



Department of Transportation

Secretary Anthony Foxx

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Introduction

The U.S. Department of Transportation formally began operating on April 1, 1967 with a mandate of ensuring that the United States has a fast, safe, efficient, accessible and convenient transportation system that will meet our vital national interests and enhance our quality of life. While that continues to be the mandate of the department, the practical implications of this have changed as the nation's population has grown, and the way we move ourselves and our goods has dramatically changed. Department leadership has also sought to understand the future needs of our transportation system, by understanding long-term trends to forecast future requirements. As the transportation system constructed in the middle of the 20th Century has begun to approach the end of its useful life, and the introduction of technology to improve the safety of travel has coincided, the opportunity to improve the way people move and use transportation systems has never been better.

Throughout the Department's history we were focused on building an infrastructure system to connect point a to point b, often regardless of the neighborhoods and communities impacted to make that system possible; we are now focused on place-making transportation projects that afford economic opportunity and mobility to all residents in our urban, suburban, rural, and tribal communities. In the 1960's we had to fight industry to require seatbelts in vehicles, and to take other safety measures. The result of these safety battles paid off: the motor vehicle fatality rate has dropped by 80 percent. Now, fifty years later we are working with the automobile and technology industries to shape policies to ensure safe deployment of autonomous and connected vehicles on our roads, which have the potential to save tens of thousands of lives annually. It is estimated that connected vehicles and new crash avoidance technology could potentially address 94 percent of crashes involving unimpaired drivers.

President Obama's Administration inherited a country faced with economic collapse at the same time that technological advances began to change the entire landscape of traveling with more convenience at higher speeds, safer than ever before. This was a pivotal moment for transportation like the Wright Brothers first flight at Kitty Hawk, driving rail's golden spike at Promontory, and the introduction of the Model-T.

Record of Progress

New Era of Innovation in Advanced Technologies

From automated vehicles to connected infrastructure to data analytics, technology is transforming how we move around our country. As the digital era increasingly reaches deeper into transportation, our task is not only to keep pace, but to ensure public safety while establishing a strong foundation for the 21st Century. Revolutionary new transportation technologies and the smart use of data have the potential to save lives; give us back hours lost in traffic; reduce harmful carbon emissions; and provide greater dignity, mobility, and access to opportunity for millions of our fellow Americans.

During this Administration, the Department has taken significant steps to unlock the promise of these new transportation technologies, including automated vehicles. This innovation has the potential to transform personal mobility and open doors to people and communities—people with disabilities, aging populations, communities where car ownership is prohibitively expensive—that today have limited or impractical options. Automated vehicles may also have the potential to save energy and reduce air pollution from transportation through efficiency and by supporting vehicle electrification.

With the **Federal Automated Vehicle Policy**, I provided an unprecedented policy framework for the safe integration of autonomous vehicles that sets out a proactive approach to ensure safety while facilitating innovation. The policy lays out 23 “next steps” that the federal government will need to address if the country is to take maximum advantage of the safety and mobility potential of this technology. As part of the policy framework, we released a 15-point Safety Assessment tool to set clear expectations for manufacturers who want to develop and deploy highly automated vehicles. We also provided guidance to state governments to help delineate Federal and State responsibilities for the regulation of these vehicles.

Another key to the future of automotive safety is connected vehicle technology, often referred to as **Vehicle-to-Vehicle** or “V2V”. With V2V technology installed in cars, thousands of crashes could be avoided each year as vehicles communicate through short range radio technology to avoid collision. The Department has released a proposed rule, that if finalized, would require all new light vehicles to include this groundbreaking safety technology

Some of the most exciting innovation is happening in cities. Since September 2015, the Department leveraged \$350 million in federal, local, and private funding to show how these technologies can change cities and local communities. Through the **Smart City Challenge**, 78 cities competed for funding to execute their visions for the future of urban transportation. The winning city, Columbus, Ohio, will combine \$40 million in Department funding with approximately \$100 million in funding through public-private partnerships to pilot advanced technologies that will change the face of urban transportation.

Safety is Always Our Top Priority

My predecessor, Secretary LaHood recognized very early in his tenure the growing danger of **distracted driving** and focused the Department’s attention like a laser on this problem. According to DOT data, the problem is increasing and in 2015, 3,477 people were killed and 391,000 were injured in distracted driving crashes in the United States. Research also shows that texting while driving makes it 23 times more likely a driver could end up in a crash. DOT provides information on distraction through its website, www.distraction.gov, and by publishing crash data on the website.

