have one more quick question after that, but if either of you want to contribute, I would love to hear.

Mr. WASHINGTON. Yes.

Very quickly, how expensive is it to not do it? I think we can quantify that in lives. In lives lost on our highway system. When I think about a system in moving people—you mentioned 20 miles—this is ideal for a light rail system. We are building many, many—much track of light rail systems here in Los Angeles County.

And I think about the systems that go directly into our Nation's airports as well. There could be 50,000, maybe 100,000 people working at some of our larger airports, and trains get a big portion of them to that airport.

I think the last thing I would point to is the environment. You know, how we want to live. We know that transportation is the biggest emitter of pollution. And so how expensive is it not to do this? I would measure that in lives.

Ms. NEWMAN. Thank you.

And Mr. Kunz, if you have anything to share.

Mr. KUNZ. Yes. Thank you for that question, Congresswoman.

The other big thing that has not been mentioned is the cost of peoples' time and waste sitting, stuck in traffic, or stuck in airports. It is estimated to be several hundred billion dollars a year.

And then as a businessperson, time is money. So if all your people are taking all day to get anywhere, your entire company is less competitive, especially against nations that actually have these efficient systems, and then they can outcompete us.

Ms. NEWMAN. Good, thank you.

And rather than do my next question, I just would like to enter for the record that I suggest at both the city metropolitan level and at the DOT level—and I will share this with the Secretary of Transportation—that we stop quibbling about whether it should or should not be done and all of the stumbling blocks.

Because there are prior issues attached to this. There are NEPA challenges, there are construction challenges, there are—everything. I think we have to start coming together and thinking about how we get this done and not why it should or should not be done, because it is clear it needs to be done.

And then I will say one final thing. There is no better reason to do it rather than to create opportunity to make our environment cleaner and healthier and to save lives. So I am hoping that when I do have my meeting with Secretary Buttigieg that we can just move forward in getting this done and figure it out.

Mr. MOULTON. Thank you. Thank you, Congresswoman. Your time has expired. But I agree.

And I think it is important to just point out in that regard, Judge, you were complaining about the process. They seem like very legitimate complaints you had with not being involved in the process. Of course, that was under the Trump administration, that EIS was handled with the FRA. I think you will find a different reception with the Biden administration.

OK. Next on the list is my colleague from Indiana, Mr. Carson.

[Pause.]

Mr. MOULTON. Mr. Carson, are you here and unmuted?

Mr. CARSON. Yes, sir. Can you hear me?

Mr. MOULTON. Yes, sir.

Mr. CARSON. All right. Sorry about that. I was having some technical difficulties here.

Mr. MOULTON. We still cannot see you but we can hear you.

Mr. CARSON. Yeah.

So I am curious. So the need for Federal Government, essentially the need for—I am sorry, I am having a problem with this camera. OK. I am sorry.

So the need for Federal investment—this is for everyone—compared to other industrialized nations. In terms of the United States, our passenger rail investment falls far behind many of our allies. Now as you all know, opponents of more Federal investment, some on the committee, argue that private investment is more important than Federal investment. What would you say to rebut those views?

Mr. PORCARI. If I may, Congressman.

Mr. CARSON. Yes.

Mr. PORCARI. The two are not irreconcilable, so there are many rail systems that are privately operated with an operating profit that are built on a governmental investment that built the infrastructure. And public-private partnerships are an established model that have worked around the world for rail operations.

But again, I would point out that it is taking a public funding component to make those happen in every case.

Mr. WASHINGTON. And I would add to that if I could, Congressman.

Mr. CARSON. Yes.

Mr. WASHINGTON. I think the need to build and rebuild infrastructure in this country is so great that we need what I call the three-legged funding and financing stool. The first stool is the Federal Government. That is one of the legs. Currently that leg is wobbly.

And then you need local investment like we have here in L.A. County: Measure M, we went to the voters.

And then finally the private sector. That three-legged stool is what we need to build and rebuild infrastructure in this country. The private-sector equity, they want to invest in infrastructure. We

know that leg is strong. The local initiatives, the last 2 or 3 years, there has been a 70-percent success rate on local initiatives and that stool is strong.

The wobbly one is the Federal. If we get that right, I think we can build and rebuild the infrastructure in this country.

Mr. CARSON. Yes, sir. Thank you.

Chairman, I yield back.

Mr. MOULTON. I thank the gentleman.

And just so everyone knows, there are several Republicans who said they would like to come back. If you do come back to the hearing, please just let the committee staff know and we will get you on the list. But for right now, we are going to go to the next Democrat on the list, who is Ms. Wilson from Florida.

Ms. Wilson, you are recognized for 5 minutes.

Ms. WILSON OF FLORIDA. Thank you to Mr. Chairman, and to Chairman Payne, and Ranking Member Crawford for today's hearing.

In the early 20th century, the arrival of Henry Flagler's railroad put Miami on the map. My grandfather migrated from the Bahamas to build the railroad and help to incorporate the city of Miami.

As we build back better, Congress must invest in this industry to increase our country's rail capacity. This investment will create high-paying jobs, union jobs, and will help rebuild our middle class. In addition to high-speed rail, we need to provide increased funding for heavy rail projects.

For decades, I fought to construct heavy rail on the 9-mile North Corridor project in my district to connect my community to more opportunities.

I thank the witnesses for appearing today and I have a few questions, but this question is for Ms. Eckert.

My mantra in Congress has always been jobs, jobs, jobs. Can you speak on how the California High-Speed Rail Authority Small Business policy, coupled with the Buy America standard, have spurred the State's economy, generated jobs, and supported more than 600 small businesses?

Ms. ECKERT. Thank you, Congresswoman, for the question.

So the California High-Speed Rail Authority and the California State Building and Construction Trades Council created—have a community benefits agreement, and in the agreement, there are certain targeted hire provisions.

So a certain percentage, about 30 percent, of the workers in the area should be making about $32,000 to $40,000 annually. And 10 percent of those workers should be comprised of people who are facing traditional barriers to employment. This has created an opportunity and a road for those individuals to participate in high-standard registered apprenticeship programs, and work under proper worksite safety standards, get fair compensation, and then a road to the middle class that would follow them to more projects than just the California high-speed rail project. So their skills are transferrable.

Ms. WILSON OF FLORIDA. OK. In your testimony, you spoke about the California high-speed rail project's community benefits. Please highlight how this agreement helped disadvantaged workers, and workers facing traditional barriers to employment.

Ms. ECKERT. So just from the—my last answer, it is a targeted hire program. So that ensures that people in the disadvantaged community have access to the apprenticeship programs that are in that area. So those individuals, people who—emancipated youth, previously incarcerated individuals—have the opening point to participate in the gold standard apprenticeship programs, and then work on the California high-speed rail project.

Ms. WILSON OF FLORIDA. Thank you so much.

Mr. Kunz, in your testimony, you emphasized the role of the Federal Government in spurring investments in high-speed rail. Please elaborate on the benefits that other countries are receiving from their robust Government investment into infrastructure, specifically high-speed rail.

Mr. KUNZ. Thank you for that question, Congresswoman.

Every country that has built high-speed rail has benefitted numerous ways. It has created jobs, it has created access, it has brought economic development to depressed areas, it has enabled people to be efficient with their time, it has enabled them to find affordable housing, affordable transportation to get home quickly to be with their families. The benefits are just numerous and every nation that has built this, has all experienced those same benefits. And we are definitely set to experience all the same here, in this country, because a lot of our lines have the exact same perimeters of the city payers, the population densities, and the mobility of the population.

Ms. WILSON OF FLORIDA. Thank you.

I yield back.

Mr. MOULTON. Thank you, gentlewoman, for yielding back.

And with no Republicans showing up so far, I will go to my colleague from Washington, on both this committee and the Armed Services Committee, Ms. Strickland. You have 5 minutes.

Ms. STRICKLAND. Great. Thank you, Chair and Ranking Member Crawford, it is my honor to be here today for my first hearing as vice chair of the subcommittee, especially as we look forward to the future of high-speed rail and how this is going to increase our competitiveness, equity, and economic development.

So I am thrilled to start with Rachel Smith of the Seattle Metro Chamber of Commerce to speak to high-speed rail opportunities in the Pacific Northwest and Washington State.

Now as you have noted in your testimony, Ms. Smith, the Cascadia Ultra-High-Speed Rail Corridor Line could result in the reduction of 6 million metric tons of CO2 over the first 40 years of operation. So from an environmental perspective, and for the economic development of the Metropolitan Seattle region, it is clear this investment will do a lot of work.

[Off-mic comment.]

Ms. STRICKLAND. So Ms. Smith, how is the Pacific Northwest through Cascadia or otherwise, uniquely poised to implement high-speed rail spurred by Federal investments?

Ms. SMITH. Well thank you, Congresswoman, so much for the question.

You know, our region is poised in so many different ways to take advantage of robust Federal investment in ultra-high-speed rail. First of all, we have the coalition. So as I mentioned in my testi-

mony, we have elected officials from the highest levels of Government in our State and nationally, all the way down to local elected officials who have said they support high-speed rail being developed in our community. So we really have robust coalition support to do this.

We also have a history in our region of, as I said, sort of partnerships to get big projects like this done. You know, typically we rely, from a funding perspective, on local, regional, and State taxes, public-private partnerships which have been mentioned, fare box recovery, and other sort of internal revenue generation. And then of course a robust Federal partnership. So we exercise those muscles well to be able to put together a funding package to accomplish big projects.

We also have a great relationship with our labor community in terms of both the public and private sector. And I think that helps streamline all of the work that we would want to do for the actual project delivery.

Again, at the end of the day, our community has made a commitment to transit. We have made a commitment to transit in our bus service, we have made a commitment to transit in light rail. We recently passed a $54 billion light rail package in 2016. In 2008, we passed an $18 billion light rail package. So our community has made those commitments to transit and we are starting to see the benefits of that.

So I really think that we are poised in every way, from coalition, to funding, to partnerships with labor, to a commitment to this kind of technology, and this kind of growth in our community.

Ms. STRICKLAND. Great. And I have one other question for you. We know that congestion on Interstate 5, I describe as soul-crushing, whether you are trying to get from Seattle to Tacoma, down to Joint Base Lewis-McChord into the State capital. And you know, this has everything to do with access to jobs, it has to do with readiness for our troops at JBLM, the largest military base on the west coast. And we know that we often say to folks, "Well, let's just add another lane of highway."

And I am sure this was touched on already, but can you talk again about what the secretary of transportation for the State has said about the cost of adding a lane of I–5 on the same corridor versus investing in ultra-high-speed rail?

Ms. SMITH. Absolutely.

The bottom line is there is no way to meet the capacity to move people through the highway system as there is on transit. Every rail line that we add is exponentially more people. And when we really think about the efficient movement of people and goods, there is absolutely a need for our highway and road system to work. And as I said in my testimony, to carry goods from our manufacturing and farms into our communities, cities, and towns.

But for the efficient movement of people, we really need to have robust investments in transit and rail; that sort of reliable grade-separated rail, again, exponentially moves more people, and does it at a cost lower than a new highway lane in our region or in any region.

Ms. STRICKLAND. Thank you, Ms. Smith.

I yield back, Mr. Chair.

Mr. MOULTON. I thank the gentlelady for your questions.

And I would just add, you know, if we build a high-speed rail, no one is going to force you to take it. You have that freedom of choice that Americans do not have today. And yet, travelers all around the world have—I do not understand why travelers in China should have so much more freedom than we do today, in America. I think we really would like it if we rectify that.

I now turn to my colleague from California, Mrs. Napolitano. You have 5 minutes.

Mrs. NAPOLITANO. Thank you very much, Mr. Chair.

I would like to first address my question to Phil, a good old friend. How are you, sir?

Mr. WASHINGTON. I am great, ma'am.

Mrs. NAPOLITANO. Can you talk about the Union Station improvements to the Santa Fe Springs Rosecrans and Marquardt grade separation in my area, funded by the high-speed rail, and why are they important to my community? I know Marquardt and the overcrossing is going to be a tremendous help, but can you expound on that, please?

Mr. WASHINGTON. Yes. And great to see you, Congresswoman.

First on Marquardt. This is the deadliest grade crossing, probably in the country, definitely in the State of California. And high-speed rail money is providing a grade separation at that most deadly area in the country. And I think it will save lives. I know it will save lives. And it will be very, very efficient.

Union Station. Union Station will be the hub for high-speed rail when it comes down. Also, it is the hub and the link to southern California for Amtrak; for our commuter rail service, Metrolink; and our great system here in L.A. County.

The improvements that high-speed rail have funded are in the neighborhood of $423 million to develop a flyover, if you will. Union Station is a stub-end station, meaning trains come in and they have to leave the same way: they have to back out. And so the efficiency of a run-through track here in Los Angeles, and other historic train stations, make it very, very efficient. Trains do not have to idle, sometimes up to an hour, before they leave out.

So those improvements, both at Union Station and Marquardt, are very, very needed, and will save lives and also make things more efficient.

Mrs. NAPOLITANO. Thank you very much. I look forward to learning more about the benefits it is going to bring.

Mr. Porcari and Mr. Kunz, in seeking Federal investment for high-speed rail from all taxpayers, how can we ensure that the low income can afford the tickets to high-speed rail?

Mr. PORCARI. Congresswoman, it is a great question.

And one of the ways that we can do that is through a fare structure that recognizes ability to pay through working with employers to encourage employer contributions towards the cost of using the system. And making sure that in general, the affordability for everyone of the system is of paramount concern. And any operator of the system, if it is a private operator, that should be part of the contractual arrangement where affordability is considered.

Mrs. NAPOLITANO. Mr. Kunz.

Mr. KUNZ. Thank you, Congresswoman.

I would like to point out in France, the country that has a mature, high-speed rail system, actually has launched a second no-frills, high-speed system that literally, you can get from like, Paris to Nice for about $20.

So the beauty of high-speed rail is that they are a very efficient systems, they are very high-capacity, and they are not that expensive to operate. So it is actually easy for these operators to provide low-cost tickets for everybody to ride. So these are really meant for everybody.

Mrs. NAPOLITANO. It is a little different because I was able to go on some of those in Europe a while back, but the Government owns the land. So there is not a problem with eminent domain and issues that preclude it from going over. So I think that somehow, we have to be very cognizant that the low-income taxpayer whose money goes into it, is somehow recognized, and be able to help.

I don't know if their employer will be willing to pitch in, but I certainly hope that we can come to a solution because it doesn't seem fair that a taxpayer's money go into this process and not getting a benefit out of it.

Thank you, Mr. Chair. I yield back.

Mr. MOULTON. I thank the gentlelady. We will now go to Ms. Titus from Nevada.

Ms. TITUS. Thank you very much.

Mr. Washington, I represent Las Vegas. So many of your constituents are coming back to my district now, and we are glad that they are. But they often have to spend hours sitting on I–15 just in back-to-back traffic that is hardly moving. And you see that on the weekend, Friday coming, and Sunday going. So that is why I am excited about the development of the Brightline West project that will connect the two areas: Las Vegas and southern California.

And you mentioned in your testimony that a recent study estimated that the annual ridership would be over 10 million people. We are optimistic about that, too. And so that would put this intercity rail line among the top in terms of ridership.

So I wonder, if given your role in managing a multimodal transit system that serves tens of millions of passengers every year, how your agency is coordinating with projects like Brightline West to ensure intermodal connections, and what lessons you have learned to date that other metropolitan areas like Las Vegas could use to get these kind of projects developed?

Mr. WASHINGTON. Well thank you for the question, Congresswoman.

And yes, Interstate 15 is terrible. I was up in Barstow at the National Training Center, being a retired Army guy, went up there and talked to some troops at Fort Irwin.

I think the 10.8 million riders annually is a real number. From Las Vegas to Apple Valley, and then on to Los Angeles, the High Desert Corridor, the land and the right-of-way that we have purchased being the L.A. Metro Authority, is paying off. We have about $170 million or so for right-of-way acquisition to help Brightline get from Palmdale, which is about 54 miles out, all the way into Los Angeles Union Station where I happen to be right now. And so we are—and the connection, once they get to Union

Station, branching out to all areas of L.A. County, and connecting to the system—the local system here, is incredible.

I think the other thing that I put in my testimony is being able to come from an affordable area, which is a high-poverty area in a place called Palmdale and be able to get to Union Station in L.A. within 40 minutes, opens up a whole range of opportunities for families.

So we are working very, very closely with Brightline right now on environmental issues, electrification issues, and those things. And our hope is that they will break ground—I know they are going to be breaking ground within the next 12 months or so.

Ms. TITUS. Well, I am very encouraged by that. I think they will, too. And we have been trying to work it with the Ways and Means Committee to lift the cap on some of those bonds that they have applied for to use in the construction of it here in Nevada.

So I see it not just as a tourist train, but as a business travel train, and even some people may commute; live here for the tax purposes, and commute to work somewhere in California, or for some reason, back and forth.

Mr. WASHINGTON. Yes. Yes, and that is the idea. The idea is if you can get from Vegas to Los Angeles in, what, 2½ hours or something like that, that is incredible. And on the way, people can go either way. If they live in Apple Valley, they can go to Las Vegas to work, or they can go to Los Angeles to work and still have affordable housing.

So it is—I think it is a project of regional and national significance just because of the economic benefit to people that otherwise would not have that; i.e., low-income folks.

Ms. TITUS. I agree. I think we need to think regionally, not just locally, and this is a good example of a project like that. There is no reason that the Southwest can't be united like the Northeast is. Our distances are longer, but we have other advantages that they don't have. So thank you very much. I yield back.

Mr. MOULTON. I thank the gentlelady for her questions. And of course we can't, as Americans today, travel quickly between—travel at high speed, I should say, between California and Nevada and then back to California. But we can do that on this committee. So we go back to California with my colleague now, Mr. Huffman.

Mr. HUFFMAN. It is good to have a high-speed connection with you right now, Mr. Chair, and I want to thank you. I want to really commend Chair Payne for choosing to focus on this important issue. And what I've heard today is that if we do this right, investments in high-speed rail can improve connections between communities, provide better access to jobs, housing, and other social services, rebuild America's manufacturing base, and create good-paying jobs that will depend on that manufacturing while giving us a cleaner, more efficient way to move people as we tackle the climate crisis.

That is all pretty exciting to me. And I want to bring attention, though, to the title of this hearing, which is when all of this potential meets limited resources. And it is really no wonder that we face this dilemma, especially when we compare the United States to other countries around the world. We've really starved invest-

ment in passenger rail capacity while lavishing generous Federal matches on highway funding.

And you get what you pay for. So many State transportation projects we know receive robust Federal support. But as was pointed out, Secretary Porcari pointed this out, if you look at the much-maligned California high-speed rail project, their 2030 business plan anticipates 85 percent of its funding from State sources, only 15 percent from Federal. We've got the fifth largest economy in the world.

California is the leader in tackling climate change. And it has been able to keep this project alive by dedicating a significant portion of its cap-and-trade revenues. But other States don't have those kinds of resources. All States that want to step into the 21st century with high-speed rail are going to need more Federal support to do it.

So Secretary Porcari, you discussed the underinvestment in rail relative to highways and aviation, and you used Baltimore to New York City, that corridor, as an example. Heading south, you also have Baltimore to Washington. And you've got existing service with Amtrak and MARC. Even with the dedicated trust fund that you recommend, we are going to be stretched to fund projects and also build new projects that don't cannibalize ridership from existing service. So I want to ask you how can we ensure that high-speed rail complements rather than competes with existing service in corridors like this.

Mr. PORCARI. It is a great question, Congressman, and first, the service characteristics of high-speed rail versus, say, commuter rail are very different. So the high-speed rail service would typically be over longer stage lengths with fewer intermediary stops. But in practical terms, States today are required to make those difficult financial trade-offs that you talked about.

And one of the early activities they would likely engage in is to make sure that they are not cannibalizing their existing service in the planning process by making sure that any investments are net ridership increases and in both environmental and equity terms are actually a plus for the communities as well. That is part of the philosophy and certainly the purpose behind the NEPA process to begin with.

It is also a fundamental tenet, I think, of good interaction and community planning. And you can codify that through a community benefits agreement where the local communities know exactly what they are getting in terms of benefits, whether it is local employment or a better commuter rail service in return for that investment.

Mr. HUFFMAN. All right. I appreciate that.

Mr. Washington, I would love to hear a little more about this manufacturing hub that you described. That is an incredible vision about building these systems entirely here in the United States and all of the good jobs and other benefits that would be associated with that. Can you tell us a little more about where this would be, what it would look like and what we would get out of it?

Mr. WASHINGTON. Well, what we envision, Congressman, is an industrial park, an industrial park with suppliers onsite with a test track onsite. Usually when you get rail vehicles, they have to be

tested. And it takes long to get into the testing queue in Pueblo, Colorado. And so that takes a lot of time. There are climate chambers where the vehicle needs to be tested as well.

So what we are proposing is a soup-to-nuts manufacturing facility, train people to build trains in this country and build locomotives in this country and manufacturing them in this country. I think the economy would benefit. The place that we are looking at, we are still talking about that, but it would likely be in the north county area of L.A. County where there is a ton of space. There is room for a test track.

And we see being able to offer us as the house person, not to coin Las Vegas too much, but this is a way that the local economy can make money by bringing trains in from all over the country to be tested at a manufacturing facility right here in this country instead of relying on vehicles right now that are made in Spain, that are made in France, that are made in Canada. Let's do it here, is what we are saying.

Mr. MOULTON. I thank you——

Mr. HUFFMAN. Thanks so much. I yield back.

Mr. MOULTON. I thank the gentleman, and we are now going to go to Massachusetts where my colleague, Mr. Auchincloss, has been a great addition to the community. Mr. Washington, you were earlier talking about changing Los Angeles Union Station from a terminal into a station by making through tracks. That is a project that we've been trying to do here in Massachusetts to connect our two stations in Boston that are only a mile apart but have always been disconnected.

Doing so would finally complete the Northeast Corridor from Virginia to Maine. And it is a project that was originally delayed by the onset of World War I. So we talk about the consequences of not investing in rail over the past century. There is a great example. In that intervening time, we have literally built two entire highways in that short space, in that short span. We built a highway in the 1960s. We tore it down and built another highway since then. Those stations still remain disconnected. Mr. Auchincloss, over to you.

Mr. AUCHINCLOSS. Thank you, Mr. Moulton. I have been enjoying this hearing a great deal because high-speed rail is at the intersection of really three critical issues for my district and my home State. One is housing affordability. Sixty percent of extremely low-income individuals in Massachusetts are paying more than half their incomes on rent. And home prices in Massachusetts are skyrocketing up 11 percent since 2019.

We have got a huge congestion crisis. Pre-COVID, it was very bad. And unfortunately it is coming back as the economy reopens. The average driver in Greater Boston is spending more than $2,000 a year on the cost of congestion. And of course we have got a climate crisis. And the transportation sector in Massachusetts accounts for about 40 percent of our net carbon emissions in the State.

And high-speed rail can be a part of resolving all three of those crises, in conjunction with other transportation policies like Complete Streets and mobility as a service and investing in buses. And for that reason, I've been and will continue to be a strong supporter

of my colleague, Mr. Moulton's, high-speed rail vision, which has really been a substantive and, I think, compelling vision for how we can do high-speed rail as a country.

But the challenges that we have had, of course, have been how to pay for this effectively and how to overcome issues with land-use entitlements and regulation that can obstruct it along the way. And there are a couple of different approaches to that in the form of national infrastructure banks that have been circulating around Congress.

There is one version in Financial Services Committee, on which I sit, another led by Chairwoman DeLauro. And they all have slightly different takes. But overall, they take public-sector money to then leverage private-sector investments. They politically insulate decisions about how to invest in strategically important national infrastructure projects.

And they work with State infrastructure banks to provide them the technocracy and tools that they need to make good investments as well. And so high-speed rail to me sounds like a great example of where a national infrastructure bank could be very helpful. And I would like to ask Mr. Porcari as well as Mr. Kunz, who represents one of the public- and private-sector dimensions that might both be at the table in a national infrastructure bank, to discuss if you were in the room as we were chartering this institution and it was going to be investing in high-speed rail, what would you feel like you needed to have guaranteed and part of the charter and of the way that the national infrastructure bank would operate in order to be confident that we could be investing in high-speed rail and getting it built on time and under budget. And Mr. Porcari, maybe you could start.

Mr. PORCARI. Congressman, it is an excellent question. In addition to the characteristics of the national infrastructure bank that you described, I would say, above all, consistency and predictability. One of the downfalls of the public-private partnerships that we've had in the U.S. is every one is bespoke. We don't have kind of a standardized template.

As a consequence, you can't price the political risk of that kind of partnership in America. If we look to our neighbors to the north in Canada, U.K., Australia and other countries, while not perfect, where they've used those kinds of public-private partnerships, it is a much more tightly defined system where the community and elected officials obviously have input early and often, but there is also an endpoint to that where you have some certainty, and the financial markets understand that certainty.

Mr. AUCHINCLOSS. I think political risk is a very good way to put that. Thank you. And Mr. Kunz?

Mr. KUNZ. Thank you for that question, Congressman. I think you are on the right track there. We do need a structure where there is substantial funding available to the tune of several hundred billion dollars. We need to be focusing on key projects and getting them to completion, not spreading the money all over the country.

And then we need to enact structures to run the system so that you can have private competition on them. You leverage the value capture that the station areas create, feed that back into some of

the funding sources and also setting up coalitions to work with the local communities as these systems are developed: where the stations go, where the routes go, those kinds of things.

So it is really a comprehensive program. And like I said, prioritizing the important projects to make the case and get those to completion so that the public can ride them and see them, and then that really opens up sort of the floodgates for the rest of the country.

Mr. AUCHINCLOSS. Reducing political risk and prioritization. I want to, in any balance of time that I have, also allow Ms. Eckert to weigh in here as well because we need to make sure that unions are at the table for these projects as well.

Ms. ECKERT. Sure. Thank you, Congressman.

Mr. MOULTON. Ten seconds so try to be——

Ms. ECKERT. Ten seconds. Oh. I just wanted to just add that new and novel technologies should also be covered under the Railway Labor Act and therefore those workers the—labor standards to the workforce that they have had for the last century.

Mr. MOULTON. All right. Thank you for being so concise, and I thank my colleague and friend from Massachusetts. And we are now going to go down to Georgia for Mr. Johnson. You have 5 minutes, sir.

Mr. JOHNSON OF GEORGIA. Thank you, Mr. Chairman. And this is a very important hearing, and it is apt that you, Mr. Chair, are sitting in the chair for part of this meeting. I support the Seth Moulton high-speed rail plan and also support the American High-Speed Rail Act. And you have been a real champion. And I want to commend you for that.

Mr. Kunz, thank you for being here today. It is a pleasure to hear from the U.S. High Speed Rail Association on the need for a bold transformative investment in high-speed rail in America, a network. And there has been some hesitancy surrounding high-speed rail that comes from concern about the lack of capital.

Your testimony talks about the importance of establishing a high-speed rail development agency within the Department of Transportation as well as a rail trust fund to provide the capital needed to build out an HSR network. What is your response to those who find the vision of an American high-speed rail network too expensive to make, and they think that the investment would not be worthwhile? What is your response?

Mr. KUNZ. Well, thank you, Congressman, for that question. We really just have to have the vision. We have to look at what these systems have done for the rest of the world and then look at America and how we are struggling with congestion and climate and energy—foreign oil dependency and all the problems we have that are all slowly dragging our country down.

And so by investing in high-speed rail with a big vision, bold funding, and really aggressively building these projects, we can see these massive transformations take place all across our country. Everybody can participate in this and benefit from it. And so like I said, this isn't fantasy. This is proven out all over the world to deliver all the things that we say that it will deliver. And it is based on, like I said, seeing it happen in these nations.

Mr. JOHNSON OF GEORGIA. Yes. Before we had one highway running through the Nation, we had a rail network. And it has been said that it was rail that opened up America. Can you comment on the fact that America has not kept up with its rail investment over the centuries and how it has left us in an uncompetitive posture in relation to other countries around the world?

Mr. KUNZ. I thank you for that. I think the biggest thing is that people need to realize that highways and aviation are actually low-volume modes of transportation. So we are trying to put too many people through those systems. And it is causing, basically, a hardening of our arteries of our entire Nation. So by having high-speed rail, it opens up sort of the floodgates of our economic development, our mobility, and everything so that it makes us more efficient as a Nation, makes each company more efficient that operates within the Nation.

And again, if we don't keep up with China and Europe and the rest of the world, they leave us in the dust when it comes to global competitiveness because we are taking so long to get anywhere. It costs us so much to do anything versus other countries that can get to three meetings in a day and be back to their office and just have super-efficient countries, basically, when you have these.

Mr. JOHNSON OF GEORGIA. Yeah. There have been so many locations around the Nation that have been left out of economic development. So equity, not just in urban communities but in rural communities, how can we enhance the economic prospects of people in rural areas through high-speed rail?

Mr. KUNZ. See, that is one of the beauties of high-speed rail, is that in a corridor—let's say, for example, between San Francisco and Los Angeles, it is not just like the way aviation only would make economic development in the two endpoints. High-speed rail connects all the cities in between. And they are now connected into that entire megaregion of economic development.

So the Central Valley—perfect example—is a place that had very high unemployment, very depressed economic conditions. And it will now be connected into both economies of California, the northern San Francisco economy and the southern Los Angeles economy. And those exact same things will happen in corridors all over the country because these have stops in between. Not every single train stops at every station every hour, but they will have access into the system so that people can get jobs and opportunities.

And it works in both directions. The economic development also comes to their towns because of the access. So companies can locate back-office operations there. People can, you know, move more things to these other cities that you wouldn't normally go to——

Mr. MOULTON. I want to thank the——

Mr. KUNZ [continuing]. Because they are too far.

Mr. MOULTON. I want to thank the gentleman for his time.

Mr. JOHNSON OF GEORGIA. Thank you.

Mr. MOULTON. Time has expired.

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

Mr. MOULTON. Thank you very much, sir. You know, one of the example corridors I often like to talk about is Chicago to Atlanta because most Americans don't think that those cities are close enough for a high-speed rail. It is about the same distance as Bei-

jing to Shanghai, which is one of the most popular high-speed rail corridors in the world.

But of course it would do so much for all the economies in between Chicago and Atlanta if you built that out, which is something that just expanding highways or airports wouldn't be able to do. So thank you very much for the question. And I now want to welcome Congresswoman Johnson from Texas. Thank you so much for joining the subcommittee hearing this afternoon. You have 5 minutes.

Ms. JOHNSON OF TEXAS. Well, thank you very much and let me thank you for conducting this hearing. To me, it is clear that the development of a high-speed rail system not only in my State of Texas but across this great Nation would provide tremendous economic and environmental benefits while simultaneously decreasing traffic congestion in America's cities and metropolitan areas.

According to the Texas A&M Transportation Institute, the cost of congestion has already increased by nearly 50 percent from the previous decade and further estimates forecast that national congestion costs will continue to escalate in the coming years from $179 billion in 2017 to $237 billion by 2025, an increase of 32 percent.

For my State, a high-speed rail system between Texas' largest metropolitan areas would greatly improve travel between large engines of economic opportunity and growth as well as offer a desperately needed option to the often busy and congested trip between Dallas and Houston by highway. So I thank you, Mr. Chairman, for allowing me to participate today in this important discussion, and I yield back. But I reserve for questions to the witnesses on the number 2 panel. I yield back.

Mr. MOULTON. And I thank the gentlelady. It has been a pleasure to chair this committee hearing. But I have not done it without error because I mistakenly skipped over Mr. García from Illinois, who is up next.

Mr. García, you have 5 minutes and my apologies. Over to you.

Mr. GARCÍA OF ILLINOIS. No apologies needed. Thank you, Chairman Moulton and Ranking Member Crawford, for pulling this hearing together. High-speed rail, whether it is wheel and steel or maglev technology, holds significant promise in the U.S. Future connectivity, development, you name it, but the fact is we are still dragging our feet, not just on implementation of new technologies but even in how we operate what we already have. As many of you know, I hail from Chicago, the modern-day birthplace of the labor movement.

I represent a lot of working-class, blue-collar families who quite literally keep our trains running. That is why fellow Chicagoland Representative Schakowsky and I are introducing legislation to ensure railroad employee unemployment benefits don't get subjected to sequestration and cuts as the market ebbs and flows.

We want to make sure these hard-working men and women who keep our trains running have all the rights and protections that they deserve. That is why I think it is absolutely critical that any new form of railroad—high-speed wheel on steel or maglev, hyperloop—you name it—are classified as "rail carriers." Ms. Eckert, what kind of ramifications would railroad workers face if new

types of railroads were not classified as "rail carriers"? Would those workers lose out on benefits that currently rail carrier employees have?

Ms. ECKERT. Thank you for the question, Congressman. Yes. So railroad workers covered under the RLA do benefit from the Railroad Retirement Act. But also, we have not faced the same wage stagnation as the rest of the country. And that is due to the high union density of railroad workforce. Comparatively speaking, studies have been done that typically the wages of a peer group for a workforce that is not unionized is about 11.2 percent. But we can identify a peer group by contracting out of work that we typically have done on specifically mechanical work.

And then with that data set, we could see that people performing duties similar to us or even the same duties as us but not covered under the RLA make about $16,900 less than we do a year. So in areas like where I come from, $16,900 is a lot of money. And also, you are not guaranteed the same retirement benefits as you would if you were covered by the Railroad Retirement Act.

Mr. GARCÍA OF ILLINOIS. Great point. So given today's testimonies, I want to take a step back and ask a broader question about what are the key obstacles our country still faces in terms of making high-speed rail a reality. Mr. Porcari, based on your years in the industry and at the Department of Transportation, what, in your estimation, are the key obstacles keeping us from making high-speed rail a reality in this country?

Mr. PORCARI. Congressman, thanks. It is a great question and one we need to think big. We need to, as I have mentioned before, level the playing field so that jurisdictions throughout the country can make the choices that make sense to them. And I am confident that high-speed rail and higher speed rail, among other train choices, would be something that is supported by local jurisdictions if there was some funding parity in it.

We also need to really fully load the cost of the transportation system we have now—its environmental impacts, its safety and life safety impacts—and think about a safer, more environmentally friendly mode of transportation. It is a genuine alternative for both urban and rural areas. And that really is a rail system, something you don't build in a day. But if you have the confidence that it is going to be a long-term effort and be supported, something you can do just as we have done with our aviation and highway system.

Mr. GARCÍA OF ILLINOIS. Thank you. And that question is for Mr. Kunz, obstacles and how do we make it a reality in the U.S. Mr. Kunz, are you there? Mr. Kunz? If you are not there, I am going to yield back to the chair.

Mr. MOULTON. We seem to have lost Mr. Kunz for a minute, but I want to thank the gentleman.

Mr. García, are you going to yield—are you going to yield back?

Mr. GARCÍA OF ILLINOIS. Yes, I yield back to you, sir.

Mr. MOULTON. Thank you. I want to thank the gentleman very much for his questions and for all the members of this panel for participating. We have learned a lot. And I know we opened this panel with a critique from my colleague, the ranking member, of California high-speed rail. It reminds me that just 10 years ago when I was at Harvard Business School, I did an indepth financial

analysis of California high-speed rail. And we came to some interesting key conclusions. One, the project was going to cost more than they were saying at the time. And of course that has been proven true. And it has certainly had its fair share of missteps and poor leadership along the way.

I think things are in much better hands now. But another conclusion we reached is that even at a much higher price tag, it still costs a lot less than expanding airports and highways to meet 2050 demand. But when we talk about that capacity piece, the fact that one high-speed rail line has the capacity of 6 to 10—some people even estimate 12—highway lanes, the other conclusion we showed is that in 2050, while the expansions that you would have to do to airports and highways to meet demand would just get you there, if you build high-speed rail instead, you would be able to go much beyond 2050 to meet future demand as well. When we talk about this generational opportunity to invest in infrastructure with the American Jobs Plan, I think it is critical that we not squander this generational opportunity by investing only in the last generation's infrastructure. So I have learned a lot from this panel, and I want to thank everybody who has participated. We are now going to go into a short recess before the next panel. If you would all please rejoin us in just about 5 minutes, the subcommittee shall stand in recess subject to the call of Chairman Payne.

[Recess.]

Mr. PAYNE [presiding]. The subcommittee will come to order. I now call panel 2 and I ask the witnesses on the panel to please turn on their cameras and keep them on for the duration of the panel.

I would now like to welcome the witnesses on our second panel, Mr. Carlos Aguilar, president and chief executive officer of Texas Central high-speed rail; Mr. William Flynn, Chief Executive Officer of Amtrak; Mr. Josh Geigel, chief executive officer and cofounder of Virgin Hyperloop; Mr. Andres de Leon, chief executive officer, Hyperloop Transportation Technologies; Mr. Michael Reininger, chief executive officer of Brightline Trains; and Mr. Wayne Rogers, chairman and chief executive officer of Northeast Maglev.

Thank you for each of you being here today and I look forward to hearing your testimony.

Without objection, our witnesses' full statements will be included in the record. And, as with the previous panel, since your written testimony has been made a part of the record, the committee will request that you limit your oral testimony to 5 minutes.

Mr. Aguilar, you are recognized for 5 minutes.

TESTIMONY OF CARLOS AGUILAR, PRESIDENT AND CHIEF EXECUTIVE OFFICER, TEXAS CENTRAL; WILLIAM J. FLYNN, CHIEF EXECUTIVE OFFICER, NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK); JOSH GIEGEL, CHIEF EXECUTIVE OFFICER AND COFOUNDER, VIRGIN HYPERLOOP; ANDRES DE LEON, CHIEF EXECUTIVE OFFICER, HYPERLOOP TRANSPORTATION TECHNOLOGIES; P. MICHAEL REININGER, CHIEF EXECUTIVE OFFICER, BRIGHTLINE HOLDINGS, LLC; AND WAYNE L. ROGERS, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, NORTHEAST MAGLEV, LLC

Mr. PAYNE. You are on mute.

Mr. AGUILAR. Chair Payne, Ranking Member Crawford, members of the committee, thank you for inviting me to testify today to share our vision on high-speed transportation. My name is Carlos Aguilar, CEO of Texas Central, the most shovel-ready rail project in the United States today. Texas Central is a transformational project. We will link the fourth and fifth largest metro areas in the country separated by 240 miles, which is right in the sweet spot of high-speed rail.

These are the only two metro areas in the United States that grew by over 1 million people each between 2010 and 2020. Most travel between them is on I–45, a congested road with the highest fatality rate per mile of any highway in the country. We need solutions and we need them now.

Texas Central is a traveler safety program. We will save at least 800 lives during the life of the project, moving passengers to our train and taking thousands of cars off the road. Our technology has transported over 10 billion passengers without a single accident or fatality.

Texas Central is a jobs program, generating over 17,000 craft jobs in Texas and 20,000 supply chain jobs across 37 U.S. States. At the core of this is the Business Workforce Opportunity Program, our version of Build Back Better, created 3 years ago to develop small rural minority-, women-, veteran-, and disabled individual-owned businesses. Every contract we sign sets specific inclusion targets, the highest ever attempted in heavy construction in the United States.

Texas Central is a climate change program. It will eliminate over 8 million tons of CO2 emissions during its lifetime, the equivalent of shutting down seven large powerplants for a full year, reducing air pollution near roads that impact communities of color most. We will also use less land. In fact, our 205-mile-per-hour train requires 28 times less than a new highway.

Texas Central is a global competitiveness program, to leapfrog past China and other countries in high-speed transportation by bringing the safest, most efficient rail technology to America today. At the same time, we will support American suppliers to build a new industry, injecting over $12 billion into American jobs and products. For example, we will buy 1,100 miles of rail and a total of over 1 million tons of American steel.

Texas Central is focused on all Texans, connecting two vibrant metro areas but also bolstering rural communities by creating high-paying jobs, expanding first responder and healthcare capabilities, and providing new services such as broadband internet.

