

AASHTO FAST ACT REAUTHORIZATION

Compilation of 11 White Papers from Committees

DRAFT September 7, 2018

INTRODUCTION

The Fixing America's Surface Transportation (FAST) Act enacted in December 2015 represented the first comprehensive, long-term surface transportation legislation since 2005's SAFETEA-LU. The FAST Act continues to fulfill the Constitutional directive that investment in transportation is a core federal responsibility. Its authorization of \$305 billion for federal highway, highway safety, transit, and passenger rail programs from 2016 to 2020 could not have been timelier in supporting our economic growth and maintaining our multimodal transportation infrastructure.

Yet at the same time, the FAST Act provides only a one-time and near-term—though absolutely necessary—reprieve when it comes to federal surface transportation funding. By not enacting a long-term funding source, the Highway Trust Fund (HTF) continues to remain at a crossroads. The HTF has provided stable, reliable, and substantial highway and transit funding for decades since its inception in 1956, but this is no longer the case. Since 2008, the HTF has been sustained through a series of General Fund transfers now amounting to \$140 billion. Without a solution to this crisis, AASHTO estimates that states will see about a 40 percent drop in highway funding from FY 2020 to the following year—\$46.2 billion to \$27.7 billion in FY 2021. In the past, such similar shortfall situations have led to the possibility of a reduction in federal reimbursements to states on existing obligations, leading to serious cash flow problems for states and resulting in project delays. More alarmingly, due to a steeper projected shortfall in the Mass Transit Account, new federal transit obligations are expected to be zeroed out between FY 2021 and FY 2023, excluding any “flex” of highway dollars to transit. Simply put, this is a devastating scenario that we must do all we can to avoid. Beyond maintaining program levels, there has been broad consensus among states that additional Federal funding and investment is warranted.

Beyond funding stability, after decades of adding layers of regulatory requirements on State transportation agencies, some aspects of the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the FAST Act provided helpful policy reforms. Through the proposed infrastructure package and the next surface transportation reauthorization, AASHTO recognizes that we need to continue the momentum of MAP-21 and the FAST Act by making further efficiency gains on transportation policies and project delivery and provide increased flexibility for States. State DOTs strive to maintain responsible stewardship of taxpayer resources and both human and natural environments, all the while improving both mobility and accessibility for all residents and businesses.

POLICY WHITE PAPERS FROM ELEVEN AASHTO WORKING GROUPS

Resulting from the first phase of the 18-month reauthorization policy development process, this document comprises in-depth policy white papers from the eleven Working Groups listed below.

1. Connected and Automated Vehicles
2. Data Management and Analytics
3. Funding and Finance
4. Operations
5. Performance-based Management
6. Planning
7. Project Delivery: Engineering
8. Project Delivery: Environmental Protection
9. Research and Innovation
10. Safety
11. Transportation System Security and Resilience

After the meeting of the AASHTO Transportation Policy Forum in Atlanta on September 22, recommendations from TPF will be provided to each of the Working Groups for their consideration before finalizing each of these white papers. Upon completion, this package of papers will be updated for review by each of AASHTO's Modal Councils and the Special Committee on Freight for their respective white papers to be completed in early 2019.

TIMELINE

COMPLETED

- **May 2018:** Formally kick off the FAST Act reauthorization effort at the TPF meeting; *2018 AASHTO Spring Meeting, Franklin, TN*

CURRENT

- **May 2018 to September 2018:** Committees to develop and approve their five-page white paper.
- **September 2018:** TPF, Modal Councils, and Special Committee on Freight to receive briefings on each white paper; *2018 AASHTO Annual Meeting, Atlanta, GA*