Secretary LaHood was able to change public attitudes towards distracted driving through personal advocacy and the Faces of Distracted Driving Campaign in 2010. He worked to establish laws restricting the use of cell phones and other hand-held devices while driving. Secretary LaHood acted to ban federal employees—a workforce of 4 million people— from texting while driving. Under his leadership, we also prohibited commercial truck and bus drivers from texting on the road, and prohibited similar practices among railroad employees and flight crews. We have continued to build on Secretary LaHood’s efforts to enact policies and fund campaigns to aggressively target distracted driving. Furthermore, as we look to address the broader increase in roadway fatalities, we’ve collaborated with technology companies – such as Carto, Mapbox, StreetLight Data, and Waze – to crowd source additional data sources to better understand and identify the factors that impact fatalities.

DOT, through the **Federal Aviation Administration (FAA)**, safely and efficiently handles approximately 68,000 commercial and general aviation flights per day. We’ve established four strategic priorities to drive performance: to make aviation safer and smarter by continually analyzing operations to detect and mitigate risk; deliver benefits through technology and infrastructure; enhance global leadership; and empower its workforce.

The United States is experiencing the safest period in aviation history. The nation's impressive safety record is due in part to the aviation industry and government voluntarily investing in the right safety enhancements to reduce the fatality risk in commercial air travel.

Continued growth means that the FAA must be proactive and smart about how it uses safety data to detect and mitigate risk. The agency has moved beyond the "historic" approach of examining past accident data to a proactive approach that focuses on detecting risk and implementing mitigation strategies before accidents or serious incidents occur.

The FAA is using a similar approach to streamline some of its aviation regulations. In 2016, the FAA proposed new regulations that would overhaul the airworthiness standards for small general aviation airplanes. Based on industry recommendations, the proposed rule would establish a new performance-based regulatory structure using consensus-based industry standards as a method of compliance. The final rule will bolster the general aviation market by removing barriers to FAA certification for emerging technologies and foster global harmonization of aviation standards.

The FAA has also been working to safely integrate **unmanned aircraft systems ("UAS" or "drones")** into the national airspace. Drones hold great promise, but we must promote responsible behavior by drone operators. That's why the agency began requiring registration for all drones last year – except those that weigh less than 250 grams – to build a culture of accountability and responsibility, and to help protect public safety in the air and on the ground. More than 600,000 drone owners have registered their drones, and the FAA is using the registry to promote education and training for drone operators. The FAA also has an ongoing public outreach campaign to educate these new users about how to operate safely in the National Airspace System.

In 2016, the agency released a flexible framework of rules governing the safe operation of commercial drones weighing less than 55 pounds. Using an incremental approach to integration, the FAA requires drone operators to obtain a remote pilot's certificate, fly their drones within line of sight of the operator, fly under 400 feet, and not fly over people. They also must fly only during daylight and stay within uncontrolled airspace unless they have specific FAA authorization. The next step is to set ground rules for when and where certain types of drones can operate over people, unlocking commercial opportunities while protecting public safety.

After two years of record recall fines and unprecedented oversight of the auto industry, I worked with the National Highway and Traffic Safety Administration (NHTSA) and the FAA in 2016 to examine lessons from aviation's safest period in history to explore meaningful ways to **improve automobile safety**. The automakers and NHTSA committed to work together to develop a collaborative, data-driven, science-based process, consistent with the law, to emphasize our shared commitment to further enhancing the safety of roadway users. The Department will continue to explore ways to be more proactive with the auto industry, rather than only issuing fines and recalls as a reactive measure.

For 40 years, the Washington, D.C. subway system – known as "Metro" put their revenue needs ahead of safety and maintenance, which created a significant safety risk to the traveling public. In 2015 our Federal Transit Administration (FTA) undertook a major audit of Metro's safety culture and practices, which led to FTA's unprecedented action of temporarily assuming direct safety oversight of a local transit agency. Our oversight has been extensive and thorough, and the next Administration should continue to push the