Our investors have contributed $700 million so far, with no Federal or State money. Funds from 22 Texan families looking to leave a positive legacy for the State, other American investors, and our close ally Japan. This has paid for the permitting and derisking of the project. We have obtained major regulatory approvals, completed ridership studies, advanced engineering, and attracted expert companies to execute the works and operate the system. We have secured the station sites and other land for the project. This is why we are ready to get shovels in the ground, to help transform American transportation and to fulfill the promise of high-tech jobs for the new economy.

The direct cost of construction will be $24 billion. Total cost will depend on funding sources, interest rates, risk premiums and other factors. The funding plan includes participation of banks from Japan, Italy, and Spain, alongside potential support from U.S. DOT, which we aim to secure.

At Texas Central, we are honored to have bipartisan support of mayors, legislators, and other elected officials, including Houston mayor Sylvester Turner, Dallas mayor Eric Johnson, and Fort Worth mayor Betsy Price, to name a few. Without the vision and strong bipartisan support of leaders like Congresswoman Eddie Bernice Johnson, Congresswoman Kay Granger, Congressman Colin Allred, and Congressman Seth Moulton on this committee, this project would not be ready to go today.

On behalf of the entire Texas Central team, I would like to thank this committee for its efforts to assist projects like us in accessing the RRIF program and other high-speed rail initiatives. We look forward to working closely with all of you, the U.S. DOT, and the Federal Railroad Administration to make this a reality. Thank you very much.

[Mr. Aguilar's prepared statement follows:]

Prepared Statement of Carlos Aguilar, President and Chief Executive Officer, Texas Central

INTRODUCTION

Chair Payne, Ranking Member Crawford, members of the Committee, thank you for the opportunity to testify today and share with you the transformational potential of high-speed rail in general, and the benefits of our own train project being developed in Texas.

US Department of Transportation Secretary Pete Buttigieg recently said:

> "The U.S. shouldn't be too proud to learn from other countries, especially now that we're out of the top 10 [ranked countries for infrastructure], I always want to see the U.S. No. 1.
>
> "The U.S. shouldn't fall behind its competitors or its allies, like Japan, Spain and China, countries with impressive high-speed train systems, which 'can't come soon enough' to the U.S."

We agree, and, Texas Central is doing precisely that.

We live in a moment of tremendous challenges, from the threat of Climate Change, to unprecedented sudden unemployment and economic distress created by the pandemic, to competition from rising powers that seek to beat the United States technologically and economically. Great moments of challenge call for bold leadership and vision. High-speed rail, and the Texas Central project in particular, offer this Committee and this Nation an opportunity to show such leadership and vision.

We went around the world and have brought the best home to Texas, so that OURS will be the best high-speed rail system in North America and serve as a

showcase and catalyst for other regions throughout the country. This 21st Century transportation system will transform mobility between Houston and North Texas, and we are ready to plant the seed of this high-tech industry in the US which will allow our country to lead in high-speed rail technology and LEAPFROG the early lead of CHINA and other major powers in this critical industry. After years of effort, we can now proudly say that we are ready to go.

We propose to make this project of national and regional significance a WIN-WIN opportunity for our country on multiple fronts.

WIN on SAFETY and EFFICIENCY,
WIN on JOBS and ECONOMIC COMPETITIVENESS,
WIN on ENVIRONMENTAL, SOCIAL JUSTICE and ECONOMIC EQUITY,
WIN on CLIMATE CHANGE.

1. *WIN on SAFETY*: We will save lives in one of our most congested and growing inter-urban corridors. Today, I–45 is the highway with the highest fatality rates in the country per Popular Mechanics and other surveys. We will take 15,000 cars of the road on year one, avoid over 100,000 crashes through 2100, thereby preventing at least 800 road fatalities.
2. *WIN on JOBS and ECONOMIC COMPETITIVENESS*: Investments in this innovative project will spur economic growth not only in Texas but across the United States. It will lead to direct job creation and career opportunities in construction, material production and supply chain, and the operations and maintenance of the system. It is an investment that will spark the creation of a new high-tech industry in the U.S. It is an investment that will determine our ability to compete globally against nations that have committed to developing 21st Century transportation systems.
3. *WIN on JUSTICE*: We will contribute to address environmental, social, and economic justice:
   a. We will bring diversity and opportunity: For three years we have been working with the cities of Dallas and Houston, as well as with communities along the alignment to produce our Business Workforce Opportunity Program (BWOP), our version of Build Back Better. The result is the most ambitious inclusion of small, rural, minority, women, veteran, and disabled individual-owned businesses ever attempted in a heavy construction project in US history. As a result, we have set specific targets for our scope, which has been defined and finalized. ALL of these targets are now included in all Texas Central contracts that we have agreed and signed. On average, 34% of the construction content will go to BWOP companies, and 24% of design project management and other services, will go to BWOP professionals and firms.
   b. We will bring services to rural areas, like our colleagues in Spain have done with Broadband and internet access. We will improve many other services as well and provide over 25% of our jobs in rural counties.
4. *WIN on CLIMATE CHANGE*: We will improve our environment by eliminating over 8 million tons of CO2 emissions by 2100, which is equivalent to the yearly emissions of seven modern 500MW Gas-fired electricity plants today.
   a. Texas Central high-speed trains will go through non-attainment counties, which require reduction in greenhouse gasses. As we reduce those, we will contribute to less premature deaths due to air pollution (5000/yr in the case of Houston alone).

After $700 MILLION dollars of private investment to de-risk this project, we have achieved all major permitting and engineering milestones needed to begin construction—all that is needed is for the members of this Committee and for the Administration to say the word and work with us to transform American transportation, restore American leadership in large scale infrastructure, and fulfill the promise of high-tech green jobs for the new economy.

Texas Central has, over many years, competed and recruited the best of the best expert companies from around the United States, and the whole World and we are proud and excited to present to your consideration, a high-speed rail project that is ready to break ground the second financing is finalized. This 21st Century transportation solution will connect two of America's largest regions, Houston and North Texas, in under 90 minutes at 205 miles per hour, utilizing the service-proven Japanese Tokaido Shinkansen system, the gold standard of high-speed rail worldwide. In their 56-year history, Shinkansen trains have had zero operational fatalities and their on-time performance is within seconds per-train per-year. Americans deserve the BEST in rail technology, and that's what this project offers. It will create jobs and spur economic development, thanks to years of considerable effort and thorough analysis by the Federal Railroad Administration (FRA), which completed key regulatory processes, including the Record of Decision.

This world-class transportation solution addresses congestion, safety and the efficient movement of people and goods between two of America's largest megaregions in the nation's 2nd most populous state. In fact, these two megaregions, Greater Houston and North Texas, collectively produce 6% of US GDP, and contain close to 50% of Texas' population and 5% of our national population. Connecting these cities via high-speed train will provide a much-needed regional mobility choice and solution to a corridor that is growing more congested, dangerous and unreliable as each new day passes.

Today, there are no direct passenger train options for travelers between these population centers, which means the 16 million direct journeys that are already happening annually are by airplane or automobile. Meanwhile, the size of this travel market is expected to grow at 1.5% per year until 2050, almost twice the national average, resulting in a total population of just under 20 million journeys in 2022 and just over 34 million journeys in 2050. Already, about 90 percent of travelers make this journey by car. If you are not familiar with this area of the country, the stretch of highway that connects these two megaregions is infamous. Interstate-45 between Houston and Dallas consistently ranks as one of the deadliest highways in the country. In 2019, the National Safety Council ranked I–45 #1 on its list of Most Dangerous Highways in the US, with 56.5 fatal accidents for every 100 miles of roadway. This is unacceptable and it is one of the principal reasons that Texans are demanding better, safer transportation choices and options.

BUILDING A CULTURE OF SAFETY

Now, contrast the currently available options for millions of travelers every year with the impeccable safety record of the Shinkansen system over its entire 56-year history. It has moved over 10 BILLION people without a single operational accident or fatality. On time performance is also the best of any comparable system in the world. You will get to your destination within a minute of timetable schedule every time, every day. Americans deserve to have the best high-speed rail system in the world, and that is what this project offers.

Like the Shinkansen system, Texas Central's system is being designed with safety and efficiency, at the heart of every decision. Because of this CULTURE of safety and "purpose-built infrastructure", Texas Central will be able to achieve these outstanding and proven safety and reliability milestones. For instance, Texas Central tracks are completely grade separated, which means trains will *cross over or under all public roads*, and the right-of-way is equipped with intrusion prevention and detection capabilities to eliminate the risk of trains interacting with cars or other equipment. We have also designed our track to be over 50% on viaduct to lessen impact on landowners and ensure all existing public roads stay open.

To ensure that Texas Central replicates the safety-critical elements of the Tokaido Shinkansen, in 2020 the FRA published a Final Rule of Particular Applicability that establishes a comprehensive set of safety standards for the design, operation and maintenance of the Texas Central high-speed rail system, providing regulatory certainty and minimizing project risks.

A JOB CREATOR AND ECONOMIC CATALYST WITH BIPARTISAN POLITICAL SUPPORT

At Texas Central, we are very proud and humbled to have earned the support of mayors, legislators and other elected officials from all over the state and nation, including Houston Mayor Sylvester Turner, Dallas Mayor Eric Johnson, Fort Worth Mayor Betsy Price, just to name a few. And, without the strong bipartisan support of leaders in congress like Congresswoman Eddie Bernice Johnson, Congressman Colin Allred and Congressman Seth Moulton on this Committee as well as Congresswoman Kay Granger this project would not be ready to go today. Their hard work and support have been critical to the continued success of the project.

The Texas High-Speed Train not only enjoys strong support across the US on local, state and national levels, it also has geopolitical importance. The project has secured development capital investment from Japan, 22 Texan families looking to leave a positive legacy for the State and the country, as well as other American investors. All of this has paid for the permitting and de-risking of the project, without any state or federal funding. We also expect significant participation of banks from Japan, Italy and Spain, apart from the possibility of accessing federal financing. These countries represent important partners in this project and have extensive high-speed rail networks of their own that allow them to inject significant experience and knowledge into the project. Texas Central is bringing together the world's high-speed rail expertise right here in the US. Moreover, there is MUCH AMERICAN expertise in high-speed rail all around the world and we are bringing many of these experts home to TEXAS.

While we are delighted to have worldwide support for the project, Texas Central is an American company and we are committed to employing US manufacturers and suppliers. We expect to inject more than $12 billion into labor and product costs to build the system, including utilizing 1,100 miles of steel rail, 600,000 tons of rebar and other steel products totaling more than 1 million tons of steel altogether supplied by US Steel manufacturers, spending $7.3 billion on procurement costs, and employing localized suppliers all along the 240-mile route. This project provides a unique economic opportunity for the nation that will create jobs, plant the seeds of a new industry in the US and help jumpstart the state and national economy by infusing billions of dollars into US industries.

While the goal was always to build the nation's first high-speed train, it just turned out that Texas—specifically Houston to North Texas—was the ideal spot for a train that could be commercially successful. We looked at over 90 different pairs of cities in the United States, and Houston to North Texas came out on top. There are many reasons why.

First of all, that 240-mile stretch between Houston and North Texas is in the sweet spot of "too far to drive, too short to fly." It's also relatively flat, with less than 500 feet of elevation change—no mountains, no tunnels, no major engineering challenges. It's largely undeveloped in between, and you can connect roughly 16 million people between those two economic centers. Simply looking at this project from an economic perspective, Texas makes the most sense, both on the cost and ridership side.

The Texas High-Speed Train project is a job creator. More than 17,000 good paying and high skilled construction jobs on average for a sustained period of five years, 20,000+ US supply chain jobs from many zip codes in 37 US states that we have received quotes from, and more than 1,500 permanent jobs once in operations. An estimated 25% of these job opportunities will be concentrated in rural areas, helping to boost rural economies and bring high-paying, high-tech jobs to these underserved areas. The project will also create many more thousands of permanent jobs in supporting industries.

To build the system, we anticipate a cost of $24 billion for direct construction of the alignment, three stations, system equipment and installation. Total cost will depend on funding sources interest rates, risk premiums, and other factors, but we expect significant private and international investment.

We would like to thank this committee for its efforts in passing H.R. 2 to assist projects like Texas Central to access the Railroad Rehabilitation and Improvement Financing program and other potential high-speed rail initiatives. We are committed to working with the Committee as it finalizes surface transportation reauthorization legislation. We believe the private sector has a role to play and we are ready to implement this project as an example of what the private sector can accomplish.

A Commitment to Diversity and Inclusion

Texas Central is a company that values and cultivates a diverse and inclusive workforce. At the core of this commitment is our Business and Workforce Opportunity Program (BWOP), created with a mission to recognize the value and development of small-, rural-, minority-, woman-, veteran- and disabled individual-owned businesses by offering fair and competitive opportunities to bid and participate in building and operating the Texas high-speed train. The BWOP was developed in collaboration with our stakeholders—cities, counties, workforce boards, chambers, community colleges and universities and businesses. Our program also focuses on helping businesses build capacity and mentor protege partnerships. The goals and objectives of the program requirements are embedded into all Texas Central agreements.

The program goes beyond providing opportunities to participate. The jobs created will require new skills to be developed through extensive training, new investments in workforce development and partnering with a supporting network of workforce boards, community colleges and universities, K–12, unions and employers to meet the demand. To achieve these goals, we are planning to set up a High-Speed Rail Center of Excellence and have proposed it to be housed at Texas A&M University in College Station and in coordination with the Texas A&M Transportation Institute (TTI), not far from our intermediate station in Brazos Valley. In addition, we will work with the Historically Black Colleges and Universities in Texas to provide internships and other professional positions. We are establishing an expert presence to attract supply chain companies and others to build an educational hub in Texas and serve the rest of the nation from there.

HIGH-SPEED, LOW IMPACT

The all-electric Texas High-Speed Train will have tremendous environmental benefits when compared to all alternatives. It will remove more than 14 million automobiles off I–45 per year, according to the Final Environmental Impact Statement, published in 2020 by the FRA. This net reduction of nitrous oxide, volatile organic compounds and greenhouse gas emissions will contribute to the nation's goal of reaching net-zero GHG emissions by 2050. High-speed rail also has a significantly smaller footprint than new highway construction as the train can move the same amount of people as a 16-lane highway while only using a fraction of the land. In fact, a high-speed rail line requires only 17 acres of land per mile to construct compared to 468 acres per mile for a new highway.

With its small footprint and significantly lower emissions per passenger mile, Texas Central will help handle Texas' growth more efficiently and relieve stress on the environment.

CONCLUSION

This major infrastructure project is a result of millions of man-hours of work by hundreds of engineers, environmental specialists, scientists, surveyors and numerous other trained professionals over the past decade. It includes years of close coordination with federal agencies (including the FRA, US Army Corps of Engineers, US Fish and Wildlife Service), state and local agencies and planners, landowners and many other stakeholders to create a safe, structurally sound and solid and responsible design that takes future growth into account. We look forward to working closely with the Committee, the US Department of Transportation and the Federal Railroad Administration to make this a reality. We are ready to bring a world class high-speed rail system to the US, create jobs and help boost the economy as we all recover from the Covid-19 pandemic.

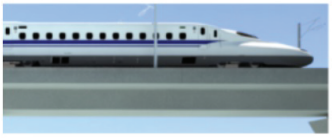
In short, *we are ready to go*.

Thank you for the opportunity to testify today.

High Speed, Low Impact

Texas Central Railroad will provide a safer, more comfortable passenger experience that is far more efficient and environmentally friendly than driving or flying.

13 million passengers are projected to ride the Texas High-Speed Train per year by 2050. **By taking these travelers off the roads and out of the skies,** Texans can expect:



- A total energy savings of **2.46 trillion BTUs**. That's enough energy to make **85 trips to the moon every year for 25 years!**
- Reduced greenhouse gas emissions by **4.5 million tons or 101,000 tons per year.**
- To save more than **1.2 billion gallons of gas or 65 million gallons** per year.
- To save **300 million hours** of travel time vs. plane or car.
- **86 million cars** removed from I-45. That's **12,500 cars per day!**

Energy Efficiency

- High-speed trains utilize regenerative braking technology to **recapture energy**.
- High-speed trains emit just **1/12th the amount of carbon** as a typical commercial jet.
- Our technology is **entirely electric**.

With its lightweight design, the Shinkansen train consumes less energy than other high-speed trains.

Population Growth/ New Mode to Meet Growing Need

- According to U.S. Census Bureau data **more than 1,000 people relocate to Texas per day**. This puts stress on aging infrastructure leading to congestion and less than ideal highway expansion systems in the state.
- More than **127% increase** in vehicular traffic is expected on Interstate 45 between Dallas and Houston by 2035. (FEIS, Section 1.2.2.3)

Rail moves the same amount of people per hour as 16 lanes of highway.

HSR: Only requires 17 acres of land per mile to construct

VS

Highways: Require 468 acres of land per mile to construct

Mr. PAYNE. Thank you.

Next, we will hear from Mr. Flynn for 5 minutes.

Mr. FLYNN. Good afternoon, Chairman Payne, Chairman DeFazio, Ranking Member Crawford, and members of the subcommittee. I am proud to represent Amtrak's 17,000 hard-working employees and have the opportunity to discuss Amtrak's critical role in advancing high-speed rail in America.

As America's only high-speed rail operator, Amtrak strongly supports development of high-speed rail in all markets where it makes sense. This includes in the Northeast Corridor, the NEC, where we stand ready to advance President Biden's vision of making our existing high-speed service much faster, and in new or existing mar-

kets which have the population levels and other attributes that make such services successful.

Building high-speed rail and expanding overall intercity passenger operations require a strong Federal commitment and substantial and reliable Federal funding through a trust fund-like structure. This is the most important lesson we can learn from countries with successful high-speed networks. There is simply no substitute. If we funded highways the same way we fund intercity passenger rail today, we would still be driving on dirt roads.

High-speed rail must be part of a much broader rail strategy. Our goal should not be to develop high-speed rail lines in only a few corridors which take years to yield benefits. We should develop a modern, efficient, trip-time competitive intercity passenger rail network that includes high-speed rail.

Every high-speed system in the world relies on a foundation of high-quality, conventional intercity rail that allows passengers to connect to high-speed services. The development of such systems has generally been undertaken by the nationally owned railroad, to ensure effective service integration, economies of scale, and uniform standards.

Amtrak is well suited for the job, created with the legal authority and having the fleet, the core systems, the trained employees, and the experience necessary for the job. We are transforming the Northeast Corridor into North America's only 160-mile-per-hour operation.

And given that high-speed rail lines take many years to develop and construct, an average of 16 years, according to a 2018 European Commission study, we should start right away by continuing to develop the NEC and initiating conventional and higher speed services in the many corridors that we have identified for improvement or expansion in our recently released Amtrak Connects US vision.

For some of the 60 corridors that we have identified, high-speed service should be the ultimate goal, such as corridors in Texas, Florida, and the Pacific Northwest. Many other corridors have opportunities to achieve 110 or 125 miles per hour in the near term, such as the Richmond-to-Raleigh segment of the Southeast High-Speed Rail Corridor. Pursuing such a strategy will give us a realistic, achievable, scalable plan for a network of expanded intercity and high-speed passenger rail service throughout our Nation.

Our Northeast Corridor operations demonstrate the success of this model. Our Acela service dominates in certain segments, such as Washington to New York. Years of investment have improved all levels of service and allowed high-speed trains to benefit from the connectivity and access provided by regular intercity and commuter trains. With additional investments, we can deliver much faster service, generating enormous economic benefits.

With funding to replace ancient infrastructure on the NEC, such as the 148-year-old, 30-miles-per-hour B&P Tunnel south of Baltimore, and additional investments costing less than $50 billion, Amtrak could significantly reduce trip times. For example, a trip between Washington and New York City would take only 2 hours. Washington to Baltimore would take just 21 minutes.

Investments like these would create thousands of jobs, enable faster and more frequent commuter rail service, and contribute directly to the fight against climate change. Taking an Amtrak train on the all-electric NEC produces 83 percent fewer greenhouse gas emissions than driving, and 73 percent fewer than flying.

Our Nation needs a comprehensive network of high-quality, intercity passenger rail service that includes high-speed rail, and Amtrak is ready to deliver that—deliver that in partnership with the Federal Government, States, and private entities such as Texas Central and Brightline. If intercity rail is going to meaningfully contribute to the President's goal of reducing greenhouse gas emissions by 50 percent by 2030, and help create the expanded mobility, greater economic opportunity, and enhanced equity we desire, we need a broad program anchored by a Federal commitment and dedicated funding.

Thank you for your time and your support, and I look forward to your questions.

[Mr. Flynn's prepared statement follows:]

Prepared Statement of William J. Flynn, Chief Executive Officer, National Railroad Passenger Corporation (Amtrak)

INTRODUCTION

Good morning, Chairman Payne, Ranking Member Crawford, and Members of this Subcommittee. Thank you for inviting me to testify at this hearing on behalf of Amtrak. My name is William Flynn, and I am Amtrak's Chief Executive Officer.

I am particularly honored to be representing Amtrak at this hearing. It takes place six days after President Biden traveled to Philadelphia to join us in celebrating Amtrak's fiftieth anniversary. The American Jobs Plan he has proposed, which would provide $80 billion for Amtrak and high-speed and intercity passenger rail, is an important first step in developing an improved passenger rail system that would enhance mobility by serving more communities; provide more frequent and more equitable service; generate significant economic benefits; and reduce greenhouse gas emissions.

Amtrak has accomplished a great deal since we began service on May 1, 1971 with a mandate to transform unprofitable intercity passenger rail services operated by private railroads into "a modern, efficient intercity railroad passenger service" [1]—with an initial appropriation of only $40 million. In thinking about where Amtrak, and high-speed rail service in North America have come over the past half century, the title of today's hearing—"When Unlimited Potential Meets Limited Resources"—seems particularly apt.

The potential high-speed rail offered to revolutionize intercity travel was one of the major reasons Congress created Amtrak. The *Metroliner*, the United States' first high-speed train, had begun service between New York City and Washington in 1969, the year before the enactment of the Rail Passenger Service Act (RPSA) that established Amtrak. Many members of Congress who had experienced the *Metroliner* recognized the potential high-speed rail service had to, in the words of the RPSA, "provide fast and comfortable transportation between crowded urban areas[2]" throughout the United States.

WHAT IS HIGH-SPEED RAIL?

When most Americans hear the words "high-speed rail," what comes to mind are sleek bullet trains racing along newly-constructed rail lines on elevated viaducts. People who live in countries that have extensive high-speed rail networks would consider that definition of high-speed rail too narrow. In fact, "high-speed rail" encompasses several different types of services arranged along a continuum with gen-

[1] Rail Passenger Service Act of 1970, Pub. L. No. 91–518, Sec. 101.
[2] Ibid.

erally fuzzy boundaries—and we need all of them in the United States if we are to realize high speed rail's potential.

On one end of the continuum are the high-speed bullet trains, such as Japan's Shinkansen or the extensive network of high-speed services China has developed over the past 15 years that operate on dedicated, custom built electrified rail lines at speeds that approach or exceed 200 mph. Their costs—both monetary and from the environmental impacts associated with their construction—can be justified in corridors with high travel volumes that are anchored by large cities; where existing rail lines are at capacity; where the distances are too long for anything other than very high speed service to be trip time competitive with flying; and/or where topographical characteristics such as mountains or other factors make it infeasible to significantly increase speeds on conventional rail lines. Los Angeles to Northern California is the perfect example of this, which is why we need to build California High Speed Rail.

Next are high-speed corridors like Amtrak's Boston-to-Washington Northeast Corridor (NEC) or Great Britain's West Coast Main Line connecting London and Glasgow, where frequent high-speed trains operating at maximum speeds of 125 to 160 mph share electrified tracks with conventional intercity, commuter and freight trains. Both the NEC and the West Coast Main Line have high train densities and passenger volumes that have reached the point where development of dedicated high-speed rail lines over portions of their routes is necessary to accommodate growing demand, and also to make rail more competitive with air travel for trips between their endpoint cities, which are approximately 400 miles apart. In the U.K., this has taken the form of the roughly $135 billion HS2 program, a series of newly-built, dedicated 225 mph lines that will interface with existing high-speed and conventional lines now under construction to connect London, the Midlands and Northern Britain.

The German system—Europe's largest in terms of annual passengers—perhaps best represents the strategy of incremental development of high-speed rail. Starting with an extensive conventional network and a significant freight rail sector in place, Germany has strategically developed 186 mph or higher high-speed segments to speed up certain city pair and international routes, while investing in conventional routes to bring them up to 100 to 155 mph standards, to achieve overall trip times which are competitive with driving and flying. Thus, out of Deutsche Bahn's roughly 21,000-mile network, only approximately 1,300 miles operate at speeds above 155 mph as of 2018, yet the network serves as the primary mode of intercity travel for many. To put this in perspective, Germany is roughly half the size of Texas but has a total network of equal size to Amtrak's that provided 151 million intercity trips in 2019.

While some definitions of high-speed rail use a higher threshold, the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) defines "high-speed rail" as "intercity passenger rail service that is reasonably expected to reach speeds of 110 mph."[3] Corridors with maximum speeds of 110 mph, four of which Amtrak operates, can offer faster trip times than driving and be very competitive with flying. Importantly, they can be developed at a much lower cost than faster corridors in markets where passenger demand would not justify the major capital investments, such as electrification and elimination of grade crossings, that are generally required to operate trains at higher speeds.

In nearly every nation, conventional rail service is the foundation for the development of successful high-speed rail service. Improvement or initiation of conventional rail service can occur much more quickly than construction of new high-speed rail lines, and can set the stage for high-speed rail service by building a ready market and existing passenger ridership that high-speed rail can tap when it arrives. Conventional rail service also feeds high-speed rail, providing connecting passengers and allowing high-speed services to be extended over conventional speed lines to extend the reach of high-speed trunk lines.

THE PATH AHEAD

Instead of asking how we can develop high-speed rail *lines*, what we should be asking is how—to paraphrase Amtrak's initial and current statutory goals—we can develop a modern, efficient, trip time competitive *intercity* passenger rail *network* throughout the United States that *includes* high-speed rail. If we focus myopically on the development of dedicated high-speed rail lines, or on new technologies that share most of their characteristics, we will not tap intercity passenger rail's potential in the many locations around the nation where it can play a meaningful role.

[3] 49 U.S.C. 26106(b)(4).

And we will continue to make little progress in addressing climate change on a national scale, as we will leave most of the country waiting at the station for the decades it typically takes to develop even one new high-speed line. For example, the UK's HS2, for which planning began in earnest in 2012, is not set to begin operation on its initial segment until as late as 2030, with the full project not expected to be complete until 2040. We also cannot ignore the fact that we already have a high-speed railroad in the United States—the NEC between Washington and Boston—on which relatively modest investments could yield large improvements in trip times, ridership, economic impacts and reduced greenhouse gas emissions.

Much of the NEC's success is due to factors that do not exist at similar levels anywhere else in the United States, particularly its very high population density along a linear corridor anchored by the country's largest city and extensive network of conventional rail, commuter and transit services that predates the development of high-speed rail. However, that does not mean that the NEC is the only U.S. corridor well suited for high-speed rail service. Rather, it helps to illustrate, as a prototype, the sorts of conditions that corridors in the U.S. will likely need to be successful—robust public transit connectivity, high-density land-use, significant populations, high driving and parking costs, significant congestion on other modes, economic agglomeration, and so forth.

So, while Amtrak strongly supports development of new high-speed corridors, we can't focus only on the dream of funding and constructing a large number of them from scratch, which is not going to happen soon enough to meet the near term need for more passenger rail service, or take a chance that new technologies will eventually prove viable. The urgent economic and mobility needs of the nation require a more holistic approach that focuses on quickly improving and expanding our conventional network to serve more people and places with reliable service, completing the two high speed corridors already under development—the NEC and California High-Speed Rail—and launching select additional corridors with the right attributes for high-speed development.

Such an approach, which focuses on creating reasonable alternatives to high-carbon transportation modes in the near term, is essential to addressing climate change. As the Committee knows, the transportation sector accounts for the largest share—nearly 30%—of greenhouse gas emissions in the United States. The ambitious environmental goals the Biden Administration has proposed—particularly the 50% reduction in greenhouse gases by 2030—cannot be realized if the only options for most intercity trips continue to be driving or flying. With new high-speed lines taking, on average, 16 years to progress from the start of construction to operation in Europe according to a 2018 report by the European Union's European Court of Auditors,[4] the United States simply does not have the time to wait on high-speed rail alone to increase intercity passenger rail use in America.

HIGH SPEED RAIL IN THE NORTHEAST CORRIDOR

Turning the Boston-to-Washington NEC into North America's only high-speed railroad is perhaps Amtrak's biggest accomplishment. When we acquired the NEC on April 1, 1976, it was literally falling apart. *Metroliners* bounced over bumpy tracks at reduced speeds; commuter rail service was in a downward spiral; and extensive slow orders due to lack of maintenance by the NEC's owner, the bankrupt Penn Central, could have curtailed rail service were it not for an emergency appropriation in 1975 that kept trains running until Amtrak took over.

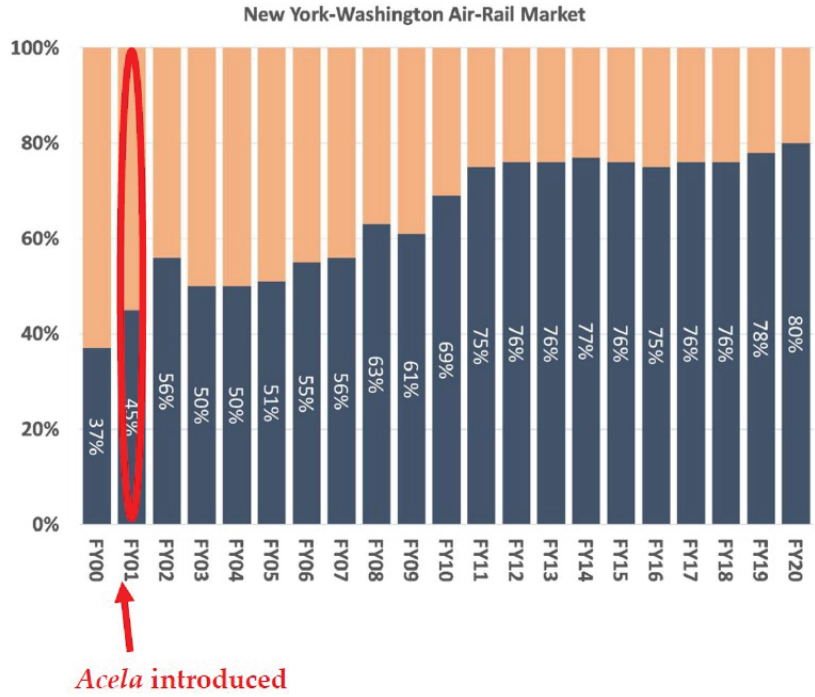
Over the next five years, Amtrak rebuilt the NEC with funds provided by the Northeast Corridor Improvement Program (NECIP), reducing trip times, and ultimately increasing maximum speeds to 125 mph. In 2000, funding appropriated for the Northeast High-Speed Rail Improvement Project (NHRIP) allowed us to extend electrification from New Haven to Boston and increase maximum speeds to 150 mph on that segment. Shortly thereafter, we introduced the high-speed *Acela* trainsets that have been the flagship of our NEC services for the ensuing two decades. Their popularity has led to widespread usage of the term "*Acela* Corridor" to describe the megaregion they serve: a densely populated corridor that accounts for 17% of the U.S. population and 20% of the gross domestic product on which the NEC is the artery that provides mobility and drives the economy.

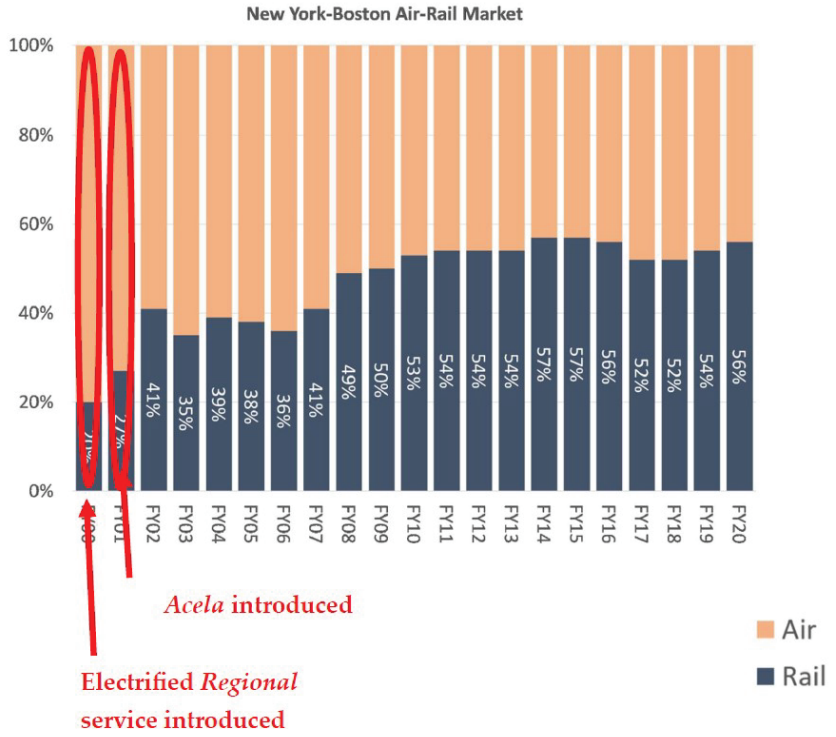
As a result of these investments, the NEC is a very different rail line today than it was in 1976. It is the busiest railroad corridor in the Western Hemisphere, hosting (pre-COVID) 2,000 passenger trains carrying approximately 820,000 commuter and Amtrak passengers each weekday, along with approximately 60 freight trains a day. Amtrak passengers made 17.1 million trips on the NEC in FY 2019,

[4] https://op.europa.eu/webpub/eca/special-reports/high-speed-rail-19-2018/en/

accounting for over half of our total ridership. Today, the high speeds between Washington and New York City are 135 miles per hour and will soon rise to 160 miles per hour, as will maximum speeds between New Haven and Boston. High-speed crossovers and bidirectional signals allow trains to weave efficient paths across the railroad, Positive Train Control protects operations, and trains achieve high levels of on-time performance far surpassing those on the rest of the Amtrak system.

Improved and higher speed service in the NEC has had a dramatic effect on Amtrak's competitiveness with airlines. As shown below, from 2000 to 2019 Amtrak's share of the air-rail market between New York City and Washington increased from 37% to 78%. Amtrak's market share between New York City and Boston nearly tripled, increasing from 20% to 54%. Amtrak's NEC ridership has, of course, decreased markedly during the pandemic: March ridership was down 76% from FY 2019 levels. However, our share of the air-rail market has actually increased since the pandemic began. That trend is likely to continue if, as many observers expect, airline service in short-distance markets is not restored to pre-COVID–19 levels.





Despite COVID–19, we are continuing to make major improvements in our NEC high-speed rail services.

- The opening of the Moynihan Train Hall at New York City's Penn Station at the end of last year has transformed our station facility in that city, which contributes nearly half of our nationwide ticket revenues, from a crowded subterranean chamber of daily commuter horrors into a spacious, modern, world-class station that is at last worthy of the great city it serves. Moynihan Train Hall gives new meaning to the phrase from last to first.
- The 28 next generation *Acela* trainsets that will soon begin entering revenue service will expand the *Acela* fleet by 40% and increase the number of seats per train by 25%. They will operate at higher speeds—a maximum of 160 mph—while offering improved ride quality, increased reliability, and modern contactless features. The new *Acela* trainsets have already provided large benefits to our nation's economy because they were bought in America: 95% of their components were produced in the United States by 250 suppliers in 27 states.
- We have just selected a preferred bidder to produce 83 Intercity Trainsets: dual mode trains capable of operating at 125 mph under electric power and continuing under diesel power to destinations beyond the NEC without the need for time consuming engine changes. They will replace the 45-year-old Amfleet I cars operated on our *Northeast Regional* trains and will also operate on many of our state-supported corridor routes.
- Completion of the New Jersey High-Speed Rail Improvement Program, which is replacing the electric traction infrastructure and overhead catenary wires installed in the 1930s, and upgrading track and signals, on a 24-mile stretch of the NEC between Trenton and New Brunswick, New Jersey, will allow the new *Acela* trainsets to operate over that segment at a maximum speed of 160 mph.

Because the NEC is a shared use facility, capital investments in the NEC have also provided major benefits to the commuter rail riders who account for over 90% of NEC rail travelers. The near doubling in the number of commuter trains operating over the NEC from 1976 when Amtrak acquired it to 2019, particularly the enormous expansion of New Jersey Transit service and the increase in trains be-

tween Washington and Baltimore on the MARC Penn Line from two to 31 round trips each weekday, would not have been possible without the investments the federal government has made to provide expanded capacity, increased reliability and higher speeds.

THE GREEN WAY TO TRAVEL

The history of Amtrak's ownership of the NEC demonstrates that, when Congress has provided funding to improve high-speed rail service, we have used it well on transformative projects that have produced enormous benefits. Importantly, those investments have led millions of passengers who would otherwise have driven or flown to take the train, making a major contribution to our environment.

Passenger rail service is the green way to travel, particularly on electrified rail lines like the NEC. We hear a lot of talk about other transportation modes adopting stretch goals to reduce their emissions, such as producing only electric cars by 2035. On Amtrak's NEC, we are already there. Since we completed electrification to Boston in the early 2000s, all Amtrak trains operating between Washington and Boston have utilized electric power. As a result, traveling on an Amtrak NEC train produces 83% fewer emissions than driving, and 73% fewer emissions than flying. About a third of the NEC's electric traction power is hydroelectric power generated in Safe Harbor, Pennsylvania along the Susquehanna River.

HIGH-SPEED RAIL ON AMTRAK'S NATIONAL NETWORK

The *Acela* trains account for only part of Amtrak's high-speed operations. *Northeast Regional* trains, *Keystone Service* trains and other state-supported trains operate over the NEC at a maximum speed of 125 mph. Passengers riding those trains between the NEC and destinations on state-supported routes travel at that speed for a portion of their trips, reducing their trip time. Long distance trains destined for Chicago, New Orleans, Georgia, and Florida travel over the NEC at a maximum speed of 110 mph.

On four of the corridors on our National Network, all of which are operated, maintained, and owned in whole or part by Amtrak, we operate state-supported services which reach the 110 miles-per hour threshold for high-speed rail under the PRIIA definition. All these corridors benefited from improvements funded under the American Recovery and Reinvestment Act of 2009 and/or the 2009 and 2010 Transportation Appropriations Acts that provided over $10 billion in funding for high-speed and intercity passenger rail development.

- On the Amtrak-owned Keystone Corridor between Philadelphia and Harrisburg, the initial phase of the Keystone Corridor Improvement Project (KCIP), a partnership between Amtrak and the Commonwealth of Pennsylvania completed in 2006, restored electrified service, increased maximum speeds to 110 mph, increased service frequency and extended most trains from Philadelphia to New York City. The result: 91% ridership growth from 2006 to 2019. The KCIP project's success, made possible because of Amtrak's ownership of the corridor and its ability to mobilize its workforce to complete the project in a relatively short time, has been cited in studies published in the Harvard Business Review and the Mineta Institute as a model for cost-efficient improvements in existing intercity passenger rail services. With additional investments, maximum speeds on the Keystone Corridor, the only electrified Amtrak route other than the NEC, could be increased to 125 mph.
- On the 96-mile Amtrak-owned portion of the Michigan Line between Porter, Indiana and Kalamazoo, Michigan that forms part of the *Wolverine* route between Chicago and Detroit/Pontiac, speeds were increased to 110 mph in 2012 following the installation of the Interoperable Electronic Train Management System (I–ETMS), one of the first successful positive train control systems outside of the NEC. When, following completion of improvements constructed by Amtrak, speeds are increased on the 135-mile segment of the Michigan Line between Kalamazoo and the Detroit area that Michigan acquired in 2013, trains will be able to operate at 110 mph on approximately 160 of the 231 miles of the Michigan Line owned by Amtrak and Michigan.
- Track and signal improvements on the 61-mile Amtrak-owned Springfield Line between New Haven and Springfield, Massachusetts allowed speeds to be increased to 110 mph in 2018, and provided additional capacity that enabled Amtrak service to increase from six to nine weekday round trips and the initiation of CTrail commuter rail service.
- Trains also operate at a maximum speed of 110 miles per hour on the 79-mile portion of the Amtrak-leased, and partly Amtrak-owned, New York City-Albany/Schenectady Empire Corridor between Poughkeepsie and Schenectady.

