



February 1, 2017

Building a 21st Century Infrastructure for America

Committee on Transportation and Infrastructure, United States House of
Representatives, One Hundred Fifteenth Congress, First Session

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**United States House Committee on Transportation and
Infrastructure
“Building a 21st Century Infrastructure for America”
Testimony of Frederick W. Smith
Chairman and Chief Executive Officer
FedEx Corporation
February 1, 2017**

Chairman Shuster, Ranking Member DeFazio, and members of the committee, thank you for inviting me to testify before the committee today. We are at a critical crossroad, given the economic challenges that face our nation. If we want to maintain the U.S.’ status as a global economic and policy leader, we must work together on policy and infrastructure solutions that will modernize and drive our economy forward.

Since 2007 our economy has been slowing, our national debt has increased from 63% to 105% of GDP, net business investment is subdued, protectionist tendencies are increasing here and abroad, and our infrastructure is deteriorating in many areas. To change these trends and advance our success in the world economy will require significant cooperation from both Houses of Congress and both political parties. A key component of economic success depends on our modernizing American transportation infrastructure. Infrastructure investment cannot be limited to road and bridge improvements. A holistic modern transportation system needs to be established combining physical infrastructure enhancements with sound transportation policies, including incentives for improved safety and fuel efficiency. And, without stable sources of funding, we will be unable to successfully support our key role in global commerce.

There are solid areas of growth in today’s economy. Just look at e-commerce. I will discuss e-commerce in more detail later in my testimony, but sales in this area are expected to reach \$2.4 trillion worldwide by 2018, a 26% increase from 2016. To help achieve this forecast,

our nation needs three things: a robust infrastructure that can support the timely and efficient movement of goods and services, open trade that encourages the movement of goods, and regulatory reform based on sound public policy that will spur innovation.

FEDEX

At FedEx, we are an engine for job and economic growth. We find that when we help businesses access new markets, they expand and create jobs in their communities, a critical issue for those who are feeling left behind in this country. Further, a more connected world sparks innovation when shared ideas, goods, and technologies interact to transform how we live and work. Federal and state governments, along with industry and community leaders, must work together to achieve these objectives. They cannot be achieved by one entity alone.

- Our FedEx Express air-ground system, now a global network, offers time-definite air express, ground and freight shipping within the U.S. as well as linking the American economy to 99 percent of the world's GDP.
- Our FedEx Ground and FedEx Freight networks use both road and rail to speed products from business-to-business as well as business-to-consumer services, which are essential in these days of Internet shopping.
- Our FedEx Trade Network business provides heavy air cargo and ocean services around the world.

In April 1973, FedEx launched a new air cargo service with a handful of employees.

Today, we have a fleet of over 650 aircraft including our new Boeing 777 freighter, one of the most efficient freighter aircraft in the world. We serve over 375 airports in the U.S. and abroad. On the ground side, we operate 150,000 motorized vehicles. This includes the latest in all-electric and hybrid trucks, some of which transit the streets of Washington each day. Together, our 450,000 team members operate one of the largest logistics and transportation companies in

the world, serving more than 220 countries and territories. FedEx jobs are transportation and trade jobs.

Think about the FedEx headquarters city Memphis, Tennessee. Transportation and trade have made Memphis the largest customs clearance port of entry in the United States. The FedEx SuperHub has helped make Memphis “America’s Aerotropolis.” An Aerotropolis is “aviation plus”: a city or an economic hub that extends from a large airport into a surrounding area of distribution centers, light manufacturing firms, innovation centers, linked to the airport via intersecting expressways and rail lines. FedEx Express arrives by air, supplemented by our surface transport companies, FedEx Ground and FedEx Freight. There are three interstate highways traversing the city, plus Memphis also has advantages in having five Class 1 railroads and the fourth largest inland water port.

On our first night of service on April 17, 1973, FedEx delivered 186 packages to 25 U.S. cities. Today we average more than 12 million shipments each business day around the globe. Vehicles providing service on behalf of FedEx Ground and FedEx Freight each logged more than 2 billion miles last year. From our Memphis Hub, we have 150 aircraft flying every night, with an average aircraft landing interval of 90 seconds. Other major FedEx Express hubs in Indianapolis, Newark, Oakland, Anchorage, Ft. Worth and Miami connect the U.S. with every corner of the globe.

The rapid growth of e-commerce is putting significant and enormous new demands on our transportation infrastructure. E-commerce has driven major shifts in demand over the past several years. E-commerce shopping isn’t a trend — it’s a fundamental part of retailing today in the U.S. and growing exponentially worldwide. The changing landscape of the marketplace has presented FedEx with a wonderful growth opportunity well into the future, and FedEx is

committed to providing our customers with industry-leading e-commerce solutions that leverage all of our enterprise-wide capabilities. By 2020, the global B2C e-commerce market is expected to generate \$3.2 trillion in revenue, with the B2B e-commerce market expected to be twice that size. In terms of transportation revenue, the global B2C e-commerce transportation market produced \$85 billion in 2015. Most importantly, e-commerce is expected to grow at a 15 percent CAGR by CY19.

The FedEx global networks are capital intense, large physical systems, built over 40+ years, and are essential to the growth of e-commerce today. Without our physical networks – along with several major competitors – there would be no e-commerce. Virtual online retailers must be rooted in the physical as e-commerce goods need to be physically delivered to a destination. Building this type of global, integrated network does not happen quickly. FedEx has worked to build a presence in communities big and small for more than four decades. Access to the Internet is sparking growth in once under-served communities, and those communities count on FedEx to connect them with the world.

FedEx and other transport providers need modernized infrastructure that includes:

- The best air traffic control system, so that more flights can operate safely in the congested air space and at crowded airports around the United States.
- Updated sea and air ports, with modern technology to speed shipments through potential choke points.
- Well-maintained roadways, so that the most direct routes can be operated safely, efficiently and swiftly.

Transportation and logistics are the lifeblood of U.S. commerce from factory to warehouse to retail outlets or e-commerce fulfillment centers to consumers. Within the U.S. and around the world, FedEx moves shipments that are compact, often perishable and are high value added goods that need to be quickly delivered. Today our Express and Ground companies move

both the products that consumers want and items such as lifesaving medical devices that people desperately need. FedEx offers a broad array of time certain delivery options depending on the needs of our shippers and recipients.

However, FedEx and other transportation and logistics companies cannot continue to help grow the U.S. economy and increase jobs without improved infrastructure and wise policy decisions from Washington. Let me discuss a number of important issues that are essential if we are to build a quality infrastructure in the 21st Century.

FAA REAUTHORIZATION AND AIR TRAFFIC CONTROL REFORM

The current FAA authorization extension expires on September 30, 2017. We look forward to FAA Reauthorization hearings, particularly as they relate to the structure of the Air Traffic Organization (ATO) and the ongoing transition to NextGen. Presently, there are three main issues of importance to FedEx:

- Improving the air traffic control (ATC) system
- Ensuring transparency in the payment for the ATC system
- Assuring irrelevant provisions are not added to the legislation

The current ATC system needs to be improved to achieve increased capacity in the skies and on the ground, more efficient flight paths, enhanced safety, reduced noise and emissions, reduced delays, and a less labor intensive working environment for pilots and controllers.

Improving ATC system efficiencies is dependent on the implementation of the multiple programs, procedures, and systems encompassed by NextGen. Much of NextGen will require long-term capital expenditures which is difficult, if not impossible, while the FAA is subject to annual Congressional appropriations.

We commend Chairman Shuster and this Committee for tackling the difficult issues associated with ATC Reform. We support recent efforts to create a new independent ATC system. In general, we believe that an independent enterprise will work more effectively and efficiently than the current government operated system. That assumes, of course, this new ATC system is allowed to operate as a bona-fide stand-alone business organization separate and apart from the government. It must be able to efficiently respond to the needs of its users, appropriately charge for its services based on a credible cost accounting and allocation system, and have access to capital markets.