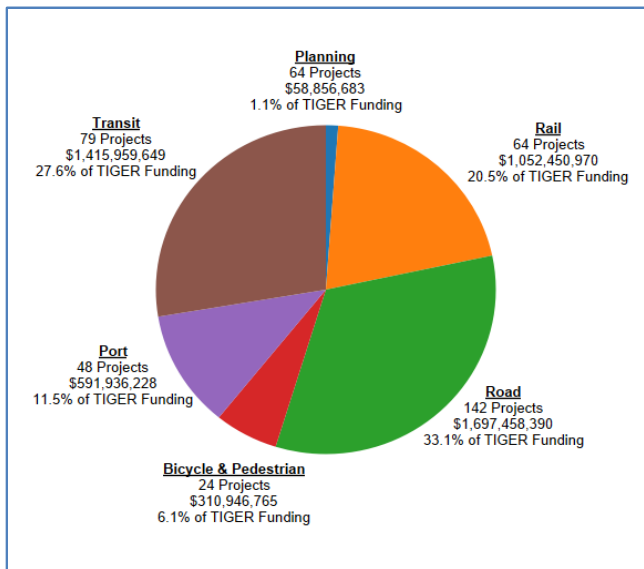
District of Columbia, Maryland, and Virginia to do a better job overseeing the safety of this transit agency.

Improving our Nation’s Infrastructure

When Secretary LaHood began at DOT in 2009, the nation was reeling from the financial crisis. When President Obama signed the **American Recovery and Reinvestment Act** into law, this Department was able to inject \$48 billion in infrastructure investment into our economy. Recovery Act projects improved more than 42,000 miles of road and more than 2,700 bridges, purchased 11,500 buses and 665 American built rail cars, kick started the High Speed Rail program that is transforming thousands of miles of passenger rail and supported 800 projects improving our airports and air traffic control facilities.

A success first funded through the Recovery Act legislation that has continued to build through eight rounds, the **Transportation Investment Generating Economic Recovery (TIGER)** grant program awards funding, on a competitive basis, to multimodal projects that are not well-suited to funding through our traditional grant programs. Over the course of the Obama Administration, Secretary LaHood and I provided billions of dollars for investments in highway and bridge construction projects, expanding transit and rail options, improving our ports and freight networks, and general maintenance and upkeep that was sorely needed in our existing systems.

TIGER PROGRAM: FUNDING DIVERSE PROJECTS



Since 2009, the TIGER grant program has provided a combined \$5.1 billion to 421 projects in all 50 states, the District of Columbia, Puerto Rico, Guam, the Virgin Islands, and tribal communities. Leveraging funding from state, local, and private sector partners, these projects have repaired bridges, built safer streets, constructed new transit lines, expanded commuter rail, and reinvigorated ports across the country. This has resulted in improved freight movement, enhanced mobility and increased connectivity for communities.

And while TIGER was incredibly successful in what it was able to accomplish, demand for the TIGER grant program far exceeded available funds. This sustained demand shows that there are many transportation projects that do not fit in our traditional funding silos, and this

Department has worked to open up funding opportunities for these important investments.

When I took the helm of the USDOT in 2013, I immediately recognized that despite the funding injections of the Recovery Act and annual TIGER programs, the consequences of underinvestment in our nation’s infrastructure were wearing down our transportation system. At that time, Congress had not passed a long-term surface transportation bill in eight years. It was time for Congress to act on our infrastructure needs, and we took the case directly to the American public.

Our administration put together our own aggressive proposal for surface transportation and I went on the road to push for action. I visited communities in 43 states – including two bus tours that highlighted infrastructure needs along our route. That effort paid off in 2015 when Congress passed, and President Obama signed, the **FAST Act** – a five year surface transportation bill. The FAST Act not only provides planning assurance to state and local governments, but also protects transit investments, promotes public private partnerships and smart cities, secures dedicated funding for freight projects through the FASTLANE grants program, and makes a number of key safety and project delivery reforms. While it still does not meet the total needs of our system, it is providing much needed spending certainty to state and local governments so that they can plan beyond their immediate crises. FASTLANE in particular builds upon some of the successful experience from TIGER in supporting economically beneficial projects, but with projects of a significantly larger scale.

In an era of limited budgets, state and local governments will have to utilize innovative, creative tools to meet their infrastructure needs. That’s why President Obama called on DOT to set up an office to specifically help communities across the country utilize special credit programs and public-private partnerships to build needed transportation infrastructure. Our Build America Innovative Finance Bureau, which was formalized in the FAST Act, has so far closed \$13 billion in financing to support \$30 billion in projects. The Bureau is supporting a broad range of projects, a total of about 50, at a variety of stages of development.