When you add up all the trains described above, over half of Amtrak's trains operate at a maximum speed of 100 mph or more over at least a portion of their route.

Amtrak is also working with Union Pacific Railroad, the Illinois Department of Transportation, and the Federal Railroad Administration (FRA) to increase maximum speeds between Joliet and East St. Louis, Illinois on the Chicago to St. Louis *Lincoln Service* route. We are seeking FRA approval of recently completed testing for 90 mph operations, which we hope to implement within the next few months. Thereafter, additional testing will be conducted to obtain FRA approval for 110 mph operations, which could commence within a year.

WHY DOESN'T THE U.S. HAVE MORE OR FASTER HIGH-SPEED TRAINS?

One of the questions Amtrak is often asked is why the United States does not have faster or more high-speed trains like most European countries in corridors where that would make sense. The answer is simple: money. Unlike these countries, the United States has chosen to primarily invest in highways and aviation rather than rail.

From the mid-1930s, when lightweight streamlined trains were introduced, until 1959, the United States had the fastest trains in the world. Passenger trains serving corridors like Chicago to Minneapolis, some pulled by steam locomotives, operated at speeds of 90–100 mph. They offered frequent service, with trip times that would be competitive even with today's driving times, on rail lines shared with freight trains.

In the 1950s that began to change. As European countries and Japan started investing in improved and higher speed passenger rail service, the United States opted instead to build interstate highways and airports. The federal government's decision to invest in cars and planes rather than passenger rail contributed significantly to the precipitous decline in intercity passenger rail service that resulted in the creation of Amtrak.

Today, the 150 miles per hour maximum speed on *Acela* trains places the United States 18th in the world when countries are ranked based on their fastest trains. You get what you pay for—and in the United States the vast majority of federal transportation funding has gone to highways.

In recent years, an increasing share of highway funding has come directly from taxpayers rather than from highway users. As everyone familiar with federal transportation funding knows, failure to raise the federal gas tax since 1994 caused the Highway Trust Fund to become insolvent in 2008. Since then, the federal government has appropriated over $157 billion to bail it out: nearly three times as much money, in just over a decade, as Amtrak has received over its entire 50-year existence.

By contrast, since 2010, the only federal funding available for developing or improving intercity and high-speed passenger rail, other than Amtrak's annual appropriation, has been small grants under several competitive matching grant programs such as the Consolidated Rail Infrastructure and Safety Improvements Program (CRISI) and the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program (formerly known as BUILD and TIGER). The *total* funding appropriated for competitive grant programs for which passenger rail is eligible would not make a dent in the cost of constructing even a single high-speed rail line. Most of those programs are not limited to intercity passenger rail, and over the last four years highway projects have received the majority of the funding from programs for which they are eligible.

If highways were funded in the same way we fund passenger rail, we'd still be driving on dirt roads. If we are going to have improved intercity and high-speed rail in the United States, Congress must provide adequate, consistent, and reliable funding as it does through trust funds earmarked for other transportation modes.

WHAT DO SUCCESSFUL HIGH-SPEED RAIL SYSTEMS AROUND THE WORLD HAVE IN COMMON?

While international high-speed rail systems differ in many respects, an examination of the way successful systems have been developed reveals five nearly universal commonalities.

First, the national governments in all these countries have provided significant, consistent, and predictable funding for the development and construction of high-speed rail lines over an extended period.

Second, nearly all these countries have followed an incremental approach to expanding high-speed rail service. They began by upgrading existing conventional speed rail lines for higher speeds; progressed to building dedicated high-speed rail segments along portions of routes; and over time extended their dedicated high-

speed rail network along lengthy corridors on heavily traveled routes. The major exception is Japan, whose narrow-gauge rail lines through mountainous regions could not be upgraded for higher speeds. Even today, most European high-speed trains continue to share tracks with conventional rail services over at least portions of their routes, particularly in terminal areas in major cities.

Third, high-speed rail service in these countries does not exist in a vacuum. Rather, it is integrated with conventional speed intercity passenger rail service, often operating over the same tracks or as extensions of high-speed rail services, and seamlessly connected to regional rail, commuter rail and rail transit services, as well as airports.

Fourth, countries that have rapidly developed high-speed rail systems—most notably China—do not have environmental laws like those in the United States, or the same protections for private property owners' rights. That allows high-speed rail lines to be built more quickly and at lesser expense. Six years of ultimately unsuccessful environmental litigation delayed construction of Brightline's yet-to-be-completed line Miami to Orlando Airport line, which was originally projected to begin operations in 2015. Environmental requirements, and the challenges of purchasing or condemning thousands of properties to create a new right-of-way, are major reasons the initial segment of California High Speed Rail is now projected to begin service more than two decades after voters approved funding for it. No one would suggest getting rid of our environmental and property rights laws, but any realistic projection of the time required to build high-speed lines if funding suddenly became available must take those laws into account.

Finally, in nearly all the countries that have built successful high-speed rail systems, a national passenger rail operator has played a leading, and in most cases the lead, role in planning and developing high-speed rail service. Examples include SNCF in France, Deutsche Bahn in Germany, Renfe in Spain, and JNR in Japan. In order to build a high-speed railroad, you need people with experience in planning, constructing, maintaining and operating high-speed rail lines, and you want to leverage this capacity so that you can support several projects efficiently, learning valuable lessons as development progresses. In most countries (including the United States), most of those people work for the national passenger railroad, and this core capacity is utilized to drive network development.

WHAT CAN WE DO TO TRANSFORM HIGH-SPEED RAIL ON THE NEC?

The biggest challenge we face in improving existing high-speed rail service on the NEC is, of course, the age, condition, and capacity of key infrastructure assets, such as bridges, tunnels, and electric traction systems. The good news is that most of those assets were built to last 100 years. The bad news is that many of them are now more than 100 years old. They must be replaced or rebuilt just to maintain existing service levels. Historical federal funding levels have been insufficient to address the NEC's State of Good Repair backlog, let alone make the investments required to increase speeds and track capacity for improved high-speed rail service.

The most important factor in achieving higher speeds on a rail route is not the maximum speed at which trains are able to operate, but rather minimizing places where trains must go slow. In many places along the NEC, all trains must operate at very slow speeds on infrastructure not capable of accommodating faster operations. The most prominent example is the curving, water-laden, 150-year-old Baltimore & Potomac (B&P) Tunnel just south of Amtrak's Baltimore station, through which trains crawl at 30 mph. The longest slow stretch is the 57-mile Metro-North Railroad segment of the NEC between New Rochelle, New York and New Haven, on which the maximum speed is only 80 mph. Slow speeds on the Metro-North segment are the major reason that *Acela* trip time between New York City and Boston is 51 minutes longer than between New York City and Washington, even though the distances are nearly identical and the *maximum* speed between New York City and Boston (150 mph) is faster than the 135 mph maximum between New York City and Washington.

It also does no good to have an *Acela* train race up the Northeast Corridor from Washington at a maximum speed of 135, or soon 160, miles per hour, only to come to a dead halt four miles from its New York City destination because trains in both directions are sharing the one single-track tunnel under the Hudson River while the other undergoes stopgap repairs. The additional time that must be added to schedules to account for the likelihood of infrastructure-related delays affects on-time performance and necessitates longer scheduled trip times.

Fortunately, we have an opportunity to address this problem. With realistically achievable levels of federal funding for essential state-of-good repair investments

and additional investments to increase speeds, we can significantly reduce trip times and improve existing NEC high-speed-rail service.

Amtrak has identified investments, collectively projected to cost approximately $50 billion, that would enable *Acela* trains to operate at 160 mph on approximately 333 of the 457 miles between Washington and Boston and increase maximum speeds on the Metro-North segment to 125 mph. This would reduce trip times on express *Acela* trains to approximately two hours between New York City and Washington and two hours and 30 minutes between New York City and Boston.

Travel time between Washington and Boston would decrease by a full two hours, making Amtrak service much more competitive with flying. These investments would also provide additional capacity that, in addition to enabling Amtrak to increase *Acela* service frequency to every half hour, would also benefit other Amtrak and commuter rail services.

The key infrastructure investments to increase speeds and capacity that could be accomplished if this level of funding were made available include:

- Realigning curves, upgrading tracks and signals, and installing constant-tension catenary where it is not presently in place;
- Minor bridge replacements, platform reconstruction and interlocking reconfigurations where required for higher speeds or to facilitate increases in service frequency;
- Installation of additional track to provide a continuous four-to-six-track railroad along the Metro-North segment and a minimum of three tracks on the state-owned/Amtrak-operated portion of the NEC in Massachusetts;
- Construction of a new dedicated high-speed segment between Newport and Edgemoor, Delaware (Delaware New Segment); and
- Construction of a new high-speed segment on new right-of-way between New Haven and Providence (Connecticut New Segment).

The projected costs of these improvements, and the trip time reductions they would produce, are shown in the table below.

SECTION–>	WAS-NYP		NYP-BOS		NEC	
Phase	HSR Trip Times	Cost ($B)	HSR Trip Times	Cost ($B)	HSR Trip Times*	Total Cost ($B)
Current NEC	2:49		3:40		6:29	
NEC HSR Program	2:00	**$12.0**	2:28	**$36.3**	4:28	**$48.3**

*Full Corridor Trip Times exclude New York City station dwell

The Connecticut New Segment accounts for $29.5 billion of the $36.3 billion projected cost of the New York City to Boston improvements. Amtrak's plan assumes it would run primarily within the Interstate 95 right-of-way and include a new station in New London. While the projected trip time improvements attributable to construction of the new segment assumed its maximum speed would be 160 miles-per-hour, approximately 38 miles could support up to 186 mph operations, which could produce additional trip time reductions.

The projected $12 billion cost of the Washington to New York City improvements does not include the cost of four not yet funded State of Good Repair projects: replacement of the B&P Tunnel and of the Susquehanna, Gunpowder and Bush River Bridges in Maryland. While some of these projects, particularly the B&P Tunnel replacement, would increase speeds and contribute to the projected trip time reductions, replacement of these assets is necessary for reasons unrelated to speed limitations.

What is most significant about these investments is the not the higher maximum speeds they would allow on hundreds of miles of track, but rather that they would increase average speeds to 113 mph between New York and Washington and 94 mph between New York and Boston, both in the same range as many European high-speed rail services. These investments could be constructed incrementally as funding and track time for construction became available, providing immediate benefits before completion of the entire project.

GOING FURTHER: INVESTMENTS TO ACHIEVE BELOW TWO-HOUR NEW YORK TO WASHINGTON TRIP TIMES

When President Biden spoke at our 50th anniversary celebration last Friday, he said that Amtrak's vision shouldn't be limited to reducing trip time from New York to Washington to two hours. Instead, he believes that our goal should be to operate 220 miles per hour trains with a trip time of 90 minutes.

Additional funding beyond the $50 billion scope described above would advance this goal by allowing Amtrak to begin constructing dedicated high-speed rail tracks on new alignments. The Selected Alternative in the NEC Future Plan discussed below includes the construction of five new segments, in addition to the Delaware New Segment included in Amtrak's proposed investments, between Washington and New York City. They are:

- Bayview (Baltimore) to Newark, Delaware
- Philadelphia International Airport
- Baldwin, Pennsylvania to Philadelphia
- Philadelphia to Bridesburg, Pennsylvania
- North Brunswick to Secaucus, New Jersey

The new segments would be designed for 220 mph operation. While they would be connected to the existing NEC tracks at endpoints, the new segments would be located almost entirely outside of the existing NEC right-of-way. This means that their construction would have little impact on current NEC operations, allowing it to proceed in tandem with upgrading of existing NEC tracks that requires track outages that must be limited in order to avoid severe disruptions and delays to train operations.

Trains could begin utilizing each new segment as it was completed. Once a significant portion of the new segment mileage has been constructed, additional high-speed trainsets capable of higher speed operation could be acquired and the maximum speed on the new segments increased to 220 mph, equivalent to the fastest high-speed lines around the world.

AMTRAK'S PROPOSED INVESTMENTS AND THE NEC FUTURE PLAN

In 2017, the Federal Railroad Administration (FRA) completed a more than five-year, comprehensive planning and Tier I assessment of environmental impacts known as NEC Future that defined, evaluated, and prioritized future investments in the NEC. All the investments Amtrak has identified above are included within the Selected Alternative the FRA chose in the Record of Decision. (The Selected Alternative includes additional capacity between New Haven and Providence but does not specify how it will be provided pending further study.)

In addition to establishing a prioritized plan for future investments, NEC Future's Record of Decision also provides programmatic level (Tier 1) environmental clearances. This will enable projects included in the Selected Alternative to proceed directly to site-specific, project-level environmental reviews, greatly shortening the environmental review process compared to corridors for which corridor-wide programmatic environmental analyses have not yet taken place.

Amtrak is aware of proposals to discard the Selective Alternative that FRA has chosen for the route of New York City to Boston service, which is along the existing NEC right-of-way except for the New Haven-to-Providence segment, in favor of an alternative route across Long Island (the Long Island Alignment) that FRA considered and rejected because of its significant negative environmental and community impacts. The rejected Long Island Alignment would, among other things, require the construction of new tunnels under the East River; building a new high-speed rail line from Long Island City to Ronkonkoma, New York through densely populated urban communities; the construction of a long, deep tunnel under the environmentally fragile Long Island Sound; and construction of a new high-speed rail line through communities between Hartford and Boston. Needless to say, the environmental and impacts and enormous costs of this alternative make it highly unlikely that it would ever be constructed even if it had been selected. Giving it further consideration would serve no purpose other than to delay commencement of urgently improvements on the Metro-North segment between New Rochelle, New York and New Haven, the slowest portion of the NEC.

WHAT IS AMTRAK'S ROLE IN ADVANCING HIGH-SPEED RAIL OUTSIDE OF THE NEC?

When Congress created Amtrak in 1970 to revitalize passenger rail service, a major component of its vision was that Amtrak would develop expanded and higher speed passenger rail service. A half century later, only a small part of that vision has been realized. The main reason, as I noted above, is money. However, a lack of national direction and stable leadership in developing and advancing a plan for a national network of connected intercity and high-speed rail routes has also played a role.

It is time to return to Congress's original vision of having Amtrak play a lead role in the development of expanded intercity and high-speed rail service—and this time provide the funding to enable that to happen. Amtrak brings a great deal of value

to the table. Amtrak is the operator of the only high-speed rail service in the United States today, and the only U.S. company that has maintained and constructed operational high-speed rail lines. We have more than 45 years of experience in complying with the unique U.S. safety regulations for high-speed rail track and equipment. The majority of our approximately 17,000 employees are involved, directly or indirectly, in the operation of high-speed rail services, including most of our train and engine employees (conductors and engineers). Many of these employees have unique skills not possessed by other U.S. workers in areas such as construction and maintenance of electric traction infrastructure and planning high-speed rail operations and equipment acquisition. We are also the only U.S. company with high-speed rail training programs.

Amtrak also possesses unique access rights, administered by the Surface Transportation Board (STB), over all other freight and passenger rail carriers' rail lines and other facilities. While very high-speed rail services may require dedicated tracks, frequent, higher-speed passenger rail services are compatible with freight operations and are an essential component of any high-speed rail development effort to avoid the extraordinary costs and environmental impacts of building new, dedicated high-speed rail lines where they are not necessary. Amtrak trains on the NEC operate up to 150, soon to be 160 miles per hour on tracks shared with freight trains, and freight trains operate over nearly all of the Amtrak rail lines elsewhere on which the maximum passenger train speed is 110 mph.

Given the high expense of high-speed rail infrastructure, which on average was found to cost $30 million per kilometer (excluding more expensive tunneling projects) with more recent projects exceeding $48 million per kilometer in Europe by the 2018 European Union audit, maximizing the utility of the conventional network and focusing new alignment, high-speed segment construction on the highest impact, most-critical segments is imperative to properly conserve financial resources.

There are many different ways for Amtrak to participate in and bring value to proposed high-speed rail services like those whose representatives are also appearing before you today.

- Amtrak was part of one of the international teams that bid to be the Early Train Operator for California High-Speed Rail.
- We have consulting and joint ticketing agreements with Texas Central. The joint ticketing agreement will allow passengers to make reservations through Amtrak's website, app and other distribution channels for trips involving travel on both Amtrak trains and Texas Central's planned high-speed rail line between Dallas and Houston, and provide seamless connections between the Amtrak and Texas Central stations.
- We have also recently entered into an agreement with the Commonwealth of Virginia under which we will contribute capital funding to Virginia's planned upgrades along the fast-growing Washington-to-Richmond segment of the Southeast High-Speed Rail Corridor This will allow significant increases in Amtrak service frequency and set the stage for extension of Amtrak service over a newly constructed, dedicated high-speed rail line between Petersburg, Virginia and Raleigh.

We would welcome the opportunity to develop a joint-ticketing agreement with Brightline, whose proposed extension from the Orlando Airport to Disney World would operate along the same rail corridor as Amtrak's New York-to-Miami *Silver Service* long-distance trains, with which it could connect. However, existing federal law creates a major impediment to establishing connections between Amtrak trains and railroads like Brightline that the STB deems to be "intrastate." Those railroads are not subject to the STB's jurisdiction, and therefore do not have to pay Railroad Retirement or Railroad Unemployment Taxes for their employees, as long as they do *not* connect with Amtrak.

Discouraging connections between other passenger railroads and Amtrak's National Network makes no sense. Nor does treating some passenger railroads that operate over the interstate rail network, seek federal grants, and utilize federal tax advantaged financing differently from the rest of the railroad industry makes no sense. Congress should eliminate this loophole to encourage connectivity and create a level playing field for all passenger rail operators. Likewise, federal laws should be amended to ensure that foreign rail operators, most of which are government-owned, that wish to operate high-speed rail or other passenger rail services in the United States are allowed to do so only if their countries extend the same right, on equal terms, to American railroads.

Finally, if the federal government is going to invest in private developers of high-speed rail systems, Amtrak, as the federally-owned intercity rail operator, should be the vehicle for this investment. Amtrak, with five decades of marketing and sales

experience, is ready to help validate high-speed rail development schemes and ridership and revenue estimates, assist with planning and design for infrastructure and operations, invest in projects and form joint ventures, provide experienced union labor, and ensure that new lines or segments are properly integrated into Amtrak's National Network so that these investments create value far beyond the project limits.

AMTRAK CONNECTS US PROVIDES A BLUEPRINT FOR NEAR TERM EXPANSION

The Amtrak Connects US proposal that Amtrak has recently unveiled[5] sets the stage for improvement of intercity passenger rail service *throughout* the United States—not just along a few isolated corridors. The product of nearly three years of planning and consultation with stakeholders, Amtrak Connects US embodies a carefully considered vision for expanded and improved intercity passenger rail service. By adding up to 30 plus new routes and increasing service on up to 20 plus existing routes over the next 15 years, it would attract 20 million more riders annually.

Amtrak Connects US would bring new or additional passenger rail service to 47 of the 50 largest urban areas. It would provide Amtrak services with multiple daily frequencies to 15 states that lack such service today, including many of the largest, fastest growing and most diverse states such as Florida, Texas, and Georgia. The only Amtrak service these 15 states currently receive is provided by trains that run just once a day, and in many cases pass through the state in the middle of the night.

Amtrak Connects US presents numerous opportunities for additional federal investments, and for partnering with states, cities and proposed non-Amtrak high-speed rail services that do advance. It is a realistic, achievable, and scalable plan that can be developed incrementally, and incorporate high-/higher-speed service where demand warrants and funding permits. Many of the routes it identifies for new or expanded service, including Portland to Vancouver, British Columbia; Miami to Tampa; Chicago to Indianapolis; Petersburg, Virginia to Raleigh; New York City to Scranton; and Los Angeles to Phoenix have segments that would be good candidates for near term 110 mile-per-hour service.

The importance of having a plan shaped by vision but not fantasy is underscored by the history of the federally-designated High-Speed Rail Network. In 1991, Congress directed the U.S. Department of Transportation (USDOT) to designate corridors on which trains were reasonably expected to reach speeds of 90 mph or more that would be eligible for authorized federal high-speed rail funding. Since then, Congress and USDOT have designated 9,200 miles of high-speed rail corridors in addition to the NEC. However, the funding required to develop high-speed rail on these corridors has never been appropriated. Thirty years later, trains operate at 90 mph or higher on only 277 of those 9,200 miles. More than a third—3,413 miles—of the federally-designated high-speed network is served only by Long Distance trains, and 1,500 miles have no intercity passenger rail service at all.

NEW TECHNOLOGIES ARE NOT A SUBSTITUTE FOR HIGH-SPEED AND CONVENTIONAL PASSENGER RAIL

While new technologies like Maglev and Hyperloop may capture the public imagination, they are not a substitute for high-speed and intercity passenger rail. They would serve only a small niche of the intercity travel market at a much higher cost—both financially and environmentally.

Maglev is not really a new technology. The first high-speed Maglev carrying revenue passengers opened in Germany in 1984, and a 19-mile Maglev line serving Shanghai's airport has operated in China since 2003. However, countries that have considered building a Maglev system—China, Japan and Germany—have opted to build high-speed rail lines instead in every case where that was a viable alternative because constructing a Maglev line is much more expensive than building a new high-speed rail line, and vastly more costly than upgrading an existing rail line for higher speeds.

Construction of a Maglev line through heavily populated areas would also be much more environmentally disruptive than developing or improving high-speed rail along an existing rail corridor. Maglevs are also not as energy efficient as Amtrak trains. The energy consumption of the proposed Washington-to-Baltimore Maglev that FRA has calculated is twice as high per passenger mile as the energy consumed

[5] https://www.amtrakconnectsus.com/vision/

by an Amtrak NEC train. FRA has concluded that building that Maglev line would *increase* energy consumption by 3.0 trillion BTUs annually.

In addition, the huge public expenditures required to construct a Maglev line would benefit only a small number of affluent travelers. Unlike passenger rail, Maglev is a point-to-point system that serves few or no intermediate stops and cannot share tracks with or easily connect with other services. Very few Amtrak NEC or MARC commuter rail passengers would be able to use, and even fewer could afford to use, the proposed Washington-Baltimore Maglev.

Less than 3% of Amtrak's NEC passengers travel between the three places—Washington, Baltimore and BWI Airport—the proposed Washington-to-Baltimore Maglev would serve. Even for them, using Maglev would save only a few minutes of travel time. Maglev's projected trip time from Washington to Baltimore would be only 15 minutes faster than an *Acela* train today, and just six minutes faster than the projected *Acela* trip time following replacement of the B&P Tunnel and completion of the other investments discussed above. Based on Maglev's average fares, a daily commute from Washington to Baltimore that costs $16 on MARC would cost $120 on Maglev. For less than half the projected cost of constructing a Washington-Baltimore Maglev, the parallel NEC could be transformed into a modern four-track railroad, providing significantly improved capacity, reliability and speeds for both MARC and Amtrak passengers from all economic strata.

Unlike Maglev, Hyperloop is a new unproven technology. No one has traveled in a Hyperloop, let alone at high speeds, other than company employees on short test tracks. If Hyperloops prove to be technologically feasible and safe, and are able to gain public acceptance, they would have the same limitations as Maglevs.

CONCLUSION

President Biden's American Jobs Plan is an important first step in developing a high-speed and conventional passenger rail system in the United States that would enhance mobility, generate significant economic benefits, and reduce greenhouse gas emissions. The potential for high-speed rail in the right markets in the United States is indeed unlimited—and largely untapped.

We urge Congress to support the President's proposal; to provide the levels of funding Amtrak has requested in its Legislative & Grant Request; and to enact Amtrak's proposals for reauthorization. Most importantly, we urge Congress to provide adequate, assured and long-term funding for intercity passenger rail service, such as the trust funds it established decades ago for other transportation modes, and that has been the key to the development of high-speed rail services in every other nation.

I thank you for your time today and for your support for Amtrak. I invite you to join with President Biden, Amtrak's employees and stakeholders, and me in celebrating what we have accomplished during our first half century, and in realizing in the years ahead Congress's 1970 vision that Amtrak provide "fast and comfortable transportation" in every region of the United States.

Mr. PAYNE. Thank you, Mr. Flynn. We appreciate you being here.

And now we will hear from Mr. Giegel for 5 minutes.

Mr. GIEGEL. Thank you. Chairman DeFazio, Chairman Payne, Ranking Member Graves, Ranking Member Crawford, distinguished members of the subcommittee, thank you for the opportunity to testify about the critical work we are doing to bring our transportation network into the 21st century. I am Josh Giegel, CEO and cofounder of Virgin Hyperloop, the first new mode of mass transportation in over 100 years.

In the same way that highways and transcontinental railroad reshaped America, hyperloop would once again shrink distances across the country in urban and rural areas alike. In 2014, I cofounded this company in a garage, when hyperloop was just an idea on a whiteboard. By late 2016, we began construction of our first full system test site, DevLoop, north of Las Vegas. To date, we have completed over 500 tests of our system. Several members of this committee have visited DevLoop on congressional delega-

tions, including Chairman DeFazio and Ranking Member Sam Graves, in addition to a number of senior DOT officials.

Today, we have approximately 300 employees, and are the leading hyperloop company in the world, and the only company—the only company to have had passengers travel safely in a hyperloop.

Hyperloop is a high-speed surface transportation system. Travel occurs within a low-pressure enclosure, equivalent to 200,000 feet above sea level, in a vehicle pressurized to normal atmospheric conditions, much like a commercial aircraft. This, along with a proprietary magnetic levitation engine, allows us to reach and maintain airline speeds with significantly less energy than other modes of transportation.

Not only is hyperloop fast, it's a high-capacity mass transit system, capable of comfortably moving people and goods at 670 miles per hour with 50,000 passengers per hour, per direction, on demand and direct to your destination, meaning no stops along the way. That is the equivalent of a 30-lane highway.

The benefits of our system are significant. Trips that take hours today could take minutes, providing businesses access to more expensive labor and consumer markets, and providing individuals and families with a wider range of opportunities for employment, housing, healthcare, and other services. We achieve all of this on a fully electric system with no direct emissions.

Hyperloop transportation is not just about improved mobility of people and freight. It means new jobs, supply chains, environmental and energy efficiency benefits, enhanced safety, and U.S. international leadership in an emerging technology.

I believe it is important to bring these benefits into reality promptly. So we have worked with the Department of Transportation and several congressional committees in jurisdiction on the establishment of the Nontraditional and Emerging Transportation Technology Council, NETT Council for short. The NETT Council improves agency coordination on innovative transportation technology and has been critical to helping move hyperloop forward in the United States. We commend this committee for including its codification in the surface transportation bill it developed last year.

Because of the U.S. Department of Transportation's guidance issued last summer that hyperloop is subject to FRA safety jurisdiction, legislation should make clear that hyperloop is eligible for funding programs on the same terms as rail projects. Given hyperloop's promise to transform U.S. transportation, additional Federal funding should be provided to accelerate its deployment to enhance U.S. competitiveness in an increasingly interconnected world. Federal funding supporting hyperloop is a downpayment towards a cleaner, more efficient transportation system, not only for the next decade but the next century.

Beyond the enormous benefits I have outlined, we believe our narrow right-of-way profile, with lower land requirements, will allow us to avoid costly issues faced by other systems. With rapid travel speeds and efficient fleet management, we expect to significantly reduce operating costs. As with all cutting-edge technologies, we expect further cost efficiencies to emerge as our technology scales and matures.

So in conclusion, we want you to know that Virgin Hyperloop is ready. It is no longer a question of whether hyperloop will happen, but where it will happen first.

In November 2020, through our Pegasus demonstration, two Americans became the first human passengers in the world to ride a hyperloop system. And one of the things I did not mention in my intro is that I was one of those two Americans. I can personally attest to the safety of the system and the exciting potential that this carries to transform the way that people travel. It is time to build back better, smarter, safer, and cleaner. And hyperloop will help the country to do just that.

We look forward to continuing to work with this committee, Congress, and the Department of Transportation as we bring our vision to reality.

Thank you for the opportunity to appear today.

[Mr. Giegel's prepared statement follows:]

Prepared Statement of Josh Giegel, Chief Executive Officer and Cofounder, Virgin Hyperloop

Chairman DeFazio, Chairman Payne, Ranking Member Graves, Ranking Member Crawford, and distinguished Members of the Subcommittee:

Thank you for the opportunity to testify today about the exciting work we are doing at Virgin Hyperloop to bring the transportation network into the 21st Century. My name is Josh Giegel, and I serve as CEO of Virgin Hyperloop. In 2014, I co-founded the company when hyperloop was just an idea on a whiteboard in a garage. Today, we have approximately 300 employees and are the leading hyperloop company in the world. Last year we added to that leadership when we became the first hyperloop system to safely carry human passengers, conducting that test on our full-scale operational prototype facilities.

THE INNOVATIVE HYPERLOOP TECHNOLOGY

First, let me briefly explain hyperloop technology. The term "hyperloop" is shorthand for a high-speed surface transportation system utilizing magnetic levitation to move vehicles, or "PODs" as we have named them, within a low-pressure enclosure, while the POD is pressurized to normal atmospheric conditions—much like a commercial aircraft. The low-pressure environment all but eliminates aerodynamic drag on the vehicle, which allows a comfortable passenger experience at very high speeds while maintaining those speeds with significantly less energy than other modes of transportation. Transportation is on demand and direct to destination, which combined with the system's high speed, means dramatically reduced travel times.

BENEFITS OF HYPERLOOP

Hyperloop transportation could fundamentally improve the way people and freight move and the way communities connect—in urban and rural areas alike. It is in our national interest to support the continued advancement of this exciting industry to bring these benefits to reality sooner rather than later.

Hyperloop offers the promise of many benefits: improved mobility of people and freight, enhanced safety, the creation of new jobs and supply chains, establishing U.S. international leadership in an emerging technology, and, very important in these times, environmental and energy efficiency benefits.

Enhanced Mobility: Our hyperloop system is designed to be incredibly high-speed and high-capacity, capable of moving people and goods at up to 670 miles per hour and 50,000 passengers per hour per direction. Trips that take hours today could take minutes, providing businesses access to more extensive labor and consumer markets, and providing individuals and families with a wider range of opportunities for employment, housing, healthcare, and other services. Hyperloop service is designed to be on-demand and direct to destination, minimizing wait times common in other modes of transportation. Practically speaking, this would mean no long waits at a portal (station) for a POD's arrival or departure; no waiting at intermediate stops for other passengers to board or depart; and no departure delays due

to other PODs' simultaneous use of the same portal. A hyperloop route could serve not just the largest cities but also smaller metro areas. This system is intended to combine many positive attributes from other systems—the speed of a plane, on-demand convenience, and the energy efficiency of an electric car—all while being affordable, comfortable, and safe.

Safety Advantages: Safety is our top priority at Virgin Hyperloop. Our system is safe by its very nature. Because the PODs travel in an enclosed tube, hyperloop would avoid some of the greatest safety risks affecting rail or bus travel, including at-grade crossings and weather. The enclosed tube would prevent tragic pedestrian and trespasser deaths and injuries, as well as collisions with wildlife. Not only is hyperloop expected to be safer as a system, Virgin Hyperloop is committed to safety through multiple reviews of our technology and processes, not only by our world-class engineering team but also by independent safety experts and certifiers.

Economic Growth and High-Tech Jobs in the U.S.: The birth of a new mode of transportation holds the promise of boosting economic growth by spurring the development of a new high-technology industry. The ecosystem that will develop around the hyperloop industry will help the U.S. build back much better through the creation of advanced and high-tech jobs in the manufacturing, construction, and engineering industries, among others.

U.S. Leadership Internationally: Hyperloop also presents the United States with the opportunity to achieve international leadership in an emerging industry. We are a U.S.-based company creating American jobs, all while retaining the know-how and intellectual property within this country. The jobs we are creating here in the U.S. will allow our technology to be deployed around the world, solidifying the United States as the leader in and exporter of hyperloop technology.

Superior Environmental Performance: Lastly, hyperloop can be an important part of the solution as we tackle the climate crisis. Our system is designed to be 100% electric with zero direct emissions, and our proprietary magnetic levitation system is energy efficient, driving down any indirect emissions. We believe that hyperloop will be roughly 10 times more energy efficient than an airplane and use significantly less energy than other maglev systems, making it less expensive to operate. We are also designing our system to be energy agnostic, meaning we can use any type of clean energy to power our system, like solar, wind, or hydrogen power. Due to its high speed and capacity, hyperloop could also reduce roadway congestion and air pollution, for example, by reducing demand for auto travel. In addition, a hyperloop tube is anticipated to have a narrower profile than the right-of-way for a conventional rail track or a new highway lane, with portals significantly smaller than high-speed rail of equivalent throughput, using less land and reducing costs as well as environmental impact.

VIRGIN HYPERLOOP'S RAPID PROGRESS

By late 2016, only two years after I was working out of a garage, we began construction on our first full-system test site, "DevLoop", which is 30 miles north of Las Vegas. In six months, we completed construction and began testing. To date, we have completed over 500 tests of our system and its components. Several Members of this committee have visited our DevLoop test track on CODELS, including Chairman DeFazio and Ranking Member Sam Graves, in addition to senior DOT Officials. In November 2020, through our "Pegasus" demonstration, we became the first hyperloop system to safely carry human passengers. As one of those human passengers, I can attest to the safety of the system and the exciting potential this carries to transform the way people travel.

We are at a watershed moment in our development. Our team is passionate about hyperloop's potential to revolutionize transportation for the future by enhancing mobility, increasing economic opportunities and bringing communities and regions together—safely and in an environmentally responsible way.

As we rapidly developed and began our engagement with the Federal government, we realized that hyperloop was perceived as not fitting clearly into an existing modal administration at the Department of Transportation. Some components of our system are similar to rail, but other aspects of the system, like cabin pressurization, face aircraft-like issues. All of the various components created the need for a one-stop-shop for companies like ours to engage with the Department.

That's why we worked with the Department of Transportation and several Congressional Committees of jurisdiction on the establishment of the Non-Traditional and Emerging Transportation Technology, or NETT Council, in 2019. This internal DOT body improves agency coordination on innovative technology with multi-modal applications and has been critical to helping move hyperloop forward in the United States. We commend this Committee for including codification of the NETT Council

in the surface transportation bill it developed last year. That remains a sound provision.

Our work with this Committee, coupled with the NETT Council, led to the release of the "Pathways to the Future of Transportation" guidance document by DOT in July 2020. That guidance provided a clearer regulatory framework for hyperloop.

FURTHERING CONTINUED RAPID PROGRESS FOR HYPERLOOP WOULD SERVE THE NATIONAL INTEREST

We have a real opportunity at this moment to Build Back Better when it comes to our nation's transportation system, and we can do this in part through a U.S.-based hyperloop company creating American jobs. Federal funding supporting hyperloop would be a down payment on a faster, cleaner, more efficient transportation system connecting communities in ways not possible with existing modes.

For all these reasons, we believe funding for hyperloop is a sound investment. We believe our narrow right-of-way profile, ability to climb steeper gradients, and tighter turning radius will allow us to reduce or avoid issues that can be costly for other systems, including right-of-way and tunneling costs. We also expect that our portals will be significantly smaller than high-speed rail stations while achieving the same passenger throughput, further reducing infrastructure costs. As with all cutting-edge technologies, we expect further cost efficiencies to emerge as technology scales and matures. So, while project costs will always vary based on length, terrain, and other variables, we are always working to drive down costs in a manner consistent with safety.

Further, our very high-speed capabilities and optimized fleet management design mean dramatically increased throughput on a route. This would reduce per mile costs per passenger or POD. Beyond immediate cost savings, greater route capacity would reduce the need to build additional infrastructure in the future as populations and ridership grow.

As Virgin Hyperloop continues to advance in its technology development toward commercial operation, the Federal government can demonstrate support for this U.S.-based technology by ensuring this type of advanced technology has a chance to access Federal funding. This could include ensuring the eligibility of applicants to seek and receive funding for pilot projects that would demonstrate the technology, as well as commercial projects.

Because of the U.S. DOT's guidance that hyperloop is subject to FRA safety jurisdiction, it is appropriate that legislation makes clear that hyperloop is eligible for any funding program for which rail is eligible, provided the application meets other requirements. This would be for routes of all lengths, for demonstrating the ability to provide passenger and/or other service, and for commercial service.

Further, the Federal government should provide additional funding opportunities for such a cutting-edge means of transportation as hyperloop. Legislation could set aside funds for emerging technology developed in the United States. As the conversation continues on funding programs for transportation, it is important to support emerging and cutting-edge transportation to bring our transportation system into the 21st-century—as well as to increase national competitiveness in an increasingly interconnected and competitive world. The opportunity exists to provide funding for this type of transformational transportation as part of larger legislation without sacrificing other modes. We must continue to invest in our future and our children's future, even as we bring other systems up to a state of good repair.

CONCLUSION—THE BRIGHT FUTURE

We can have—in the near future—hyperloop, a new, more efficient, faster, and sustainable component of our national transportation system that brings communities together and opens up opportunities for all. We aim to create a mass-mobility experience that is available to the broad public. We pride ourselves on our engagement with local communities, working with on-the-ground partners in, alphabetically, Missouri, Ohio, Texas, and West Virginia, to conduct feasibility studies and explore future possible routes and projects.

I have seen this company grow and our technology develop and am confident in hyperloop's ability to transform transportation in this country for the better. America has moved forward as we've moved faster—hyperloop is the giant leap.

I appreciate the opportunity to testify today before you—policymakers who can position the U.S. to lead the 21st-century transportation revolution. It's time to build back much better, smarter, safer, and cleaner. We are proud of the bipartisan interest and support we have garnered, and we look forward to continuing to work with this Committee, Congress, and the Department of Transportation as we bring our vision to reality.

Thank you for the opportunity to appear today.

Mr. PAYNE. Thank you very much, Mr. Giegel.

Next, we will hear from Mr. de Leon for 5 minutes.

Mr. DE LEON. Thank you, Chairman Payne, Chairman DeFazio, Ranking Member Graves, Ranking Member Crawford, and members of the committee for the invitation to testify before you and share the progress that HyperloopTT has made toward realizing the first transportation breakthrough in over a century. Over the next 5 minutes, I will provide an overview of our history and technology, sharing insight into our Great Lakes hyperloop project and describe the role the United States Government can play to advance the adoption of commercial hyperloop systems.

In 2013, HyperloopTT was founded in Los Angeles as the first company developing a hyperloop, a new mode of ultra-high-speed transportation with passenger, cargo, and defense applications. Over the past 7 years, we have been the world's largest hyperloop company, uniting 800 contributors, 150 full-time employees, and 50 corporate partners working across 40 countries to create large-scale infrastructure innovation and secure over 50 patents for hyperloop operations.

How does hyperloop work? Hyperloop technology integrates pressurized capsules in a near frictionless environment to safely and efficiently achieve airplane speeds with zero emissions. Our capsules will levitate over an unpowered, conductive track, using proprietary passive magnetic levitation developed at Lawrence Livermore National Lab, funded by NASA, and tested at full scale by General Atomics in San Diego. Removing steel wheel-on-rail friction and operating in a low-pressure environment, hyperloop travel requires significantly less energy than current transportation methods, reducing the money and time that passengers must spend to move between city centers. This is not a theoretical concept, but a ready-to-build reality.