FUTURE

- **September 2018 to February 2019:** Modal Councils and Special Committee on Freight to develop and approve their five-page white paper.
- **February 2019:** TPF to receive briefings on each Modal and Special Committee white paper; *2019 AASHTO Washington Briefing, Washington, DC*
- **February 2019 to May 2019:** TPF to develop draft policy resolutions based on each white paper.
- **May 2019:** TPF to deliberate on draft policy resolutions developed to date; *2019 AASHTO Spring Meeting, Park City, UT*
- **Summer 2019:** TPF to hold an in-person reauthorization meeting to finalize and adopt draft policy resolutions for Board consideration, amend white papers as necessary, and develop legislative outreach strategy; *2019 AASHTO Joint Policy Conference, Location TBD*
- **October 2019:** AASHTO Board of Directors to consider and formally adopt TPF policy resolutions, and amend white papers as necessary; *2019 AASHTO Annual Meeting, St. Louis, MO*

- **October to November 2019:** AASHTO staff to develop a comprehensive suite of reauthorization policy information composed of policy resolutions, white papers, and visual complements intended to serve different audiences in the transportation stakeholder community.
- **November 2019 to September 2020:** AASHTO members and staff to communicate and explain AASHTO's formal policy positions.

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AASHTO FAST ACT REAUTHORIZATION

1: Connected and Automated Vehicles

INTRODUCTION AND BACKGROUND

The potential of Connected and Automated Vehicle (CAV) technologies to save lives, enhance mobility, and serve as the platform of a new generation of transportation management systems is vast. While there is tremendous potential in significantly improving transportation mobility and accessibility for people with CAVs, the top priority for AASHTO and the state DOTs is the safety associated with the implementation of the technologies. Safety has been, and will remain, at the forefront of AASHTO's policy goals as state DOTs have the primary responsibility for the safe and efficient movement of people and goods on our nation's highways and streets.

Ultimately, it is in the best interest of society that vehicles equipped with CAV technologies be introduced as quickly as possible to realize the saving of lives and improving the quality of life, and a collaborative approach on the challenges will help avoid pitfalls on a much-needed deployment pathway. The traditional division of responsibilities for vehicle safety, under purview of the federal government, and safe operation of vehicles through licensing and registration under purview of the state government has worked well and needs to be maintained in the future. However, the advent of automated vehicles is blurring the role of the vehicle and the operator subject to traditional jurisdictional lines and requires a new collaborative approach to what lies ahead.

The transformative nature of CAVs is just now coming into focus. There are still many questions to be answered from both a policy and technological perspective. While current media attention appears to focus on automated vehicles, AASHTO believes the future includes both connected and automated vehicles. AASHTO's member DOTs believe that establishing a strong foundation for CAVs requires robust connectedness for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE #1 Deploying CAV Technologies in the Safest Manner Possible is Paramount

- *Current Federal Policy:* None
- *Issue:* Safety is the most important consideration for AASHTO and state DOTs respecting highway infrastructure and the emerging deployment of CAVs. It is estimated that over 90 percent of fatal vehicle crashes are a result of human error some of which could be mitigated through CAV technologies. These new technologies have the potential to decrease crashes and fatalities significantly and positively influence the safety of not only vehicle occupants, but also highway maintenance and construction workers, bicyclists, and pedestrians. While the prospect for safety improvement is exciting, we are also acutely aware that this is truly innovative technology and there are still uncertainties surrounding it. However, any slowdown in the deployment of CAV technologies will result in a substantial setback in our nation's efforts to reduce the number of traffic crashes that result in death or injury.
- *Recommendations:*
 - AASHTO continues its commitment to safety as a top priority for the transportation industry and strongly believes that connected and automated vehicles have the potential to further reduce motor vehicle crashes and traffic related fatalities.

- The demonstration of connected and automated vehicles must continue and provide the data and examples necessary to establish the safety benefits of this technology. Initial data generated by automobile manufacturers, technology developers, research organizations, and public agencies must be shared and the results transparent to the public and decision makers.
- Any proposed laws, regulations, or guidance by federal or state governments should not pick winners or losers of technology but remain neutral and open to innovation and changes.
- Government regulators and lawmakers should revise or remove outdated safety related laws, regulations and guidance as data demonstrates a technology's ability to provide an equivalent or higher level of safety than current regulations support or incorporate.