The Bureau is in the process of negotiating conditions to provide technical assistance to New Jersey, New York and Amtrak to help them build a new “Gateway” passenger rail tunnel under the Hudson River for both inter-city and commuter trains. Understanding the urgent need to close and repair the current 109-year old tunnel, DOT is assisting the project sponsors on all tools available to address this local infrastructure crisis. When we are unable to support projects of national significance through a single program, we have developed blended approaches—using credit, grant dollars, and technical assistance—to push critical projects like the Gateway Tunnel forward.

At the same time, we have recognized that federal resources can be maximized by delivering projects quicker without undermining environmental outcomes. Accordingly, we have taken the lead in speeding up the time it takes to permit and complete a project — by increasing cooperation between government agencies, making the expectations clear to states and local project sponsors, and the launching of the first-of-its-kind online tool to allow the public to track projects through an online dashboard. This is exemplified by the Federal Highway Administration’s Everyday Counts program, which identifies innovative strategies to build projects more efficiently and the formal creation of the Administration’s Interagency Infrastructure Permitting Improvement Center to streamline coordination between major Federal agencies and reduce Federal permitting timelines. Today, major projects that may have required 5-6 years of environmental permit processing are being completed in less than half that time, while maintaining the integrity of these critical environmental reviews. Put simply, time saved is money saved.

Ladders of Opportunity

Transportation is not just about bricks, mortar, and machines. It connects people and communities to opportunity and has a dramatic effect on economic mobility and quality of life. That’s why we have spearheaded a number of initiatives that help instill these values both inside the Department and to our stakeholders and funding recipients.

We launched the “**LadderSTEP**” pilot in seven cities, which is providing technical assistance to municipalities and local communities on how to apply for grant funds or otherwise implement impactful projects that that revitalize, connect and support access to economic opportunity. For example, in Baton Rouge, DOT is helping the city plan a streetcar line and submit an application for Federal grants. In Phoenix, we are helping the city make intersections safer so residents can access future light rail stops.

When projects are built in communities, we believe it should create job opportunities for residents of that community. That’s why we launched the DOT Local Hire Pilot Initiative to explore the possibilities for States and cities to hire local residents for transportation projects. The initiative enables Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) grantees to utilize geographic labor hiring preferences and economic-based labor hiring preferences to evaluate the impact on the competitive bidding process.

We also created the Ladders of Opportunity grant program to award funds to local transit agencies in order to modernize and expand bus service to connect disadvantaged and low-income individuals, veterans, seniors and others with job and educational opportunities, health care, and other vital services. Altogether, the initiative supported 25 projects in 19 states to modernize and expand transit bus service to connect disadvantaged and low-income populations to centers of education, employment, training, health care, and other vital services. One example is Detroit, where we provided direct assistance to unlock millions of dollars for the city so Detroit could purchase new buses. As a result, for the first time in decades, Detroit is able to meet its full bus schedule and 24-hour service was recently announced for some key routes. Ridership is up by 25,000 to 50,000 trips per week. In addition, funding provided for Detroit’s M-1 Rail that connects the Downtown and Mid-Town corridors has led to the creation of the Regional Transportation Authority, a long-sought goal of transportation planners to truly achieve regional coordination.

We infused Ladders of Opportunity principles into our grant programs as well. One example is found in the most recent years of the TIGER program, where we prioritized projects that strengthened access to opportunities through transportation improvements. We are also enhancing our enforcement of Title VI, the provision of the 1964 Civil Rights Act prohibiting racial discrimination by recipients of federal funds, including transportation.

Finally, transportation will not truly serve communities if we do not allow residents to participate in the process and we hear their voices. That’s why I launched the *Every Place Counts Community Academy* initiative, which provides an easy to understand guide for everyday people on how to influence projects in their community. We are also working to reform the FAA’s methods for community input, to make sure that communities of all income levels have equal say when it comes to the impact of air noise near airports.

Environmental Sustainability

From day one with Secretary LaHood and continued under my leadership, environmental sustainability has been a priority and area of accomplishment. Most prominently, with EPA’s partnership, the Department has implemented historic improvements in **fuel efficiency**, including combined light duty fuel economy and greenhouse gas emissions standards that will roughly double fuel economy by 2025. Additionally, given that trucks account for more than 20 percent of carbon pollution from transportation, the Administration set the first-ever standards for heavy-duty vehicles in 2011, supplemented by a second set of standards this summer for model years 2016 through 2027 which are expected to lower

carbon dioxide emissions by approximately 1.1 billion metric tons, save vehicle owners about \$170 billion in fuel costs, and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

When Hurricane Sandy struck and severely damaged critical transportation infrastructure, Secretary LaHood recognized that we shouldn't rebuild to yesterday's specifications, but rather rebuild to be resilient against future extreme events that are expected as our climate changes. As a result, billions of dollars from the Hurricane Sandy Disaster Relief Appropriations Act were used to make sure that, as we continued to rebuild these assets, we did so in a way that was significantly less vulnerable to natural disasters in the future, and also made systems less vulnerable overall.