We are commencing our technology partnership with Hitachi Rail, GNB and other top leading companies on a full-scale test track with more than 120 [inaudible]. We are in discussions with infrastructure and transportation operators for conventional deployment, and we have released a comprehensive feasibility study with Ohio Metropolitan Planning Organization NOACA for our Great Lakes hyperloop project.

The Great Lakes Hyperloop Feasibility Study conducted by independent transportation economists at TEMS found that a 468-mile route connecting Cleveland, Chicago, and Pittsburgh is profitable without Government subsidies, has a 3- to 4-year construction timeline, benefit-cost ratio of 2.2, and a cost of only $54 million per mile, significantly less CapEx than high-speed rail or maglev technologies. Economically, over 25 years, the region will experience a $74.8 billion increase in property value, a $47.6 billion increase in income, and a $12.7 billion tax base expansion, with a total development cost of about $25 billion.

Environmentally, the region will experience a replacement of 143 million tons of CO2 over 25 years, equivalent to cutting almost half of Cleveland's annual emissions or removing over 1 million cars from the road every year.

To summarize, the study found that HyperloopTT's system is efficient, profitable, and it is sustainable, and will significantly improve Americans' quality of life, including increasing U.S. GDP by 1 percent when deployed as a national network.

Hyperloop technology is not a distraction; it is an opportunity. While high-speed rail and maglev technologies have been around for decades and solved some of the problems of transportation, their reliance on public subsidies and energy requirements of increasing speed and distance limitations prevent general adoption in the United States.

Hyperloop technology is an economically viable, natural evolution of existing technologies. And we invite the entire American transportation industry to work with us in bringing this to the American people.

We are requesting assistance through the Maglev Deployment Grant Program to advance preconstruction planning activities. Also, as Congress drafts transportation infrastructure legislation, we respectfully ask that you establish a new hyperloop grant program to support further R&D, feasibility studies, environmental analysis, and other preconstruction activities as a way to improve transportation and commerce while improving business growth and job creation across the country.

Today, thousands of pieces of technology trace their origin to 52 years ago, when the United States invested in science and innovation to land an American on the Moon. With minimal Government investment, hyperloop has the same transformative potential to position the U.S. as the leader of a new era of sustainable transportation.

Thank you for inviting me to testify.

[Mr. de Leon's prepared statement follows:]

Prepared Statement of Andres de Leon, Chief Executive Officer, Hyperloop Transportation Technologies

Thank you, Chairman DeFazio, Chairman Payne, Ranking Member Graves, Ranking Member Crawford and Members of the Committee, for the invitation to testify before you and share the progress that Hyperloop Transportation Technologies (HyperloopTT) and our partners have made towards realizing the first transportation breakthrough in over a century and share some insights on the role of government in advancing this effort.

HyperloopTT is preparing for commercial deployment of hyperloop systems, a new mode of safe and sustainable high-speed transportation that brings airplane speeds to the ground at a very competitive development cost of only $54 million per mile, compared to $150 or even $250 million per mile with other modes. Hyperloop systems work by levitating pressurized passenger and cargo capsules in a near-frictionless environment to enable energy-efficient and emission-free travel, reaching speeds up to 760 mph. Hyperloop technology has significant potential for passenger, cargo and defense applications.

Currently optimizing our system on the only full-scale hyperloop test track, HyperloopTT integrates breakthrough innovations with proven technology to create safe next-generation travel. Efficiency is key to hyperloop operations. HyperloopTT capsules will levitate over an unpowered, conductive track using proprietary passive magnetic levitation developed at Lawrence Livermore National Laboratory, funded by NASA, tested at full-scale at General Atomics in San Diego and advanced for hyperloop operations by HyperloopTT engineers. Removing steel wheel-on-rail friction and operating in a fully enclosed low-pressure environment, hyperloop travel requires significantly less energy to reach traveling speeds than current transportation methods, reducing the money and time passengers must spend to move between city centers.

Pioneering the first transportation breakthrough in over a century is not easy. To overcome large-scale infrastructure development and innovation challenges, HyperloopTT created a new organizational model, uniting an ecosystem of more than 800 expert contributors, 50 full-time employees, and 50 corporate partners working across 40 countries. As a result, HyperloopTT is a highly capital-efficient network orchestrator and technology creator with a low burn rate and is the subject of two Harvard Business School Case Studies on "Catalyzing High Impact Innovation to Transform Global Transportation." Following our advanced business model, HyperloopTT will license our technologies and know-how developed with global industry leaders, including Hitachi Rail, TUV SUD and Leybold, and regional partners, like GNB in California, to infrastructure operators, such as Ferrovial, and transportation operators. This approach drastically reduces the time to market for hyperloop systems as it allows experienced infrastructure operators to manage hyperloop networks, similarly to how airports function with gate slots sold to specific airlines. HyperloopTT can then partner with established transportation operators in the airline, rail and shipping industries, creating systems that complement existing infrastructure to serve the American people best and prepare for a more equitable, efficient, competitive, sustainable and integrated transportation ecosystem.

Currently, our Great Lakes Hyperloop project, a Public-Private Partnership with Cleveland MPO NOACA and over 90 regional organizations and institutions, connecting Pittsburgh, Cleveland and Chicago is the most advanced hyperloop project in the United States. Conducted by independent transportation economists at TEMS, the Great Lakes Hyperloop Feasibility Study (GLHFS) found that a HyperloopTT system along the corridor would operate profitably without requiring government subsidies, have a 3–4 year construction timeline and a cost of only $54 million per mile, resulting in a remarkable Benefit/Cost Ratio of 2.20 with long-standing economic and environmental benefits, including a reduction of 143 million tons of CO2. The study projects that a fully connected hyperloop network throughout the U.S. could increase GDP by 1%.

Economically, the study found that the region surrounding the 468-mile route would experience a $74.8 billion increase in property value, a $47.6 billion increase in income and a $12.7 billion tax base expansion over 25 years, with a total development cost of about $25 billion. The cost estimate includes the infrastructure, systems, vehicles, stations and right of way/easements necessary to develop a passenger-ready commercial system and a 30% contingency.

The independent study projects that high-value, time-sensitive cargo will generate 35% of the system's revenue. Allowing operators to charge passengers bus fare prices and see a positive return on investment without requiring recurring operational subsidies from the government.

Environmentally, the study found that implementing a HyperloopTT system would replace 143 million tons of CO2 in the same 25-year period, equivalent to cutting Cleveland's annual emissions by almost half, removing over one million cars from the road every year or eliminating 14 billion miles driven. Additionally, the HyperloopTT system has the potential to generate more clean energy annually than is required for operation, creating a self-sufficient transportation system that can serve as a resilient source of renewable energy for the region.

To summarize, HyperloopTT has developed a hyperloop system that is an efficient, economically viable and sustainable mode of transportation that will significantly improve the passenger experience and quality of life for the American people.

The next phase of the Great Lakes Hyperloop project is the Environmental Impact Statement (EIS). The system's ability to operate profitably without government subsidies has attracted interest from private companies willing to accept the business risk associated with building and operating a hyperloop. Still, they are less inclined to expose themselves to the risks associated with funding an EIS that does not have a finite timeline. Therefore, we are requesting government assistance through the Maglev Deployment Grant Program or another funding avenue to advance pre-construction planning activities.

In addition to passenger-focused systems with the ability to transport cargo, HyperloopTT's HyperPort joint venture is pioneering a dedicated system for standardized shipping containers. Leveraging hyperloop technology and leading port automation, the HyperPort can efficiently increase port capacity and reliability while reducing congestion and emissions.

The development of hyperloop technology is not a distraction, as some have called it. While high-speed rail and MagLev technologies have been around for decades, they have struggled for adoption in the United States. Hyperloop technology is the economically viable, natural evolution of these existing technologies. The dedicated teams at HyperloopTT and across the entire industry are demonstrating the short-

term development timeline and long-term benefits of investing in innovative hyperloop systems that are good for the public, the environment and governments. The future of sustainable transportation is hyperloop, a reality that the traditional transportation industry is beginning to accept. Right now, the United States can retain its reputation as the breeding ground for innovation, but every day, as more countries look to hyperloop as a solution for modern transportation problems, the window grows smaller.

The role of government in this effort is an important question. While we know private industry will provide financing for constructing and operating the system, the federal government can play a significant role in advancing commercialization efforts in the United States. As Congress continues to draft transportation and infrastructure legislation, we respectfully ask that you consider hyperloop and other new and innovative technologies. Establishing a new hyperloop grant program that would support further research and development, feasibility studies, environmental analysis and other pre-construction activities would go a long way to improve transportation and commerce while spurring business growth and job creation across the country.

At HyperloopTT, we are inspired by the great American innovators that have come before us—Peter Cooper, Henry Ford, the Wright Brothers, and all others that have created what seemed improbable in their day. In our lifetime, we have not seen a new form of land-based transportation. With so much innovation in other areas, why has transportation gotten a pass? Today, thousands of pieces of technology that the world takes for granted can trace their origin to 52 years ago, when the United States invested in science and innovation to land an American on the moon. With minimal investment from the federal government, hyperloop has the same transformative potential and will position the United States as the global leader of a new era of sustainable innovation.

Thank you for inviting me to testify. I hope you join the hyperloop movement and work with us to bring this innovative transportation technology to the American people.

Mr. PAYNE. Thank you, Mr. de Leon.

And now we have Mr. Reininger for 5 minutes.

Mr. REININGER. Thank you, Mr. Chairman [inaudible] subcommittee.

Can you hear me now?

Mr. PAYNE. Yes.

Mr. REININGER. Thank you, Mr. Chairman, Ranking Member, members of the subcommittee. I am honored to be here again, having last testified before you 4 years ago. Brightline was under construction and some of the same topics were on the table.

Since our 2018 launch in Florida, we operate the only private high-speed system in the U.S., showcasing the potential of American high-speed passenger rail. We carried more than 1 million passengers in our first full year and learned a lot that is worth sharing from the investment of over $4 billion over the last 10 years.

From the perspective of our experience, we see multiple opportunities to again break free from the inertia that has historically restrained high-speed rail in the U.S. Along with the current discussion around the potential of high-speed rail, we also hear the voices lamenting the lack of advanced train systems that exist in many competing global economies. We see immediate ways to forge meaningful progress towards realizing the potential we are discussing and encourage this committee to enlist the private sector to multiply the effects of public-sector investments.

We have developed an approach which applies American ingenuity to the successful models observed from around the world. We carefully select travel markets that are too short to fly and too far to drive, and where introducing passenger rail presents a clear consumer value proposition. Changing current habits requires offering

a better option. We use existing road alignments and infrastructure corridors to leverage previous investments, reduce environmental impacts, lower costs, and speed execution as a basis for profitability.

We continue to build every day and in 2022, we will complete the extension into the Orlando International Airport, making our total route 235 miles, linking four of the largest cities in America's third largest State. Four hundred million annual trips occur between these cities today, 95 percent of them by car. By upgrading a freight railway first built in the 1890s and building along an express highway, we leveraged 130 years of previous investment to support our 21st-century service. Brightline is on track to carry 9 million annual riders.

Brightline West will connect Las Vegas to Los Angeles, where today 50 million annual trips and over 100 daily flights occur. Traveling on trains capable of speeds of 200 miles an hour, using the I–15 corridor but cutting the drive time in half, Brightline West's better option expects to serve 11 million annual riders.

We integrate with other systems to fashion a multimodal network that is diverse and convenient. MiamiCentral connects all local transit systems with ride sharing, bike sharing, and even e-scooters to connect our customers to their ultimate destination. Integration requires interagency investment and innovation, but also offers real opportunity to enhance the appeal of train travel in America. Cooperation is key to advancing priorities related to jobs, climate, and equity, so the many benefits that accrue from the introduction of high-speed rail are unlocked. Revitalizing Miami's Overtown neighborhood, equitable access to transportation, and new employment opportunities are just a few of the benefits in addition to the $6.4 billion in total economic impact Brightline has already produced in Florida.

As this subcommittee looks to exact results, especially through increased public investment, we urge you not to consolidate around a single approach and not to underestimate the power private investment can bring towards crafting a national network. Consider allowing private entities to become eligible parties for FRA grant programs by partnering with currently eligible applicants as a simple way to stretch direct Government investment. High-speed rail projects require large, upfront investments and need cost-efficient long-term financing. Private activity bonds help us attract private lenders and freed up capital to be redirected into building our hard assets.

Consider increasing the volume cap on PABs from the current $15 billion, which has already been exhausted, to $30 billion, to create a larger pool to help finance projects. An improvement, but PABs alone is not the full solution.

RRIF was designed as a low-interest loan in lieu of grants to incent projects that need an economic boost. We vigorously pursued RRIF but ultimately found it ineffective for projects such as ours. RRIF has only provided $6.2 billion in project funding over the last two decades, none of which has gone to high-speed rail. Why? These projects get laden with high upfront credit risk premiums, adding inertia that defeats the momentum otherwise gathered from a low-interest loan. If credit risk premiums were an eligible use of

U.S. DOT discretionary grant programs, much smaller grants used in conjunction with a loan would ultimately return principal and interest to the Government, engage equity investment into the collateral, and lower the overall level of public investment needed to exact results.

We commend the efforts of this subcommittee and believe our collective efforts can advance us towards an American high-speed rail system that will compete against the best in the world. And as an active participant, we remain fully committed to overcoming inertia and building more systems we can all ride within the next 4 years.

Thank you very much for the opportunity.

[Mr. Reininger's prepared statement follows:]

Prepared Statement of P. Michael Reininger, Chief Executive Officer, Brightline Holdings, LLC

Thank you, Mr. Chairman, Ranking Member, and members of the Subcommittee. I am the Chief Executive Officer of Brightline Holdings. It is an honor to be before you today. Over the past five years, Brightline has built and now operates the only private high-speed passenger rail system in the United States providing modern, eco-friendly service in one of the largest and most congested travel markets in the country. We are currently developing our second system to serve Southern California and Las Vegas. We think that across the country, there are multiple places in need of a high-speed rail alternative like ours.

Brightline is based in Miami, where we are represented by our distinguished Congresswoman and your subcommittee colleague, the Honorable Frederica Wilson, a true champion of our efforts. The Honorable Dina Titus, also on this subcommittee, is an advocate for Brightline West. We are grateful for their support, as well as that of the other dedicated committee members along our Florida corridor and of our efforts out west.

Four years ago; when Brightline was still under construction, I offered testimony before this Subcommittee as Executive Director of Brightline's parent company, Florida East Coast Industries. Since then, we have seen tremendous progress including the launch of Brightline's initial operation in Florida which showcases the potential of high-speed rail. We carried more than one million guests in our first full calendar year. Though COVID–19 has temporarily interrupted our operations—in part because as a private company, we were not eligible for CARES Act funding—we are preparing for a relaunch later this year.

I am delighted to share what we have learned from our investment of more than $4 billion over the last 10 years, so that it might help catalyze more investment from private and public sector participants into high-speed rail in America.

We see tremendous opportunity to forge meaningful progress amidst the amplified discussion around high-speed rail as this subcommittee explores ways to expedite the realization of that potential. In particular, I would like to focus my comments on three areas.

First, our business model which parallels the most successful models from around the world, while applying American ingenuity to our different context and circumstances.

Second, the multiple benefits to customers, economies and communities that accrue from the introduction of transportation investments such as high-speed rail.

And third, steps this subcommittee can initiate to incentivize greater participation by the private sector to multiply the effects of public-sector investment and overcome hurdles that have inhibited progress to date.

Without question, passenger rail represents an important element of our transportation infrastructure, but we often hear the many voices who lament the fact that the U.S. does not enjoy the same level of modern service by train that exists in many competing global economies.

There is a direct correlation between market capture of passenger rail and travel time saved versus driving. Time savings of one, two, and three hours as compared to driving, translates to market capture rates of approximately 15%, 40%, and 50%, respectively. Examples include New York to D.C. 27%, Florence to Rome 30%, and Tokyo to Osaka 64%.

Similarly, high-speed rail significantly displaces air travel. In markets such as France, Italy, England and Spain high-speed rail captures on average, 80% of the total rail and air travel market. Brightline shares the characteristics of these examples, serving medium distance corridors, connecting large populations, and saving time and money compared to alternative travel modes.

In addition to our approach, two other models exist in the United States. The first is the Amtrak model, in which the federal government provides all the capital for infrastructure and systems and subsequently subsidizes operating expenses. Another approach, being utilized in California, relies on participation from state and federal resources with a long-term commitment for operating and maintenance expenses.

Our model, by contrast, is premised on three key constructs:

1. Careful selection of markets and the introduction of a clear consumer value proposition.
2. Leveraging existing infrastructure to reduce capital costs, mitigate environmental impact and increase speed to market.
3. Integration across transportation systems to develop door-to-door optionality for a range of customer types.

We focus on high volume travel markets where the introduction of passenger rail presents a faster, safer, greener and more economical option to how people travel today. Changing habits requires offering a better option.

Specifically, we target city pairs that are "too short to fly and too far to drive." As a practical matter, distances of 200–400 miles, where we offer considerable time savings over driving on congested roads or comparable timing to flying at significantly less cost. Add to that basic proposition a thoughtful customer experience and you have the core of our business thesis.

Brightline links the downtowns of Miami, Fort Lauderdale and West Palm Beach. Our service is an alternative to reliance on one of the most congested and dangerous roadways in the country. We recently crossed the halfway point of construction, and in 2022 we will complete the extension of our service into the Orlando International Airport. Our total route will be 235 miles with connections to four of the largest cities in America's third largest state. Today, 400 million annual trips occur between these cities, with over 95% of them taken by car. Upon stabilization, Brightline will carry 9 million riders on this route.

Florida is an increasingly popular destination. In 2019, we welcomed 130 million visitors and are experiencing growing relocation of both individuals and businesses. With the growth of our market and the increasing adoption of our new service, we recently announced the addition of three new stops along our South Florida line in Aventura, Boca Raton and PortMiami.

Brightline West, the company's first expansion outside Florida, will connect Las Vegas to Los Angeles. Starting with a convenient station on Las Vegas Blvd., Brightline West will connect to LA via Rancho Cucamonga with an inline station in the Victor Valley.

Traveling at expected top speeds of 180 mph on eco-friendly electric trains, we'll cut the drive-time in half. Our system will provide a superior option for the 50 million annual trips taken by cars and over a hundred daily flights presently taxing this congested travel market. Brightline West expects to serve 11 million annual riders.

Central to our proposition is a commitment to optimizing every detail of our passengers' experience including free onboard Wi-Fi, Americans with Disabilities Act (ADA) accessibility from station to train, a wide selection of food and beverage and of course next-generation infrastructure including stations, trains and technology that rivals the best in the world.

In order to be profitable, we need to be efficient with our capital investment. For us, this starts with leveraging existing transportation corridors. By optimizing the total cost and time associated with creating the system infrastructure, we forge the basis of economic stability for the business.

In Europe and Asia high-speed rail has taken advantage of a rail network that is primarily focused on passenger trains and benefits from significant public investment into the ownership and maintenance of the infrastructure. By contrast, the US has focused on decades of infrastructure investment on freight lines and highways, so that is where we must look for opportunity.

In Florida, we expanded and upgraded an historic freight line first built by Henry Flagler in the 1890s which gave rise to the State's initial development surge. Enhanced with new value, a century of previous investment now supports the introduction of our new service, spearheading a 21st-century phase of development and growth.

We look to utilize existing road alignments. By building a rail network within existing transportation corridors we reduce environmental impacts and project costs while saving time in review, approval and construction. For example, to facilitate our planned extension from Orlando to Tampa we are negotiating with the Florida DOT to secure the Rights of Way along existing corridors such as Interstate 4. Brightline West will leverage this same strategy along Interstate 15. The smart use of previous investments and foresight regarding future investments is central to long-term economic effectiveness. This is an area where cooperation between public and private sectors can yield dramatic results.

The third element of our model is integration of various transit systems to facilitate "the last mile." Again, learning from abroad we know high-speed rail is most successful in densely populated city centers, where the vast majority of individuals find themselves within easy reach of a station.

US cities tend to be less dense and more reliant on private automobiles, so we focus on linking our stations and systems to planned and existing transit operations to fashion a multi-modal network of services that is seamless and convenient.

As examples, MiamiCentral will connect Tri Rail, South Florida's regional commuter system, to Miami's Metrorail, Metromover and Metrobus systems and integrates ridesharing services, bike-sharing and e-scooter systems to connect customers to their ultimate destinations. In Fort Lauderdale, we connect with Broward's Transit buses and in Palm Beach to the County's Palm Tran Bus and Palm Trolley. In Orlando, we will be located within one of America's most active airports, with opportunities for extensive transit integration. Looking forward, Brightline West will connect via Metrolink to greater Los Angeles.

This level of integration requires inter-agency cooperation, investment and innovation but also offers the most opportunity for real leverage in advancing the appeal of train travel in America.

Cooperation will unlock the substantial benefits of high-speed rail and advance the administration's priorities related to jobs, climate, and equity. High speed rail benefits will come in many forms including improved public safety, enhanced environmental sustainability, valuable contributions to equitable access for underserved communities, and significant economic benefits across the spectrum.

Trains are one of the safest ways to travel. Some analyses have found intercity rail to be 18 times safer than automobile travel. As passenger rail takes millions of cars off America's roads, travel becomes inherently safer.

All forms of mass transit represent environmental improvements over cars and planes. The International Energy Association indicates that passenger rail is already more than three times as energy efficient as a car and 12 times more energy efficient than air travel (per passenger). Shifting occupancy to and increasing electrification of high-speed rail, in combination with increasingly lower carbon-intensity of electric power production, will deliver even greater emissions reductions.

Our Florida trains run on biodiesel and Brightline West will operate zero-emission, electric trains. Together, these routes will remove more than a half million tons of CO2 emissions annually by eliminating 7.6 million vehicle trips.

Additionally, high speed rail revitalizes downtown areas with new transit hubs, enhancing existing infrastructure and encouraging further development to consolidate around stations.

Both our transportation and development activities have advanced equity within our communities. Development of MiamiCentral helped spur revitalization of Overtown, an historically vibrant community of color that was cut off with the construction of I–95 decades ago.

We made a priority of establishing our corporate headquarters in Overtown and put in place a hiring system that offers preference to people within our local community. Moreover, we have increased equity in terms of access to transportation opportunities as a part of our partnership with local commuter services in South Florida.

In a powerful example of a public-private partnership, we have afforded access to a large section of our corridor for use by Tri-Rail. This arrangement helps provide free rides to everyone living in the Community Redevelopment Area and expands access to employment opportunities for many who historically did not have a connection to downtown Miami.

And of course, there's the $6.4 billion in economic impact that Florida is already realizing as a consequence of our activities, including:

- $2.4 billion in labor income.
- $3.5 billion added to Florida's GDP.
- 10,000 jobs created through rail-line construction: 1000 workers daily during COVID.
- 2,000 jobs created post rail-line construction.
- Tens of millions of dollars already added to the state's tax base.

Our hope as we grow is to facilitate a "Buy America" foundation through technology transfer to a vibrant manufacturing sector for high-speed equipment and infrastructure here in the US. Currently, this equipment is primarily built abroad where sufficient markets already exist to support its production.

Establishing a next-generation form of transportation is capital-intensive and time-sensitive, but we believe Brightline has provided a proof-of-concept that can offer a model to accelerate a broader realization of high-speed rail in the United States.

I would also highlight what I believe this subcommittee can do to incentivize further private investment as the government seeks to increase its own commitment to high-speed rail.

The first area we would point the subcommittee's attention toward is access to efficient capital. Massive upfront capital needs require cost-efficient long-term capital. Specifically, increasing the private activity bond (PAB) volume cap and making improvements to the Railroad Rehabilitation & Improvement Financing (RRIF) loan program represent actionable opportunities for improvement.

PABs attract private lenders willing to accept lower rates on bonds because of their tax-exempt status and that lower rate reduces the cost of capital to the developer. The savings on interest expense can be redirected into hard assets. Any deferred tax revenue is made up over time as the invested money is put to work in the economy.

Our request is pretty simple: consider increasing the volume cap from the current $15 billion—which has already been exhausted—to a minimum of $30 billion to help finance projects.

Another opportunity to improve access to capital is to revamp the RRIF program to make it more attractive to private investors in passenger rail projects. RRIF offers direct loans for up to 100% of a railroad project with repayment periods of up to 35 years, with no pre-payment penalty, and interest rates equal to the cost of borrowing to the government.

Congress has authorized $35 billion in loan authority for the RRIF program, but only $6.2 billion in rail project funding over the last two decades [1]—none of which has gone to high-speed rail. The reason is that these projects are viewed as start-up ventures, with limited credit history and are therefore subjected to high upfront credit-risk premiums which defeat the intention of a low-interest loan.

Ways to overcome this include making credit risk premiums an eligible use of any USDOT discretionary grant program, such as CRISI, RAISE, INFRA or even a new program like PRIME that was included in last session's HR2 legislative package. High speed rail projects could then utilize grants to offset the initial costs of RRIF financing. Our view is that facilitating a loan that ultimately returns principal and interest to the government and lowers the burden of taxpayers by providing a mix of a grant and loan, is a more efficient way to affect the desired results and benefits of these projects.

Another opportunity to spur investment is to include private sector rail operators as eligible parties in both new and existing intercity passenger rail grant programs. This can be realized by allowing for current eligible applicants to partner with the private sector.

One final, and essentially cost-free, means of incentivizing further private-sector participation in advancing high-speed rail is to increase investor confidence by introducing greater certainty into the approval process.

Advancing a high-speed project involves clearing a series of financing hurdles and a wide range of approvals at every level of government from municipal to federal. We understand and appreciate the diligence of officials in protecting the public and are more than willing to proceed within the existing laws and regulatory frameworks.

However, a challenge that often adds unnecessary time and expense to projects is the routine granting of extensions on deadlines for regulatory comment periods. Therefore, we would encourage the Subcommittee and Congress to consider reducing the degree of discretion in extending deadlines, especially for comment periods, under existing laws and regulatory reviews.

As a company we are committed to the model we outlined here today as an example of how the private sector can contribute to the goal of advancing high-speed rail in America. Brightline believes that working together we can achieve a rail sector that will compete among the best in the world. We again commend the Chairman, the Ranking Member and this Subcommittee for their efforts to re-engage the nation

[1] https://www.transportation.gov/buildamerica/financing/rrif/railroad-rehabilitation-improvement-financing-rrif

on how to initiate safe, convenient, affordable, efficient, and environmentally friendly high-speed rail in America.

Mr. PAYNE. Thank you very much for your testimony.

We will now have Mr. Rogers for 5 minutes.

Mr. ROGERS. Thank you very much, Mr. Chairman, members of the subcommittee. Thank you for this opportunity to testify today.

We are 100 percent U.S. owned and franchised by the Maryland Public Service Commission to provide high-speed rail service between Washington, DC, and Baltimore, utilizing the world's fastest proven mass transportation technology, the superconducting magnetic levitation. SCMAGLEV is environmentally friendly, energy efficient, and deliverable today.

The Northeast Corridor, or as it has been named the "Northeast Megalopolis," is the most populous corridor in the United States. It holds over 50 million people on 2 percent of the land area and accounts for 20 percent of U.S. GDP and 75 percent of all U.S. rail traffic. This megaregion lacks modern first-class transportation infrastructure.

Central Japan Railway, or JRC, began maglev technology development in 1962, and in 1997 constructed the Yamanashi Priority Line, demonstrating, testing, and proving SCMAGLEV technology. It is fully Japanese Government approved now for public use.

In 1998, Congress created the Maglev Deployment Program. The purpose of this program was not to do research and development on maglev, but to actually deploy a system at the best location in the United States. A national competition was created for States to apply and ultimately select the single project. Baltimore-Washington Maglev Project is the winner of that competition.

Far exceeding Congress' original goals, we have entered into an agreement with JRC granting BWRR a cost-free license to deploy the SCMAGLEV on the Northeast Corridor. JRC has had a bullet train deployed since 1964. In 2019, it carried 168 million passengers, with trains as often as every 3½ minutes at an average annual delay of under 1 minute. It is the safest transportation system in the world, with no accident-related fatalities in 57 years of operation.

SCMAGLEV in Japan does not replace the bullet train; it is in addition to existing high-speed service. We anticipate the same with the U.S. deployment of SCMAGLEV. Amtrak will still carry millions of passengers. We are complementary to Amtrak and we are singularly focused on the 94 percent of passengers that still utilize their automobile. Our short-term vision is a standalone project connecting Washington, BWI Airport, and Baltimore in 15 minutes. A longer term vision will connect all the major city centers and airports to New York City in an hour.

In pursuing our vision, we are guided by four principles.

Number one, best-in-the-world technology.

Number two, job creation, creating 161,000 construction job-years, employee labor earnings of $8.8 billion, skilled training and union jobs for tens of thousands, increased U.S. GDP of $23 billion from construction, and $599 million a year thereafter.

Diversity, equity and inclusion, number three. We have a written DEI plan developed along with minority firms, civil rights groups,

and social activists. The goal, 40 percent of construction-related jobs for people of color and women.

Four, combatting climate change. Transportation is a major contributor to global climate change. DC to Baltimore has currently over 120 million car trips per year. We will reduce vehicle-miles traveled by 9 to 12 percent, eliminating 16 million cars and 2 million tons of greenhouse gas reduction.

In 2016, a full environmental impact statement began, and the draft has already been publicly released. Public hearings on the project are complete. While there are always negative comments on a large infrastructure project, 79 percent of the public hearing testimony testified in favor of the project. Over 19,500 people have signed a petition in favor of the project. Corridor polling since 2011 in 4 different years has shown over 86 percent support for the project. For example, in April 2021, polling in Prince George's County, a majority minority community, showed 72 percent of African Americans in favor of the project.

The private sector has invested over $120 million in the BWRR project. The Congress should replenish funding already authorized in the MDP.

The Government of Japan has stated a willingness to provide significant financial support for the cost between Baltimore and Washington, DC. This precedent-setting combination of no-cost technology transfer, mobilization of financing from the private sector, offshore financing, and technical support multiplies the effect of U.S. Government funding to deliver 21st-century infrastructure.

Thank you very much for this opportunity.

[Mr. Rogers' prepared statement follows:]

Prepared Statement of Wayne L. Rogers, Chairman and Chief Executive Officer, Northeast Maglev, LLC

Chairman Payne, Ranking Member Crawford, Members of the Subcommittee, thank you for this opportunity to appear today. I am Wayne Rogers, the Chairman/CEO of The Northeast Maglev, LLC and the Baltimore-Washington Rapid Rail, LLC.

The Northeast Maglev is a 100% US Veteran-owned company promoting the deployment of the fastest, proven mass transportation system in the world, the Super-Conducting Maglev, on the Northeast Corridor. BWRR is a railroad company, franchised by the Maryland Public Service Commission, to provide high speed rail service between Washington DC, Baltimore-Washington International Thurgood Marshall Airport (BWI), and Baltimore. When in service the SCMAGLEV project will provide 15-minute service between Washington and Baltimore and one hour service between Washington and New York, operating at 311 mph.

Thank you for the opportunity to testify about the US Maglev Deployment Program and the Baltimore-Washington SCMAGLEV Project specifically.

Our vision will connect the Northeast Corridor utilizing the fastest, proven, and tested transportation technology in the world today. A technology which is not only environmentally friendly and energy-efficient but is deliverable today.

The Northeast Corridor, or as it has been named the "Northeast Megalopolis," is the most populous corridor in the United States. It holds over 50 million people, or 17% of the US population on 2% of the land area. The population density of approximately 1000 people per square mile vastly exceeds the US average of 80 people per square mile. Population projections show that the corridor will have continued growth.

The region accounts for 20% of US GDP. It is the home to not only the US Capitol and the White House, but also the NY Stock Exchange, the UN Headquarters, NASDAQ, the headquarters of ABC, NBC, CBS, NPR, Fox, Comcast, the New York Times, the Washington Post, and USA Today. Many major financial institutions

such as JP Morgan Chase, Citigroup, Goldman Sachs, Fannie Mae, Freddie Mac, Capital One and Fidelity make their homes here. 54 of the Fortune Global 500 companies and 162 of the Fortune 500 are located in the region.

The region should have modern, first class transportation infrastructure.

The vision of bringing Maglev to the Northeast Corridor is one that Congress and the US Government has long supported.

The Final Report of the National Maglev Initiative in September 1993 laid the groundwork for where we are today. That report evaluated Maglev development efforts in Japan and Germany and found them to be technically feasible and desirable for deployment in the US. The Report concluded that in the 10 corridors it assessed, Maglev would cover all its operating costs and substantially contribute to its capital costs. More importantly,

> "In the Northeast Corridor its revenues would cover total life cycle costs. These projected results reflect the ability of the technology to offer the best door-to-door travel time for distances up to 300 miles and very competitive travel times even up to 600 miles."

The conclusion of the Final Report was that there were no technical impediments to developing/deploying Maglev in the US. The report examined the alternatives of buying a system from a foreign source to gain experience or totally developing one in the US.

> "One approach is a US industry partnership to implement a foreign maglev design in the United States ... The cost for this development work could be shared with the US and foreign industry partners, but, from a practical standpoint, the foreign industry would not likely spend additional development funds unless there is an assured market with a reasonable return time period."

I appear before you today with an opportunity for the United States that is even better than that which was anticipated in 1993, a cost-free technology license.

MAGNETIC LEVITATION DEVELOPMENT

Magnetic Levitation or "Maglev" transportation technology has been developed over a period of more than 50 years, and the Superconducting Maglev has its roots in the US, where the initial concepts were developed by two noted scientists at Brookhaven National Laboratory.

In Japan, what is now the Central Japan Railway Company (JRC) began Maglev technology development in 1962. In 1997 JRC began running tests on the Yamanashi Maglev Line "priority section" demonstrating SCMAGLEV technology. It is fully approved for public use.

Unlike conventional railway systems, the SCMAGLEV accelerates and decelerates not by a force generated by a mechanical motor, but through a magnetic force generated between the onboard superconducting magnets and electromagnetic coils in a guideway.

For propulsion, the SCMAGLEV system utilizes the concept of a linear motor, which resembles a conventional electric motor that has been "unrolled." Rather than producing a rotational force, the linear motor causes motion in a line along its length. In the SCMAGLEV system, the simultaneous attracting and repelling forces interacting between superconducting magnets on the train and propulsion coils in the guideway walls propel the train along a guideway at speeds over 300 mph.

In 1998, noting Japanese Maglev deployment and that the US still had no high-speed rail systems and was falling further and further behind in the world in technology, the Congress created the "Maglev Deployment Program". The purpose of the program was not to study or to develop Maglev but to actually deploy a system at some location in the United States. A national competition was created for States to apply to the USDOT to select a single project. 12 applications were supported by 14 entities. 7 States were selected for further study, eventually to 3 with the goal of having one. After a span of work of over 20 years, the Washington Baltimore Maglev Project is the winner of that competition.

Far exceeding the goals outlined originally, BWRR has entered into a technology agreement with JRC granting to BWRR a cost-free license to deploy the SCMAGLEV on the Northeast Corridor. This saves the federal government what would have been billions of dollars in technology development and allows immediate deployment of the system.

Despite the tendency of some to label Maglev an 'emerging technology', the SCMAGLEV is a fully proven system. It has been thoroughly evaluated by the Japanese government, which acknowledged that the system technologies had been com-

prehensively established in 2009. In 2011, the Japanese government enacted SCMAGLEV technical standards. The Yamanashi segment is now being extended with multiple construction contracts underway to connect Tokyo and Nagoya.

As those of you who have traveled to Japan have experienced first-hand, JRC's Tokaido Shinkansen Bullet Train high speed rail deployed in 1964, carried 168 million passengers in 2019, with an average annual delay under a minute and no accident-related fatalities ever in 57 years. SCMAGLEV will not replace the bullet train, it will be in addition to existing service.

Northeast Maglev believes that this will be the same with deployment of the SCMAGLEV on the Northeast Corridor. AMTRAK will still continue to carry millions of passengers. SCMAGLEV is not targeted as competition with AMTRAK, rather is complementary and focused on the 94% of passengers that still utilize their automobile for corridor travel.

THE MAGLEV DEPLOYMENT PROGRAM AND CONGRESS

Maturity of the technology was a clear desire of Congress for the Maglev Deployment Program. It was funded by Congress who provided $60 million in contract authority and authorized $950 million as part of TEA–21 in 1998. SAFETEA–LU provided an additional $90 million in contract authority. $10 million was provided in FY19 appropriations and $2 million in each of FY20 and FY21. The Maglev *Deployment* Program was a statement of US Government policy that Maglev had been studied sufficiently and emphasized building a high-speed maglev project in the best corridor in America. It has been a long and focused effort.

THE BALTIMORE-WASHINGTON MAGLEV PROJECT

The Baltimore-Washington Project which I represent is the winner of the MDP competition.

Our short-term vision for this project is to connect Washington, DC to BWITM Airport in about 9 minutes, after a one-minute stop, the City of Baltimore in about 5 minutes, for a total DC to Baltimore trip of 15 minutes. Our longer-term vision is connecting cities and airports to New York City in one hour, ultimately to Boston at 311+ mph.

In pursuing our vision, we are guided by four (4) principles:

1. Best in the world technology. The project will utilize not only best in the world transportation technology but will incorporate all advanced software and technical systems in providing 21st century transportation.
2. Job Creation. The DC to Baltimore leg is anticipated to create in construction 123,000 job years and 38,000 professional service job years. Regional labor employee labor earnings are estimated at $8.8 billion. The Project will not only create jobs it will provide skilled training for thousands of workers. BWRR has signed an agreement with the National Association of Building Trade Unions (NABTU) to build the project under a project labor agreement. The project has not only been endorsed by the NABTU but also the Eastern Atlantic States Council of Carpenters, the Baltimore DC Metro Building Trades Council, the Maryland Transportation Builders, the Painters and Allied Trades Union, and the Laborers International Union NA. The Project has garnered business support being endorsed by the Baltimore City, Baltimore, Northern Anne Arundel and Prince George's County Chambers of Commerce as well as the Maryland Hispanic Chamber and several Black chambers of commerce.
3. Diversity, Equity and Inclusion. The Project has a written DEI plan, developed with minority firms, civil rights groups and social activists. The Project's goal is 40% of construction related jobs to be provided to people of color and women, taking great care also to seek representation of recruits from the jurisdictions where the Project will have a presence.
4. Combatting Climate Change. Transportation is a huge contributor to global climate change. DC to Baltimore have over 120 million car trips per year. The Project will reduce Vehicle Miles Travelled between 9 and 12% diverting up to 16 million car trips. This means reducing greenhouse gas emission by more than 2 million tons.

ENVIRONMENTAL STATUS OF THE PROJECT

In 2016, a full Environment Impact Statement was begun for the Project by the Federal Railroad Administration. Over 200 public and agency meetings have been held. The Draft Environmental Impact Statement was issued on January 15, 2021. Six virtual public hearings were held on the DEIS ending April 10, 2021 and while there are always negative comments about a large infrastructure project, 79% of the

commentors who testified, testified in favor of the Project. The comment date for the DEIS closes on May 24, 2021. We hope to have the final EIS and Record of Decision by the first quarter of 2022.

PUBLIC SUPPORT FOR THE PROJECT

Over 19,500 people have signed a petition in favor of the Project. Over 3,300 people have written letters of support to elected officials. Polling conducted in 4 different years since 2011 show over 86% support for the Project in the corridor. In Prince George's County in April 2021 polling showed 72% of African Americans in favor of the Project and 68% of the general public in favor, despite not having a stop in the County. Only 19% of the people in the County were against the Project.