From past experience, this type of organization is difficult to create. If instead, we see a “hybrid” type of privatized ATC system with little control over costs, no credible cost accounting system, with “Ramsey” or weight based pricing (based on ability/willingness to pay), and without all segments paying their true share of allocated costs, we cannot support the effort.

Any new reauthorization bill must ensure transparency and fairness in the payment of fees for the ATC system. Currently the FAA is funded through excise taxes deposited in the Airport and Airway Trust Fund (AATF) as well as a contribution from the General Fund, which recently was up to 30% of the total. The amount of excise taxes paid by all-cargo carriers is roughly equal to the use of the system.

Any changes to this current payment system must address the following concerns. Charges for the system must be based on actual costs using a transparent cost accounting system and all users of the system must either pay their fair share of the costs or those costs must be subsidized by the government. No carrier’s charges should be materially increased over the current rates. The major funding gap that will be created if the amount from the General Fund is removed from the system’s funding must be replaced in some fashion other than through

payments from the users of the system. If a user fee is proposed, the weight of an aircraft should not be a factor in calculating the user fee. The weight of an aircraft is not a factor in the cost of handling that aircraft in the ATC system.

In past years, many operational measures have been added to FAA reauthorizations. FedEx opposes all amendments that do not relate to improving the efficiency and safety of the ATC system.

NEXTGEN

In addition to changes in our ATC system, we need technological advancements that NextGen can deliver. Critical to the safe and efficient operation of the U.S. aviation system is a modern air traffic control system. Unfortunately, the basic design elements of the FAA system have not changed significantly since its inception in the 1950s which is incredible given technological change over the last 60 years! To meet future demand, improve safety, and avert gridlock, the nation must deploy new technology, modernize procedures, add capacity, and increase productivity. The NextGen initiative is vital for our country's economic future.

FedEx Express is excited about the possibilities that FAA's NextGen air traffic control – the GPS-based system – offers because it will enhance safety, reduce delays, save fuel, and reduce emissions. For our operations, NextGen means less time sitting on the ground and holding in the air. NextGen procedures can shave minutes off flight times, which translate into money saved.

For our fleet and our crews, NextGen innovation and improvements can deliver an even higher level of safety. NextGen can provide air traffic managers and pilots with the tools to proactively identify and deal with weather and operational hazards. NextGen will make aviation

even more environmentally friendly. Direct routing eliminates circuitous flight plans which waste fuel and energy. More precise flight paths and controlled descent will further reduce the numbers of people affected by aircraft noise, a factor especially important to FedEx Express, so we can be better neighbors while flying at night.

INTERSTATE ROAD SYSTEM

The building of the U.S. interstate highways fundamentally changed our country and the way we work together as Americans. It took 17 years to create and fund the idea of the interstate, beginning with a 1939 Report to Congress and culminating with President Eisenhower signing the Federal-Aid Highway Act of 1956. As we all know, President Eisenhower understood the importance of a strong highway system in no small part because of his experiences with the German Autobahn in World War II.

Our interstate system is now over 60 years of age and it is in desperate need of updating. We need both short and long term investment. Short term, we must stop the deterioration in many interstate roads and bridges that have long suffered from neglect. Long term we need a plan to modernize, improve, and expand the entire system.

Currently, more than 40 percent of major U.S. highways in urban areas are congested. On average, a typical American commuter loses 34 hours sitting in traffic each year. According to the American Society of Civil Engineers (ASCE), over 30 percent of U.S. interstates are in poor or mediocre condition. These substandard roads result in drivers' paying \$67 billion, or \$324 per motorist, annually in vehicle repairs and operating costs. The ASCE rates U.S. roads 19th in the world, behind Namibia.

Left unaddressed, future demand will continue to challenge our bridges and roads for years to come. The U.S. Department of Transportation projects that by 2045 freight volume will increase by 45%, and the DOT currently has 20 proposed new interstate highway segments planned. This growth will add even more pressure on freight bottlenecks throughout the country and further hamper the performance of our highway system and the transportation industry alike by adding delays to truck freight. We must build this modern interstate highway system as the current situation can no longer be tolerated.

Along with the American Trucking Association, FedEx supports federal investment in highways primarily funded by user fees. The trucking industry – which currently pays more than 40 percent of federal highway user fee revenue – supports an increase in highway user fee payments if they perceive value in the form of road and bridge improvements from the expenditures. The sources of revenue should:

- Be easy and inexpensive to collect;
- have a low evasion rate;
- be tied to highway use; and
- avoid creating impediments to interstate commerce.

We must identify revenue sources that provide sufficient long-term funding for the Highway Trust Fund. We must recognize that due to changes in vehicle technologies, fuel taxes cannot alone fund the system. Alternative vehicles such as electric and natural gas need to also pay a user fee. This can now be easily done through technology. Consequently, FedEx supports a broad mix of revenue sources in order to avoid over-reliance on a single option. The recent, bipartisan effort to adequately fund the Inland Waterways Trust Fund can serve as an example.

33 FOOT TRAILERS

FedEx has a portfolio of shipping services to move e-commerce within the U.S. and around the world. Our two surface transportation subsidiaries, FedEx Ground and FedEx Freight, offer small parcel and less-than-truckload pallet shipping to businesses across the entire country.

To continue to move America forward, we must combine infrastructure enhancements with sound and efficient trucking policies, coupled with incentives for better safety and fuel technology. The growth of e-commerce in the modern economy necessitates quick and reliable shipping for the 122.5 million households and 7.5 million domestic businesses that now rely on the transportation system to obtain goods every day.

FedEx is part of a diverse group of American shippers, deliverers, and retailers, *Americans for Modern Transportation (AMT)* coalition who advocate for enhanced transportation policies. This coalition actively works to improve transportation infrastructure and policy to reflect, and meet, the growing needs of modern businesses and consumers.

One way we can help freight move around the U.S. is by making smarter, more effective use of existing infrastructure. In 2011, 67% of all U.S. domestic freight tonnage moved by truck— that is 9.2 billion tons of freight. As transportation demand has increased over the years, equipment standards for other transportation modes have been necessarily adjusted to accommodate more capacity (such as double-stacked rail containers). It is time to make adjustments to trailer standards for light freight and ground package shipments.

Less-than-truckload (LTL) carriers and ground package systems, including FedEx Freight and FedEx Ground, rely primarily on twin trailers to haul freight. In 1982, Congress fixed a standard of 28 feet for twin trailers that states must allow on their highways. Capacity expansion

opportunities for these types of trailers have not been adjusted for over two decades due to the Federal freeze on truck size and weight under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

FedEx strongly supports the proposal to increase the national standard for twin trailers from 28 feet to 33 feet. This would not include an increase in gross vehicle weight, so it would not increase wear-and-tear on the highway system. The adoption of a 33' twin trailer standard would allow a carrier, on any given lane, to grow the volume of shipments carried up to 18% before adding incremental trips. The use of 33-foot twin trailers was recommended by the Transportation Research Board in its Special Report 267 and also by the Energy Security Leadership Council.

Studies have shown that an increased trailer length of 33 feet will be as safe, or safer, than the existing 28-foot length trailers in terms of handling on the road. In fact, Twin 33s perform equal to or better than current trailer combinations in four critical safety measurements: static rollover threshold, rearward amplification, load transfer ratio, and high speed transient off tracking. In several years of operations in Florida and elsewhere, FedEx drivers have told us repeatedly that they find them to be more stable. Safety will be enhanced simply by reducing the trips and mileage driven with industry estimates of 1.3 billion fewer miles driven, 6.6 million trips eliminated and 900+ accidents avoided at today's level of demand. In short, more goods are transported per trip.

Such a reduction in truck trips would be environmentally friendly, saving on fuel and emissions from trucking. The EPA SmartWay Transport Partnership Program identified use of more productive vehicles as an effective emissions reduction strategy. By increasing the length of twin trailers by just five feet will enable companies to increase efficiency, and support

sustainability by reducing CO2 emissions by 4.4 billion pounds of carbon and saving more than 200 million gallons of fuel per year to move current volumes.