Most recently, we designated the country's first alternative fuel corridors to improve the mobility of passenger and commercial vehicles that employ electric vehicle charging, hydrogen, propane, and natural gas fueling technologies across the United States. These corridors of alternative fueling and charging infrastructure was designated along national highway system corridors.

Vision for the Future

In examining our infrastructure and system needs, it is critical to look to future needs and trends. That's why I assembled a team of experts from across the Department, working with leaders in government, academia, the private sector, and other organizations, to take a holistic look at our Nation's transportation systems and identify the trends and choices we will need to make in the future.

Among the challenges we face in the future include a rapidly growing population, demographic shifts in rural and urban areas, a 45% increase in freight volume, and a transportation system increasingly struck by more powerful, extreme weather events in a changing climate. The result of this effort is the report *Beyond Traffic*, which discusses the implications of these trends for each mode of transportation: highways, transit, pedestrian and bicycle, aviation, intercity and freight rail, maritime and pipelines. I believe *Beyond Traffic* will be a valuable guide for subsequent Administrations to understand the scope of the long-term problems we face in order to more effectively develop solutions.

Building upon a safety culture that is interwoven into our every action, the three main areas of focus should be how we fund our infrastructure, how technology is changing our transportation system, and how we can ensure that the system that we have and that we build works for the American people – whether they live in suburban, rural or urban areas – and connects them to opportunity.

Funding

As we dedicate the utmost effort to implementing the current surface transportation law, we must recognize that much more substantial reforms are needed to meet the growing long-term challenges described in *Beyond Traffic*. Traditional approaches to funding and delivering federally-funded transportation programs, developed decades ago, may no longer be capable of providing Americans with a state of the art transportation system. As the transportation system has grown and become more complex, transportation decision-making has become more difficult, transportation projects have become more costly, and revenue challenges have grown.

In recent decades, investments have failed to keep pace with increasing needs and much of our infrastructure has fallen into disrepair. New policies are needed to generate sufficient revenues to meet the needs of our transportation system, prioritize funding to cost-effectively improve mobility, and incentivize efficiency and performance. The Nation needs to modernize our transportation programs to ensure the cost-effective use of federal dollars to support a safe, efficient, and sustainable multimodal system that meets the needs of all Americans.

Technology

New technologies, like vehicle automation and Next Generation air traffic control systems, are making travel significantly safer and more convenient. Advances in data processing are enabling governments and private companies alike to improve transportation services and better target investments. Government is rewiring to become more supportive of these beneficial technologies, while ensuring that they are safe and secure. This is both an opportunity and a challenge. Technological changes are coming fast and with greater frequency. Whether it is drones being used for delivering packages to driverless vehicles on our roadways, to proposed Hyperloop transport, the Department needs to be prepared to react quickly, nimbly and proactively in order to shape positively the way these technologies transform out transportation system. That is why I went to the International Auto Show in Detroit in 2016 to announce the President's FY 2017 budget proposal of nearly \$3.9 billion over 10 years for pilot deployments of safe and climate-smart autonomous vehicles to create better, faster, cleaner urban and corridor transportation networks.

Involving technical expertise in policymaking at senior levels is essential today and will grow in importance in the coming years to ensure that we make the most of these opportunities. In addition to fielding technical experts able to inform operational aspects of connected and automated vehicle technology and UAS technologies, it is critical that we assemble big thinkers able to understand the promise and forecast the effects that this game-changing technology holds. That is why we are forming an Advisory Committee on Automation in Transportation to gather leaders in technology-related fields and provide advice to future Administrations in real time with innovation.

Opportunities

Transportation also has an important role to play in addressing rising economic inequality and segregation. There is no opportunity without transportation. Transportation connects Americans to the schools, jobs, and social services, and networks that help them get ahead. Transportation policy and investments must empower Americans to connect to opportunity and to come together, not grow apart.