ISSUE #2: The Future of Transportation Includes Connected and Automated Vehicles

- *Current Federal Policy:* None
- *Issue:* While there has been significant focus on autonomous vehicles (AV) and the benefits they may bring, there has been less attention on a future that includes connected vehicles (CV). As infrastructure owners and operators, State DOTs believe that establishing a strong foundation for AVs requires ensuring robust connectedness for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication. The overwhelming support for the development and deployment of CAV systems is evident in the significant commitment that state and local agencies have already made in leading, supporting, and fostering the testing and deployment these new technologies. To date, 33 locations in the US are deploying connected vehicle (CV) technologies under sponsorship of USDOT and seventeen locations are deploying the technologies without sponsorship from USDOT. Combined, this represents 72,000 vehicles on the road and 65,000 devices installed on the infrastructure.

Many of these CV deployments involve state transportation agencies and AASHTO is working and supporting the states in many different ways. For example, AASHTO is supporting a national traffic signal phasing and timing (SPaT) challenge, which is challenging state and local public sector transportation infrastructure owners and operators to achieve deployment of dedicated short-range communications (DSRC) 5.9 GHz infrastructure with SPaT broadcasts in at least one corridor or network (approximately 20 signalized intersections) in each of the 50 states by January 2020. As of August 30, 2018, at least 26 states have committed to the challenge. More than 200 signals are broadcasting SPaT and more than 2,000 additional signals are planned. States and local transportation agencies have invested millions of dollars in DSRC, and they do not want that investment to be a waste. However, there is little federal direction regarding communications between V2V and V2I communication. Some States are unsure if they should invest in DSRC or 5G, or both for V2I communications, which slows the advancement of this technology. Nationwide interoperability, including further deployment of DSRC, is essential.

- *Recommendations:*
 - AASHTO supports integrating Connected Vehicle technologies with the development and deployment of Autonomous Vehicles to maximize public safety.
 - AASHTO urges USDOT to ensure that its effort to establish a nationwide standard for V2V safety communications continues unimpeded such that other connected vehicle applications can be developed and deployed.
 - AASHTO believes the transportation industry must use every tool available, including DSRC, to make our vehicles, highways and roads safer. The DSRC spectrum is the only viable technology available now and U.S. DOT should support its use for connected vehicle applications. Also, DSRC should be protected solely for V2X uses and not allow it to be used for sharing with other uses.

- AASHTO also recognizes that the future is uncertain with regard to technological innovation. The industry must remain flexible with regard to technical approaches and standards development. While DSRC is the only viable technology available now to support V2X applications, any standards development that occurs now should not impede technological innovation in the future.
- A universal, seamless approach to security management and CV communication is essential for the widespread deployment of connected vehicles. The Federal government should quickly lead this development through standardization and appropriate research and technology demonstration programs. This will help state better understand when and how to make investments that they consider appropriate.

ISSUE #3: Any New Laws or Regulations Must Maintain the Current Federal-State Regulatory Paradigm and Any Changes Should be Done Collaboratively with the States

- *Current Federal Policy:* 49 CFR Part 571: *Federal Motor Vehicle Safety Standards*
- *Issue:* Historically, the regulation concerning the design, construction, and performance of a motor vehicle is a Federal obligation that has been under the oversight of the National Highway Traffic Safety Administration through the Federal Motor Vehicle Safety Standards (FMVSS). The licensing of motor vehicle operators, registration of vehicles, and enforcement of traffic laws have been the domain of states. In other words, the federal role is focused on *what can be sold* through the establishment of safety standards, emissions standards and consumer protection. The state and local role is focused on *who* can operate and *where, when and how* vehicles are used.

The development of automated driving systems (ADS) has the potential to disrupt this separation of design versus operation whereby motor vehicles are no longer driven by a person but by the ADS (i.e., artificial intelligence) and important questions about design, regulation, and certification of complex computer systems must be addressed. Already, there are bills in both the House and Senate that would potentially preempt state law by focusing, in part, on the performance of an ADS and affecting the *how* aspect of vehicles which is currently under the domain of states.