OPEN SKIES

The U.S. airline business consists of two geographic markets – domestic and international – with a wide variety of service offerings available to U.S. consumers in each. Federal Express was a pioneer in the U.S. air cargo business and a leader in the development of the international marketplace as well. In both, the deregulation of antiquated requirements on market entry allowed FedEx Express and the overall market to grow and better serve millions of customers. In the international context, it began with the instigation of the first “Open Skies” agreement in 1992 with a new bilateral agreement between the U.S. and the Netherlands. Open Skies Agreements eliminate government regulation of commercial decisions about the routes, frequency, pricing and capacity of airlines service. Instead, Open Skies promotes competition in the market, which benefits customers and consumers. All U.S. Administrations since 1992 have supported this policy, and each has negotiated additional Open Skies agreements that create U.S. jobs, support U.S. business expansion, and help market U.S. exports.

Today, FedEx has created a global air network that relies on 120 Open Skies agreements and our 650-plus aircraft fleet provides market access for U.S. manufacturers and merchants to offer their goods to international businesses and consumers, large and small. Over 300,000 U.S. businesses, 98 percent of which are small and medium sized businesses, depend on the supply chains supported by U.S. air cargo operators to sell and compete in the global marketplace.

FedEx supports Open Skies, wholeheartedly. We see Open Skies as a natural evolution of aviation deregulation that allowed our company to invent and develop the modern air-ground

express delivery industry. U.S. deregulation of cargo aviation in 1977 resulted in enormous job and revenue growth for both U.S. cargo operators and their customers. U.S. air freight services to fast-growing regions like the Middle East, Indian Subcontinent, and Africa contributed over \$3 billion to the U.S. trade balance in the last five years.

As international competition has become more vigorous and new models challenge the traditional legacy carrier dominance, some say that Open Skies agreements should now be limited to protect large U.S. airlines from new competition. FedEx is part of a coalition of U.S. passenger and cargo airlines, *U.S. Airlines for Open Skies (USAOS)*, which support Open Skies. This coalition represents airlines transporting more than 42 million passengers annually, and cargo airlines moving nearly 8 million tons of cargo. Airlines that benefit from Open Skies employ over 900,000 people. Open Skies agreements benefit not just U.S. airlines but also consumers, businesses, and our military.

FLIGHT AND DUTY TIME

One area which does NOT need change is expanding the application of Part 117 Flight and Duty Time Rules to the All-Cargo airline industry. FedEx has led the airline industry in fatigue risk management for over 25 years, and we continue to lead, using the same flight and duty regulations that have safely applied to cargo carriers since their enactment. In fact, portions of our industry-leading suite of safety related software tools are in the process of being patented; we received our first patent just last month.

Part 117 Flight and Duty Time Rules have produced unintended, negative consequences in passenger operations. FedEx is safer under its current, comprehensive fatigue prevention system than it would be under Part 117. FedEx has modeled the use of Part 117 in our system

and can categorically say that our system produces much better fatigue results than would Part 117. Part 117 rules do not fit our system.

NATIONAL UNIFORMITY IN AREAS OF INNOVATION

New technological advancements are changing the way we look and think about our transportation needs. These technological advancements must be factored into what kind of infrastructure we will need in the 21st Century. It is critical that the U.S. have policies that encourage national uniformity in areas of innovation such as autonomous or driverless vehicles as we advance into the next century.

AIRPORTS

Another important element of aviation infrastructure is airports. Adding runways in the U.S. has become a massively time-consuming effort, averaging 20 years from planning to pavement. However, within the next 10 years, the top twenty airports in the U.S. will become overly congested. While control of traffic in the air will help, new runways and facilities will still be needed and existing ones will need maintenance. The newest runway built in Memphis for example, is the 11,000 ft. World Runway, which allows fully loaded, wide-bodied jets that carry up to 25 percent greater maximum payloads to fly non-stop to points halfway around the globe. Using this runway, our B-777F's reach Asian points such as our operations in Japan and Korea without stopping, and then return direct from places like Hong Kong and Shanghai to our hubs in Memphis, Indianapolis and Oakland speeding up America's commerce in an unprecedented way. In the end, sufficient airport infrastructure is a *sine qua non* of U.S. air operations.

SUSTAINABLE ENERGY

Finally, although you may not think of it as infrastructure, we need a more flexible and sustainable energy supply – biofuel for aircraft, electricity for delivery vans and natural gas for our long-haul trucks. I include it as “infrastructure” because it is a critical element that supports our industry, and this need extends to all modes, not just aviation. For FedEx, sustainability is a relatively simple concept: to connect the world responsibly and resourcefully. That’s why we focus upon issues like vehicle fuel efficiency, cleaner vehicle technologies, reducing aircraft emissions, and finding alternative sources of cleaner domestic energy, including renewables. For aviation, we want a jet fuel that can be used (without changing infrastructure) that is safe and delivers environmental, economic and operational benefits, such as supply reliability. FedEx Express has a sustainability goal, set forth in 2009, to get 30 percent of its fuel from alternative sources by 2030.

While FedEx and other private sector entities will continue to seek sources of alternative fuels, we believe the U.S. government has a role to play in encouraging the development of alternative aviation fuels. FedEx participates in the joint private-sector-government taskforce, Commercial Aviation Alternative Fuel Initiative (CAAFI). We strongly support the work of this organization, allowing both private sector actors and appropriate government agencies to come together to meet the goal of developing alternative fuel for U.S. airliners.



Testimony of

David W. MacLennan
Chairman and Chief Executive Officer

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“Building a 21st Century Infrastructure for America”

Committee on Transportation and Infrastructure
United States House of Representatives

February 1, 2017

Chairman Shuster, Ranking Member DeFazio, and distinguished members of the House Committee on Transportation and Infrastructure, thank you for the opportunity to testify before you today.

My name is Dave MacLennan. I am the Chairman and CEO of Cargill. Cargill provides food, agriculture, financial and industrial products and services to the world. Our purpose is to nourish the world in a safe, responsible and sustainable way.

Our company is a great American success story. It was started in 1865 by William W. Cargill, with just one small grain warehouse in Conover, Iowa. That elevator almost went bankrupt a few years later, when the railroad stopped coming to Conover. However, Mr. Cargill knew that transportation drives growth in agriculture. So he followed the infrastructure, and today, we have 150,000 employees in 70 countries who are committed to our purpose.

Thank you for your past leadership on reauthorization of the Water Resources Development Act and passage of the Fixing America’s Surface Transportation Act. I am encouraged by the interest of this committee and the current administration in modernizing our nation’s infrastructure. I am eager to discuss the challenges



and opportunities facing our agricultural transportation system and hear the testimony of leaders from other industries.

For much of our history, America's infrastructure has been the envy of the world. It has allowed our country to become the economic powerhouse it is today. Certainly for agriculture, moving product for trade and export is crucial. But while many other countries are building the roads, ports and railways of the future, we are falling behind. If the U.S. is to remain competitive and American companies are to thrive, we must maintain and upgrade our infrastructure.

We must commit to making the investments that will keep America competitive in decades to come. The dollars we spend now will pay off tenfold. Infrastructure investments will allow American companies to compete effectively with their counterparts abroad and create long-term growth that will benefit all Americans.

Twenty-first century infrastructure is a broad term that covers a lot of topics. The shiny ones include electric cars, microgrids and high-speed rail. In our business, today's shiny objects are bio-based technologies. I encourage the committee to support policies that enable adoption of innovations homegrown in rural America.

For example, agriculture-based asphalt rejuvenators restore the aged properties of asphalt. This allows significantly more recycled asphalt to be used in road construction without sacrificing performance. Embracing performance-based specifications would increase the use of responsible, sustainable practices, resulting in cost savings and reduced environmental impact.

To support the safety, reliability and cost-effectiveness of our electric grid, natural ester dielectric fluid is an agriculture-based product that delivers increased fire safety, reduces the amount of raw material necessary in transformers and extends asset life. These are just two examples of bio-based technologies that offer broad, tangible benefits to both our nation's infrastructure and its agriculture industries.