CONGRESSIONAL ACTION NEEDED

The private sector has invested over $120 million in the BWRR Project. The federal government has provided the State of Maryland $27.8 million in MDP cooperative agreement funding, as well as an additional $26 million in funding approved but not yet contracted.

For the Project to proceed as envisioned under the MDP, Congress will need to replenish funding in the MDP that is needed to undertake the detailed engineering, geotechnical investigations and other activities necessary for the Project to proceed to construction, as well as continued System Technology Familiarization (safety review) activities undertaken with the FRA, BWRR and JRC leading to the rules for the safe operation of SC Maglev in the United States.

We are requesting $300 million in contract authority for the MDP which would be provided to the State of Maryland to complete activities precedent to finalizing construction. At this time, we estimate the civil capital costs to be around $9 billion.

The Government of Japan has stated a willingness to provide significant financial support for the cost of the initial operating segment between Baltimore-Washington, DC.

This precedent setting combination of no-cost technology licensing, mobilization of financing from the private sector, and off-shore, multiplies the effect of government funding to deliver infrastructure.

With support from the private sector and the Japanese Government, if action is taken by the Congress and timely action by the FRA, we anticipate revenue service could begin around 2030.

We look forward to working with the Committee to meet those requirements and to bring the SCMAGLEV Project in our most important corridor to fruition.

Thank you for the opportunity to testify today.

Mr. PAYNE. Thank you. The gentleman yields back.

We will now move on to Member questions. Each Member will be recognized for 5 minutes. And I will start by recognizing myself.

Mr. Flynn, I know that Amtrak currently operates its Acela high-speed rail service on the Northeast Corridor, which was the way I got here last night. The Acela service helps transport many of my constituents up and down the Northeast Corridor.

I look forward to clearing out the infrastructure backlog on the Northeast Corridor, including the Gateway Program, so that Acela trains can travel at the entire full speed along the entire corridor. Can you elaborate more on where you see the Acela service and Amtrak service in general fitting in with high-speed rail?

Mr. FLYNN. Thank you for your question, Mr. Chairman. And thank you for riding the Acela down here to Washington the other evening [inaudible].

As I mentioned in my comments earlier, we do operate high-speed rail. That high-speed rail is Acela. And the complaints we have in the near term, in terms of speed and reliability [inaudible] former CEO of Amtrak [inaudible] the way to go faster is to not go slow.

So to increase speeds in the near term on our right-of-way, on our alignment, we have a substantial repair backlog [inaudible]

structure and, as you know, certainly with tunnels and bridges along that right-of-way, which is why I called attention to the Baltimore and Potomac Tunnel, which has an operating speed right now of 30 miles an hour.

So we are operating the Washington to New York segment on an average speed of 80 miles an hour today. We can achieve top speeds of 135 miles an hour. But with improvements, such as I have suggested earlier, we believe we can get the Washington to New York segment down to 2 hours, a savings of 50 minutes or so, operating at an average speed of call that 113 miles an hour, for example. And on the north end of our Northeast Corridor, we can make substantial improvement in our New York to Boston route, which is currently at about 3 hours and 40 minutes and get that down more than an hour to 2 hours and 28 minutes with state-of-good-repair investments and ultimately the investments that are required in the infrastructure.

Mr. PAYNE. And as I have stated to the last panel, equity in rail is one of my top priorities as chairman of this subcommittee. I wanted to be sure that your projects will benefit underserved communities and offer a fair shot at contracting opportunities for minority-owned businesses.

To the panel, how will your projects take equity into consideration and how do you plan to give minority-owned businesses a fair shot at contracting?

Start with Mr. Aguilar.

Mr. AGUILAR. Mr. Chairman, as I was saying, we have very clear targets for set [inaudible] and these are very specific. They are coordinated with the city of Houston for the southern part of the alignment, and the city of Dallas for the northern part of the alignment. The targets are, on average, 34 percent inclusion targets for construction and 24 percent for professional services. So that gives you a sense of how much of a priority it is for us.

Number two, in terms of equity for rural communities, I mentioned in my statement that we will provide some additional services, broadband being one. Our plan is to have broadband alongside our alignment for up to 30 miles on either side of it offered to the population.

Mr. PAYNE. OK, Mr. Aguilar, I am going to have to move on.

Mr. Giegel, same question. And just a quick response, please.

Mr. GIEGEL. Thank you for your question. We are looking for—on new technology, we are creating new technology. With that, we are connecting local cities to economic opportunities, using local partners. And this is going to be about connect places along the way. There is no such thing as fly-over States anymore. The ability to get more people on our network, creating more opportunities for employment, for jobs, for recreation. Also for local partners to actually create the infrastructure in that particular area.

Mr. PAYNE. In underserved communities?

Mr. GIEGEL. Yes, sir.

Mr. PAYNE. And minority businesses?

Mr. GIEGEL. Yes, sir.

Mr. PAYNE. Thank you.

Mr. de Leon? You are muted. You are still on mute.

Mr. DE LEON. Sorry. I was saying that the way that we have built the HyperloopTT company has been by radical cooperation with the environment. We are a technological company that collaborates with technological partners, small companies, big companies, the startup environment, and also with the communities. We do not know to do the job in another way. You know, that is the way that this company has been done based on our crowdsourcing effort.

[Andres de Leon, chief executive officer, Hyperloop Transportation Technologies, submitted the following post-hearing supplement to his preceding remarks:]

The most successful strategies to diversify contracting and procurement provisions begin with studying the existing disparities in small and large government contracting, setting clear and measurable goals for the share of contracts awarded to MBEs, WBEs, and DBEs, and providing resources to these businesses to navigate the bidding process. Equity in contracting will recognize, respect and implement these provisions regardless of location, working directly with local, state and federal agencies that are party to the contracting process and mechanism.

In all cases, efforts will be made to encourage minority-owned businesses to participate in the project through the supply chain, during construction and operations.

Mr. PAYNE. Mr. Reininger?

Mr. REININGER. Yes, thank you. So for our construction effort in the State of Florida, we modeled the entirety of our program after the targets that were set by the Florida Department of Transportation for the same sorts of topics. And I am happy to say that we have consistently met and exceeded those—the achievement of those goals throughout the construction of our process.

And as to equity, through the creation of the multimodal system at MiamiCentral, we have dramatically increased equitable access to a number of transportation systems through this network that we have been able to craft right in the center of the downtown area of Miami.

Mr. PAYNE. Thank you. And what were those goal numbers?

Mr. REININGER. They were 10 percent total for MBEs and WBEs in participation in the construction.

Mr. PAYNE. OK. Mr. Rogers, very quickly.

Mr. ROGERS. Yes. We worked with civil rights groups and activists from the beginning, providing them a seat at the table from the start of the project. As we outlined, it is one of our four pillars of the project itself. We set open and transparent goals, 40 percent of the work going to minorities, people of color, and women. We are working with unions on training programs within underserved communities. There are lots of union apprenticeship programs from minority communities. We are working with them. And our partners sitting at the table are groups like National Action Network or Black Chamber, the Hispanic Chamber, the Women Chamber, and they are all growing together, all of us working together as an integral part of developing this project.

Mr. PAYNE. Thank you. I yield back and now recognize Mr. Crawford for 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman. I appreciate it.

I want to start with Mr. Flynn. Amtrak announced its plans to expand its routes, including to several small cities, where there

does not appear to be enough demand or population to warrant those new lines. Can you guarantee that those new routes will be self-sustaining and turn a profit? Or will they lose money?

Mr. FLYNN. Thank you for the question, Mr. Crawford. So we announced a vision, Amtrak Connects US, which talks about expansion of existing lines and service to new areas, about 60 routes therein. The other key point that we mentioned there, Congressman, was that we would open these routes, initiate either new service or expanded service, in consultation with the States and with the other authorities, be they municipal authorities, departments of transportation, et cetera. So that vision is indicative. We had a great meeting and a press roundtable with representatives from the State of Colorado and Oklahoma just the other day, really a few weeks ago, where there was a huge excitement about that kind of expansion, given the massive congestion that exists on the I–45 corridor and the 5 million people that live along that Front Range.

So it will be deliberate. It will be in consultation with States and communities to ensure that there is a level of ridership that will grow and can support those routes.

Mr. CRAWFORD. But you are not in a position right now to say whether or not that will be self-sustaining, or that it would indeed require a high degree of subsidization?

Mr. FLYNN. I am not in a position to say that it will be self-sustaining. I do believe that it will require support. But that support will be largely borne by the States, because these routes are in the State-supported network. And so it is really—that is why we work closely with the States, because they have got to sign up for that economic contribution.

Mr. CRAWFORD. Thank you, Mr. Flynn.

Mr. Giegel, I want to turn to you now. You and I have had opportunities to talk in the past about how companies like Virgin Hyperloop can provide opportunities to communities outside of the major metropolitan areas. Could you discuss how your company plans to use this technology to connect more rural or heartland communities?

Mr. GIEGEL. Yes, Congressman, thank you for the question. And thank you for your work with Chairman DeFazio last year on the codification of the NETT Council.

So speaking a little bit on your area, like looking at Little Rock, smaller, a reasonably smaller town compared to some of the bigger cities, being able to connect to places like Memphis and into Texas, what we see is being able to reduce those connection times from hours to minutes, providing significantly more economic opportunities. And also diversification of employment opportunities for local constituents, and then also companies. And so we view this as recreating the interstates network, just at a substantially higher speed with a substantially reduced economic and environmental footprint.

So this would give the opportunity for cities typically that are too far flung to be able to become merged together, being able to get from Memphis to Little Rock faster than you can get across uptown Manhattan, that is the power of this technology to bring to the heartland of America.

Mr. CRAWFORD. Thank you. I look forward to that. I like the idea of connecting Little Rock to Memphis in 15 minutes or Little Rock to Dallas in 30 to 40 minutes. So it would be interesting to see how this develops and I appreciate you being here and thank you to all the panelists. And I yield back.

Mr. PAYNE. Thank you, sir. The gentleman yields back.

And now we will go to Mr. Moulton for 5 minutes.

Mr. MOULTON. Thank you, Mr. Chairman. We are learning a lot today and it is a great hearing, so thank you so much for bringing it together.

My first question is for either of the gentlemen from hyperloop, perhaps I will start with Mr. de Leon. Hyperloop promises unrivaled travel speeds, very impressive. But, of course, you do not have operational systems yet.

So what current hurdles do you face to demonstrate your technologies for the purposes of Federal funding and what is the timeline? Mr. de Leon?

Mr. DE LEON. Yes. Yes, well, first of all, thank you for the question. Hyperloop technology is ready to build. And of course, it would not make sense, you know, to start just building it with the most aggressive strategy. OK? We think that we need to go to a progressive strategy and to grow in the speeds, to grow in the headways, and, you know, all the rest.

Mr. MOULTON. I understand that, sir. But could you just tell us what is the timeline?

Mr. DE LEON. The timeline is basically we would be ready to build the first as soon as we have the funding available, it will be ready to build the first commercial prototype. That is 5 kilometers, it is a product that we are now analyzing to be built in different parts of the world. And from that, we expect that in that 3 years of construction, in 3 years from now, we will be able to move people, you know, in a real commercial prototype——

[Andres de Leon, chief executive officer, Hyperloop Transportation Technologies, submitted the following post-hearing supplement to his preceding remarks:]

After completing a feasibility study for the Great Lakes project, HyperloopTT is ready to build a full-scale commercial prototype and system using a progressive strategy of construction. This strategy allows us to demonstrate to the United States government a commercial prototype in 3 years from the start of construction.

A current hurdle to demonstrating HyperloopTT technologies in the United States is the availability of federal funds to assist the Great Lakes Hyperloop environmental review process. The private sector has advised us that they are willing to take the business risk of developing and operating a HyperloopTT system. Still, they are not enthusiastic about taking the risk of preparing the environmental documentation since they have no control over the cost or schedule. Federal funding for the EIS would unlock private capital for construction.

A commercial-scale HyperloopTT project would demonstrate conformance with USDOT requirements and operate initially transporting light freight, adding passenger transportation after completing final certification applicable to passenger transport.

HyperloopTT has designed and constructed the world's first full-scale hyperloop test center in Toulouse, France. This 320-meter system is capable of all testing except maximum speed that requires a longer track. All system and subsystem testing is currently underway.

Mr. MOULTON. Thank you. Mr. Giegel, your company has safely carried passengers during tests. You were one of them. What are the fastest speeds you have achieved during those tests?

Mr. GIEGEL. Thank you for the question. We have achieved in our 500-yard-long facility in Las Vegas top speeds of passenger tests for about 110 miles an hour. Top speeds of the system test were approximately 240 miles an hour.

Mr. MOULTON. And so what is your timeline for achieving 670 miles per hour with passengers?

Mr. GIEGEL. We really need the length to be built out. So to have a system that is approximately 20 miles long or so would give us the opportunity to reach some of those higher speeds. To build that out from a timelines perspective, a couple more years of technology development, commercialization, I would say. And then towards the latter part of this funding cycle, we would be able to start building those projects and definitely applying for them over the coming years.

Mr. MOULTON. OK, great. Thank you.

Mr. Aguilar, Texas Central is developing a Shinkansen system in the style of the Japanese bullet trains. Just give us a few points on why you have chosen that technology over some of the technologies that we have heard at the hearing, including hyperloop, which sounds magical.

Mr. AGUILAR. The main reason why is the proven track record of the technology, and the fact that predictability and safety is our main focus. We want to be the first in the United States. We have to show how it works, ensure it is the safest in the world and the most efficient. That is what the Shinkansen technology brings.

Mr. MOULTON. Great, thank you. And, Mr. Flynn, I just have a couple questions for you. I have been a huge supporter of Amtrak for many years in Congress and beyond. I most recently led a bipartisan letter for Amtrak appropriations that would deliver nearly $4 billion for the Northeast Corridor of the national network, which was based on your estimated request released in early April. But I do want to get straight on some basic facts.

What is the top speed of the Acela service?

Mr. FLYNN. The Acela service in the southern network, Washington to New York, top speed is 135 miles an hour. And then in New York to Boston, a top speed of 150 miles an hour across different segments of the track.

Now, we are operating on a lower speed on a scheduled basis, as most high-speed operations, in fact, do around the world.

Mr. MOULTON. So for how many minutes of the 7-hour journey from Boston to Washington does the Acela run at that top speed of 150 miles per hour?

Mr. FLYNN. About 34 minutes would be the—sorry, about 34 miles, pardon me, would be the top speed. We would be operating at that top speed over 34 miles of track.

Mr. MOULTON. So how long does that take? What is that, about 8 minutes, something like that, 10 minutes?

Mr. FLYNN. It is in that range. Yeah, it is in the range of 10 minutes, sir.

Mr. MOULTON. And so would the Acela's top speed of 150 miles per hour qualify as high-speed rail anywhere else in the world?

Mr. FLYNN. Yes, 125 miles an hour is the international standard for high-speed rail.

Mr. MOULTON. Actually, it is widely accepted to be 186 miles per hour. Usually the definition used in the European Union is about 160, 250 kilometers per hour, but 300 is really the standard. And, of course, in China, we are—China is building to much higher speeds, up to 250 miles per hour. Do you think that America should accept that lower standard, or should we be doing as well or better than the Chinese?

Mr. FLYNN. Well, I think we should be providing America absolutely the best mobility options and strategy that we can. But I did want to say that, as far as I understand the regulation, 125 miles an hour on existing track infrastructure is high speed. Our Acelas that we are ordering, the new Acelas that are delivering—I should not say we have ordered—will have a top speed of 186 miles an hour.

And with the infrastructure improvements that we have talked about in our state of good repair, we will be getting to Washington, for example, Washington to New York, down to 2 hours. That speed is an average of 113 miles an hour.

But there are speeds, top speeds, and there are scheduled speeds. So, for example, Tokyo/Nagoya, 35 million people in the Greater Tokyo area, 12 million people in Nagoya. It is a 217-mile distance between the two. The version of the Shinkansens that ride on that track today have top speeds of 185 miles an hour and the scheduled speed is 115 because there are stops in between, there is the time to ramp up. In fact, most of the international routes that I have examined, since coming to Amtrak, of high-speed trains in Europe and in Japan have schedules that operate somewhere between 49 percent to I think a high of about 70 percent of maximum speed.

Mr. MOULTON. Right. But, Mr. Flynn, you are talking about average speed, right? Those lines in Japan still go 186 miles per hour. The trains still go 186. They just have to—because they have so many stops, their average speed is 115.

And if you actually understood the history here, is that America revised down its definition of high-speed rail to make these other projects qualify. And I just do not understand why we would not be aspiring to be the best in the world, rather than be behind literally everyone else when we talk about building a transportation technology.

Mr. FLYNN. We are not aspiring to be behind anyone, Congressman. Back in 2010 and 2012, we, Amtrak, provided the NEC Future Vision for the Northeast Corridor, which called for substantially higher speeds. It is really a question of funding.

Mr. MOULTON. Well, I can assure you, Mr. Flynn, that is exactly the vision that I support. And I think you would find a lot of support for that on the committee.

Thank you, Mr. Chairman. I yield back.

Mr. PAYNE. Thank you. And I agree with the gentleman from Massachusetts there. There are many of us on the committee that will agree with that.

Next, we will have Mr. Davis for 5 minutes.

Mr. DAVIS. Thank you, Mr. Chair. And thank you to my colleagues and witnesses for being here today.

I have a few questions. I am going to try and run through them quick, because I want to hit a few of you here who have come.

Mr. Reininger, you are doing a lot of great work in Florida and Nevada and California. First, is there any chance you are interested in a project connecting my home State of Illinois with any of its neighboring States?

Mr. REININGER. Well, thank you, Congressman, for your question. And I guess we would have to go to our core business model and say let's get out the map, let's draw a 300-mile ring around Springfield and find the major cities that connect in that ring and let's find a road corridor or an infrastructure corridor that we can use as a jumping off point and there is a solution hidden in there someplace. So we would be happy to engage with you on that.

Mr. DAVIS. Great. I have ridden on your line in south Florida, and I would be glad to sit down with you and your team at any time.

Secondly, our former colleague and chair of this subcommittee, Jeff Denham, he would always use Brightline as a case study for the development of high-speed rail in the United States, as contrasted against the California experience that he saw.

What have other countries done to successfully incentivize private-sector investment, and what can we do better to spur private investment here in the United States?

Mr. REININGER. So in our testimony, we have outlined a number of those things. I would say probably the most important thing that would boost private-sector investment would be to help us access efficient long-term capital in one of any number of ways. We have suggested that making private-sector entities like ourselves eligible for grant programs in the future, when we partner with otherwise eligible public-sector entities, is one way for the public-sector dollar to be leveraged into more than a dollar's worth of outcome. That would be an important way to make things happen more quickly.

We have spoken specifically about expanding the private activity bond allocations. We used it effectively. It will help. But that alone is not going to be the total solution to accessing capital, because that capital market has simply limited overall liquidity within it to sort of help broad-based numbers of projects like these.

We have also talked about utilizing low-cost loan programs like the RRIF loan in a more efficient way, where it can actually be an incentive in the way that it was designed to be to get some of these projects over the economic hurdles that they face to become viable and self-sustaining of their own right.

There could be other cooperative models that exist that parallel some of the things that we see elsewhere, where you have unified national host organizations that then tap into other providers such as ourselves that will offer returns on the public investments but also carry the burden of some of the operations and maintenance risks that would otherwise have to be carried over the long term. So there are multiple sets of ways that access to the capital that gets projects over the hurdles that they presently face that would turn more of these conversations into reality.

Mr. DAVIS. Well, thank you, Mr. Reininger. I appreciate that. I do want you and the rest of the witnesses here to take a look at my One Federal Decision Act, because I know the regulatory environment can cause expansion or it can cause a lack of expansion in capital products here in the rail industry and in passenger rail.

I do want to go talk to Mr. Giegel. Josh, great to see you again, my friend. And you know I would not have you on a hearing without being able to harass you over a few things.

Last year, Secretary Chao announced hyperloop is a technology that can compete for discretionary grants. Looking at H.R. 2 that passed last Congress, what changes would you recommend to ensure companies like yours are given the tools to be successful?

And I have to be quick because I have a question for Mr. Flynn, too.

Mr. GIEGEL. All right, thank you, Congressman. It is good to see you again as well.

I think shortly, a short answer is that we would like to be eligible for the same things that other modes are. I think we have heard, you know, some of the limitations of other types of technology. And if we are going to reinvest, we should be reinvesting in technology that has substantially lower wait times, higher speeds, substantially higher level of service with lower levels of emissions than anything else.

So in terms of what the committee can do for us, I think ensuring that we are eligible for all those same pots. And if they really want to go a step further, let's talk about subsidizing—or, sorry, let's talk about creating opportunity for new technologies to compete in a very friendly way to incentivize the future of transportation.

Mr. DAVIS. Thanks, man. I am looking forward to coming to Vegas and getting in that pod.

Mr. GIEGEL. Sounds good.

Mr. DAVIS. Thanks, buddy.

Mr. Flynn, you know what I am going to ask you about, the short shunt issue on the Saluki and Illini Express in central Illinois. What is the latest on getting the technology that we all know exists and we have been told by Amtrak and by the CN that we just have to put it in the trains and it should fix it?

Mr. FLYNN. Good afternoon, Congressman Davis. It is great to see you again. We are continuing to work on that with the CN. We are experimenting with different types of cars, railway cars, that could address that shunt issue, and we would be happy to come by and visit with you and give you some more detail on that.

Mr. DAVIS. I told you guys last time, and I have said this to the CN, too, my patience is wearing thin. There is no way to talk about high-speed passenger services if we don't have reliability on the lines that we have now. And this one is abysmal. You guys know that. It was long before you took over. I get it. But we got to get the technology, we got to address the short shunt issues, otherwise a lot of technological advances that we are talking about here are going to either overcome the technology that Amtrak currently uses, or we are going to be able to work with Amtrak.

So I do want to sit down with you, sit down with CN, and let's get this thing fixed before the next hearing so I can say thank you next time.

Mr. FLYNN. Well, we are testing a short shunt device now and we will make it a point to come over or virtually brief, depending on what is allowed.

Mr. DAVIS. I would love to see you in person.

Mr. FLYNN. I would like that, too.

Mr. DAVIS. I yield back.

Mr. PAYNE. The gentleman yields back. And now it is my honor to recognize the gentlelady from Washington, the vice chair of the committee, Ms. Strickland.

Ms. STRICKLAND. Thank you, Mr. Chair.

As we have heard from multiple witnesses on our first panel, the need for Federal investment in high-speed rail is clear, with the potential to create thousands of railroad and manufacturing jobs, save billions of dollars through reduced congestion on the roads. But I want to also point out that looking solely at high-speed rail doesn't necessarily solve every problem. We need a holistic framework that uses all types of modes of rail.

So I would like to start with you, Mr. Flynn. I would like to touch on Amtrak's support for the development of new high-speed rail corridors and the role that the current service can play.

So can you tell us, how can investments in conventional rail service complement investments in new high-speed rail lines like those being considered in my home State of Washington?

Thank you.

Mr. FLYNN. Thank you very much for that question because the question itself really, from an Amtrak perspective, outlines the strategy for the development of high-speed rail corridors, where they make sense across the country.

If we look to learn lessons from the development in Europe and perhaps the development in Japan as well, high-speed rail was developed in concert with conventional rail service and connected to—as we say on the Northeast Corridor—often commuter rail service, so that there is a feed and a distribution to and from high-speed operations across those high-speed corridors.

So we believe it absolutely is an integrated approach, and why in my remarks and in my written testimony that we have submitted to the committee, we have talked about not developing one-offs, but developing the integrated approach and building more reliable, higher speed conventional services, services at 110 miles an hour or approaching 125 miles an hour, in new corridors or expanding current corridors with more frequency, we are building that passenger base. And certainly some of those corridors are and must be candidates for high-speed rail service.

And that approach, that developmental approach, is really what we have seen in Japan, in Germany, in France, in Spain, really where we successful high-speed rail.

Ms. STRICKLAND. Great. And then one other question about this topic. As the Biden administration and Congress pursue this aggressive agenda to mitigate climate change, in addition to obstacles around timeframe, what do we lawmakers need to actually keep in

mind on the interoperability between conventional rail and high-speed rail?

Mr. FLYNN. Well, I think one thing for us all to keep in mind is really time, the time dimension. Because the President has set ambitious goals to achieve a 50-percent reduction by 2030. High-speed rail development, as I noted in my comments, at least the European Commission has identified it is a 16-year kind of development, on average, once the approvals are in place. That is after we have approvals.

But we have pointed out in our Amtrak Connects US corridor strategy, we can have impact now in the near term before 2030 to those environmental goals. So building out reliable, frequent, conventional service is also the predicate to building at high-speed where it makes sense, if I can say it that way, and also as marching down the road to achieve those climate goals in the near term and sustainment.

Ms. STRICKLAND. Great. And then one more question while I have time still. You know, we talk a lot about equity, and that means affordability and access. So what are we going to be able to do to ensure that families at all income levels are going to be able to take advantage of these technologies, for example, in high-speed rail?

Mr. FLYNN. Thank you. Well, I would like to just start and talk a little bit about Amtrak itself. We are a Government corporation. Forty-two percent of Amtrak employees are ethnically diverse, and we have a long record of diversity in Amtrak employment, and we serve the cities. Our rail networks serve the city, and often inner cities, and in many cities the Amtrak services really are the only accessible inner-city travel options that many people have. And so we are committed to equity in transportation. We think Amtrak has a demonstrated track record there, but we certainly have more to do, and we have a path to do that.

Ms. STRICKLAND. So I am asking specifically about high-speed rail. Do you think there is a way for us to ensure that that is going to be accessible and affordable?

Mr. FLYNN. Yes, I do. In fact, I had a conversation with Chairman Payne about that several days ago, and if we think about our corridor in the Northeast, that certainly is accessible. Corridors in and out of a Chicago hub, for example, whether it is down into Illinois, into Missouri, across through to Michigan, building up higher speed services, the 110- to 125-mile services in many parts of the country where we simply do not serve today, I think absolutely do bring accessibility to good quality services that customers will want to take.

Ms. STRICKLAND. Great, thank you very much. I am out of time.

Mr. FLYNN. Thank you.

Mr. PAYNE. Thank you. The gentlelady yields back. Now we will have Mr. Fitzpatrick for 5 minutes.

Mr. FITZPATRICK. Thank you, Mr. Chairman.

Mr. Flynn, thank you for attending this hearing today. The Northeast Corridor runs right through my district. SEPTA's commuter rail line is essential to my district, and I understand that the Northeast Corridor Commission has established a goal of switching from essentially a "but for" liability provision and instead

adopt a what is known as a no-fault liability provision so that each party takes responsibility for their own equipment, their own employees, and their own passengers. Currently, the "but for" liability provision we believe unfairly penalizes SEPTA. No-fault is already being used with most commuter rail lines across the NEC.

So my first question is: When do you plan on abiding by the commission's policy and adopt a no-fault liability with SEPTA?

Mr. FLYNN. Thank you, sir, for the question. It is not my understanding that no-fault is indeed the policy. There are, in the Northeast Corridor, the members of the Northeast Corridor, the several States, and Amtrak as well, have different views on what the right approach should be on liability, and we are working to resolve that. Again, we would be happy to sit down with you in your office and have a more fulsome discussion on the question.

Mr. FITZPATRICK. Yes, that is our understanding, sir, regarding the Northeast Corridor Commission and what they are establishing. So it is obviously very important to our districts. We would appreciate the followup on that sir. That would be OK.

Next question, I would like to ask you about Amtrak's last remaining in-house call center, which is right outside of my district. Many of my constituents, in fact, work there, and they provide superior customer service compared to the outsourced work, yet this call center has continuously been under threat of outsourcing.

So my final question for you, sir, will Amtrak consider ceasing its outsourcing of customer service jobs and support these hard-working women and men?

Mr. FLYNN. Yes, thank you for the question, Congressman. I don't believe that the call center is under constant treat. Some employees may feel that or may perceive that, but we have already made commitments to maintain the call center, in effect, to maintain the work at the call center, and they have done just a great job. Everyone at that call center, along with all our frontline employees, have done a great job of serving our Amtrak customers during this pandemic, and we have communicated that.

Mr. FITZPATRICK. Well, I appreciate hearing that, sir, and I will communicate that to them. So you are opposed to outsourcing?

Mr. FLYNN. We had—the company had implemented outsourcing as a backup in peak demand periods, but we have made the commitment to that customer service center and we will keep that commitment.

Mr. FITZPATRICK. Thank you, sir. Final question to Mr. Rogers, Maglev. Mr. Rogers, I understand we have a mutual friend, Mr. Jerren, who wanted me to say hello.

But my question for you, sir. First of all, it is an exciting time for your company. It will be a great timesaver for passengers on the NEC. Can you tell me how your company will go about hiring crews needed to build this project?

Mr. ROGERS. Yes, we really look at workforce development as integrated, and so we talked about our four pillars, the diversity, equity, inclusion with union jobs, and jobs, and we are going to have 161,000 job-years. So that is a big number that we have to do.

So one of the things is we have worked closely with unions. In 2017 we signed an agreement with North America's Building Trades Unions. We built the project under a project labor agree-

ment. We have been working with the various unions that will be creating training centers in diverse communities, so that is part of it as well. And so that means that the unions, as well as business groups and civic groups, are all working together because of the large nature of this opportunity.

And so we have been endorsed not only by the Building Trades Unions but also the carpenters, the laborers union, Baltimore-DC Metro Building and Construction Trades Council. So we think we really try to approach these things, climate change, diversity, jobs, workforce development, and union participation as really one, and working it all with everyone sitting at the table.

Mr. FITZPATRICK. Thank you, Mr. Rogers, and thank you for your commitment to PLAs. Very, very important as far as quality of work and therefore safety issues, so we appreciate that.

Mr. Chairman, I yield back.

Mr. PAYNE. Thank you, sir. Next we will have Ms. Titus for 5 minutes.

Ms. TITUS. Thank you, Mr. Chairman.

I just address my question to Mr. Reininger. You know I am a big fan of the project Brightline West. I have been working to try to get some kind of speed train, passenger train service between here and Los Angeles for many years. So I am excited that it is coming. I think it will bring more visitors to my district and help the economy during these difficult times, take cars off of I–15, improve air quality.

But any time we talk about infrastructure, we also have to focus on the jobs. This is going to create some jobs and high-quality jobs as you construct this project. So I would ask you, as you move closer to the construction phase, what are your relationships with labor? How are you talking to the workers who are both going to build this and operate it once it is finished?

Mr. REININGER. Congresswoman, thank you very much for your question, and certainly thank you for all the support that you have provided us along the journey that we are underway with. You are exactly right. The investment that we are planning on making in Brightline West is going to create an enormous amount of job growth and activity in your area, some 40,000 construction jobs, we think, will be generated by the investment that we are prepared to make there.

With respect to labor, I think there would be a couple of important points that I would make. First of all, we are in the midst of negotiations of construction contracts to begin to initiate the construction work that we just spoke of, and in the course of those negotiations, our preferred contractor is also in the midst of discussions with labor around a project labor agreement that would be put in place. Our understanding is from both sides that those discussions are going very, very well. We are very supportive of those discussions and anxious for that to come to an amicable conclusion.

In addition, we made a recommendation as a part of the testimony here that private-sector entities be allowed to be eligible applicants for some grant programs in the future. Without any specific regard to a particular idea, we put that forward as a general idea.

But before we did that, we explored the idea with organized labor, and we have found them to be supportive of that proposed legislative action, and in fact, we have shared the correspondence that we have received from them with the Railroads, Pipelines, and Hazardous Materials Subcommittee staff here of this committee. So we have been engaged from the beginning here, and we understand the importance and the priorities that you are describing here.

Lastly, I would tell you that our Florida operation, our first phase of our Florida operation, was built in complete compliance with the FRA's Buy America program, despite the fact that we didn't receive any Federal funding that would have otherwise mandated those requirements. So we are respectful of and supportive of the initiatives that you are referring to.

Ms. TITUS. That is great. You know, just to carry this a little further, you mentioned some things that we can do to better assist with the financing. You mentioned these grants, we talked about the bonds. Is there anything this subcommittee needs to be doing additionally to make that financing easier to be sure this project gets underway sooner rather than later, and we start to build back better?

Mr. REININGER. Sure. The specific—the recommendations that we put on the table, you know, regarding eligibility for grants, the expansion of the PABs program, some revamping of the application of the loan programs, are all going to be very direct, very actionable things that this subcommittee would be very helpful in.

Beyond that, we have spoken, in under written testimony, about curtailing some of the discretion that is applied to some of the approval processes in the regulatory framework that will help otherwise increase confidence in the processes that we undergo, and also reduce what was oftentimes unnecessary time delays which translate into additional costs to the project.

So we have provided a few, what we think are very actionable, very practical things that this subcommittee can do to help us do what we think we are doing, which is breaking the inertia that has limited progress in this space over the last several decades.

Ms. TITUS. Well, I am excited to hear that and work with you, Mr. Chairman, and other members of this subcommittee. Representative Moulton, I know, is interested in this topic to try to get some of those things accomplished. I yield back.

Mr. PAYNE. Thank you. The gentlelady yields back. Now we will have Mr. Westerman for 5 minutes.

Mr. WESTERMAN. Thank you, Mr. Chairman and Ranking Member Crawford, and to all the witnesses. This is very interesting testimony that I have listened to it and I have read your testimony, and probably a lot more questions than I can get in in 5 minutes.

But Mr. de Leon, you testified that the development costs of the hyperloop is only $54 million per mile compared to the $150 million to $200 million per mile for other modes.

Now, as an engineer serving in Congress, when I hear only $54 million a mile, that raises an eyebrow, and I even checked with my State department of transportation, and they tell me they can build urban interstate for $9.7 million per mile, rural interstate for $7.5 million per mile, and an interstate through the mountains for $11.45 million per mile.

So would you clarify what you are talking about when you say only $54 million per mile? And what are the other modes that are $150 million to $200 million?

Mr. DE LEON. Yes, well, in all the analysis that we have done and the analysis that we did in the Great Lakes, this was the cost, you know, the average cost that we have, you know, for developing all the infrastructure and all the systems.

Every time that we have done a comparison, we are looking at numbers that are around 30 percent to 40 percent less than high-speed rail, and that is because hyperloop [inaudible] has smaller infrastructure and much more simple infrastructure.

And of course the cost of the high-speed rail depends also a lot in the country. In Spain, it was, like, $20 million per kilometer. In France it was $32 million per kilometer. In California, we are talking about $150 million per mile. So it depends on the country.

You cannot have a real, clear cost, you know, until you do a real feasibility study and you analyze the territory, the geography, and everything that is needed to [inaudible].

What we have seen in our Great Lakes feasibility study is that these numbers make a lot of sense, that you have a recap on the investment around 25 years and——

[Andres de Leon, chief executive officer, Hyperloop Transportation Technologies, submitted the following post-hearing supplement to his preceding remarks:]

The Great Lakes Hyperloop Feasibility Study, prepared by NOACA and their independent transportation economist consultant TEMS, used standard industry practices and supplier and contractor estimates to arrive at the project cost of $54 million/mile for hyperloop. This cost estimate includes 28% in soft costs (engineering, design, insurance, escalation, etc.) and 30% additional unassigned contingency on all costs. Further, infrastructure and transportation operators will see a positive return on investment in 15 years.

AECOM, an engineering and construction company not affiliated with HyperloopTT, estimated $150 million/mile as the 2020 estimated cost of the California High Speed Train project. The estimate of $200 million/mile (actually $256 million/mile) was published by Maryland DOT and NE Maglev in their recently released EIS for the DC to Baltimore SC Maglev project. (See Appendix G.9—Capital and Construction Costs Memorandum, dated March 31, 2020). This estimate does not include Systems, Right of Way, Vehicles, Professional Services, or Contingencies.

Mr. WESTERMAN. So you are saying it is—I've got to keep moving on, but I wanted to—Mr. Reininger, what is your experience on costs for high-speed rail per mile?

Mr. REININGER. So I can point to our two examples. Our real-world example in Florida, we have invested about $16 million a mile for the 235-mile system that we built there. And our Brightline West program is going to be executed for about $31 million a mile.

Mr. WESTERMAN. OK. So that still surprises me that it is that much per mile, but you built them so you know exactly what it costs.

And as we look at new technologies like hyperloop, I do see a lot of advantages for that because it is a small footprint. The pods operating in a vacuum. I have had a chance to go out to Las Vegas and visit the test site and I know that there has been a lot of great work that you guys are doing up there, Josh.

I know you could probably build hyperloop on a highway interstate median. It could go underground, it could go underwater, it could go above the ground. You don't have any grade crossings, you don't have to worry about animals getting in the way, it is averse to weather.

But I also understand that the technology is not as proven, but outside of that, what would prohibit—I mean if you are looking at high-speed rail or mass transit, why wouldn't we be looking at hyperloop as the first technology to look at, or the future technology?

Mr. Aguilar, you might take a shot at that, and Mr. Flynn as well.

Mr. DE LEON. Excuse me, is the question for me?

Mr. AGUILAR. No, for me, I believe. I would start by saying, you know, short-term needs need short-term solutions. And as I said in my testimony, our market here down in Texas is already congested, very congested. It needs solutions to be offered.

Our cost per mile, by the way, is about $62 million a mile for the civil infrastructure, but that is because we have built a system that has 50 percent of this in viaducts. And this is to address concerns to reduce impact on landowners and so on.

But that is the main reason why.

Mr. WESTERMAN. Mr. Flynn?

Mr. FLYNN. Thank you, Congressman Westerman.

From an Amtrak perspective, what we have talked about is investing, really, in both conventional and high-speed railways we have today on the Northeast Corridor. And we have the opportunity to expand higher speed conventional rail and high-speed rail in certain corridors in the U.S.

Our corridors also serve commuter trains and, for example, if you look at our Northeast Corridor, there are 2,100 trains a day on that Northeast Corridor, and we are part of that, and that includes commuter rails as well and our Acela high-speed train and there are also 60 freight trains a day on that Northeast Corridor.

So I think it is a very different—well, certainly a very different technology and certainly a very different application. And what we have talked about is the ability to enhance and expand and serve a greater part of America within the next decade on network that exists today that requires some upgrading, but certainly achievable in that timeframe with the benefits of mobility benefits and I would argue environmental benefits as well.

Mr. WESTERMAN. All right, I knew I would have more questions than time. I yield back, Mr. Chairman.

Mr. PAYNE. Thank you. The gentleman yields back. And I will now turn the gavel over to the vice chair of the subcommittee, the gentlelady from Washington, Ms. Strickland. You have the gavel.

Ms. STRICKLAND [presiding]. Thank you, Mr. Chair.

We have three Members who are scheduled to speak, so at this time, I would like to recognize Representative García for 5 minutes.

Mr. GARCÍA OF ILLINOIS. Thank you, Chairwoman Strickland. Mr. Flynn, in your testimony, you laid out four corridors in Amtrak's national network that receive significant investments from the 2009 American Recovery and Reinvestment Act, several of which run right through Chicago.

Can you share with the committee what kind of further improvements we can anticipate with the type of investment proposed in President Biden's American Jobs Plan, and would Amtrak consider additional improvement in corridors that run through the Chicagoland area?

Mr. FLYNN. Thank you for your question, Congressman García.

Let me start with the last part of your question as to whether Amtrak would consider additional investment. The answer is absolutely yes. And our Amtrak Connects US strategy which talks about new corridor services and expanded corridor services, it addresses exactly that. And certainly Chicago is a key component, a key node, in the Amtrak network. So that is about services from Chicago into Madison, in Milwaukee. We are talking about expanding—that is our Hiawatha Service—expanding to multiple daily services through to Minneapolis-St. Paul.

I talked to Congressman Davis, we are talking about expansions from Chicago into St. Louis on those several lines, the ability to connect to Detroit, Michigan, and points in between. So Chicago is a very important part of our network as you know, and certainly a key part of our vision of how we can expand. More rail services on routes that we have today, and new passenger routes that we have yet to serve.