The construction of our Interstate Highway System vastly improved connectivity across our country, reduced travel times at a time when many of our cities suffered from extreme congestion, and created immense economic benefits. However, some communities bore a disproportionate share of the costs of this change. Urban highways continue to isolate residents by reducing pedestrian, transit, and roadway connectivity making it difficult to reach jobs, schools, and basic services. Many of these same neighborhoods continue to suffer from a legacy of underinvestment and neglect. Low-income neighborhoods are twice as likely to lack basic pedestrian infrastructure, and have pedestrian fatality rates roughly double those in more affluent areas. Future transportation policy-making must be cognizant of these issues.

Actions Needed

The next Secretary of Transportation will not simply work on building roads and bridges and ensuring safe travel. The next administration is entering a period of advanced automated technologies in transportation, an infrastructure system that continues to work for some and against others in society, dramatic demographic shifts, an increase in extreme weather events in a changing climate, and a backlog of projects needed across the country with not enough resources to address it. Future administrations should, if the United States is to remain competitive in the global economy, devote significant time and energy to securing the resources needed to keep America competitive.

The current FAA reauthorization expires in September 2017. FAA faces many challenges in preparing for the future, integrating UAS, maintaining safety, improving operations, and spurring innovation related to automation and more. The next Secretary will have an early opportunity to influence aviation reauthorization.

Our Administration's Grow America Act laid out a proposal for increasing funding to begin addressing our infrastructure deficit through additional investments funded by Business Tax Reform. The current funding source, the federal gas tax, does not meet our infrastructure needs and is getting weaker each year. Business Tax Reform is one proposal, but future Administrations should consider fundamentally rethinking transportation funding. At the same time, the next Secretary should continue utilizing the Build America Bureau to leverage private capital on our national infrastructure needs and expand upon our efforts to streamline and strengthen our finance programs.

As it relates to economic equality and opportunity, federal funding should be tied to a requirement that state and local governments consider their entire population when planning for their future by integrating Ladders of Opportunity concepts into all federally funded projects. This includes ensuring the NEPA process includes full public engagement and that Title VI is adhered to from the beginning of the project planning process. Within discretionary grant programs, ensuring access to opportunity for all groups should continue to be a key criteria. And finally, we must engage and educate the public so that all community members understand how to effectively participate in transportation decisions.

Last, we must continue to take advantage of technology. The Department has already established a strong foundation for utilizing technology to further our transportation goals by supporting innovation within a culture of safety. Just a few places where the next Secretary can continue efforts already underway include: 1) The Smart City Challenge: continue working with Columbus to implement their winning proposal and nurture the creative solutions that were proposed by other applicants. 2) Automated Vehicles: With the Federal Automated Vehicle Policy, I provided a framework for the discussion that needs to continue for many years. The policy lays out 23 "next steps" that the next Administration and Congress should consider if we are to take maximum advantage of the safety and mobility potential of this technology. 3) Connected Vehicles (V2V): Complementing automated technologies, the next Administration will be responsible for finalizing the rule for this technology which has the potential to avoid or mitigate 80% of all unimpaired crashes. Furthermore, V2V is a central component of the Smart Cities innovations that can transform cities around the country. 4) Drones: This Administration has taken the first few steps needed to safely integrate drones into our airspace, but there are significant opportunities to develop new ways to manage the National Airspace System, increase the agility of our regulatory regime, and to quickly test, collect data, and enable new missions and economic and safety benefits of this technology. 5) Continue funding communities to deploy and pilot advanced

technologies. In October 2016, I announced nearly \$65 million in grants to support community-driven advanced technology transportation projects –including support for four of the Smart City Challenge finalists to implement ideas developed as part of their applications. In all, these advanced technology grants will fund 19 technology-driven projects in local areas to fight congestion, increase connectivity, and improve access to opportunity. The next Administration will have the opportunity to fund communities to deploy advanced technologies with \$240 million over the next four years.

Closing Statement

It has been a tremendous honor to serve President Obama and the American people as Secretary of Transportation. I believe we truly are at a crossroads with our nation's transportation system. We are a different country than we were when the Department opened its doors fifty years ago – more diverse, urban, and populated. My goal was to set this Department on a course for the next fifty years that more fully recognizes the role transportation decisions play in economic opportunity for underserved communities, appreciates the role that technology can play in making our transportation future much safer, and embraces innovation even when it disrupts traditional ways of thinking.

I wish the next Secretary of Transportation every success, and hope that the work we did in this Administration will help empower the next Administration to build an even stronger transportation system that serves the American public.