As exciting as new technologies are, we should also think about our traditional assets. So the remainder of my testimony will focus not on the shiny objects, but on the ones that tend to get rusty: the rails, roads, bridges and waterways of rural America.



Mr. Chairman, someone recently gave me an article about Cargill from BusinessWeek written January 4, 1964. An excerpt reads, “What the grain division does is buy grain at a point of surplus and carry it to a point of deficit. Or buy it at a time of surplus and carry it over to a time of deficit. Our profit comes from being able to do this at a lower cost than our competitors.”

That was 53 years ago. While the world has changed dramatically, some things remain the same: Transportation and infrastructure drive agriculture.

Agriculture is the largest user of freight transportation in the United States, claiming 31 percent of all ton-miles according to the USDA. When commodity prices are based on world market prices, American competitiveness requires efficient, working infrastructure. In our world of thin margins, when infrastructure fails, we all feel it.

At Cargill, we support multiple modes of transportation. What is most important to us is making sure our customers prosper by getting their goods from point A to point B in an efficient and sustainable manner.

This holiday season, our company delivered more than 20 million fresh and frozen Honeysuckle White and Shady Brook Farms turkeys to our customers, and to the dinner tables of American families, using infrastructure of all types. You probably didn't think about how the turkey got to your table, or about the jobs in growing turkey, grain processing, feed manufacturing, transportation, distribution and retail that are involved along the way. You didn't need to worry about those things because companies like Cargill are hard at work keeping our food system efficient and connected.

Every year, Cargill ships more than 200 million tons of dry bulk cargo around the world. That is equivalent to the weight of 980,000 Statues of Liberty. We move more than 1 million trucks, 400,000 railcars, 10,000 barges and 50,000 shipping containers annually. It is the interconnected nature of waterways, railways and highways – the three-legged stool of domestic transportation – that is important to keeping the United States competitive. When one mode of transportation is troubled, it affects the entire system.

Unfortunately, our nation's transportation infrastructure is under unprecedented strain.

- Our inland waterways struggle under the strain of aging locks and growing demand.
- Our sea ports aren't deep enough to accommodate newer, larger ships.
- Our railroads are experiencing capacity constraints.



- Our bridges and roads are crumbling, receiving D ratings from the American Society of Civil Engineers.

If our ports fail, we can't link Pacific Northwest grain farmers to the global market. If our locks and dams fail, we can't to move road salt we mine in Avery Island, Louisiana, up the rivers to keep winter roads safe in Pittsburgh, Pennsylvania. If our bridges crumble, we can't cost effectively truck fertilizer to family farmers in Platte City, Missouri. If our railroads are over capacity, we can't ensure enough ethanol makes it to New Jersey to be blended into gasoline to fuel our automobiles.

We know what it looks like when one mode of transportation fails and the consequences ripple up the supply chain. In 2005, when Hurricane Katrina temporarily shut down the Gulf ports, we lost the ability to transport grain on the nation's waterways. Losing this efficient transportation capacity greatly impacted the price of corn paid to our family farmers along the Mississippi River, with U.S. corn prices falling 30 cents per bushel overnight. In 2005, the U.S. corn crop was about 10 billion bushels, so this amounted to \$3 billion in lost market value during this time.

In the Chairman's home state of Pennsylvania, crumbling bridges near our beef plant in Wyalusing were recently bypassed for replacement. Reduced weight limits made them impassable for our carriers. In this rural town where we employ more than 1,700 workers, trucks moving beef to our customers are forced to re-route to state highways, adding an additional \$500,000 in costs to the business annually with the total cost to date reaching nearly \$1.5 million.

It is easy to see the impact an investment in infrastructure will have locally, but we must also look at the impact our investments will have around the globe. America is the breadbasket to the world. Disruptions in the global food supply chain due to ineffective infrastructure can have immediate and lasting impacts on food security. It can also undermine our ability to compete against agricultural exporters from other nations.

The World Economic Forum recently ranked the United States 11th overall in infrastructure quality in 2016. Our agricultural transportation system is turning from a strength into a potential weakness. If nothing is done, the cost of moving agricultural products to markets will steadily rise in the United States. At the same time, some of our strongest competitors, like China and countries in South America, are building 21st century infrastructure to make their transportation systems more efficient.



The time for action is now. We cannot allow ourselves to be surpassed by our global competitors, but building things takes time. Even if we decide to move forward very soon, it will take a number of years to impact local jobs and American industry.

The cost of inaction is more lock closures, congested highways, railway bottlenecks, constrained ports and structurally deficient bridges. Ultimately, this means losing our competitive edge. That would choke our economic recovery and hamper future growth.

We recognize the financial considerations that must accompany legislative decisions, but we believe that a healthy investment in the future now will prove to be a wise decision down the road. In our view, it is better business to build the 21st century infrastructure we need to stay competitive than to keep bandaging failing 20th century infrastructure indefinitely.

I want to thank you again for this opportunity to share Cargill's views with you today. Our ability to fix our infrastructure, compete in the global market and keep our economy growing will be influenced by the decisions and actions of the people in this room. I urge you to invest in the food and agriculture sector by reinvesting in the state-of-the-art transportation system that we all know clearly got us here in the first place. Cargill stands ready to work with the carriers and our government to help find long-term solutions that will benefit us all.

Thank you again for the opportunity to share Cargill's views with you today. I look forward to answering your questions.

**Testimony of Ludwig Willisch,
President and CEO, BMW of North America**

**Before the Committee on Transportation and Infrastructure,
U.S. House of Representatives**

Hearing: “Building a 21st Century Infrastructure for America”

February 1, 2017

Thank you, Chairman Shuster and Ranking Member DeFazio, and Members of the Committee for inviting me to participate in today’s hearing. Transportation and infrastructure are accepted as necessary by most people, however, they are just as often overlooked. I am especially grateful to be here today to lend support to these issues.

My name is Ludwig Willisch and I am the Head the Americas for the BMW Group. I represent the more than 70,000 people who have jobs provided and supported by BMW in the U.S. This includes:

- A dealership network across 48 states comprised of 341 BMW, 126 MINI, 152 Motorrad, and 36 Rolls Royce Motor Car dealerships;
- Our U.S. headquarters in New Jersey;
- Five Vehicle Distribution Centers in California, Georgia, Maryland, New Jersey, and Texas;
- Six Parts Regional Distribution Centers in Florida, California, Illinois, Texas, and Nazareth, Pennsylvania, which is the largest distribution center outside of Germany;

- Four regional sales offices in New Jersey, Illinois, Georgia, and California;
- A design studio, a tech office, and testing facilities in California;
- BMW Bank in Utah;
- BMW Financial Services in Ohio;
- ReachNow, our premium car sharing service, based in Seattle;
- BMW Technology Corporation in Chicago;
- Our carbon fiber manufacturing facility in Washington State; and
- BMW Manufacturing in South Carolina.

After investing nearly seven and a half billion dollars — starting over 20 years ago — our South Carolina plant is now the largest in our global production network. In addition, it receives nearly half of its energy from renewable resources: sustainable energy and manufacturing can work together.

What is more, this plant earns BMW the title of the largest exporter of vehicles in the United States by value. We estimate that BMW had around \$10 billion in U.S. exports last year alone.

For us, our commitment in the U.S. extends beyond numbers. Over the last 42 years, the BMW Group has worked hard to become part of the fabric of the communities in which we are present. We have a talented team and achieve much within our company, however, no one in this industry can go it alone. Every auto company relies on a network of suppliers, service providers, and reliable infrastructure to deliver for our customers.

In this spirit, I would like to give you a sense of how important transportation and infrastructure is through BMW's eyes. I will guide you through our footprint in the U.S. as I share with you how a vehicle comes to life.

The BMW X3 is one of our best selling vehicles. It is one of four models in production at our plant in South Carolina — the X3, X4, X5, and X6. The X3 is enjoyed by customers in 140 countries around the world after it is exported from South Carolina — but let us start at the beginning.