Mr. GARCÍA OF ILLINOIS. And you wrote at length in your written testimony about why the U.S. has fallen so far behind in high-speed rail connectivity, you also mentioned how existing funding programs like CRISI, the RAISE program which we previously knew as the TIGER or BUILD. In your words, existing funding streams "would not make a dent in the cost of constructing even a single high-speed rail line."

What are some policy solutions the committee should consider to make sure an adequate source of funding exists to begin to build the framework for a high-speed rail network, and does intercity rail need its own dedicated funding stream?

Mr. FLYNN. Well, the answer to your question, Congressman García, is in your statement.

At the beginning of our hearing today before the first panel spoke, Chairman DeFazio talked about funding, talked about the need for transportation infrastructure. One of the other witnesses, former Deputy Secretary Porcari, talked about funding and talked about the need for a trust fund structure or trust fund-like structure, so that we can have dedicated, predictable funding for these kinds of projects that are going to occur over a very long period of time.

When we think about NEPA and the other permitting processes that take place, and then ultimately into construction, on many major projects we are talking a decade or more. So without the visibility and the predictability and the certainty of funding, these projects are all affected, they ultimately become more high cost, and they take longer than they should.

So if I were to recommend one policy action, creating a trust fund or trust fund-like structure for intercity passenger rail would be key.

Mr. GARCÍA OF ILLINOIS. Thank you. And finally before my time runs out, you discussed the reduction in greenhouse gasses when

the Northeast Corridor was largely electrified. Are there other corridors in the country that would be strong candidates for electrification? What kind of market and policy obstacles remain in further electrification of our intercity passenger rail network?

Mr. FLYNN. Yes, there certainly are other corridors that would lend themselves to electrification. There will be requirements for density, of service, and key population centers.

I talked earlier about our new intercity train sets that we have. We are placing an order for finalizing that order. Those intercity train sets are dual mode so the locomotive can go from electric to diesel at a much more fuel-efficient diesel in terms of greenhouse gas emissions that are created per passenger-mile by those diesels.

So there are interim steps that advance us along the President's goal to that 50-percent reduction in greenhouse gasses. And passenger rail is certainly one of those vehicles to provide the mobility the country needs, but to do it in the most environmentally sustainable way.

Thank you, sir.

Mr. GARCIA OF ILLINOIS. Thank you so much. I yield back, Madam Chair.

Ms. STRICKLAND. Thank you. I would now like to recognize Representative LaMalfa for 5 minutes.

Mr. LAMALFA. OK, I am hitting the right buttons. Thank you, Madam Chair, I appreciate it. Well, certainly an interesting conversation today. I have had to dip in and out because of other things going on, but as a California Member with the issue with high-speed rail in our own State, and I'll join some others and say, look, I am not against the concept, and I think the Northeast Corridor is our best chance for success on that and other areas as we look at them.

But when I see where Texas is having a hard time, when Texas is having difficulty with their abilities to streamline and get through a process, how the heck is California going to do it at 50 percent higher prices for everything, our regulatory climate that is a lot more negative to doing any—and this is, you know, scored as an environmental project, but we still can't get very far.

As a State legislator, I was very interested in this and hearing legislation on the high-speed rail project here, trying to link L.A. and San Francisco with supposed spurs to Sacramento and San Diego as well. And it has fallen far short of what the voters were told when it was placed on the ballot for them to decide by a narrow margin, 52 to 48 percent, years ago.

And so legislation I had was, two of them, was to say stop spending until you have a plan, because they didn't have a plan for the route, how they were going to line up the property. They still don't have the property, and this is 12 years after it passed, and they are way behind on all their deadlines. And later on they told us, well, this is going to provide 1 million jobs. They sat there with a straight face and said 1 million jobs. Finally, we got them in committee a few years after, they said, well that means 1 million job-years.

Well, the way it is going, that is starting to look like 1 million years because they are so far behind and the price has at least tripled and they have heard in earlier testimony they are going to

need many more billions of dollars from the Federal Government to continue going along.

And so far the Federal Government has committed to a total of about $3.3 billion under the Obama era ARRA Act, and the State hasn't even put its own money forward. But so it just continues to be a frustration.

So to hear a possibility of a high-speed rail line in California that might work that Brightline is working on, the Los Angeles to Las Vegas route, that had been referred to as the Desert Express before, and some good work had got done towards that, but what I need to bring in as a question here to Mr. Reininger here is that—I used to also chair back in 2016 to 2018 in the Natural Resources Committee, the Subcommittee on Indian, Insular and Alaska Native Affairs in the U.S., and so we have concerns there that the so far undefined routes through the area could be going through some burial areas and cultural sites of their ancestral lands, that hasn't quite gone through what's known as a section 106 review process.

And so I want to hear from those on the panel who have an interest, especially Mr. Reininger, what can we do to allay this concern because I don't think you want to have the negative that is going to come from this later, and we don't want to be doing things that aren't sensitive to taking care of those issues.

Like in my north part of the State, we have had levee repair processes that were important, but some of those go through old Tribal sites and such, and there are people, you know, that were buried there and such, but working with the Tribes they are able to—you know, we took some elbowing of getting the Army Corps of Engineers to pay attention to that, but the Tribes are very forward with us trying to say, hey, we want to help get this done, but we just need to have proper respect done for these old sites. Same thing here.

What can we do better to allay some of the concerns of the Tribes that are on the route there? And the cultural areas, the burial areas that might be—whatever it is—and get a proper review that doesn't take forever——

Ms. STRICKLAND. Representative LaMalfa, we are going to run out of time here soon, so can we allow the witness to——

Mr. LAMALFA. Yes——

Ms. STRICKLAND [continuing]. Answer the question?

Mr. LAMALFA [continuing]. I will stop there. I will stop there.

Ms. STRICKLAND. Thank you.

Mr. LAMALFA. Thank you. Yes.

Mr. REININGER. So I think that was pointed towards me. Thank you for the question, and I will try to be as brief as I can because I know time is running out here, but clearly, we respect the process that is in place.

The environmental review processes are well established. The kinds of investigations that are necessary are clear, and we are following those processes completely in everything that we are doing, but the Tribes involved here are definitely a stakeholder that would have a voice in the process, and we encourage the continued engagement with them to execute the process under the guidelines that are in place by the regulatory frameworks.

Mr. LAMALFA. Well, it is seemingly not paying enough attention to section 106, as it is titled, and they are not getting the results, so I don't think you want ultimately to go to a worse outcome, but who knows, it could cause litigation, because it really hasn't been addressed from everything I have understood. The FRA needs to be helpful on this, too, instead of just trying to push through on something that could cause legal issues or a lot of hard feelings later. So I would love for a commitment to take a closer look at that.

Mr. REININGER. Absolutely.

Ms. STRICKLAND. Thank you very much.

Mr. LAMALFA. Thank you, Madam Chair.

Ms. STRICKLAND. Our next speaker is Representative Eddie Bernice Johnson. You have 5 minutes.

Ms. JOHNSON OF TEXAS. Thank you very much, Madam Chair, and I thank the committee leadership for calling this hearing.

I was very pleased to have Mr. Aguilar from Texas Central with us today, and really quite aware of all the activity and all the attention that has been given to all the people along this whole route, Dallas to Houston or Houston to Dallas. And today, 16 million trips are made between north Texas and the Greater Houston region annually. Ninety percent of these trips are made my road, leading to significant congestion along Interstate 45 between these two regions. Travel time along this corridor can exceed 5 years, and I expect it to exceed 6.5 hours by 2035.

With the economy of Greater Houston and north Texas expected to grow at 1.5 percent per year until 2050, almost twice the national average, trips between these cities are projected to top just over 34 million journeys in 2050. This growth will undermine mobility in the area, degrading our air quality, impacting roadway safety, and stifling economic growth.

Preventing the negative impacts of this project congestion is one of the reasons why I am a strong proponent of the Texas Central project. It will provide a faster, safer, and more environmentally friendly mobility option in connecting these two economic giants of Texas. It will also be the first true high-speed rail system in the U.S., covering 240 miles in 90 minutes. So this project will not only create a large number of jobs for constituents, it will also provide a new 21st-century mobility option between the Nation's largest metropolitan areas, Dallas and Houston.

While this project is vital in the area that I represent, it is critical to transforming the Nation's transportation network and strengthening our economic competitiveness. It is truly one that ought to be considered.

And I am delighted that Mr. Aguilar, the president, is here today, and I know that we have heard a lot of testimony from him. I have been a witness that they have worked this entire route from Dallas to Houston, or Houston to Dallas, dealing with individuals, property owners, and all the like.

Now what I would like to ask Mr. Aguilar is whether or not they are really committed in taking any kind of steps to be sure that it will be also inclusive. We know that this is going to be rural, lots of minorities and women along the way, and it will take a lot of workplace training.

So I would like him to comment on some of the things that have been planned for this route as we begin to take this extraordinary step to improve travel and the environment.

Mr. AGUILAR. Thank you, Congresswoman, and yes, absolutely, you have my commitment and our company's commitment to that. And as I said, we started working with both the city of Dallas and the city of Houston in establishing the goals and set the targets for inclusiveness. We also added rural businesses as part of the definition of inclusion. That was intentional, ensuring that we have a broad impact along the whole route. And it was as a result of all that planning that we are including specific targets to each of the contracts that we sign.

And it has not been easy, I have to be very honest with you. This is not normal practice for the industry. And we have had to ensure that everybody buys into the program. And by the way, all contractors are. And that is the benefit of executing this in a concerted way. So it is the planning, and it is the coordination with public officials, and aligning in interests, and knowing that this is a priority for all.

Ms. JOHNSON OF TEXAS. Well, thank you very much. I have been aware of a lot of the activity. I have participated in some of it. I look forward and hope that I can live to see the fruition of this program.

Madam Chair, do I have any more time?

Ms. STRICKLAND. I am going to use privilege and give you about 20 more seconds.

Ms. JOHNSON OF TEXAS. OK, well, thank you very much. I know that the city of Dallas is very interested in [inaudible] downtown terminal, and I just wanted a little comment on that from Mr. Aguilar.

Mr. AGUILAR. Yes, we are actually coordinating in the planning of that plan, which actually started with coordinating meetings at the end of last month. It would be located right across our station, and the idea would be to connect directly to DART there and ensure that the transfer of passengers to Union Station as well is included so that we are physically connected to the rest of the network.

Ms. JOHNSON OF TEXAS. Thank you very much, and thank you Madam Chair. This is my 28th year—29th year on this committee, and my major goal when I started was an intermodal, seamless transportation system around the north Texas area and I think this is one of the things that will complete it. Thank you very much, and I yield back.

Ms. STRICKLAND. Thank you, Congresswoman.

Well, everyone, this concludes our hearing for today. I, again, want to say thank you to each of our witnesses for this long hearing and for your testimony today.

I am going to ask for unanimous consent on two items. Number one, that the hearing record of today's hearing remain open until such time as our witnesses have provided answers to any questions that may be submitted to them in writing. I am also going to ask for the unanimous consent that the record remain open for 15 days for any additional comments and information submitted by Members or witnesses to be included in the record of today's hearing.

Without object, so ordered.

The Subcommittee on Railroads, Pipelines, and Hazardous Materials now stands adjourned. Thank you everyone.

[Whereupon, at 3:27 p.m., the subcommittee was adjourned.]

SUBMISSIONS FOR THE RECORD

Prepared Statement of Hon. Sam Graves, a Representative in Congress from the State of Missouri, and Ranking Member, Committee on Transportation and Infrastructure

Thank you, Chair Payne, and thank you to our witnesses for being here today.

In certain circumstances, passenger rail can benefit our transportation network.

In that sense, we must support new technology that increases the safety and efficiency of these systems while meeting the transportation demands of Americans.

How best to meet the freight and passenger rail needs of the U.S. economy and consumers is essential as we consider rail investments in a surface transportation bill.

We must be mindful of how we spend taxpayer dollars and consider changes in travel habits and preferences in a transportation landscape that has been altered by COVID–19.

Allocating exorbitant levels of funding on projects that fail to account for actual consumer demand and future costs will only create unnecessary new burdens.

We should consider all our options, including leveraging private rail investments and supporting existing grant programs that have proven effective in maintaining and upgrading our rail network.

I look forward to hearing more from our witnesses about these opportunities.

Thank you, Chair Payne. I yield back.

Prepared Statement of Hon. Steve Cohen, a Representative in Congress from the State of Tennessee

Thank you, Chairman Payne and Ranking Member Crawford, for holding this important hearing today.

Passenger rail is an essential connection for millions of Americans. Expanding this service would connect more communities to educational and economic opportunities as well as recreational activities that may not be accessible via air travel or to someone who does not have access to a vehicle. Today, many major metro areas have little or no access to passenger rail service. In my home state, Memphis is only one of two cities served by passenger rail. With the loss of essential air service in much of the country, including rural and midsize communities, passenger rail fills the void and provides essential connections to jobs and services in nearby metro areas, and convenient access to the rest of the country by rail or major airport hubs.

Passenger rail is also an essential tool in responding to climate change and improving economic and racial equity. People who cannot afford or are unable to drive rely on passenger rail for jobs, services, visiting family, and more. Connecting more Americans to each other via passenger rail will provide a low emission alternative to driving and flying that can decrease greenhouse gas emissions and support our nation's climate change goals. It also provides a more cost-effective and accessible mode of travel to vulnerable populations in all corners of the country.

Additionally, while no mode of transportation is 100% safe, high-speed rail has the potential to save lives and reduce traffic fatalities. Consider that last year, more than 42,000 people died on America's roads and highways—including 1,231 deaths in Tennessee. High-speed rail and intercity passenger rail are safer forms of travel than automobile usage and could reduce the number of transportation deaths and injuries in Tennessee.

That is why I plan to introduce the Interstate Rail Compacts Advancement Act of 2021, which would create multi-state passenger rail commissions, such as the successful Southern Rail Commission, to promote regional coordination and sustain a vision of passenger rail service across America. Most intercity passenger rail serves a multi-state region, with passengers regularly traveling across state lines. How-

ever, regional collaboration to support passenger rail service is only as effective as coordination between Governors, State Departments of Transportation, and other relevant state and local officials and entities. By incentivizing states to create multi-state rail commissions, we can improve regional collaboration to support passenger rail service. In my home state, there is particular interest to connect Memphis to Nashville, which could hopefully be extended to Atlanta, Georgia. The ability to create a multi-state passenger rail commission would undoubtedly help to make this proposal a reality.

With upcoming surface transportation reauthorization legislation, our Subcommittee has a significant opportunity to make meaningful investments to promote intercity passenger rail development and in turn reduce the carbon footprint of the transportation sector, reduce congestion which is already returning to pre-pandemic levels, create better job opportunities and expand access to affordable and equitable housing opportunities. I look forward to working with my colleagues on this Subcommittee to examine ways in which we can facilitate increased passenger rail opportunities for Americans across the country, including passage of my bill, the Interstate Rail Compacts Advancement Act.

Thank you again, Chairman Payne and Ranking Member Crawford, for holding this hearing today.

Letter of May 20, 2021, from Paul P. Skoutelas, President and CEO, American Public Transportation Association, Submitted for the Record by Hon. Peter A. DeFazio

MAY 20, 2021.

The Honorable PETER A. DEFAZIO,
Chairman,
U.S. House of Representatives, House Committee on Transportation and Infrastructure, 2165 Rayburn House Office Building, Washington, DC 20510.

The Honorable SAM GRAVES,
Ranking Member,
U.S. House of Representatives, House Committee on Transportation and Infrastructure, 2164 Rayburn House Office Building, Washington, DC 20510.

The Honorable DONALD M. PAYNE, JR.,
Chairman,
Subcommittee on Railroads, Pipelines, and Hazardous Materials, House Committee on Transportation and Infrastructure, 589 Ford House Office Building, Washington, DC 20510.

The Honorable RICK CRAWFORD,
Ranking Member,
Subcommittee on Railroads, Pipelines, and Hazardous Materials, House Committee on Transportation and Infrastructure, 592 Ford House Office Building, Washington, DC 20510.

DEAR CHAIRMAN DEFAZIO, RANKING MEMBER GRAVES, CHAIRMAN PAYNE, AND RANKING MEMBER CRAWFORD:

On behalf of America's $74 billion public transportation industry, which directly employs more than 435,000 people and supports millions of private-sector jobs, I am pleased to submit this testimony for the record for the Committee on Transportation and Infrastructure hearing on "*When Unlimited Potential Meets Limited Resources: The Benefits and Challenges of High-Speed Rail and Emerging Rail Technologies*" on May 6, 2021.

First, we thank you for holding this important and timely hearing on the future of high-performance passenger rail. APTA has recently endorsed "*A Vision for Connecting America's Urban and Rural Communities with Passenger Rail*". APTA believes that the transportation investments of today will be the foundation of a forward-looking strategy to establish safe, reliable, efficient, integrated, and climate-friendly alternatives for moving people. America has an opportunity to build a high-performance rail network to position us to overcome our economic challenges and compete in the global marketplace in the coming years.

Passenger rail is an underutilized mode, and ripe to connect with national and local transportation networks and rural areas with high-performance corridor services. These services will relieve congestion on highways and airspace and provide efficient, accessible, equitable, and environmental-friendly mobility options. New and reinvigorated rail corridors will have multiple users and would connect

seamlessly with Amtrak and local and regional public transit services. Development of a national network and national rail plan should be guided by federal, state, and regional planning efforts, and coordinated with the various state-supported intercity passenger rail corridors.

Dedicated funding for passenger rail is critical to realize these goals. To that end, APTA strongly urges Congress and the Biden Administration to establish a robust Passenger Rail Trust Fund supported through new revenues, other than revenues dedicated to the Highway Trust Fund, to provide long-term certainty necessary for planning and funding multi-year projects and state-of-good-repair investments. Leveraging these funding streams with federal financing programs will further facilitate project delivery.

Currently, there is no dedicated, predictable funding program for passenger rail projects. States and other entities seeking to build or improve passenger rail must rely on several competitive grant programs to fund their significant capital needs. A dedicated Passenger Rail Trust Fund, together with significantly higher passenger rail investment, would provide long-term certainty and help fund critical projects that will repair, maintain, and improve our passenger rail systems today and in the future.

In addition, access to freight railroad rights-of-way is a significant issue to ensure effective implementation of a federal high-performance rail program. Appropriate incentives need to be provided to host railroads with the expectation that they will accommodate the public purpose and necessity of facilitating growth of passenger rail. Finally, the private sector should be offered opportunities to partner with the public sector in developing high-performance rail corridors.

We believe that seizing the opportunity to make these critical investments in passenger rail now will also help the nation meet its renewed commitments to racial and social equity and to addressing the global climate crisis. Enclosed is a copy of APTA's *Vision for Connecting America's Urban and Rural Communities with Passenger Rail*.

Thank you for your consideration.

Sincerely,

PAUL P. SKOUTELAS,
President and CEO, American Public Transportation Association.

Encl.

A VISION FOR CONNECTING AMERICA'S URBAN AND RURAL COMMUNITIES WITH PASSENGER RAIL

MAY 5, 2021

The Proposition: What does America stand to gain from a substantial investment in high-performance passenger rail? What makes passenger rail best suited to generate positive, transformational change at this moment in time?

The Need and the Opportunity: The transportation investments of today will be the foundation of a forward-looking strategy to establish safe, reliable, efficient, integrated, and climate-friendly alternatives for moving people. America has an opportunity to learn from international success stories, and to build a high-performance rail network to position us to overcome our economic challenges and compete in the global marketplace in the coming years.

The Vision: For the past 60 years, Americans have relied overwhelmingly on highways and airlines for travel between regions. Passenger rail is the underutilized mode, and ripe to complement these networks with high-performance corridor services linking cities 300–600 miles apart, while connecting with national and local transportation networks and to rural areas. These services will relieve congestion on highways and airspace and provide efficient, accessible, equitable and environmental-friendly mobility options.

New and reinvigorated rail corridors will have multiple users and would connect seamlessly with local and regional public transit services and airports. Hubs will be in downtown business districts, generating jobs, income, and investment around stations, while providing convenient access to destinations and fostering community livability. Moreover, federal grants should prioritize alternative power technologies for equipment and facilities, including electrification of lines, to advance passenger rail's contribution to our nation's efforts to address climate change.

Amtrak's national network will be bolstered through investments that will address its repair backlog, modernize Northeast Corridor critical infrastructure, serve communities across the country with frequent and reliable service, and connect new city pairs. Development of the national network and a national rail plan will be guided by federal, state, and regional planning efforts, and coordinated with the var-

ious state-supported intercity passenger rail corridors. Private initiatives will be encouraged and supported as they proceed under different business models in select corridors.

Access to freight railroad rights-of-way is a significant issue to ensure effective implementation of a federal high-performance rail program. Appropriate incentives need to be provided to host railroads with the expectation that they will accommodate the public purpose and necessity of facilitating growth of passenger rail. Federal policies must encourage growth of both passenger and freight rail operations, recognizing the substantive public benefits to both networks.

Innovation and new technologies will be embraced as new ways are developed to enhance operations and better serve customers and communities. Consideration of new and evolving technologies is ongoing and must not distract from the immediate need for investment in state-of-the-art high-performance rail.

The Program: APTA urges Congress and the Biden Administration to establish a Passenger Rail Trust Fund supported through new revenues, other than revenues dedicated to the Highway Trust Fund, to provide long-term certainty necessary for planning and funding multi-year projects and state-of-good-repair investments. Leveraging these funding streams with federal financing programs will further facilitate project delivery.

High-speed corridors will be selected based on criteria, with the purpose of getting several corridors in operation in the near-term. These corridors would provide models that could be emulated in other regions of the country. Projects should be advanced using progressive program delivery and regulatory oversight procedures to facilitate efficient, multi-year program implementation, as public safety and fiscal stewardship is assured.

The private sector should be offered opportunities to partner with the public sector. Where appropriate, corridor initiatives may competitively procure operation and maintenance services for passenger rail operation, in a fair and transparent manner. To ensure fair competition, all competing companies will comply with all federal railroad and other relevant national labor laws. These procurements can provide incentives for additional private investment.

Federal funding for research and development will enable the industry to partner with colleges and universities to better address future workforce capacity needs to design, construct, operate, and manage the passenger rail network of the future, and to pursue problem-solving research and innovation.

The Outcomes and Benefits: Robust investment in America's passenger rail networks will make our economy stronger, our environment cleaner, and economic and social opportunities more equitable—benefits that will sustain their transformative power over time.

By reducing travel times, a state-of-the-art high-performance rail network will bring the economic activity of megaregions closer together. This shrinkage of geography effectively enlarges labor and business markets, leading to more economic activity, tax base growth, and new linkages among businesses, suppliers, employees, and consumers.

Federal investment in passenger rail will stimulate the U.S. economy, creating good-paying manufacturing, construction, and professional jobs across America, including the critical clean energy jobs of the future.

Throughout American history, every successful transportation improvement has resulted from committed federal, local, and state leaders, along with private entities and citizens, who share a vision and possess the energy to turn that vision into reality. It is time to stop envying what other countries have. It is time to stop asking why we cannot do that. It is time to implement a high-performance rail network in America.

"Cascadia High Speed Rail Business Prospectus," September 2018, Submitted for the Record by Hon. Peter A. DeFazio

The 40-page business prospectus is retained in committee files and is available online at https://cascadiahighspeedrail.com/wp-content/uploads/2021/04/Cascadia-HSR-Corridor-Business-Prospectus-2018-09.pdf.

Testimony of Jane Lyons, Maryland Advocacy Manager, Coalition for Smarter Growth, Submitted for the Record by Hon. Peter A. DeFazio

Please accept these comments on behalf of the Coalition for Smarter Growth, the leading organization in the Washington, DC region advocating for walkable, bikeable, inclusive, and transit-oriented communities as the most sustainable and equitable way to grow and provide opportunities for all. We have strong partnerships with business, conservation, and affordable housing organizations, and received the 2017 Regional Partnership Award from the Metropolitan Washington Council of Governments.

We have been strong supporters of major rail improvements in the Northeast corridor, but are convinced that the proposed Baltimore-Washington Superconducting Magnetic Levitation (SCMAGLEV) project is the wrong technology and design for the Washington-Baltimore corridor and the NE Corridor as a whole. Therefore, we urge you to not provide federal financial support to this project. Instead, we urge significant investments in both the Amtrak and commuter rail improvement programs.

The project would have *a negative impact on racial and social equity*. Construction would plow through majority Black Prince George's County, but the residents of Prince George's County would not be able to take advantage of the project, since the technology and design speed are such that there will only be stops in DC, at BWI Airport, and at Penn Station in Baltimore. Environmental Justice (EJ) communities would be disproportionately impacted, with 80 percent of impacted parcels located in EJ communities.

Furthermore, the high projected cost of a one-way ticket sends a signal that this project is for the wealthiest white-collar commuters, not those who will suffer from the damage wrought by the project or those who need more accessible, frequent, and affordable transit. A $60 ticket for the SCMAGLEV would be about seven times more than an existing MARC commuter rail ticket for the same trip ($8) or existing Amtrak Acela ticket ($46).

We are also concerned about the project's *negative effect on existing taxpayer investments* in transit. The project is already diverting attention from repairing and improving our existing MARC and Amtrak infrastructure. If public funding is required for the Maglev, it could divert hundreds of millions of dollars in addition to fare revenue lost due to reduced ridership on Amtrak and MARC.

The Maglev is a potential public-private partnership, and recent experience with P3s in Maryland and other states suggests that public funding will be required. Given that Maglev is a multi-billion dollar technology yet to be implemented anywhere in the U.S., this project could require significant public funding.

The limited time savings is also not worth the cost and risk. The Acela Express between DC and Baltimore currently takes 30 minutes. While Maglev would cut time spent on the train in half, it doesn't account for time spent getting to the station. The average total trip would go from 90 minutes to 75 minutes, which is not worth the risk, nor the costs to equity and environmental quality.

Investing in the Maryland MARC and Amtrak NE Corridor expansion plans would more effectively serve the transit needs of our region and the NE Corridor. Upgrades to the existing rail system could also more easily be extended to other destinations like New York and Boston, than would be the case with Maglev which would need entirely new right-of-way through the very densely developed Northeast. Existing rail stations are located in more central and well-established transit hubs, like DC's Union Station. A much more cost-effective solution would be to invest in improving our existing infrastructure and upgrade over time to high-speed rail standards.

In conclusion, we urge you to pursue upgrades to the nation's existing rail infrastructure, including high-speed rail, in lieu of the SCMAGLEV. Thank you for your time.

Letter of May 6, 2021, from Kyle Hart, Mid-Atlantic Field Representative, National Parks Conservation Association, Submitted for the Record by Hon. Peter A. DeFazio

MAY 6, 2021.

DEAR CHAIRMAN PAYNE, RANKING MEMBER CRAWFORD, AND MEMBERS OF THE SUBCOMMITTEE,

Thank you for the opportunity to submit testimony today before the subcommittee, regarding the hearing "When Unlimited Potential Meets Limited Re-

sources: The Benefits and Challenges of High-Speed Rail and Emerging Rail Technologies." This testimony is presented by the National Parks Conservation Association (NPCA). I am writing today behalf of NPCA's more than 1.6 million members and supporters nationwide. NPCA submits this testimony in ardent opposition to the proposed Baltimore to Washington SCMaglev train, which is being backed by Mr. Wayne Rodgers of The Northeast Maglev and is currently under the NEPA-required Draft Environmental Impact Statement (DEIS) review.

Under the Baltimore-Washington proposal, project developers claim that commuters would be able to make the trip between the two cities in 15 minutes. Initial estimates show that the project would cost at least $16.8 billion to build, and the average cost of a one-way ticket would be $60, eight times more than the same trip on the local commuter rail line, the Maryland Area Regional Commuter or MARC train. Approximately 75% of the project would run underground in deep tunnels, while the remaining 25% would run on aboveground viaducts. These viaducts would stand up to150 feet off the ground, whizzing trains at 300mph through Maryland communities.

This project is riddled with environmental concerns. To start, construction of the Maglev extends well beyond the tunnels and viaducts. Maglev would require the creation of a trainset maintenance facility (TMF), a 200-acre trainyard with hazardous chemicals and impervious surfaces. Maglev would also require the construction of 50-foot tall fresh air/emergency egress (FA/EE) structures every 3.5 miles along the route. Each FA/EE would require another three to seven acres of land. Construction would require right of way access roads, fences, power substations and more, negatively impacting a total of over 1,000 acres of land between DC and Baltimore forever.

As a result of the Maglev's footprint, the construction of the Baltimore-Washington Maglev could impact up to 389 acres of federally owned property. Depending on the build alternative, up to 89 acres of National Park Service land would be impacted. These impacts are centered at the Baltimore-Washington Parkway. The B–W Parkway was designated by Congress as a unit of the National Park Service in 1950 and is meant to be a scenic route between Washington D.C. and Baltimore. The DEIS acknowledges that the construction of viaducts along the B–W Parkway would permanently alter the scenic nature of the Parkway. Another 24 acres at the Patuxent Research Reserve, managed by the US Fish and Wildlife Service, would be destroyed. Northeast Maglev's preferred alternative would destroy 165 acres of the Beltsville Agricultural Research Reserve (BARC), owned and managed by USDA, to make way for the TMF. According to the DEIS, impacts to these sites would be virtually impossible to mitigate. Other federally owned properties in Northeast Maglev's crosshairs include Fort Meade and NASA's Goddard Space Flight Center. All of these agencies expressed concerns about the potential impacts to the sites that they manage during the scoping period last year.

NPCA also has concerns regarding the implication this project would have on efforts to fight climate change. As verified in the DEIS, the Baltimore-Washington Maglev would increase regional transportation energy use by approximately 39% compared to the no-build alternative. In terms of passenger miles traveled, Maglev technology is 35% less efficient than existing bus transit and 20% less efficient than existing passenger rail. According to a report in Greenbelt Online by Dr. Owen Kelley, the Maglev project would increase CO2 emissions by up to 336 million kilograms per year relative to the no-build option.

There are also significant environmental justice concerns surrounding the Baltimore-Washington Maglev as proposed. Minority populations comprise 69.6% and low-income populations make up 12.7% of the total population in the Maglev Project Affected Environment. There will be both permanent, long term as well as shorter term impacts from the Maglev Build Alternatives on communities of color and low-income populations. Low-income populations and Black and Latinx minorities are at a higher risk of direct and disproportionate impacts of the construction of this project. The construction of and the associated construction staging and laydown areas and haul routes for the Maglev Project would predominately occur within Environmental Justice population areas. According to the DEIS, 80% of the parcels that would be impacted by land use conversion, rezoning, and property acquisitions are in communities of color. Furthermore, 100% of the above ground viaduct portion of the Maglev, where construction and perpetual community impacts would be the greatest, are within or directly adjacent to environmental justice communities.

Worse yet, these communities would not directly benefit from the Maglev. The proposed project has three stations; one in Mount Vernon East Washington D.C., a stop at the BWI Airport, and finally a terminus station in Baltimore at either Camden Yards or Cherry Hill. The communities of Prince George's and Anne Arundel Counties would feel the brunt of construction and long-term impacts, while re-

ceiving almost nothing in return. Prince George's and Greenbelt officials have pushed back on this project for its disastrous impacts to their localities. The extremely high ticket price, an average of $60 for a one-way trip, would exclude all but the wealthiest of commuters from riding on Maglev. This is eight times higher than a corresponding ticket on the MARC train.

NPCA also has concerns regarding Maglev's impacts to existing transit, for which NPCA has been a long-standing proponent. According to the DEIS, the Baltimore-Washington Maglev would be devastating to existing passenger rail in the region. It is expected that the Maglev will poach roughly 32% of annual MARC riders on the Penn and Camden lines (over 2.4 million riders) and 94% of annual Amtrak riders between Penn and Union Stations (over 332,000 riders). Congress, the Biden Administration, and Maryland, DC, and Virginia have all pledged multi-billion dollar investments to improve the connectivity and reliability of regional rail in the coming years. As Amtrak discussed in their scoping comments on Maglev, the Northeast Corridor Future Plan has already analyzed passenger rail needs between Baltimore and Washington and Maglev was not identified as a priority. Significant public and private investments have already been used, secured, or planned to improve the existing infrastructure in the Northeast Corridor. As clearly stated in the DEIS, investing in Maglev would cut Amtrak and MARC off at the knees.

In conclusion, NPCA has extensive concerns regarding the proposed Baltimore to Washington Maglev train. Furthermore, given the negative impacts to existing transit, impacts to climate change, and necessary land use for such a project, it seems unlikely that NPCA would be able to support a Maglev project anywhere in the Northeast Corridor. We call on Congress to continue to invest in Amtrak and other regional transit opportunities that better safeguard our parks and the environment. Thank you for this opportunity to comment.

KYLE HART,
Mid-Atlantic Field Representative, National Parks Conservation Association.

Letter from Jolene Ivey, Council Member, District 5, Prince George's County Council, Submitted for the Record by Hon. Peter A. DeFazio

Chairman DONALD M. PAYNE JR.,
Ranking Member RICK CRAWFORD,
The House Committee on Transportation and Infrastructure,
Railroads, Pipelines, and Hazardous Materials Subcommittee.

CHAIRMAN PAYNE, RANKING MEMBER CRAWFORD, MEMBERS OF THE SUBCOMMITTEE:

As our country confronts our historic—and current—mistreatment of Black and Brown people at the hands of police and the criminal justice system, we should also acknowledge and address the ways that land use, development, and transportation projects have affected these same communities, also in a discriminatory way.

There's a long list of projects that have been built with wanton disregard for minority communities, that have had long-term detrimental impact on them. The Northeast SCMaglev would be yet another.

The Maglev project would wreak havoc on Prince George's County, eliminate green space, pollute our air, suffocate our businesses, and siphon off significant business and money from MARC commuter rail and Amtrak. Prince George's County would bear the brunt of these negative impacts while realizing no balancing benefits to our community. Again, a project is planned through a majority-minority community where the land is cheaper, the homes less expensive, and the resident's and community's opinion disregarded.

The debate so far is mainly about public land, and the Maryland Department of Transportation's draft environmental impact statement is clear who would get the benefits: "The SCMAGLEV Project could spur development and commercial investment in neighborhoods near station locations."

The Maglev project has no plan to have a station in Prince George's County. Our County residents would get only the noise, pollution, disruption to businesses, homes torn down, loss of riders on Amtrak and MARC, loss of economic prosperity, and more as the trains speed by us—figuratively and literally. This isn't just my opinion. The draft environmental impact statement describes what would happen in Prince George's County: It would "Impact community cohesion." "Increased noise." "Vibrations." "Changes to aesthetics." "Could change the community feel and atmosphere." Sound familiar? It should.

Here's the bottom line: this Maglev project is not good public policy, is not equitable, and is not a wise expenditure of public funds.

There would be benefits for some people and some interests if Maglev were to go forward. But there are more reasons overall why this project should not go forward. Building Maglev would not be the smart thing to do.

Upgrading and enhancing Amtrak and MARC would be a far better alternative to Maglev. Amtrak has the plans and ability to improve and upgrade its Northeast Corridor but doesn't have the money to do so. Upgrading Amtrak would have less environmental impact, would cause less overall disruption, and would have greater benefits for more people than would building Maglev.

It is important for the region and across the country that we develop and expand public transit. Strengthened public transportation is needed to build a healthy and sustainable future. As a society we need to ween ourselves from our car-centric way of life and build environmentally wise, equitable, and walkable communities. Maglev is not the way to do that.

Maglev is a project that would disproportionately benefit the wealthy; once again the benefits will not be equitably distributed to benefit working families, and those who bear the burdens will not be the beneficiaries. We've had enough of that.

Also, as we've seen too often with other projects, the optimistic claims being made about the cost of building Maglev do not stand up to scrutiny. The claims of how many jobs will be created are inflated. And as we've seen too often, the cost estimates are questionable, and the possibility of delays and cost overruns should be understood.

You should be wary of hidden and unexpected costs. There is no such thing as a free lunch, and when you hear those who would benefit from the project claim there will be little or no cost to taxpayers, history teaches us to take that with a grain of salt.

If building this project were good public policy, and if building Maglev were a wise, equitable, and beneficial expenditure of public funds, I could support it even if our community would not benefit directly. But that is not the case.

Objections from the community aren't just selfish NIMBY objections. This project simply is not good public policy, even beyond the unfairness of who will bear the burdens without gaining benefit. We can do better, and the funds can be better spent to benefit more people.

Majority-minority communities matter. Equity and fairness matter. Transportation networks that serve communities matter. It is time to shelve the Maglev project.

Sincerely,

JOLENE IVEY.

Testimony of John Tos, President, Tos Farms, Inc., Submitted for the Record by Hon. Doug LaMalfa

CALIFORNIA HIGH-SPEED RAIL PROJECT

MAY 4, 2021

My family and I have farmed in Fresno County and Kings County, in California's Central Valley, for generations. I am a farmer. I have built a reputation for honesty, reliability, and integrity. I keep my commitments and I expect others to keep their commitments to me.

The California High-Speed Rail Authority knows nothing about honesty, reliability, integrity, or keeping commitments. For the past decade, the High-Speed Rail Authority has been trying to build a railroad through my families' farms. It has filed nine separate eminent domain lawsuits against me and my family members. It has destroyed our orchards, it has destroyed our irrigation systems, it has destroyed agricultural wells, it has cut off access to several of our farms, it has carved up our rectangular farms into triangles and trapezoids, it has created challenges to our farming that we are still trying to overcome.

But that is not the bad part. The bad part is that the High-Speed Rail Project is so badly managed and administered that no one ever knows what they will do next. After some ten years, they still do not have a final project design, they still are not sure what property they need, they are still amending lawsuits to take more land or take less land or change the way they are affecting our operations, and they are still filing new lawsuits to take more land. Their staff turnover is so high, everybody we establish a relationship with is either fired or retires or gets transferred.

It is next to impossible to find anyone who knows what is happening. We negotiate agreements in the field with people who claim to know what is happening only to have the agreement ignored or violated by other people who say they never heard of the agreement.

I have stood in my orchards with engineers and lawyers and administrators from the High-Speed Rail Authority and talked about what they will do to my farm and when they will do it only to find out that what we talked about meant nothing and they are going to do something different.

I have spent hundreds of thousands of dollars to fix what the High-Speed Rail Project has done to our farms. I am told we will be paid for what has happened but no amount of money will ever restore what we have lost. And we now have a giant swath of bare dirt running at an angle through our farms that we cannot cross. To get to the other side of our orchard, we have to drive miles. Moving farm equipment from one side of an orchard to the other has become a major challenge. Farm equipment is big and slow. Our employees are not safe driving it on narrow rural roads, on overpasses across the rail right-of-way, sometimes in the fog of winter.

We have still not repaired the damage this Project has done to our farms. We are still spending money. We are still not confident High-Speed Rail won't announce some new design change that will take more land and damage more of our farms.

High-speed rail is a good concept. Other countries have constructed excellent high-speed rail facilities. But the California High-Speed Rail Project is giving high-speed rail a black eye. This Project is so poorly managed and administered and is setting such a bad example, it may be the kiss of death to high-speed rail anywhere in the country. If you support high-speed rail, you cannot support the California High-Speed Rail Authority.

Post-hearing Comments From Witness Andres de Leon, Chief Executive Officer, Hyperloop Transportation Technologies

Question asked by Hon. Marilyn Strickland during hearing:

Ms. STRICKLAND. Thank you, Mr. Chair.

As we have heard from multiple witnesses on our first panel, the need for Federal investment in high-speed rail is clear, with the potential to create thousands of railroad and manufacturing jobs, save billions of dollars through reduced congestion on the roads. But I want to also point out that looking solely at high-speed rail doesn't necessarily solve every problem. We need a holistic framework that uses all types of modes of rail.