The current BMW X3 was designed by an American, Erik Goplen, out of our Los Angeles design studio, Designworks. Sketches lead to 3D milling and computer modeling. This data is sent to our designers in Europe and Asia as they collaborate on the final design. Once vehicle design is complete, it is sent to headquarters in Munich for engineers to begin taking the car from page to pavement. They work closely with colleagues in our Silicon Valley and Chicago Tech offices, bringing the latest technologies to the vehicle.

The next step for an X3 is production in the United States. In South Carolina alone, BMW has around 40 suppliers, a majority of whom are within 50 miles of the plant. Our logistics network also extends beyond nearby supplier locations. It includes the Greer Inland Port for daily parts deliveries and the Greenville-Spartanburg Airport for twice-weekly direct transatlantic service on a 747. Whether from suppliers, the Inland Port, or the airport: parts heading to the plant are moved by truck on a just-in-time basis. We rely on these rails, runways, and roads every day.

A finished X3 leaves the plant by rail with some heading to the West Coast. Others will be shipped to ports in New Jersey, Maryland, Georgia, Texas, and Florida. The majority head to the Port of Charleston for international export to 140 countries. This, in large part, is why deepening the Port of Charleston has been so important to us. On this point, I would like to give a special thanks to the Committee and in particular Chairman Shuster, Ranking Member DeFazio, and Representative Sanford of South Carolina for their support of the Water

Resources Development Act. The Port of Charleston and its surrounding infrastructure is absolutely critical to the export success of BMW and a number of other companies.

The remainder of the domestic vehicles are shipped via truck to BMW's Vehicle Distribution Centers in states across the country. From the Distribution Centers, the X3 is delivered to dealers in 48 states. Once an X3 arrives at a dealership, customers will take it out for a test drive. Hopefully they will purchase or lease the vehicle through BMW Bank in Utah or BMW Financial Services in Ohio.

As you can see, safe, reliable highway and rail networks are vital to operating our business today.

Looking ahead at a number of future mobility technologies, including automated driving, infrastructure becomes all the more important. Automated Vehicles, or AVs, have the potential to bring a number of benefits. Just a few of these benefits are:

- Increased safety by avoiding accidents,
- Access to mobility for those not able to drive themselves, and
- Greater efficiency by reducing traffic congestion and optimizing routing.

The technologies are still in development, but the promise of AVs is clear. The industry is making significant investments in these technologies to move them from test track to street.

There are also opportunities for the government to support these efforts. Some of these opportunities for government support are fairly straightforward. For example, the sensors and cameras in automated vehicles rely, among other things, on road markings and signs to orient and drive. In U.S.-based test drives we have conducted, some roads do not have adequately visible lines or road conditions are unpredictable. This makes it significantly more difficult for AVs to consistently perform. This is vitally important as consistent performance lays the

foundation for customer trust. Well-maintained streets and uniform lane markings would be helpful in accelerating the deployment of AVs. As would consistent signs and traffic signals.

Other areas of necessary government support are more involved, but crucial to the long-term success of AVs. BMW welcomed the first step in creating a regulatory framework for AVs. The Federal AV Policy guidelines released by NHTSA in 2016 are, on the whole, a positive development. Using the guidelines as a basis, we — industry, regulators, and the public — need to continue meaningful conversations to move forward. There is a lot of work to be done, but with so many stakeholder groups aligned on the desired outcomes of AVs, I am confident we can find a path forward.

In the meantime, industry needs to continue educating stakeholder groups on what is possible — and just as importantly — what is not yet possible with AV technologies. By this I mean we should focus on the safe operation of AV technologies in today's environment. We should be very cautious of deploying prototypes for customer road use. With this especially, we need to call the various technologies what they actually are — from driver-assistance features to fully automated systems. Finally, we need to agree on how best to accommodate and then integrate AVs with the rest of our road users and infrastructure. This will require a balance between making the technologies available quickly, and ensuring they are validated to be safe in an evolving environment.

After a brief snapshot of our world, I hope you will agree that mobility has a very bright future. Optimizing today's system while preparing for tomorrow's opportunities will not be easy, but it will be hugely beneficial if we get it right.

It is important to emphasize: this is not just an industry or government or general public effort: it is an opportunity that requires all stakeholders to bring their best ideas and open

minds to the table. I look forward to continuing this conversation and working together to make tomorrow's potential a reality. Thank you.

The BMW Group in the United States: Additional Information

The United States is the 2nd biggest market for the BMW Group worldwide, with over 365,000 vehicles and roughly 13,800 motorbikes sold in 2016.

The BMW Group has its largest production site worldwide in Spartanburg, South Carolina. BMW began manufacturing vehicles in the U.S. in 1994 and since then, South Carolina has produced more than 3.7 million vehicles for the world. Plant Spartanburg broke another production record in 2016 with over 411,000 vehicles produced. The plant has an installed capacity that will enable production of more than 450,000 vehicles annually. In 2016, BMW exported 287,700 vehicles from Spartanburg (around 800–1,000 a day).

Capital investment to date in Plant Spartanburg is more than \$7.4 billion, including a \$1 billion expansion currently underway. The plant currently employs 8,800 people, with 800 new jobs added just in the last two years. Nationwide, approximately 70,000 people depend on jobs created and supported by the BMW Group through its sales, manufacturing, distribution, and corporate locations throughout the U.S.



Vermeer[®]

Testimony

of Mary Andringa
Chair of the Board
Vermeer Corporation

Before the U.S. House Transportation and Infrastructure Committee
115th Congress

In Support of Building a 21st-Century Infrastructure for America

February 1, 2017

**TESTIMONY OF MARY ANDRINGA, CHAIR OF THE BOARD, VERMEER CORPORATION
ON BEHALF OF VERMEER CORPORATION
BEFORE THE U.S. HOUSE TRANSPORTATION AND INFRASTRUCTURE COMMITTEE**

In Support of Building a 21st-Century Infrastructure for America

FEBRUARY 1, 2017

Chairman Shuster, Ranking Member DeFazio and members of the House Transportation and Infrastructure Committee, thank you for the opportunity to testify today on the impact of infrastructure investment to manufacturers and the American economy.

Nearly seven decades ago in Pella, Iowa, my father Gary Vermeer founded Vermeer Corporation by finding a need and filling that need with a new product built to last. Today, we are still a family-owned and -operated company that is proud to make industrial, agricultural, environmental and mining equipment here in America. Vermeer machines are used across the country but also can be seen in more than 100 countries, in places like Chile, Australia and Mongolia, to improve infrastructure, work farms and ranches and manage natural resources.

As chair of the board and former president and CEO of Vermeer Corporation, I served as chair of the National Association of Manufacturers (NAM), the largest manufacturing association in the United States, representing more than 12 million men and women. I also served as one of 18 private-sector

CEOs on President Obama's Export Council. In these capacities, I had a unique opportunity to work with American companies and the federal government to make America the best place in the world to manufacture goods. Unfortunately, while manufacturers have been minimizing costs and investing in training, process improvement and technology, shortsighted government policies are challenging U.S. competitiveness. This is especially evident in the area of infrastructure.

At Vermeer, we have been on a continuous improvement journey to attack waste in any process to increase the value delivered to the customer. Internally, we eliminate excess inventory to save shop floor space and reduce waste, and externally, we rely on timely and frequent deliveries. Our manufacturing is dependent on a robust supply chain, and our supply chain is dependent on healthy infrastructure systems. Raw materials are received daily to be processed, while purchased items, such as engines, hydraulic pumps, wire harnesses and other components, need to arrive shortly before they are consumed on the shop floor. Every day, 50 semi-loads arrive to our Pella, Iowa, facility to deliver raw materials and components. If ports are clogged, trucks are delayed, power is down or the internet has a lapse, productivity and customer service are impacted. This is not just my story. Across the manufacturing sector, transportation logistics matter, and congestion—whether at a port or on a crowded highway—is waste that drives the consumer's cost up like a hidden tax.

To further explain how essential infrastructure is to American manufacturing, I need to explain how manufacturing has evolved in this country

over the past 25 years and how Lean—the most important strategy to keep manufacturing in the United States competitive—depends on infrastructure. I led Vermeer’s path in applying the philosophies and principles from the Toyota Production System (often just called “Lean”), enabling manufacturers to produce high-quality products at lower cost. The core philosophy of Lean is to reduce waste, which is often done by reducing inventory levels. One critical Lean strategy for reducing inventory is to produce things when and where they are needed or in a just-in-time fashion. The state and quality of infrastructure has a direct impact on inventory levels a firm must hold. Insufficient and/or inefficient infrastructure can lead firms to pay higher transportation costs. Higher transportation costs can, in turn, lead to higher inventory levels as organizations will minimize the number of deliveries they place and receive by ordering in larger quantities. Conversely, investments in transportation infrastructure that positively impact connectivity, capacity, performance and flexibility can help manufacturers support and fuel a growing economy.

Vermeer constantly reviews key performance indicators to determine where waste is and where the manufacturing process can be improved. Metrics are as essential in manufacturing for analysis and decision making as they are at a port. For example, measuring the time a container waits to be picked up for transport to its destination can be used to improve the overall operations of the port. As the federal government approaches infrastructure investment, better metrics are required. As an example, the Port Performance Freight Working Group issued its first report to Congress this past December, and while this

report was a good and important first step, it did not address factors, such as truck availability, that contribute significantly to port performance but are outside the port's control.

Vermeer's single-largest infrastructure disruption—both getting supplies in and sending finished goods out—was the West Coast ports slowdown two years ago. This caused production stoppages, lost orders and, in many cases, airfreighting large components and machines to save orders or to maintain production. Regardless of the reason, if ports shut down, the impact ripples beyond the shop floor to our dealers, employees and their families. This speaks to the importance of both the physical aspects of infrastructure and the men and women who are a part of the U.S. infrastructure system.

A good percentage of products we manufacture in Iowa are sold to overseas customers. Finished machines are loaded into a container or on a flatbed trailer, then at times transferred to rail, then delivered to a port for export. In our area, we don't have a close rail spur or intermodal facility, so we truck our products 200 to 400 miles sometimes to an intermodal facility.

This past September, the Iowa Department of Transportation was awarded a competitive FASTLANE grant to build an intermodal facility in Cedar Rapids, Iowa, about 100 miles from our main facility. This project will divert freight away from congested areas like Chicago and Kansas City. The Cedar Rapids Logistics Park competed against 212 other applicants in the first round of FASTLANE grants from the newly created National Highway Freight Program. At the end of the day, I'm glad our state's project moved forward because it will

improve the transportation system for Iowa manufacturers like Archer Daniels Midland Company, Emerson, International Paper, General Mills, Terex, Honeywell, John Deere and more. But, at the same time, 194 important freight projects around the country that would be helpful to other manufacturing clusters and businesses remain in the backlog. The American Society of Civil Engineers estimates that upgrading our surface transportation infrastructure alone will cost more than \$1 trillion.

The Cedar Rapids Logistics Park grant and the transportation efficiencies that will result for companies like Vermeer and others throughout Iowa could not have been realized without the work this committee accomplished in the previous session of Congress to pass the Fixing America's Surface Transportation (FAST) Act in 2015. Beyond the creation of the National Highway Freight Program, which refocused federal money on projects that have a national, system-wide impact on the movement of goods across this country, the FAST Act provided five years of certainty for states and cities planning infrastructure projects and removed red tape to reduce wasted time and money caused by permitting delays.

In addition, I appreciate the work Congress is doing to improve our ports, inland waterways and drinking water and wastewater infrastructure with the passage of the Water Infrastructure Improvements for the Nation (WIIN) Act. Both the WIIN Act and the FAST Act are far superior to the stop-gap approach to funding infrastructure of the past decade. I urge this Congress to complete the unfinished work of last year and move to reauthorize a longer-term Federal Aviation Administration (FAA) reauthorization bill. Upgrading our runways and

airports and reforming the FAA's certification process is important to our economy. While Vermeer is a midsized manufacturer of heavy equipment, we increasingly rely on air transport to operate our business. We air-ship 400 to 500 packages a day to help support our customers across the globe. We also log more than 3,000 commercial flights per year to meet with customers, suppliers and dealers, not including all the incoming airfreight shipments or inbound customers and vendors who visit Vermeer.

As important as these measures are, it is not enough. We need to move well beyond maintaining existing infrastructure and incremental improvements. We need to deploy a 21st-century infrastructure system that is more seamless, smart, efficient and less vulnerable to physical and cyber threats and that keeps pace with today's 21st-century manufacturer. We are eager for a modernized system that truly delivers an improved quality of life for our citizens and increased competitiveness for U.S. businesses. Currently, the United States is ranked behind many of its biggest global competitors at 11th in infrastructure quality and I don't think we should be satisfied with 11th. China is spending more on infrastructure each year than North America and Western Europe combined.ⁱ By some estimates, without significant and timely upgrading of our infrastructure, the United States will lose more than 2.5 million jobs by 2025 and more than 5.8 million by 2040.ⁱⁱ The American Society of Civil Engineers, for example, estimates that a \$3.6 trillion investment will be needed by 2020 to improve the condition of American infrastructure to an acceptable level. This is \$2 trillion over the anticipated funding level.

It's time we invest in our infrastructure. While both presidential candidates campaigned on the promise to upgrade our infrastructure in the weeks leading up to Election Day, the NAM released "Building to Win," an infrastructure blueprint that lays out both the challenges our infrastructure systems face and the types of upgrades manufacturers need to be globally competitive. This call from manufacturers not only urges President Trump to fix persistent challenges plaguing our nation's infrastructure but also provides some fresh thinking and direct actions for Congress to consider in the months ahead. Likewise, the Association of Equipment Manufacturers and the Transportation Center of Northwestern University combined to deliver a report in May 2016, titled "Mobility 2050." As a manufacturer seeking to make the United States the best place to manufacture, I highly recommend both reports.

We can all agree that the nation needs to restore and upgrade our infrastructure systems. We need this committee and our congressional leadership to work with President Trump to keep his promise to fix our broken infrastructure systems and to fulfill a basic federal responsibility to facilitate commerce in the United States. This must start with bold leadership to address the solvency of the Highway Trust Fund. While manufacturers were happy to see a five-year surface transportation bill, we know that when reauthorization of these programs comes up again in 2020, the Highway Trust Fund will need more than a \$100 billion cash infusion to pass a long-term bill just at status-quo levels.

We need to make commonsense fixes to programs like the Harbor Maintenance Trust Fund where the federal government collects a tax for harbor

maintenance but doesn't fully utilize the \$9 billion balance trapped in the Harbor Maintenance Trust Fund on the backlog of harbor maintenance projects.

Public-private partnerships and private financing are another important option to make critical infrastructure investments. However, these tools are not necessarily suitable for all projects, especially in rural parts of the country. Private financing cannot replace the role of public funding but should be pursued as a tool to upgrade our aging infrastructure. One practical tool to increase private investment and public-private partnerships would be to expand the use of private activity bonds. For years, the NAM and other organizations have supported Rep. John Duncan's effort to eliminate the state volume caps on private activity bonds for drinking water and wastewater projects to multiply the benefit of federal efforts. Water is only seen when it comes out of our faucets, but aging pipes and wastewater systems are failing in dramatic, and increasing, fashion. Without major investment, breakdowns in water supply, treatment and wastewater capacity are projected to cost manufacturers and other businesses \$7.5 trillion in lost sales and \$4.1 trillion in lost GDP from 2011 to 2040.ⁱⁱⁱ

It also must be recognized that continued investment in and modernization of our nation's broadband infrastructure is critical to the success of today's manufacturer. Technology is now embedded in all aspects of production on the shop floor and the final outputs that result. Manufacturing equipment is also becoming increasingly connected to the internet, making shop floors dependent on robust broadband networks. This innovative technology has created a tremendous competitive advantage for manufacturers in the United States. Our

industry already invests a significant amount in the most advanced and secure technology solutions to support our operations and products. If we do not have a regulatory and policy environment that paves the way for additional investment in our nation's broadband and telecommunications infrastructure, we risk losing our innovative lead and the jobs that it creates.