So I would like to start with you, Mr. Flynn. I would like to touch on Amtrak's support for the development of new high-speed rail corridors and the role that the current service can play.

So can you tell us, how can investments in conventional rail service complement investments in new high-speed rail lines like those being considered in my home State of Washington?

Thank you.

Post-hearing comment from Mr. de Leon:

Federal investment into passenger rail systems should consider not only existing technologies but also emerging technologies that consider environmental challenges, safety and speed improvements, and the ability to attract private capital. The transportation industry has an opportunity to embrace these new technologies including hyperloop.

Hyperloop alone cannot address every issue facing the transportation industry, but when investment in hyperloop is combined with investments in sustainable first and last-mile solutions, hyperloop becomes the backbone of a new era of sustainable transportation, that does not require energy input from external sources and generates zero CO2 emissions. Currently, the United States' transportation infrastructure relies heavily on roadways for short and intermediate journeys, and aviation for longer journeys, both leading sources of environmental pollution. The future of transportation depends upon hyperloop as part of a sustainable multi-modal solution. Investments in hyperloop, partnered with investments in commuter rail, new clean modalities and HSR where appropriate, will create a sustainable infrastructure that meets the country's evolving transportation needs.

Question asked by Hon. Bruce Westerman during hearing:

Mr. WESTERMAN. OK. So that still surprises me that it is that much per mile, but you built them so you know exactly what it costs.

And as we look at new technologies like hyperloop, I do see a lot of advantages for that because it is a small footprint. The pods operating in a vacuum. I have had a chance to go out to Las Vegas and visit the test site and I know that there has been a lot of great work that you guys are doing up there, Josh.

I know you could probably build hyperloop on a highway interstate median. It could go underground, it could go underwater, it could go above the ground. You don't have any grade crossings, you don't have to worry about animals getting in the way, it is averse to weather.

But I also understand that the technology is not as proven, but outside of that, what would prohibit—I mean if you are looking at high-speed rail or mass transit, why wouldn't we be looking at hyperloop as the first technology to look at, or the future technology?

Post-hearing comment from Mr. de Leon:

Hyperloop provides all the advantages of high-speed rail, including speed, safety, and capacity, while amplifying these advantages beyond the vision and capabilities of current systems. Hyperloop travel is the natural evolution of high-speed rail and MagLev technologies, combining existing technology with new innovations to safely and efficiently achieve top speeds in excess of 700 mph.

Hyperloop can be constructed underground in relatively small tunnels, reducing or eliminating the need to acquire the right of way necessary for construction. While somewhat more expensive than elevated construction, the development of hyperloop in tunnels not only mitigates surface impacts to communities and eliminates potential environmental impacts, but also preserves project schedules by reducing the potential for delays and increased costs that have been experienced in other large linear infrastructure projects.

APPENDIX

QUESTIONS FROM HON. SETH MOULTON TO HON. JOHN D. PORCARI, FORMER DEPUTY SECRETARY, U.S. DEPARTMENT OF TRANSPORTATION

Question 1. Deputy Secretary Porcari, high-speed rail development can deliver on the key goals of the American Jobs Plan: climate, equity, economic recovery, and jobs. Demand for rail transport rises as a function of speed and convenience, which we've seen with the construction of integrated high-speed rail systems in other nations. Reduce travel time, and ridership grows. With high-speed rail, that means more people traveling by low-carbon or carbon-less transportation, helping achieve a major goal of the American Jobs Plan. Why is ridership capture so important for reducing emissions in the transportation sector, and what implication does this have for how we choose to invest in rail infrastructure?

ANSWER. Because the transport sector is now the single largest source of CO2 emissions in the United States, we cannot make significant progress in reducing these emissions without rebalancing our transportation system. We have to bring balance—real choices—to a transportation system that today systematically advantages certain travel modes over others. Simply put, we cannot reach our emissions reduction goals without providing a viable alternative to single occupancy vehicles and short-range air travel, and that, in turn, requires a federal financial investment in higher and high speed rail equal to that of other travel modes.

Ridership capture by rail means *immediate* emissions reductions when the electricity that powers the system comes from renewable sources. The California high speed rail system will reduce emissions by 2 metric tons of carbon per year, the equivalent of taking 432,000 cars off the road in California—roughly the number of cars registered in San Francisco County. In contrast, even the most aggressive electrification estimates for the existing vehicle fleet on the road means we will have a substantial ICE-powered fleet for the next 20 years.

We cannot meet America's aggressive emissions reduction goals through the gradual replacement of the existing passenger vehicles and truck fleet; we need to change the market share of mass transit and rail relative to single-occupancy vehicles and short-range air travel.

Worldwide, there are many examples of highly successful ridership capture by high speed rail. For example, with the construction of the Madrid-Seville AVE high speed rail line, rail went from a 14% to a 51% market share, while air travel dropped from a 40% share to 13%, and the car/bus share dropped from 44% to 36%. This is one example of a world-wide trend: the provision of high speed rail fundamentally rebalances the transportation network in a manner that includes climate, equity and land use benefits. Ridership capture by high speed rail accelerates the virtuous cycle of more frequent service, greater capacity, ever-increasing emissions reductions, reduced runway and roadway congestion, and beneficial land use changes. One essential precursor to creating this virtuous cycle is investing in higher and high speed rail commensurate with public investment in other transportation modes.

QUESTIONS FROM HON. DONALD M. PAYNE, JR. TO RACHEL SMITH, PRESIDENT AND CHIEF EXECUTIVE OFFICER, SEATTLE METROPOLITAN CHAMBER OF COMMERCE

Question 1. Ms. Smith, how should we implement High-Speed Rail so that all Americans can equitably benefit from it? Can you elaborate on how high-speed rail can positively impact underserved communities?

ANSWER. We believe high speed rail's mobility, climate, and economic promise is a benefit to all communities, and our residents agree: a just-released poll found that more than three in five voters in Oregon and Washington support establishing a regional high-speed rail project, and this includes voters in rural, small towns, and the suburbs. There are both direct and indirect benefits to these communities, as

high speed rail is part of transportation ecosystem—park and rides, local buses, and regional light and commuter rail systems will provide people access to high speed rail, and as a result, access to more job and educational opportunities. It also creates more opportunity for affordable housing investments in transit oriented development (TOD) projects, and more connections so people can get where they need to go and get back home to their families.

High speed rail is also a true green job creator, both for skilled workers like electricians and for professional service providers like engineers. The Cascadia project alone is projected to add 200,000 new jobs, and we believe that scale will be similar with projects across the country.

As with all projects, we believe that intentional planning in infrastructure investments, with a lens of race, equity, and social justice, can have great community, mobility, and environmental benefits.

QUESTION FROM HON. SETH MOULTON TO PHILLIP A. WASHINGTON, CHIEF EXECUTIVE OFFICER, LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Question 1. Mr. Washington, you spoke during your testimony about high-speed rail's potential to renew the American Dream in the form of affordable and equitable housing. China found this to be true, with high-speed rail operations reducing regional disparities by 25.7%. By comparison, the construction of our highways often displaced low-income residents and isolated communities of color from resources enjoyed by wealthier and whiter communities. How do you expect the junction and integration of two high-speed rail corridors into the LA Metro to impact nearby communities in terms of economic, housing, and other opportunities?

ANSWER. Historically, the Interstate Freeway system often divided communities and isolated low-income communities of color, while transit investments have created opportunities to uplift low-income communities of color in three ways:

1. Job creation: For every $1 billion our nation invests in transit, we create tens of thousands of jobs. These jobs are living-wage, union jobs that provide ladders of opportunities to individuals—enabling workers to purchase a home and build wealth for their family.
2. Access: Transit riders in Los Angeles County are disproportionately low-income and communities of color. Improving transit with high-speed services will greatly expand the job opportunities that riders can readily access. It will allow individuals to travel to more potential jobs and schools in a shorter amount of time. The cost of housing has been increasing steadily in Los Angeles County and creating an affordability crisis that is driving people to spend more than half of their income on housing. Transportation is the next largest cost in a household budget and reducing transportation costs by enabling people to take transit instead of driving can provide crucial relief to families burdened by housing costs.
3. Transit-oriented communities: The Los Angeles County Metropolitan Transportation Authority (Metro) has pioneered equitable transit-oriented development with the prioritization of affordable housing and neighborhood-serving amenities at transit stations. Transit projects often result in excess land near transit stations that create opportunities for transit-oriented affordable housing with direct access to a growing transit system. Beyond the publicly owned land adjacent to transit stations, transit supportive zoning, including density bonuses to support inclusionary zoning are amplifying equitable access to transit across the region.

Mobility and access to opportunity are essential to equity. The harder it is to get to one's job, school, or park, the fewer opportunities one has for personal advancement and betterment. Highways are designed to support a transportation technology that is inherently private and has—in many cases—served to exacerbate inequalities by enabling exclusionary land use policies. Rail, in contrast, is a publicly accessible technology that connects nodes of economic activity. Communities that plan for new stations are able to leverage tremendous economic benefits by creating fast and affordable connections between jobs, housing and community destinations. It is essential that such planning incorporate policies, programs and supporting infrastructure that ensure the participation of traditionally marginalized communities in this economic benefit. As an example, at Metro, transit-supportive land use is essential to solving the larger picture of equitable access and housing affordability in Los Angeles County. While Metro does not have regulatory land use control, nor authority to directly enact policies that support equitable development, Metro's Transit Oriented Communities policy encourages partnerships with local municipalities, community-based organizations and a range of stakeholders to enable and incentivize realization of equitable development around the transit system.

It is clear that the junction and integration of two high-speed rail corridors into Metro's broader rail system would vastly expand employment and housing choices within our region. This alone, will bring great benefits to Southern Californians that have been priced out of their neighborhoods and face long commutes to access their jobs. However, these rail corridors also create an opportunity to leverage the work Metro is doing to create equitable transit-oriented communities. In fact, Metro has established a series of programs that directly support the protection and creation of affordable housing and small businesses around transit, including a fund to support the protection and production of affordable housing in low-income communities near high-quality transit nodes; the Business Interruption Fund which grants up to $50,000 to small businesses impacted by certain Metro construction projects; and a Countywide Small Business Initiative which will invest in small and local businesses around transit.

Beyond these existing programs and policies, Metro is now advancing the Transit Oriented Communities Implementation Plan to establish a series of programs and projects that will further expand Metro's efforts to address displacement of low-income households, strengthen opportunities for small and local businesses, and preserve and enhance communities' cultural assets.

Thank you for your question Congressman Moulton. Metro looks forward to working with you and members of the 117th Congress to advance the mobility needs of Los Angeles County's ten million residents.

QUESTION FROM HON. SETH MOULTON TO DANIELLE ECKERT, INTERNATIONAL REPRESENTATIVE, POLITICAL AND LEGISLATIVE AFFAIRS, INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS

Question 1. Ms. Eckert, my bill, the American High-Speed Rail Act, ensures operators are deemed carriers, upholds hard-won protections like Buy America and Davis-Bacon, and requires FRA to promulgate standards and regulations for high-speed rail. Why are these critical actions for ensuring our infrastructure creates good-paying jobs?

ANSWER. Operators of rail transportation and their associated support staff must be considered carriers when federal dollars are used as a lever to create good-paying jobs. The traditional railroad workforce has a high union density. As a result, railroad workers enjoy middle-class wages, healthcare benefits, and dignified retirement. Over the last 20 years, we have seen efforts by industry to contract out mechanical work, inspections, overhauling, and modification of rolling stock that union railroad workers have traditionally performed to entities not covered under the Railway Labor Act. In one case, a passenger railroad has successfully circumvented these protections entirely. These efforts have created a division in the workforce—traditional railroad workers and workers who perform support activities for rail transportation. Workers who are not covered under the appropriate railroad labor laws—like the Railway Labor Act, the Railroad Retirement Act, and the Railroad Unemployment Insurance Act—perform the same duties, but do not receive the same pay, benefits, or representation for unsafe labor practices as those covered by those laws.

As mentioned in my written testimony, according to the Bureau of Labor Statistics, workers performing the work of "support activities for rail transportation" make significantly less than those who work for "rail transportation." These workers are also not eligible for the same retirement benefits Rail Labor has fought for since 1935. Such successful back-door attempts to subvert hard-won labor protections seek to not only erode pay and benefits but workplace standards and safety protections.

Davis-Bacon prevailing wages are set by surveys of salaries and benefits paid to construction workers in a community, regardless of their union membership. These surveys set the bar for local wage standards. If a community receives federal economic development dollars for a new project that will provide benefits in terms of access to public services and is advertised as a "job creator" for the residents of the area, it should be conditioned on contractors paying their employees a fair wage, based on the typical income workers receive in the area for the performance of those duties. What is the benefit of allowing a company to pay sub-par wages, without benefits, to a relatively unskilled, temporary workforce? It creates jobs that pay wages that will never lift anyone out of poverty, never allow workers to develop a career, and will not create generational wealth within the region.

Without labor standards, industry actively avoids using organized labor as a simple cost-cutting strategy to provide greater returns for those they are accountable to, shareholders. As a result, the United States has seen a more significant division between pay equity and severe wage stagnation.

Buy America requirements ensure that we are creating domestic supply chains for new industries. The impacts of not having robust domestic supply bases have been borne out before us. Whether it's critical shortages of personal protective equipment to combat a global pandemic, or the inability of U.S. companies to obtain microchips to meet the demands of technology, we have witnessed the results of not having guardrails on investments made within industry.

The FRA must promulgate standards and regulations for high-speed rail to conduct proper oversight of the carrier, not only to facilitate good-paying jobs but to create safe employment. With the appropriate oversight of regulatory agencies, workers can feel confident that controls are in place to ensure that they come home at the end of the day. When you're a railroad worker, there is a common saying: "The rulebook is written in blood" carrier rules are more often than not the result of federal regulations. Modern railroads are still dangerous; the industry requires oversight and organized labor to vocally advocate for their members and the public for rail operations to be conducted safely. There may be a need to reevaluate regulations to adapt to new technology, but the basic framework already exists. Even the defense department weighs the value of conducting operations against the risk of loss of life, limb, and personal property and works to implement controls to mitigate those risks and execute a successful mission. It is hard to identify why the Federal Railroad Administration should abdicate that same sense of responsibility.

Labor standards are guardrails set by the federal government to ensure the workforce used in the construction of a project is not subject to exploitative practices, that the permanent workforce gets the protections their brothers and sisters before them fought for and that we are creating a domestic supply chain for materials and resources that are needed now and to meet the technological demands of the future.

QUESTIONS FROM HON. SCOTT PERRY TO HON. CARBETT J. "TREY" DUHON III, JUDGE, WALLER COUNTY, TEXAS

Question 1. Has Texas Central or the federal government addressed the issues around flooding mitigations, emergency response times and how those impact your communities?

ANSWER. No. To this day, neither Texas Central nor any federal government agency has addressed the flooding issues/impacts of this project or the impact this project may have on emergency response times within Waller County or the other counties impacted by this project. Not only were these issues not addressed, but at no point during the entire NERA process was there any effective or substantive coordination with local officials, like myself, to properly evaluate or mitigate any of these potential impacts to our communities.

Question 2. What type of local coordination did TCR and/or FRA engage in? Were you an equal partner to them or just simply treated as in your way?

ANSWER. Unfortunately, we were never treated as an equal partner nor was there any adequate level of local coordination. In 2006, Waller County created the Waller County Sub-Regional Planning Commission ("WCSRPC") specifically for the purpose of coordinating with state and federal agencies on any project that may have an impact on our community. The WCSRPC consisted of representatives from Waller County, in addition to every municipality in Waller County as well as two school districts. The WCSRPC also had citizen representation as well. Our WCSRPC attempted on multiple occasions to engage in substantive coordination with the FRA and we were refused in every instance. When the WCSRPC requested coordination with the Texas Department of Transportation (who was originally listed as a co-lead agency on the project), one meeting was held in which we brought to light numerous impacts to our community that needed to be addressed. When we tried to follow up with TXDOT, they refused to meet with us based on instructions from the FRA to TXDOT (this is documented). After extensive and successful litigation, TXDOT was ordered by a District Judge to engage in additional coordination with the WCSRPC. We subsequently met with TXDOT only to be informed that they were no longer a co-lead agency on the project and as such, they did not have any information to provide to us. Although TCR did reach out to the WCSRPC, as a matter of law—TCR was not responsible for approval of the Environmental Impact Statement. There was no reasonable effort made by the Federal Railroad Administration (FRA) to try to work with the Commission or myself on this project and its potential impacts. In fact, the reality was that there appeared to be a concerted effort by the FRA to avoid coordination and intentionally obstruct the WCSRPC from engaging in meaningful coordination on this project. As a County Judge, I have never seen such a lack of coordination between federal, state, and local governmental entities and an intentional effort to avoid such coordination which is completely contrary to NEPA, and a litany of other federal laws requiring coordination with local govern-

ment. All of the above facts are well documented and substantiated by correspondence, documentation, emails, and video recordings.

Question 3. Can you elaborate on what permits TCR still needs to get in order to begin construction and operations?

Question 4. Did Texas Central inform you of these unfulfilled requirements necessary to start construction and operations or were you told, as Members of Congress were in Mr. Aguilar's testimony, that TCR has "achieved all major permitting and engineering milestones needed to begin construction"?

ANSWER to 3 and 4. No matter what Texas Central says to the public or this Committee about this project being "shovel ready," they still have a very long road ahead in order to begin construction and operation.

Last September, Texas Central received a special regulatory carveout called a Rule of Particular Applicability (RPA) from the FRA (something the agency had never issued in their entire history until now), which gives Texas Central the safety standards needed to operate the high-speed train safely along the route. The RPA does not grant Texas Central any permits to construct or operate—contrary to what Texas Central has misled the public to believe. Instead, the RPA simply provides a blueprint for Texas Central to operate a high-speed train if they ever receive the necessary approvals from the Surface Transportation Board (STB or the Board) under USC 43 10901. Additionally, Texas Central requested a full exemption for their Japanese rolling stock to be within the RPA but were denied. Thus meaning Texas Central will need to spend a significant amount of money redesigning their Japanese rolling stock to be compliant with the RPA. This change would have to be done prior to submitting their full application to the STB to get approvals for construction and operational permits since the Board requires final designs, not conceptual.

In July 2020, when the STB claimed jurisdiction over the project they also denied Texas Central's request for an exemption under USC 43 10901 for permits to construct and operate. Instead, the STB is requiring Texas Central to submit a full application to the Board, which will scrutinize the project in ways Texas Central has been reluctant to disclose to the government and the public since the project was first introduced (especially in areas like financial feasibility). And Texas Central has yet to file an application since this decision by the Board last July. This process could take several years to complete. Although TCR has never informed us that these requirements were "unfulfilled", they have never denied our assertions on this topic other than saying that they have "achieved all major permitting and engineering milestones needed to begin construction", which is simply untrue. They do not have any permits in Waller County to begin construction. The State of Texas has not granted TCR any such authority to date, and they must go through an application process with STB to be permitted to construct this project. Their repeated statements of being "shovel ready" are merely public relations tactics that they have now used for years.

QUESTION FROM HON. SETH MOULTON TO ANDY KUNZ, PRESIDENT AND CHIEF EXECUTIVE OFFICER, U.S. HIGH SPEED RAIL ASSOCIATION

Question 1. Mr. Kunz, by some estimates, building high-speed rail nearly doubles the number of jobs created by a similar investment in highway and transit projects. What types of jobs are created by high-speed rail investment, and will unemployment only be lowered along corridors?

ANSWER. Thanks for that question, Congressman Moulton. High speed rail investment will stimulate our economy across broad sectors, and throughout the nation—not only where new train lines will operate. A new high speed rail network will create a wide variety of jobs across multiple sectors to build the new system including design, engineering, construction, steel and concrete, fabrication, and train manufacturing. Many of these jobs will be created in depressed parts of the country by strategically locating factories in those places.

Then there will be scores more jobs in the operation and maintenance of the system including train drivers, track maintenance and inspection, station management, operations, signaling, system control centers, security, and on-board train hosts, managers, and cleaners. This includes an entire food prep sector for all the meals and beverages served on the trains. There will also be many jobs created in the stations and the many new retail establishments that open there. In addition, this will be a major stimulus in several more industries including vastly increased tourism and travel and all the jobs that will bring to hotels, travel services, tourist destinations, cruise lines, rental cars, and more. It will also stimulate a whole new real estate boom creating vast new jobs in real estate development, construction and management of all the new real estate surrounding the stations, plus many more

new jobs in architecture and urban planning and design related to this new development.

The express freight side of high speed rail will create scores of new jobs in operating the express freight system, both the trains and all the warehouses and support facilities related to a new national freight shipment system.

QUESTIONS FROM HON. PETER A. DEFAZIO TO CARLOS AGUILAR, PRESIDENT AND CHIEF EXECUTIVE OFFICER, TEXAS CENTRAL

Question 1. Do you operate or envision service primarily funded by a foreign nation? Do you think it's a good idea for foreign countries to own or operate infrastructure assets in America?

ANSWER. Texas Central is and will always be a private American corporation. Our funding option will depend on the most reasonable conditions available in the market to us or any other similar company. We do not envision our service needing operating support from a foreign government. Our aim is to provide a transportation option for the public good and service in similar fashion to other private companies in the United States. Texas Central will own and operate its assets for the benefit of the safety and well-being of the public.

We agree that it is a good idea for American infrastructure to be owned, built, and operated by American companies, including many small minority-owned businesses, and workers.

Question 2. Many of us like to talk the talk about rebuilding the middle-class. Well, investing in high-speed rail is a great way to walk the walk. Investing in rail creates middle-class jobs, which cannot be exported. Federal programs that invest in rail come with conditions—like Buy America that supports U.S. manufacturers, and the requirement that railroad workers earn traditional railroad employee benefits. All of our Panel 2 witnesses advocate for some form of Federal high-speed rail investment. I'd like to know how many of the proposed projects intend to comply with the existing requirements for Federal railroad funding:

a. Will your proposed project comply with Buy America?

ANSWER. It is our objective to maximize the sourcing of materials from US suppliers, subject to availability and without risking safety. In cases where there is no US source for safety and performance critical components, we will seek coordination consistent with the Buy America statute. In those cases, we would work closely with the Administration to reach a resolution that would allow the project to move forward.

b. Does your company fit the U.S. legal definition of a "rail carrier"? In other words, will the workers who will work on your project once it's operational earn traditional railroad benefits, like Railroad Retirement?

ANSWER. Yes, as a "rail carrier" subject to STB jurisdiction, Texas Central will comply with all the applicable laws and regulations.

Question 3. Our reauthorization bill last year recommended $60 billion of investment for rail; the President has recommended $80 billion in rail investment.

Do you think this level of investment will make it possible to build all of the high-speed rail corridors we are discussing today? How would you recommend we prioritize?

ANSWER. We fully endorse President Biden's initiatives to improve America's passenger rail experience. We appreciate the recent Congressional support of high-speed rail and are especially encouraged by Rep. Seth Moulton's recent proposals to invest in this needed transportation infrastructure. We would be very eager to engage with Congress and the Department of Transportation in formulating priorities and sharing our experience structuring a complete/self-contained project approach to reduce risks and firm up cost and schedule. Texas Central is a frontrunner in delivering true high-speed rail to the nation, based on a service-proven system with an exemplary safety and performance record and the integrated approach we have led to ensure all aspects of design, construction, and operations are defined and inter-linked before breaking ground.

QUESTIONS FROM HON. ERIC A. "RICK" CRAWFORD TO CARLOS AGUILAR, PRESIDENT AND CHIEF EXECUTIVE OFFICER, TEXAS CENTRAL

Question 1. Last year, Surface Transportation Board (STB) Chairwoman Begeman confirmed that Texas Central must file a full application, which the Board must approve, in order for the project to *begin* construction.

a. Do you agree with the Chairwoman that this project cannot begin until an application has been approved? Has Texas Central filed a full application with

the STB? If not, when does Texas Central plan to submit the full permit application to the STB?

ANSWER. The application can be a complex undertaking and we are in the preparation stages.

b. In the past, Texas Central has claimed this project is "shovel ready." However, the Texas Tribune recently found [https://www.texastribune.org/2020/11/17/houston-dallas-bullet-train-permits/] your company still lacks key federal and state approvals. Does Texas Central currently have all necessary permits to begin construction?

ANSWER. As many members are aware, regulatory approvals and permitting for an infrastructure project are complex, lengthy, and expensive. Texas Central supports past and current efforts to streamline the regulatory and permitting processes. Texas Central has achieved most of the required major regulatory milestones.

Question 2. In 2016, then CEO Tim Keith wrote that "*The project does not need, does not want and will not ask for government grants for construction or public money to subsidize operations*." In 2014, former TCR President Robert Eckels, that "*If we start taking the federal money, it takes twice as long, costs twice as much, . . . My guess is we'd end up pulling the plug on it*."

a. Has Texas Central changed its position on receiving taxpayer money? If so, why?

ANSWER. We are always evaluating all potential funding sources, public and private.

b. Will Texas Central recommit to not taking public money?

ANSWER. We are always evaluating all potential funding sources, public and private.

Question 3. In your written testimony, you thanked the committee for its efforts to include a provision in H.R. 2., the Moving Forward Act. This provision would remove taxpayer protections related to credit risk premiums paid by loan applicants, ultimately allowing Texas Central to access federal dollars.

a. Why should Congress change federal law specifically for Texas Central?

ANSWER. We have not asked Congress to change any laws specifically for us.

b. Would Texas Central be able to access taxpayer dollars through the RRIF lending program without this provision?

ANSWER. Yes. If we decide to apply for a RRIF loan or any other government loan program we would, of course, abide by the requirements.

c. According to you [https://www.bizjournals.com/dallas/news/2020/06/05/texas-central-stimulus-money.html?b=1591362897%5E21684960], $30 billion is a conservative estimate for the all-in project cost. How much of this would be covered by funding from the RRIF lending program?

ANSWER. We are looking at all financing options based on availability, term, and cost. All funding sourced from the US government would be spent in the United States.

QUESTIONS FROM HON. SCOTT PERRY TO CARLOS AGUILAR, PRESIDENT AND CHIEF EXECUTIVE OFFICER, TEXAS CENTRAL

Question 1. Your testimony claims Texas Central has "achieved all major permitting and engineering milestones needed to begin construction." Yet, just last year, Surface Transportation Board (STB) Chairwomen Begeman confirmed that Texas Central must file a full application, which the Board must approve, in order for the project to *begin* construction.

a. Can you clarify the apparent contradiction here?

ANSWER. As many members are aware, regulatory approvals and permitting for an infrastructure project are complex, lengthy, and expensive. Texas Central has achieved most of the required major regulatory milestones.

b. Do you agree with the Chairwoman that this project cannot begin until an application has been approved?

ANSWER. We are grateful that STB approved our petition for jurisdiction. Regulatory approvals and permitting for an infrastructure project are complex, lengthy, and expensive. Texas Central has achieved most of the required major regulatory milestones, will continue to work with all agencies to advance to the construction phase.

c. Has Texas Central filed a full application with the STB?

ANSWER. We are grateful that STB approved our petition for jurisdiction. Regulatory approvals and permitting for an infrastructure project are complex, lengthy, and expensive. Texas Central has achieved most of the required major regulatory milestones, will continue to work with all agencies to advance to the construction phase.

d. If not, when does it intend to file such an application?

ANSWER. We are grateful that STB approved our petition for jurisdiction. Regulatory approvals and permitting for an infrastructure project are complex, lengthy, and expensive. Texas Central has achieved most of the required major regulatory milestones, will continue to work with all agencies to advance to the construction phase.

e. In communications with prospective investors, did Texas Central relay the STB's determination that it needed to file a full application for STB approval before breaking ground?

ANSWER. We inform prospective investors of all relevant requirements needed to make the project succeed.

Question 2. In the past, Texas Central has claimed this project is "shovel ready." However, the Texas Tribune recently found your company still lacks key federal and state approvals.[1]

a. Does Texas Central currently have all necessary permits to begin construction?

ANSWER. As many members are aware, regulatory approvals and permitting for an infrastructure project are complex, lengthy, and expensive. Texas Central supports past and current efforts to streamline the regulatory and permitting processes. Texas Central has achieved most of the major required regulatory milestones.

b. In communications with prospective investors, did Texas Central acknowledge the outstanding approvals needed before construction or did it repeat the "shovel ready" claim?

ANSWER. We inform prospective investors of all relevant requirements needed to make the project succeed.

Question 3. How have the project's construction costs tripled in just five years, from $10 billion to $30 billion, before it's broken ground, and before a construction permit detailing all necessary additional and complex build requirements has been issued?

ANSWER. Costs increase for a number of reasons, reducing impact on landowners, addressing stakeholder interests, design, and remediation impacts of the very lengthy NEPA process, etc. The pandemic has also impacted costs and schedule across the industry.

Question 4. Why did TCR refrain from providing the $30 billion cost figure prior to the April 8, 2020 letter sent by TCR Chair McLane to Texas State Senator Robert Nichols that revealed the projected costs had skyrocketed, increasing 300 percent over the last publicly available project cost estimate; and how did the impact on potential investment opportunities factor into TCR's decision not to publicly disclose the updated information before this letter?

ANSWER. As stated, costs can change for a number of reasons over time and we inform our investors and the public appropriately.

Question 5. In every instance where TCR communicated with prospective investors, did TCR provide the most up to date and accurate project cost estimate available?

ANSWER. As stated, costs can change for a number of reasons over time and we inform our investors and the public appropriately.

Question 6. The rapid spike in estimated construction costs to date—tripling in just five years—raises questions about how much these prices have increased over the last year, particularly as President Biden's inflationary policies are driving up the costs of construction materials. What is the current estimated cost of the project and when did Texas Central calculate that figure?

ANSWER. The current estimated construction cost is $24 billion, other costs will depend on credit risk premiums, interest rates, etc.

Question 7. How many tens of billions of dollars does Texas Central anticipate in additional cost increases in the next five years?

ANSWER. We do not anticipate cost increases in the realm of "tens of billions of dollars" in the next five years.

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[1] See: https://www.texastribune.org/2020/11/17/houston-dallas-bullet-train-permits/

Question 8. In 2016, then CEO Tim Keith wrote that "*The project does not need, does not want and will not ask for government grants for construction or public money to subsidize operations.*" In 2014, former TCR President Robert Eckels, that "*If we start taking the federal money, it takes twice as long, costs twice as much, . . . My guess is we'd end up pulling the plug on it.*"

a. Has Texas Central changed its position on receiving taxpayer money?

b. If so, why?

c. Will Texas Central recommit to not taking public money?

ANSWER to a., b., & c. We are always evaluating all potential funding sources, public and private.

Question 9. In your written testimony, you thanked the committee for its efforts to include a provision in H.R. 2., the Moving Forward Act. This provision would remove taxpayer protections related to credit risk premiums paid by loan applicants, ultimately allowing Texas Central to access federal dollars—and it's my understanding that TCR actively lobbied for it.

a. Why should Congress change federal law specifically for Texas Central?

ANSWER. We have not asked Congress to change any laws specifically for us.

b. Would Texas Central be able to access taxpayer dollars through the RRIF lending program without this provision?

ANSWER. Yes. If we apply for a RRIF loan or any other government loan program we would, of course, abide by the requirements.

c. According to you, $30 billion is a conservative estimate for the all-in project cost. How much of this would be covered by funding from the RRIF lending program?

ANSWER. We are looking at all financing options based on availability, term, and cost. All funding sourced from the US government would be spent in the United States.

d. What do you expect to be the total project break down between federal funding and private financing for the project?

ANSWER. We are always evaluating all potential funding sources, public and private based on eligible limits.

e. Can Texas Central complete this project without federal funding?

ANSWER. We are always evaluating all potential funding sources, public and private.

f. If not, how much federal funding is absolutely necessary for the completion of this project?

ANSWER. We are always evaluating all potential funding sources, public and private.

Question 10. How does TCR intend to demonstrate that it is accurately representing the status of the project and its costs in light of the previous misleading statements made by yourself and other TCR leaders—up to and including the misleading statements referenced above?

ANSWER. We have always honestly informed our stakeholders and the public regarding our actions.

Question 11. Your testimony indicates that the project has "secured development capital investment from Japan" but in reality, this money comes in the form of a loan from the Japanese government—is that your understanding of the arrangement?

ANSWER. There has been very significant investment from many Texan and US investors. The Japanese Bank for International Cooperation and Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development have also provided both a loan and equity investment.

Question 12. Can you please inform the Committee what amount of funding Texas Central has obtained to date that has not come from a Government source?

ANSWER. No federal, state, or local funding has been received or solicited by us.

Question 13. What percentage of the total funding received to date, is the amount obtained from non-government sources?

ANSWER. No federal, state, or local funding has been received or solicited by us. The amount invested by private individuals is proprietary.

Question 14. If the Federal government is going to be in the business of funding high speed rail—for the record, I do not think we should—it's vital to apply the lessons learned from the California project. Given TCR's skyrocketing cost estimates

to date, taxpayers are rightfully concerned that this will be yet another boondoggle costing tens of billions with nothing to show in return—what assurances can you provide on the record to demonstrate that TCR can, in fact, be a good steward of taxpayer funds despite its actions to date that strongly indicate otherwise?

ANSWER. We have consistently and successfully cooperated, over a period of several years, with federal agencies on significant regulatory actions at considerable company expense. If we receive federal loans, this record should be a very good predictor of stewardship.

Question 15. Another concerning parallel between the projects is the failure to obtain the necessary land to complete the project before asking for taxpayer funds. In California, the proposed route was never properly surveyed and so the state never acquired all the properties to complete portions of the high-speed rail project there, how does Texas Central anticipate acquiring every single parcel of land required to build this as proposed?

ANSWER. Texas Central has successfully negotiated hundreds of options and each discussion is unique and personal. Texas Central will acquire parcels of land via eminent domain only as a last resort.

Question 16. How long will it take to acquire the more than 60% of all the properties whose owners have refused to sell to date?

ANSWER. Once acquisition begins, Texas Central anticipates having possession of the remaining properties within 16 months.

Question 17. Does TCR's current cost estimate include the likely costs associated with schedule delays as a result of this process?

ANSWER. The acquisition of the needed real estate and the associated costs are included in Texas Central's overall project cost and schedule.

Question 18. Did Texas Central inform those citizens who did sell their properties for a Texas infrastructure project that their property deeds could be transferred into the control of a foreign government in an offshore Cayman Islands account?

ANSWER. Texas Central owns the property purchased for the state-of-the-art high-speed train project and continues to honor all of the commitments made to the landowners who have participated in the Land Option Purchase Program. Texas Central provided a security interest on its acquired property to its lender which is customary practice in real property transactions and no property needed for construction of the project has been conveyed to a foreign entity.

Question 19. Now that a federal lawsuit has been filed against the U.S. Department of Transportation and the Federal Railroad Administration, which private sector investors will invest in the project before the litigation is completed?

ANSWER. We cannot comment on a federal lawsuit that is in progress, and to which we are not a party.

Question 20. Central Japan Railway, which operates the Shinkansen high-speed rail system Texas Central wants to build in Texas, reported a $2 billion loss for the year ended March 31, due to plummeting ridership during the COVID pandemic. What post-COVID studies has Texas Central conducted regarding realistic ridership and revenue generation projections?

ANSWER. As the COVID pandemic is still not over there are no "post-COVID" studies yet available. However, from a historical basis, we do not foresee any significant changes to our projections.

Question 21. The Biden Administration is calling for Buy American policies, and for creating permanent American jobs. Texas Central has retained an Italian company to design and build the system, a Spanish company to operate the system, a Japanese company to provide the equipment, and a Canadian company to provide engineering support. Please explain how Texas Central's foreign hiring spree advances the President's vision for creating many new American jobs?

ANSWER. The overwhelming number of jobs will be held by Americans in America. Furthermore, the temporary employment of a very few foreign experts will result in the transfer to the USA of new high-tech industry that will result in even more domestic job growth and needed expertise.

Question 22. Secretary Buttigieg is aggressively implementing President Biden's Executive Order requiring all Federal actions to prioritize environmental justice concerns—as defined by statistical disparities as a result of an action, rather than an actual intent to discriminate—in planning and funding decisions. On this basis, Secretary Buttigieg decided cancel the I–10 expansion project and DOT is now actively considering the removal of barrier highways constructed decades ago.

While the merits of such actions are up for debate, there can be no question that this now reflects official DOT policy in evaluating project design when making funding allocations. The proposed alignment in Waller County creates the exact problems the Administration seeks to prevent—placing an artificial barrier between minority neighborhoods and high economic growth zones. This Executive Order was used to stop a desperately needed highway expansion that offered significant benefits in terms of both freight and personal travel that would reduce the costs of good and travel for folks, including those in the affected communities, yet it still ran afoul of these requirements.

Your project offers no benefits relative to freight movement and will necessarily cater to the wealthy if there's any chance of it being economically viable—making it demonstrably less valuable to the population at large and those in affected communities than a project already denied.

Considering these facts, why would Secretary Buttigieg not take similar actions to stop your project and how does this potential create liabilities for the taxpayer if your receive funding prior to receiving all necessary approvals?

ANSWER. It would not be appropriate for us to speculate on future actions that Secretary Buttigieg may or may not undertake.

Question 23. Are there alternative alignments that could redress DOT's likely concerns and if so, how much will this add to the bill for the American taxpayer?

ANSWER. FRA selected the preferred alternative in its Record of Decision published in November 2020.

Question 24. It's my understanding that your project will not be interoperable with any other rail system—is that correct?

ANSWER. For a consumer/passenger buying a ticket our train will be seamlessly connected thanks to our joint ticketing arrangement with Amtrak. From the paramount aspect of safety, the service-proven Tokaido Shinkansen's dedicated, standalone system has achieved unsurpassed and optimal safety and performance by not sharing crowded and dangerous freight rail lines.

Question 25. If so, why should Congress or the Administration provide funding for a one off line that precludes other systems from operating on TCR's tracks—in other words, there is no potential value for this project outside of TCR's operations so why would we fund it?

ANSWER. See question 24.

Question 26. What value add does this project provide to the national rail network—couldn't a much greater value be obtained at a significantly lower cost using interoperable systems?

ANSWER. Once operational, Texas Central will be the US showcase for a true high-speed rail system capable of replicating the unsurpassed safety and performance record of the world-renowned Shinkansen system. We do not believe that interoperable rail systems can operate at a lower cost while maintaining the same end to end safety, speed, and efficiency of a purpose built high-speed rail.

Question 27. Who developed the concept for this project and made the initial determination that it was necessary—in short, who's idea was the project in the first place?

ANSWER. Exhaustive ridership studies have pointed to Houston-Dallas as being the city pair with the highest demand for America's first true high-speed rail system. The Shinkansen technology was selected due to its exemplary safety and performance record. The project evolved from meetings with international transportation experts and mostly Texas-based private investors.

QUESTIONS FROM HON. PETER A. DEFAZIO TO WILLIAM J. FLYNN, CHIEF EXECUTIVE OFFICER, NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)

Question 1. Do you operate or envision service primarily funded by a foreign nation? Do you think it's a good idea for foreign countries to own or operate infrastructure assets in America?

ANSWER. No. We do think cabotage requirements should apply to passenger rail industry operations, just as they do to commercial aviation and domestic maritime shipping. Congress has already addressed some of the competitive and national security challenges of foreign state-owned rail car manufacturing here in the U.S., but similar enterprises could own and operate vital rail infrastructure under today's laws. If foreign operators are permitted to operate in the United States, there should be a level playing field—American operators must have the same rights to operate in the foreign operators' countries—and foreign government-controlled entities should not be able to buy their way in to controlling vital elements of the U.S.

infrastructure. While Amtrak supports private sector partnerships, ultimately, the issue of foreign ownership of U.S. infrastructure assets is a matter of policy that should be carefully considered by the federal government.