Similarly, for many manufacturers, energy is their largest and most important cost. The renaissance in domestic energy production in all its forms—most notably unconventional gas—has not only kept energy costs low but also driven major new investments in manufacturing sectors. The nation's network of pipelines, the electric grid and other energy infrastructure need to keep pace.

Manufacturers need regulatory and fiscal policies that incentivize continued reinvestment of private capital in these infrastructure systems. Rail, energy and telecommunications infrastructure differs from other infrastructure sectors because it is almost entirely privately owned and operated. For example, private investment in freight rail has grown in recent years, including a record high \$30 billion in 2015. Burdensome regulations that create excessive red tape make project costs unaffordable and discourage private-sector investment in infrastructure, creating a drain on our ability to innovate.

Manufacturers cut costs by continuously improving their systems to be as lean and efficient as possible. At Vermeer, this means we also maintain a focus on total productive maintenance. Our plants need to operate as efficiently as possible, and that means budgeting time and money for maintenance. We cannot afford to allow our equipment to fall into disrepair or use Band-Aid solutions with

the hope that future production capabilities will be assured. We need the federal government and its local and state partners to take the same approach as manufacturers to ensure current and future competitiveness.

Many credible organizations have called for increased investment in infrastructure, yet we are still largely stuck in more rhetoric than results. There is a disconnect in understanding the link between the lofty infrastructure investment discussion about global competitiveness, employment, etc., and the daily experiences of Americans, such as getting to work and the grocery store, or finding the package ordered online yesterday at the doorstep today. The public can be complacent about the condition of infrastructure because, for the most part, it continues to work, while they unknowingly pay for the hidden costs of congestion, increased vehicle maintenance and permitting delays. The use of local, specific examples can better show what insufficient capacity and infrastructure failures mean for the daily travel of individuals, the costs to manufacturing and retail businesses and their effects on consumers and the quality of life in communities.

There is a need to educate people about how publicly owned transportation facilities and services are funded now and how user fees affect the transportation system condition and performance they experience. Honest and objective post-project evaluations can show travel time savings, crash reductions and environmental improvements. The U.S. Department of Transportation's TIGER Grant Program requires both pre- and post-project evaluation, but this mandate applies only to a small fraction of projects, and the quality of evaluations

varies widely. The story of transportation investments must go beyond what is proposed and the ribbon-cutting ceremony. To earn the public trust, the benefits of investment need to become visible and real.

Our infrastructure needs attention. It must keep pace with changing times to be effective, efficient and resilient. The case needs to be made effectively to the public, with transparency of funding and benefits. Proper metrics must be put in place to better measure the performance of the nation's infrastructure. And decades of stop-gap efforts and chronic underinvestment must be reversed to deliver a well-performing system that enhances the quality of life and competitiveness. We, the manufacturing community of the United States, look forward to working together with you to achieve this.

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ⁱ McKinsey Global Institute. "Bridging Global Infrastructure Gaps." June 2016. Retrieved from <http://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/bridging-global-infrastructure-gaps>

ⁱⁱ American Society of Civil Engineers. "Failure to Act: Closing the Infrastructure Investment Gap for America's Economic Future." 2016. Retrieved from <http://www.infrastructurereportcard.org/wp-content/uploads/2016/05/2016-FTA-Report-Close-the-Gap.pdf>

ⁱⁱⁱ American Society of Civil Engineers. "Failure to Act: The Economic Impact of Current Investment Trends in Water and Wastewater Treatment Infrastructure." 2011. Retrieved from http://www.asce.org/uploadedFiles/Issues_and_Advocacy/Our_Initiatives/Infrastructure/Content_Pieces/failure-to-act-water-wastewater-report.pdf



**Testimony of Richard L. Trumka
President, American Federation of Labor–Congress of Industrial Organizations**

Before the Transportation and Infrastructure Committee

Feb. 1, 2017

Building a 21st Century Infrastructure for America

Thank you, Chairman Shuster and Ranking Member DeFazio, for inviting me to appear before your committee today. It's a pleasure to be here with returning and new members.

This is a committee known for working together, setting aside partisan differences and getting things done for the good of the country. In recent years, you've passed such important legislation as the FAST Act surface transportation bill, two water resources development bills, an Amtrak authorization and numerous other measures.

This year will bring FAA legislation and hopefully major new infrastructure legislation. I want you to know I appreciate the good work you have done and I know you will continue to do. Yet, we know all too well there is still much work to be done.

The AFL-CIO is the largest labor federation in the United States, representing 55 affiliate unions and 12.5 million workers across the country—from bus and transit operators and water workers, to those who forge the steel, to the craft occupations that build and repair our infrastructure. The people we represent build America and make America move.

Jobs and the Economy

It should surprise no one that infrastructure was a top issue in the last election. The people of America have lived with the effects of decades of underinvestment in our infrastructure—the pothole-strewn streets, the airport delays and the rising costs of simply moving goods to market. The reality is that our infrastructure is desperately in need of repair and rapidly becoming technologically obsolete. We want investments that create good jobs and meet the real needs of our economy. Any other path takes us backward, because above all else, infrastructure investment is a long-term strategic necessity. Building the infrastructure of the 21st century is vital to both our nation's competitiveness and to the hopes of our nation's people to lead better lives.

The United States has a \$3.6 trillion infrastructure deficit, according to the American Society of Civil Engineers—and this is just for deferred maintenance on existing infrastructure. The infrastructure of the future will require additional trillions of dollars in new investment. During the campaign, President Trump spoke about \$1 trillion in new infrastructure investment. Last week, Senate Democrats unveiled a \$1 trillion infrastructure proposal. This is the right scale to be talking about—trillions—and the labor movement is ready to work with this committee to move on that scale.

It's no secret that investments in our infrastructure create jobs. We not only need jobs, but we need to create good jobs. Every billion dollars of federal investment in our surface transportation system creates tens of thousands of well-paying jobs—the type of career jobs that can support a family, a child's education, a secure retirement and a middle-class life. In fact, jobs in infrastructure pay more competitive wages than similarly skilled positions.

Policies such as Davis-Bacon, project labor agreements, Buy America and 13(c) transit protections ensure compliance with community wage standards, and that we spend American taxpayers' money in America and create jobs through smart procurement policies. These longstanding laws ensure that infrastructure investment creates good jobs, and that workers' jobs, contracts, wages and benefits are not simply stripped away to produce a low bid or through privatization.

Our affiliates have a vast network of top-quality joint labor-management training and apprenticeship programs around the country. These programs provide construction workers with the skills they need to be the most productive workers in their sector and to have a long-lasting middle-class career, and these programs can train the workers we will need to finally meet America's real infrastructure needs.

For those in Congress still seeking to push the failed austerity agenda, let me tell you this: If your house has a leaky roof, not fixing it won't save you any money. And like the leaky roof, delaying needed infrastructure investments will only cost us more in the long run. It harms our health, as we have seen in Flint and countless other places, impedes commerce, as my fellow panelists can attest to, and it is hurting our international competitiveness.

Economic Growth and Global Competition

Investing in our infrastructure is important for reasons beyond creating jobs and boosting the economy in the short term. Investments spur sustainable economic growth, ensure our country's long-term economic global competitiveness and improve the quality of life of our citizens.

We are all familiar with the American Society of Civil Engineers' estimate that our infrastructure deficit is approaching \$4 trillion. Yet that's only part of the challenge. To be competitive in the 21st century, we must invest in the transformative infrastructure of the future—this century's version of the transcontinental railroad and the national highway system.

As I travel around the country, I can tell you that every time I see a new transit center or highway interchange, that investment is followed by real estate improvements, businesses being formed, and growing and thriving communities.

It's no different in the global arena. While we wring our hands about how to maintain existing levels of funding, let alone the funding increase needed to fix our failing infrastructure, the rest of the world is moving forward.

China has been investing heavily in its infrastructure, and the results are dramatic. The Chinese understand well the lessons of American history that we seem to have forgotten, the top line of which is that infrastructure investments are the foundation for expanding commerce and growing the economy. China now invests more in infrastructure than the United States and Western Europe combined. China is investing in infrastructure appropriate to its level of development—new roads, rail capacity, airports and ports. It is moving quickly on energy and

telecommunications. In fact, China's stock of infrastructure as a percentage of Gross Domestic Product exceeds ours significantly, and it continues to invest far more than we do, lowering the cost of commerce and raising living standards.

America can do it, too. We must do so to remain competitive—and we can do it better.

We must modernize the multimodal and connectivity aspects of our transportation system, which is essential to making our economy competitive. When ships load containers at our nation's ports, they depend upon an efficient multimodal supply chain of fully dredged and deepened port facilities, seamless rail corridors and networks, and safe roadways. I urge you to think strategically about the linkage between each mode of our transportation system and how they interact with one another. Improving modal connectivity is a key piece to securing our nation's global competitiveness.

Cost of Inaction

We must act to alleviate the cost of wasted time and fuel caused by traffic delays and congestion. The Texas Transportation Institute estimates that the average commuter wastes 42 hours in travel delays, and the fuel wasted adds \$960 to a driver's expenses each year. In total for our country, that's a staggering collective *600,000 years' worth* of time wasted stuck in traffic each year, and 3.1 billion gallons of wasted fuel. And unless Congress finds the will to provide adequate funding, these problems only will become worse, costing citizens and businesses valuable time and money.

Some think government should be run like a business. No successful business runs on the idea of starving itself of critical capital investment, by trying to compete with outdated and broken equipment, or by sticking with old technologies and processes. Businesses have to make upgrades and invest to succeed, and so does our nation.

Financing Considerations

There are many possible creative financing vehicles to support the infrastructure we need beyond direct federal and state financing, including infrastructure banks, grant and loan programs, and public-private partnerships. However, most of our nation's traditionally public infrastructure is public *because* whatever user fees it generates, if any, cannot fund it on a stand-alone basis when risk and return on private capital is taken into account. This is particularly true for vital transportation infrastructure in rural areas.

We need to understand creative infrastructure financing as fundamentally supplemental to basic public financing. And whatever financing choices we create, all should be subject to the basic business test of, "is there a lower-cost source of capital?" For hundreds of years we have tapped private capital to fund our nation's infrastructure, usually through tax-exempt bonds or through Treasury bonds. We should always ask in relation to innovative financing, "what is the real cost of this capital to the public, and is another, cheaper financing vehicle from the public's perspective available?"

Labor and Business Together

Look at this panel before you. Business and labor may not agree on a number of things, but we do agree on the need for serious investments in America's infrastructure. In the aftermath of the 2016 election, there is no clearer mandate from the American people.

If we can come together on this, that should tell you something. You are the elected leaders, and at the end of the day you will have to decide. The question to ask yourselves is what kind of country do you want us to be—not only now, but also in the future.

How we invest matters. One trillion dollars in real new infrastructure investment would make a big difference to working Americans and would put us on the path to the level of infrastructure investment we need. But it has to be real investment and good jobs, not Wall Street giveaways or a race to the bottom. Done right, a trillion dollars of truly new and additional infrastructure investment would create good jobs, revitalize communities and build a prosperous future for our country.

Over the last year, the AFL-CIO has formulated some basic principles we hope will help guide large-scale infrastructure investment of the kind proposed both by the Trump administration and by Sen. Schumer. These proposals address both broad areas and the needs of particular sectors within the infrastructure space.

Overarching Principles

1. A program must include investments that are as transformative in the 21st century as railroads, highways, telephones, radio and television, and electrification were in previous centuries.
2. Our infrastructure should be funded through federal spending and credit support for infrastructure projects, and not be subject to spending offsets. This provides the lowest possible cost of capital, and maximizes the macroeconomic benefits and job creation from infrastructure investment.
3. A program must include strict Buy America provisions so that we are rebuilding our manufacturing sector as we rebuild our nation, including support for family-sustaining employment. This is a key issue for those who voted to fix our trade problems.
4. Requirements for high-road labor standards that create family-sustaining jobs and prosperous communities are a must. This applies to any project federally funded, or enjoying subsidies, loan support or innovative financing mechanisms.
5. Efforts also must focus on public health, poverty and inequality, energy infrastructure, transportation and public services.
6. We must preserve the public character of Amtrak and public transit systems.

Our infrastructure deficit is harming our economy, reducing our quality of life and endangering public health. This Congress has a mandate from the American people to fund public infrastructure and clear the way for private infrastructure. If we are to remake America for the 21st century, these are the essential investments, public and private, that will make it happen.

Passenger Transportation Investments

- Essential highway and bridge maintenance, repair and replacement;
- Mass transit repair and expansion: clean bus fleets and passenger rail, including high-speed rail projects starting with the Northeast corridor, California and the Midwest;
- Amtrak essential capital program for long-distance and state lines;
- Complete NextGen satellite-based air traffic control system; and
- Fund the FAA Airport Improvement Program for on-ground upgrades.

Energy Investments

- Significant investment in clean electricity generation, including solar, wind, nuclear and carbon capture and storage; federal siting where appropriate;
- Promote expansion of essential natural gas infrastructure;
- Significant investment in electrical transmission, including high-voltage lines, to bring clean energy to market and reduce energy lost in transmission;
- Efficiency retrofits of all government-owned buildings;
- Programs that incentivize efficiency and energy-use reductions in private buildings, including commercial retrofits, multifamily housing, industrial efficiency, and combined heat and power; and
- Build a 21st century pipeline network. Not only new, but also by reducing leaks, and repairing and replacing outdated pipes.

Freight and Shipping Investments

- Federal multimodal freight investment program;
- Accelerated port and harbor upgrades through the Harbor Maintenance Trust Fund;
- Upgrade inland waterways for higher capacity and fully modernized lock systems; and
- Upgrade federal navigation channels to accommodate post-Panamex ships.

Public Works Investments

- Bring all public school facilities up to good overall condition;
- Substantial investment in the Clean Water Fund and the Drinking Water State Fund to address clean water, lead safety, wastewater treatment, combined sewer separation and storm water management;
- Essential rehabilitation of all high-hazard dams;
- Essential levee repair and rehabilitation for 100,000 miles of levees; and
- Parks and recreation maintenance and upgrades, including roads and bridges.

Communications Investments

- Establish a national broadband network at 100 MBS, including rural areas;

- National public safety broadband network, with capacity for video downloads;
- Establish free public wi-fi hot spots in large cities, including capacity for free domestic calls; and
- Federal investment in the research needed to develop 5G wireless technology.

Conclusion

Finding significant sources of funding may be politically difficult, but the cost of inaction is high, it's real and it's growing. Labor has and will continue to consider all types of funding, including our traditional support of user fees to fund surface transportation. Done right, other sources of revenue could help, however, solving our nations' vast infrastructure needs will require major levels of public investments.

The labor movement is ready to fight, here in Washington and across our great nation, to see a transformative, inclusive infrastructure program enacted. We need to bring 21st century technology and good jobs to our whole country—to places like West Baltimore and to places like my rural hometown of Nemaquin, Pennsylvania. And the labor movement is ready, with a highly skilled workforce and the best training programs to get the job done.

Previous generations built an infrastructure and transportation system that was the best in the world, one that made us an economic superpower and helped to create a strong middle class. Unfortunately, it's a system we have been coasting on. The ride is now over, and we must rebuild.

To be blunt, we need to be bold. We need to act aggressively.

We need to be the America that can, not the America that can't.

We are eager to work with elected leaders of both parties to make this investment a reality.

Thank you and I look forward to your questions.

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