Question 2. Many of us like to talk the talk about rebuilding the middle-class. Well, investing in high-speed rail is a great way to walk the walk. Investing in rail creates middle-class jobs, which cannot be exported. Federal programs that invest in rail come with conditions—like Buy America that supports U.S. manufacturers, and the requirement that railroad workers earn traditional railroad employee benefits. All of our Panel 2 witnesses advocate for some form of Federal high-speed rail investment. I'd like to know how many of the proposed projects intend to comply with the existing requirements for Federal railroad funding:

a. Will your proposed project comply with Buy America?

ANSWER. Yes, Amtrak's proposed projects would meet or exceed applicable Buy America and domestic preference requirements, just as our current procurements do.

b. Does your company fit the U.S. legal definition of a "rail carrier"? In other words, will the workers who will work on your project once it's operational earn traditional railroad benefits, like Railroad Retirement?

ANSWER. Yes, Amtrak fits the legal definition of a rail carrier for the purposes of this question; our employees, including new employees hired as a result of our proposed Northeast Corridor enhancements or nationwide corridor development program, will continue to receive benefits that correspond with this status. Notably, the great majority of Amtrak employees are also represented by a collective bargaining unit. Amtrak believes that every operator of intercity passenger rail—high-speed or otherwise—should be an interstate rail carrier and subject to the same basic federal requirements and rules that Amtrak follows.

Question 3. Our reauthorization bill last year recommended $60 billion of investment for rail; the President has recommended $80 billion in rail investment.

Do you think this level of investment will make it possible to build all of the high-speed rail corridors we are discussing today? How would you recommend we prioritize?

ANSWER. The amounts that this Committee and the Biden administration have proposed are both visionary and completely appropriate; if invested in intercity passenger rail, such sums would represent a major step in the direction of the improved and expanded service that Amtrak seeks to operate.

More specifically, the NEC Commission, representing Amtrak, the states served by the NEC, and USDOT, have concluded the NEC needs approximately $42 billion in additional investment to be returned to a state of good repair (which would further improve trip times). In addition to addressing the SOGR backlog, the package of upgrades described in my testimony, which would significantly improve trip times on the NEC, would require an additional approximately $48 billion in investment. Amtrak is seeking an additional investment of approximately $75 billion to advance its corridor development program, which could advance more than 30 new corridor routes and enhancements to more than 20 existing corridors.

To be clear, the current level of service around the country is the product of a decades-long trend in which intercity passenger rail received only a tiny fraction of public resources made available to support highway and air travel. The nation's passenger rail network is in serious need of significant investments. These investments are well worth making in their own right—and should Congress wish to pursue truly high-speed rail service on new corridors outside the Northeast, they are a crucial first step towards achieving that goal.

Potential investments of capital funding provided for the Northeast Corridor would be prioritized by Amtrak and its partners based upon infrastructure planning developed by the Northeast Corridor Commission, including the expected CONNECT NEC 2035 first-phase implementation plan for the selected alternative from the FRA's NEC FUTURE record of decision. (Amtrak has called for creation of a new program that would provide dedicated "cost-to-complete" funding for the relevant projects; a one-pager describing that proposal is included as Appendix A.) New corridors and enhancements to existing corridors that are advanced through Amtrak's proposed corridor development program would be identified and prioritized by Amtrak in partnership with the Federal Railroad Administration and after consultation with other relevant stakeholders, pursuant to a process outlined in Amtrak's reauthorization proposal. To advance a new or enhanced corridor, Amtrak must have a willing state partner. (Legislative language containing that proposed process is contained in Appendix B.)

APPENDIX A: AMTRAK'S PROPOSAL FOR AN NEC BEST (BRIDGES, STATIONS, TUNNELS) PROGRAM

Background:

The Northeast Corridor (NEC) is the nation's busiest railroad, connecting the Northeast's major metropolitan economies. In normal times, NEC commuter railroads and Amtrak's high-speed intercity services provide a critical transportation link for hundreds of thousands of daily commuters, business travelers, students, and families. The reliability of this vital transportation artery is challenged by aging infrastructure, and NEC passengers experience frequent service disruptions due to infrastructure failures.

Dozens of NEC bridges, stations, and tunnels are beyond their design life, and while structurally safe, many are over 100 years old and in need of immediate replacement or rehabilitation. These assets are "shared benefit" assets, meaning that they support both commuter rail operations (supported by the Federal Transit Administration (FTA)) and Amtrak's intercity rail operations (supported by the Federal Railroad Administration (FRA)). Yet due to the sheer size of these assets and the costs associated with replacing/rehabilitating them, no federal program currently exists within the FRA or FTA that is appropriately structured to address the necessary shared benefit "mega-projects" and their unique challenges.

FRA's 'NEC FUTURE' planning and programmatic environmental impact statement (EIS) defined the necessity of bringing, and requirements to bring, the NEC to a state of good repair and provide additional capacity and service enhancements necessary to achieve faster, more reliable service. This vision cannot be achieved under the current piecemeal, uncoordinated funding options.

Policy Proposal:

A new long-term federal investment program, herein proposed as the NEC Bridges, Stations and Tunnels (BeST) program, could overcome these challenges by providing dedicated funding to the critical projects necessary to improve the NEC. This program would fund 90% of the combined intercity and commuter shares of the projects required to meet the service goals of the NEC FUTURE program, to bring the corridor to a state of good repair, to improve trip times, to increase reliability, and to expand capacity. These improvements would in turn create jobs, improve quality of life, reduce carbon emissions, and generate economic growth; they would also pave the way for high-speed opportunities along the NEC.

NEC BeST Projects (north to south)	State	"Order of Magnitude" Cost (billion $)	FYs 22–26 Estimated Total Funding Needed (billion $)	FYs 22–26 Federal Authorization Request (billion $)
1. Boston South Station Expansion	MA	$2.3	$0.2	$0.2
2. Warwick/T.F. Green Airport Station Expansion	RI	$0.2	$0.2	$0.2
3. Hartford Station Relocation	CT	$0.6	$0.3	$0.3
4. Connecticut Bridge Replacement Program (Conn. River [SPG], Conn. River [SLE], Devon, Saugatuck, Walk, Cos Cob).	CT	$4.7	$2.0	$1.9
5. New Haven and Stamford Station Improvements	CT	$0.2	$0.2	$0.2
6. Pelham Bay Bridge Replacement	NY	$0.5	$0.1	$0.1
7. Penn Station NY Reconstruction Master Plan	NY	$5.5	$2.0	$2.0
8. Gateway Program—Penn Station NY Expansion	NY	$10.9	$8.2	$7.8
9. Gateway Program—Hudson Tunnel Project	NY/NJ	$11.6	$7.2	$6.7
10. Gateway Program—Additional Projects (Sawtooth Bridge, Dock Bridge, Harrison 4th Track, Portal South Bridge, Bergen Loop, Secaucus Station, NJT Rail Yard).	NJ	$9.3	$1.9	$1.7
11. Newark Penn Station Improvements	NJ	$0.5	$0.2	$0.2
12. Philadelphia Gray 30th Street Station District Plan.	PA	$0.4	$0.3	$0.3
13. Maryland Bridge Rehabilitation and Replacement Program (Susquehanna, Bush River, Gunpowder).	MD	$3.5	$2.0	$1.8

NEC BeST Projects (north to south)	State	"Order of Magnitude" Cost (billion $)	FYs 22–26 Estimated Total Funding Needed (billion $)	FYs 22–26 Federal Authorization Request (billion $)
14. B&P Tunnel Program (and enabling projects)	MD	$4.8	$1.9	$1.8
15. Baltimore Penn Station Master Plan	MD	$0.1	$0.1	$0.1
16. Washington Union Station Plan	DC	$10.7	$2.5	$2.3
17. NEC Trip Time and Capacity Improvement Program (specific projects under development by NEC Commission's CONNECT NEC 2035 program).	ALL	$11.2	$3.7	$3.5
TOTAL		**$77.0**	**$33.0**	**$31.1**

All figures in billions of dollars and may reflect rounding. All figures are estimates, and subject to further analysis.

Proposed Legislative Language:

The legislative language below is in the form of proposed bill text, and not a mark-up of existing U.S. Code provisions.

SEC. 1108. NORTHEAST CORRIDOR BRIDGES, STATIONS AND TUNNELS (BeST) PROGRAM.

(a) PURPOSE.—The Secretary of Transportation (hereinafter in this section referred to as "the Secretary") shall make apportionments under this section for improvements to rail bridges, stations and tunnels on the Northeast Corridor to achieve the state of good repair, travel time and other objectives of the 2017 Federal Railroad Administration NEC FUTURE Record of Decision, and for other projects necessary to achieve such objectives.

(b) INVENTORY.—Every two years the Secretary shall publish a Northeast Corridor Project Inventory (hereinafter in this section referred to as the "NEC Inventory") to designate projects for funding and sponsors for these projects. The inventory shall be made up of bridge, station, and tunnel capital projects, and other capital projects that enable the state of good repair, travel time, service frequency and other objectives of the Selected Alternative in the 2017 NEC FUTURE Record of Decision, and shall be consistent with the most recent Service Development Plan described in subsection 24904(d) of title 49, United States Code (hereinafter in this section referred to as the "Service Development Plan"). Each NEC Inventory shall include a method for apportioning funds to project sponsors for a period of two fiscal years that will lead to the implementation of the sequencing plan for such projects described in such Service Development Plan. The Secretary may alter the apportionments as necessary if recipients are not carrying out such schedule, or not supporting other agencies in doing so.

(c) EXPENDITURE OF FUNDS.—

(1) The division of non-federal costs for apportionments provided under this section shall be in accordance with subsection 24905(c) of title 49, United States Code.

(2) The share payable toward projects from funds provided pursuant to this section shall be 90 percent, except that, for fiscal years 2021 and 2022, such share shall be 100 percent. Project sponsors may satisfy the requirement for non-program match using any other source of funds, including federal funds provided from sources other than this section.

(3) Funds apportioned under this section shall be available until expended.

(4) Eligible recipients for apportionments under this section shall be a State (including the District of Columbia); a group of States; an Interstate Compact; a public agency or publicly chartered authority established by one or more States; a political subdivision of a State; the National Railroad Passenger Corporation, acting on its own behalf or under a cooperative agreement with one or more States; or any combination of these entities.

(5) Apportionments shall be used for projects named in the most recent NEC Inventory, including all construction and pre-construction expenses, including land acquisition, or for reimbursement of advance construction amounts expended pursuant to subsection (e).

(6) For purposes of this section, the term "Northeast Corridor" shall have the meaning provided in subsection 24904(e) of title 49, United States Code.

(7) Apportionments made to the National Railroad Passenger Corporation shall be provided to the corporation in accordance with section 24319 of title 49, United States Code.

(8) One-half of one percent of the funds made available to the Secretary to carry out this section shall be available for administration of this section.

(d) PROGRAM MANAGEMENT.—Every two years each project sponsor shall submit to the Northeast Corridor Commission described in section 24905 of Title 49, United States Code (hereafter in this section referred to as "the NEC Commission") an Agency Program Management Plan in accordance with the formats, methods, and procedures developed by the NEC Commission. Each such plan shall describe the schedules, management actions, workforce availability, interagency agreements, permitting, track outage availability, and other factors that will determine the agency's ability to carry out this section, or support other agencies to do so, according to the schedule in the most recent Service Development Plan. Every two years the NEC Commission shall submit to the Secretary an updated Service Development Plan that describes the schedule and sequencing of all capital projects on the corridor, and estimates the amount each sponsor agency will need in program funding for each of the next two fiscal years to carry out projects according to the plan.

(e) ADVANCE CONSTRUCTION.—The Secretary may authorize a project sponsor to proceed with a project under this section using funds other than those apportioned under this section, provided the project is undertaken in accordance with all requirements applicable to the project under this section. Funds apportioned to the project sponsor under this section in future fiscal years may be used to reimburse the project sponsor up to the total advance construction amounts expended.

(f) MAINTENANCE OF EFFORT.—The Secretary shall ensure that project sponsors adhere to the capital and operating contribution provisions of the Northeast Corridor Commuter and Intercity Rail Cost Allocation Policy. If a project sponsor does not maintain this level of effort, the Secretary may withhold funds under this subsection from a project sponsor up to the amount of the project sponsor's shortfall, and, if the shortfall is not remedied after a reasonable period, may permanently reallocate such funds to other project sponsors.

(g) REQUIREMENTS.—Notwithstanding any other provision of law, regarding matters not directly addressed in this section, funds provided under this section, under any other part of title 49, United States Code, or under title 23, United States Code, when applied to projects named in the NEC Inventory, shall be administered as follows:—

(1) Funds received by Amtrak shall be administered as if they had been provided under subtitle V, part C of title 49, United States Code;

(2) Funds received by a designated recipient under chapter 53 of title 49, United States Code, shall be administered as if they had been provided under chapter 53 of Title 49, United States Code; and

(3) Funds received by a state (including the District of Columbia), a political subdivision of state, or a public authority, where the entity is not a designated recipient under chapter 53 of title 49, United States Code, shall be administered as if they had been provided under chapter 244 of title 49, United States Code.

This subsection shall apply whether such funds are provided directly as federal grants to a project sponsor or are transferred to the project sponsor by a grantee that originally received the funds.

APPENDIX B: LEGISLATIVE LANGUAGE FOR AMTRAK'S PROPOSED CORRIDOR DEVELOPMENT PROGRAM (AMTRAK CONNECTS US)

SEC. ____. CORRIDOR DEVELOPMENT PROGRAM

(a) AUTHORIZATION.—Subject to the notification requirements of this section, Amtrak may utilize the amounts appropriated in each fiscal year pursuant to [*the proposed authorization of funding for Amtrak's existing National Network grant*] for capital and operating costs associated with the planning, development, acquisition, construction, and operation of—

(1) new, improved, or expanded intercity passenger rail services and related infrastructure, stations, facilities, and rolling stock on corridors defined under Sections 24102(7)(B) and (D) of Title 49, United States Code; and

(2) providing daily service on Long-Distance routes serving corridors that had less frequent service during fiscal year 2019.

(b) REQUIRED PARTICIPATION.—

(1) Partnerships.—Amtrak and the Federal Railroad Administration shall jointly create a standard process for states, localities, host railroads, and other parties to seek corridor development partnerships with Amtrak for corridor improvements and expansions.

(2) State and local government advisory council.—Amtrak, with the participation of the Federal Railroad Administration, shall establish a Corridor Development Advisory Council made up of a geographically representative cohort of state and local government transportation officials to provide guidance and input related to corridor and project identification and plan development under subsections (d) and (e) of this section.

(3) State rail plans.—Amtrak shall utilize state rail plans as described in subsection (d)(1) and other studies and analyses by states and regional entities to inform corridor selection, plan development, and partnership decisions.

(4) Memorandum of understanding.—Before Amtrak incurs any costs pursuant to subsections (h)(2)–(4), and before a state, locality, or other party pays any costs pursuant to subsection (h), Amtrak and the entity or entities involved shall enter into a memorandum of understanding or agreement for sharing operating and capital costs in accordance with this section, except for routes identified under subsection (i)(2).

(c) ELIGIBLE TYPES OF ROUTES.—Routes eligible under this program are—

(1) existing or new corridor routes defined under Section 24102(7)(D) of Title 49, United States Code;

(2) federally-designated high-speed rail corridors defined under Section 24102(7)(B) of Title 49, United States Code; and

(3) long distance routes defined under Section 24107(7)(C) of Title 49 that had less than daily service during fiscal year 2019.

(d) IDENTIFICATION OF CORRIDORS.—Amtrak and the Federal Railroad Administration shall undertake a joint process to study, identify, and prioritize high-potential corridors for Amtrak partnership, investment, and development. In carrying out this process, Amtrak and the Federal Railroad Administration shall—

(1) consider—

(A) projected ridership, revenues, capital investment, and operating funding requirements;

(B) anticipated environmental, congestion mitigation, and other public benefits;

(C) projected trip times and their competitiveness with those of other transportation modes;

(D) committed or anticipated state, regional transportation authority, or other non-federal funding for operating and capital costs;

(E) whether the corridor is a Federally designated high-speed rail corridor;

(F) whether initiation or improvement of intercity passenger rail service along the corridor is included in a state's approved state rail plan developed pursuant to Chapter 227 of Title 49, United States Code;

(G) whether the corridor serves historically underserved and low-income communities;

(H) whether initiation or improvement of intercity passenger rail service along the corridor would benefit or improve connectivity with existing or planned transportation services of other modes;

(I) whether the corridor connects at least two of the top 50 metropolitan areas by population;

(J) whether initiation or improvement of intercity passenger rail service along the corridor would enhance the regional equity and geographic diversity of Amtrak's intercity passenger rail service;

(K) whether the corridor currently has Long-Distance service that corridor service could complement; and

(L) whether the corridor can be well-integrated into the National Network and create benefits for Amtrak's other routes and services; and

(2) consult with—

(A) appropriate state and regional transportation authorities, local officials, host railroads, and other stakeholders; and

(B) representatives of employee labor organizations representing railroad and other appropriate employees.

(e) CORRIDOR DEVELOPMENT PLANS.—For corridors identified under subsection (d), Amtrak, in consultation with the Federal Railroad Administration, may develop a corridor development plan for each corridor which shall include—

(1) the identification of projects to improve, expand, or develop intercity passenger rail service;

(2) a detailed description of the new, expanded or improved intercity passenger rail service that would result from such projects, including train frequencies, peak and average operating speeds, and trip times;

(3) a schedule and any associated phasing of projects and related service initiation or changes;

(4) identification of project sponsors and entities expected to participate in the project, including identification of roles and responsibilities for design, construction, operation, maintenance, and other key aspects of the corridor development plan, including carrying out improvements and operating resulting services;
(5) a description of how the project would comply with Federal rail safety and security laws, orders, and regulations;
(6) the locations of existing and proposed stations;
(7) the type of rolling stock and other equipment to be used;
(8) a financial plan identifying—
(A) projected annual revenue;
(B) projected annual ridership;
(C) estimated initial capital investments;
(D) annual operating and capital costs; and
(E) projected levels of public and private investment and funding;
(9) a description of how the project would contribute to the development of the National Network and an intermodal plan describing how the new or improved corridor facilitates travel connections with other transportation services;
(10) a description of the anticipated environmental benefits; and
(11) a description of the project's impacts on highway and aviation congestion, energy consumption, land use, and economic development in the service area.

(f) APPROVAL.—Amtrak shall submit each plan developed under subsection (e) to the Secretary of Transportation for approval. The Secretary shall review each plan and make a decision on plan approval within 60 days of submission by Amtrak.

(g) NOTIFICATION.—
(1) In general.—Following approval of a corridor development plan under subsection (f) and prior to incurring or committing to incur expenditures pursuant to subsections (h)(2)–(4) in a given fiscal year, Amtrak shall include within its submission of the general and legislative annual report for that year required by Section 24315(b) of Title 49, United States Code, descriptions of—
(A) the proposed corridors for development in that fiscal year, including:
(i) corridor improvement programs;
(ii) corridor expansion programs;
(iii) new corridor programs; and
(iv) long distance route frequency expansions described in subsection (c)(3);
(B) the service to be provided, including service frequency and trip time;
(C) the total Amtrak capital investments required for each corridor and the costs of such development efforts in that fiscal year;
(D) projected ridership, revenues, and operating and capital costs during the first five years of operation, and the projected sources of funding for such costs;
(E) access and services required from host railroads, and the status of agreements or orders governing such access and services; and
(F) the status of compliance with any applicable environmental or safety laws and regulations.

(h) USE OF FUNDS.—Funding authorized under this section for a fiscal year following the submission of notification required under subsection (g) may be used by Amtrak to carry out corridor development plans including providing for:
(1) up to 100% of the costs of planning, developing, designing and supporting the implementation of new, improved or additional services on high-potential corridors, including the costs of any necessary environmental reviews, safety planning costs, and costs incurred in connection with proceedings under subsections (a) and (e) of Section 24308 of Title 49 to obtain access orders and determine compensation terms for operations on host railroads;
(2) up to 100% of the costs of capital investments required to initiate the new, improved, or additional services, including the costs of acquiring or improving rail lines and other infrastructure, stations and other facilities, and equipment; and
(3) operating and capital costs of the new, improved, or additional services not funded by revenues during the first two years of operation; and
(4) operating and capital costs for the new, improved, or additional services during subsequent years of operation not funded by revenues, or for services subject to paragraph (i)(2).

(i) STATE FUNDING.—In the third through fifth years of operation of new, improved, or additional services funded under this section, one or more states, regional transportation authorities, local governments, or other parties with which Amtrak has entered into an agreement shall pay the following percentages of their operating

and capital costs determined under the methodology developed pursuant to section 209 of Public Law 110–432 (codified as a note to 49 U.S.C. 24101)—

(1) Phase-In.—
  (A) 10% in the third year;
  (B) 20% in the fourth year;
  (C) 50% in the fifth year; and
  (D) 100% thereafter.

(2) Non-applicability.—The requirement for partner funding shall not apply to—
  (A) long distance routes on which service frequency is increased to up to daily service;
  (B) new routes over 500 miles;
  (C) extensions of existing routes that increase the route distance to over 500 miles; and
  (D) portions of new routes within Canada or Mexico.

QUESTIONS FROM HON. PETER A. DEFAZIO TO JOSH GIEGEL, CHIEF EXECUTIVE OFFICER AND COFOUNDER, VIRGIN HYPERLOOP

Question 1. Do you operate or envision service primarily funded by a foreign nation? Do you think it's a good idea for foreign countries to own or operate infrastructure assets in America?

ANSWER. We have a broad investor base, including foreign companies, reflecting the appeal of our technology. However, we pride ourselves on being a U.S.-based company with our intellectual property and product development in the United States. We have the potential to export our high-speed transportation technology to other countries, as well as provide it to customers for use in the U.S. We see this as in the U.S. public interest compared to losing a market to non-U.S. competitors. Hyperloop technology would create opportunities for the United States to provide world leadership in a new industry utilizing an emerging and innovative, energy efficient, environmentally friendly, high-speed, mass surface transportation technology. In addition, it would stimulate growth in U.S. manufacturing jobs to support the emerging and innovative energy efficient technology, including for export. Deployment of this advanced transportation technology system could also encourage additional spinoff technology benefits, such as fostering an emerging advanced battery manufacturing industry in the United States, among other things.

Importantly, we are a technology company and do not envision being the service provider, so funding sources for a service, including associated assets would be determined by public and private partners who would operate specific routes.

Question 2. Many of us like to talk the talk about rebuilding the middle-class. Well, investing in high-speed rail is a great way to walk the walk. Investing in rail creates middle-class jobs, which cannot be exported. Federal programs that invest in rail come with conditions—like Buy America that supports U.S. manufacturers, and the requirement that railroad workers earn traditional railroad employee benefits. All of our Panel 2 witnesses advocate for some form of Federal high-speed rail investment. I'd like to know how many of the proposed projects intend to comply with the existing requirements for Federal railroad funding:

a. Will your proposed project comply with Buy America?

ANSWER. We would comply with any Buy America requirements applicable to us and understand that any partners of ours who would file applications for and receive Federal funds would comply with applicable requirements.

b. Does your company fit the U.S. legal definition of a "rail carrier"? In other words, will the workers who will work on your project once it's operational earn traditional railroad benefits, like Railroad Retirement?

ANSWER. Again, we are a technology company. Service that utilizes our technology, like service that utilizes other technology, will be structured by those who provide service. The service providers will choose how to structure their operations. A service provider will have to meet requirements applicable to their operations in providing service.

Question 3. Our reauthorization bill last year recommended $60 billion of investment for rail; the President has recommended $80 billion in rail investment.

Do you think this level of investment will make it possible to build all of the high-speed rail corridors we are discussing today? How would you recommend we prioritize?

ANSWER. "High-speed" rail projects and other rail projects should be awarded funding on their merits: that is to say upon consideration of whether they are *truly* high-speed, environmentally friendly, energy efficient, and high capacity, with safety

advantages. We have not asked Congress for funding for a specific project. We do recommend that Congress ensure that a project utilizing hyperloop technology is eligible to compete for funds that are available to a rail applicant (whether rail funds or multimodal funds) and for any funds available for advanced or emerging transportation technology, particularly given the many benefits of the technology. Hyperloop with no or low direct emissions from operations offers great promise of dramatically improving energy efficiency and substantially reducing emissions of our national transportation systems, among its many other benefits. Beyond energy efficiency and emissions benefits, hyperloop could fundamentally improve American mobility. Trips that take hours today could be reduced to mere minutes.

We also think Congress should dedicate at least some funding to truly high-speed, or high-speed capable innovative projects, which we think hyperloop can be competitive for and win. Whatever total amount of funding Congress advances in this legislation, it is in our national interest to take a step forward by ensuring a portion is allocated to investments in emerging technologies that meet our transportation challenges and have zero direct emissions, like hyperloop. The lack of investment in transportation technologies of the future is putting the U.S. further behind. In the public interest as to high-speed rail, the U.S. should be prioritizing projects that are energy efficient, reduce greenhouse gas emissions, are extremely high-speed, and increase safety. Similar criteria should apply as to funds not specifically for "high-speed" projects; even then, the speed capability of a project's technology should be a factor.

QUESTIONS FROM HON. PETER A. DEFAZIO TO ANDRES DE LEON, CHIEF EXECUTIVE OFFICER, HYPERLOOP TRANSPORTATION TECHNOLOGIES

Question 1. Do you operate or envision service primarily funded by a foreign nation? Do you think it's a good idea for foreign countries to own or operate infrastructure assets in America?

ANSWER. We are expecting to license our technology to infrastructure and transportation operators with previous experience (and history) in specific regions and countries. We believe that the funding will come from a consortium of various entities, some of which could be private foreign investments operating at international levels with strong infrastructure reputations.

Ownership of the infra-assets and its operations can be shared with foreign entities with deep knowledge and experience in the infrastructure and transportation industry. Incentivizing national infrastructure operators to join the hyperloop industry and own and operate the system with public grants could facilitate the creation of national know-how that can be exported abroad in the future.

Question 2. Many of us like to talk the talk about rebuilding the middle-class. Well, investing in high-speed rail is a great way to walk the walk. Investing in rail creates middle-class jobs, which cannot be exported. Federal programs that invest in rail come with conditions—like Buy America that supports U.S. manufacturers, and the requirement that railroad workers earn traditional railroad employee benefits. All of our Panel 2 witnesses advocate for some form of Federal high-speed rail investment. I'd like to know how many of the proposed projects intend to comply with the existing requirements for Federal railroad funding:

a. Will your proposed project comply with Buy America?

ANSWER. The majority of HyperloopTT's system components are open source and can be manufactured in a variety of locations, including the United States. It is anticipated that conformance with Buy America provisions will be satisfied through partnerships with local and regional suppliers that are part of the HyperloopTT licensing package.

b. Does your company fit the U.S. legal definition of a "rail carrier"? In other words, will the workers who will work on your project once it's operational earn traditional railroad benefits, like Railroad Retirement?

ANSWER. A HyperloopTT system fits the description of a "railroad" and "rail carrier" as defined by 49 CFR § 20102. Ultimately, the determination as to whether system operator employees engaged in operations are eligible for Railroad Retirement Act benefits lies with the Railroad Retirement Board.

Question 3. Our reauthorization bill last year recommended $60 billion of investment for rail; the President has recommended $80 billion in rail investment.

Do you think this level of investment will make it possible to build all of the high-speed rail corridors we are discussing today? How would you recommend we prioritize?

ANSWER. A good way to stretch $60–$80 billion of federal funding is to incentivize private financing of commercially viable high-speed rail, maglev and hyperloop

projects by using refundable tax credits on the order of 50–65%. Private sector financing would accelerate the development of these key transportation resources that would in turn generate billions more in private transportation-oriented development.

Tax credits would not be captured until the project capital is spent, thereby expanding the economy before the credit is claimed. Operating income and real property will generate local, state and federal tax revenue for the life of the project as well as thousands of jobs in a growing employment sector.

Absent the tax credits, hundreds-of-billions of dollars' worth of projects would never be built without federal grants or loan guarantees, far exceeding the limited federal funding capacities and leaving many needed projects unfunded. Projects left unbuilt would not create needed jobs, economic activity, and associated development, resulting in tax revenue never realized and needed transportation improvements never delivered.

QUESTIONS FROM HON. PETER A. DEFAZIO TO P. MICHAEL REININGER, CHIEF EXECUTIVE OFFICER, BRIGHTLINE HOLDINGS, LLC

Question 1. Do you operate or envision service primarily funded by a foreign nation? Do you think it's a good idea for foreign countries to own or operate infrastructure assets in America?

ANSWER. Brightline is a U.S. entity and is not owned or controlled by a foreign country. To date, Brightline has invested over $4 billion of private capital in our projects in Florida, California and Nevada. Our preference and our practice is to rely on private capital in addition to U.S. grant, loan and private activity bond programs and we believe infrastructure projects of all types should have access to a wide array of financing options within established laws and regulatory frameworks.

Question 2. Many of us like to talk the talk about rebuilding the middle-class. Well, investing in high-speed rail is a great way to walk the walk. Investing in rail creates middle-class jobs, which cannot be exported. Federal programs that invest in rail come with conditions—like Buy America that supports U.S. manufacturers, and the requirement that railroad workers earn traditional railroad employee benefits. All of our Panel 2 witnesses advocate for some form of Federal high-speed rail investment. I'd like to know how many of the proposed projects intend to comply with the existing requirements for Federal railroad funding:

a. Will your proposed project comply with Buy America?

ANSWER. Brightline will comply with all applicable federal rules and regulations, including Buy America.

b. Does your company fit the U.S. legal definition of a "rail carrier"? In other words, will the workers who will work on your project once it's operational earn traditional railroad benefits, like Railroad Retirement?

ANSWER. Brightline Florida is a "rail carrier" pursuant to 49 U.S.C. § 10102(5) and Brightline West will become a rail carrier upon commencement of operations between California and Nevada. Only the employees of rail carriers subject to the jurisdiction of the Surface Transportation Board are eligible to participate in Railroad Retirement. When Brightline West initiates operations between Nevada and California, it will become a rail carrier subject to the jurisdiction of the Surface Transportation Board and accordingly will meet the definition of an employer that will be subject to the Railroad Retirement Act. Brightline's current Florida rail operations are not conducted as part of the interstate rail network and therefore are not subject to the jurisdiction of the Surface Transportation Board, as that agency found in 2012.

Question 3. Our reauthorization bill last year recommended $60 billion of investment for rail; the President has recommended $80 billion in rail investment.

Do you think this level of investment will make it possible to build all of the high-speed rail corridors we are discussing today? How would you recommend we prioritize?

ANSWER. Establishing a national high-speed rail network will require more than $60–$80 billion. That figure is a modest sum in comparison to competitive global economies that invest more on a regular basis and are benefitted by existing networks and infrastructure.

Brightline operates the only private high-speed system in the US in Florida, showcasing the potential of American high-speed passenger rail. We carried more than a million passengers in our first full year and learned a lot that is worth sharing from the investment of over $4 billion over the last 10 years.

We believe Congress must consider ways to best stretch federal dollars by prioritizing the following:

1. Both public and private models. We encourage you not to consolidate around a single approach, and not to underestimate the power private investment can bring toward crafting a national network.
2. Systems and corridors that can be completed in a timely and short-term manner. Actual and tangible results will increase additional investment into high-speed rail.
3. Shovel ready, advanced projects that only require partial funding. Projects that are well advanced should incentivize and result in public-private partnerships of various types, including grants and loans.
4. Project opportunities where the investment of public dollars can be leveraged alongside co-investment from private sector participants to complete systems more quickly and with less commitment from the public sector. This will stretch the public dollar and allow funds to be disbursed more widely, establishing more opportunities.

QUESTIONS FROM HON. PETER A. DEFAZIO TO WAYNE L. ROGERS, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, NORTHEAST MAGLEV, LLC

Question 1. Do you operate or envision service primarily funded by a foreign nation? Do you think it's a good idea for foreign countries to own or operate infrastructure assets in America?

ANSWER. Baltimore-Washington Rapid Rail (BWRR) is a franchised railroad company that is composed solely of U.S. investors. BWRR intends to own the SCMAGLEV system. The Government of Japan has expressed a willingness to contribute to the cost of the construction of the Initial Operating Segment (IOS) from Washington, DC, to Baltimore, MD. The Government of Japan's contribution would likely be in the form of a loan to BWRR. We do not envision that the Government of Japan or Japanese private companies would have a substantial—if any—ownership stake in the project or would operate the project. We strongly believe that major U.S. infrastructure assets should be owned by U.S. entities. However, we recognize the tremendous deficit accumulated in US infrastructure investment. We cannot rely solely on US government funding and should look to new approaches that embrace government financing as well private sector participation, and to the extent possible offshore sources of funding. In the case of the SCMAGLEV project, the source of additional financial support (not ownership or operation) is our closest ally in the Asia-Pacific region, Japan.

Question 2. Many of us like to talk the talk about rebuilding the middle-class. Well, investing in high-speed rail is a great way to walk the walk. Investing in rail creates middle-class jobs, which cannot be exported. Federal programs that invest in rail come with conditions—like Buy America that supports U.S. manufacturers, and the requirement that railroad workers earn traditional railroad employee benefits. All of our Panel 2 witnesses advocate for some form of Federal high-speed rail investment. I'd like to know how many of the proposed projects intend to comply with the existing requirements for Federal railroad funding:

a. Will your proposed project comply with Buy America?

ANSWER. Yes, our Project will comply with Buy America. To the extent that certain elements of the system cannot be sourced in the United States, BWRR will seek waivers or other relief in accordance with applicable laws and regulations. We believe that after the initial phase is constructed between Baltimore and Washington, DC there will be opportunities to develop a U.S. manufacturing capability and supply chain to support the future extension of the system to New York City and beyond. Adoption of new technology gives rise to new opportunities for manufacturing and jobs that did not exist prior to the technological advances.

b. Does your company fit the U.S. legal definition of a "rail carrier"? In other words, will the workers who will work on your project once it's operational earn traditional railroad benefits, like Railroad Retirement?

ANSWER. The SCMAGLEV Project will be part of the "general system of rail transportation" in the definition of "rail carrier" in 49 U.S.C. 10102(5). As such we would anticipate that the Project and its employees would be covered by all applicable provisions, including those related to Railroad Retirement.

Question 3. Our reauthorization bill last year recommended $60 billion of investment for rail; the President has recommended $80 billion in rail investment.

Do you think this level of investment will make it possible to build all of the high-speed rail corridors we are discussing today? How would you recommend we prioritize?

ANSWER. To fully build out the high-speed rail corridors identified by Congress and the Department of Transportation (USDOT) to true international standards of

186 mph and higher—if done entirely at U.S. taxpayer expense—would certainly consume all of the amounts proposed in H.R. 2 and by President Biden, and still would not be sufficient.

Priority should be given to those corridors and projects where federal spending would bring the biggest benefits: adding needed capacity in concentrated areas; reducing automobile traffic and its concomitant environmental consequences; leveraging the greatest additional non-federal financial support to make federal spending go further; and creating the greatest economic opportunities.

QUESTIONS FROM HON. SETH MOULTON TO WAYNE L. ROGERS, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, NORTHEAST MAGLEV, LLC

Question 1. Mr. Rogers, the first phase of your project, Baltimore-Washington, is the result of a selection process conducted over multiple infrastructure bills and the MagLev Deployment Program. SCMAGLEV is proven technology, operating in Japan. What is the current status of your project, and why was the Northeast Corridor determined to be an ideal candidate for this technology?

ANSWER. Thank you for the Question, Congressman Moulton.

As you note, the Baltimore-Washington Maglev Project was one of the original seven (7) projects selected for funding by the U.S. Federal Railroad Administration (FRA) pursuant to the Maglev Deployment Program (MDP) passed by Congress in TEA–21 in 1998.

Following the FRA's assessment of feasibility studies submitted by the seven competing projects, the Baltimore-Washington Project was one of two down-selected by the USDOT for further development, including the commencement of an Environmental Impact Study (EIS).

In SAFETEA–LU and Technical Corrections, the Congress provided additional contract authority for further work on the projects remaining in the MDP competition. Congress subsequently withdrew its support for one of those projects in Nevada, and the Pennsylvania DOT returned the funds it been awarded for a project in Pittsburgh. Those funds were re-advertised and subsequently awarded to the State of Maryland for the Baltimore-Washington Maglev Project. In 2019, the Georgia Department of Transportation returned funds to the FRA that had been awarded but not obligated for the sole remaining additional project between Atlanta and Chattanooga.

As such, the State of Maryland and the Baltimore-Washington Maglev Project have effectively won the competition which Congress created in 1998 and has supported in subsequent authorizations and appropriations, and to which the USDOT and FRA have awarded additional funds in the years since.

Pursuant to an FRA grant, the Draft Environmental Impact Statement (DEIS) for the Project was published on January 15 of this year, and the public comment period recently closed on Monday, May 24, 2021. At the same time, BWRR has been working with FRA on System Technical Familiarization (STF) efforts. STF activities are intended to educate FRA on the various safety critical elements of the SCMAGLEV so that FRA can determine the most appropriate safety framework for the system in the future, with input from all of the work conducted in approving the SCMAGLEV for public transportation in Japan.

For the remainder of 2021, we anticipate that the FRA, the Maryland Department of Transportation (MDOT) and its contractors will determine how to appropriately address the various DEIS comments that have been submitted, and to identify appropriate mitigation measures for Project environmental impacts. We also intend to hold further STF meetings with FRA.

To your last point, the Baltimore-Washington Maglev Project was selected as the best initial operating segment within the framework of the MDP, which also requires the project to identify its further extensions in a designated high speed rail corridor, in our case: Wilmington, DE; Philadelphia, PA; Newark, NJ; and, New York, NY, and in future on to Boston.

The selection of the Northeast Corridor was not altogether surprising to us, in that USDOT evaluations of the regional corridors most suited for Maglev and very-high-speed rail have always pointed to the Northeast Corridor as the candidate corridor most likely to develop the ridership sufficient to cover its costs. With 75% of all the commuter rail riders concentrated in our corridor and still only accounting for 5% of the travel, the Northeast Corridor should be a priority for generation skipping technological improvement as a solution to severe traffic congestion, pollution, economic efficiency and combatting climate change.

QUESTIONS FROM HON. BRIAN K. FITZPATRICK TO WAYNE L. ROGERS, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, NORTHEAST MAGLEV, LLC

Question 1. Mr. Rogers, as you noted in your testimony, Congress has repeatedly expressed its support for maglev technology by providing tens of millions of dollars in contract authority and appropriations for the FRA's Maglev Deployment Program since it was established by this committee in TEA–21 in 1998. Despite congressional support for this innovative technology, the written testimony from the Amtrak witness is critical of SC Maglev technology and the Baltimore-Washington Maglev Project. Would you please respond to this criticism?

ANSWER. Thank you for the question, Congressman Fitzpatrick.

We were quite surprised by the testimony offered by the Amtrak witness. It contains a series of misleading remarks. For example, the testimony states that maglev systems have been rejected by any country that has ever considered them. This is manifestly false, as Japan is currently extending its SCMAGLEV system between Tokyo and Nagoya, despite having already had in the same corridor in place a HSR system superior to the US since 1964. Moreover, the testimony states that our Project would be constructed through heavily populated areas. In fact, we have deliberately opted to construct our Project primarily in deep tunnels to avoid impacts to such areas. The testimony also states that our Project would only benefit wealthy travelers when, in reality, our variable pricing strategy would enable trips for as little as $27. We strongly believe that the demographics of the Northeast Corridor point to a future where AMTRAK and SCMAGLEV are complimentary services that meet the travel demands of this growing megaregion. We need to serve more than 5% of the travelers in the most congested corridor in the country. Current service cannot be expanded to serve the public that adding a new service, totally passenger dedicated, like SCMAGLEV could do. Japan, that has had HSR for over 50 years is proof of this concept as they expand their SCMAGLEV system.

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