- *Recommendation:*
 - AASHTO recommends that the current federal-state regulatory paradigm remain intact when it comes to developing any new federal law, regulation or guidance. In addressing this and many other questions, states should be able to maintain their traditional oversight of vehicle operations and enforcement of traffic laws.
 - As technical and policy developments occur and lessons are gained, any regulations and laws needed to rebalance this separation of roles should be done collaboratively with the states (through AAMVA and AASHTO) to assure the safe deployment of CAVs.

ISSUE #4: State Laws Concerning the Operation of Connected and Automated Vehicles Need to be Uniform and Consistent

- *Current Federal Policy:* None
- *Issue:* Each state sets laws and regulations for the licensing, registration and insuring of vehicles, and states have honored registrations and licenses from other states through harmonization of minimum requirements. As states begin to grapple with how to approach AVs, some are instituting restrictions on their operation, requiring special license plates or limiting their operation to specific areas, while others are treating AVs as a standard motor vehicle, allowing operation anywhere under any safe condition. As the technology advances faster than the ability of state regulatory agencies or legislatures to respond, those laws and regulations may end up hindering technological advancements or encouraging companies to operate in states that offer friendlier regulatory

environments. Thus, a patchwork system for the operation of AVs could slow nationwide deployment, leading to the uneven accrual of benefits across the states.

For example, New York garnered attention with a debate over a state law that requires drivers to keep one hand on the steering wheel, which could limit the use of AVs based on the definition of “driver.” Also, many states have regulations prohibiting video screens from being visible to drivers as well as prohibitions against the consumption of alcohol by drivers and, in most states, passengers. These regulations are being questioned by the anticipated deployment of Level 5 (fully autonomous) AVs. One of the most glaring examples of a regulation that could hamstring future technology is the common requirement that drivers remain a reasonable distance behind other vehicles to allow for safe braking, also known as “following too closely” laws. Pennsylvania statutes include language requiring vehicles being driven in a caravan or motorcade to “allow sufficient space between each vehicle or combination of vehicles so as to enable any other vehicle to enter and occupy space without danger.” Even before Level 5 AVs are common on the roads, connected vehicle technology will allow for the safe platooning of vehicles; strictly applied, “following too closely” laws could prohibit the use of platooning on public roads, eliminating anticipated benefits to fuel efficiency and congestion.

- *Recommendation:*
 - State DOTs should commit to working with their sister agencies at the state level to ensure a unified national framework to facilitate the development, testing, and deployment of CAV technologies, including further harmonization of state-level traffic and vehicle rules affecting the operation of such technologies.
 - State DOTs should continue to work through the Autonomous Vehicle Best Practices Working Group, hosted by the American Association of Motor Vehicle Administrators (AAMVA) that is providing states and other stakeholders with a venue in which to gather, organize and share information about the testing, use and regulation of AVs.

ISSUE #5: State DOTs Need Additional Funding and Flexibility in Order to Deploy CAV Technologies and Accommodate CAV Vehicles

- *Current Federal Policy:* None
- *Issue:* States are struggling to find the fiscal resources to maintain the infrastructure as it exists today, so having to invest in new technology to retrofit existing roads, bridges and other infrastructure to accommodate CAVs will be difficult with current funding. Consequently, benefits will not accrue unless states can afford to make the necessary investments. There are a number of test bed and pilot connected vehicle programs taking place where we are learning a lot about the cost to deploy the CV hardware. As with all technology, costs can change rapidly as the new developments occur.

State DOTs know considerably less about the cost of ensuring automated vehicles are able to operate on the roadways. Currently, state DOTs (and other infrastructure owners) are uncertain, at least at a detailed level, which roadway characteristics are critically important to the safe and efficient operation of AVs: pavement condition, signage, detailed GPS base maps, or striping. We know some of the developers’ needs in a general way as industry has filed comments at U.S. DOT that signage and lane marking and striping are important. In fact, one state has responded to this concern by going from 4-inch to 6-inch stripes to help the technology developers with their sensors and lane departure warning systems. Other states, however, are not as willing to modify their lane striping widths because this is seen as a major investment. Further, there is uncertainty whether or under what circumstances replacing striping for purpose of AV deployment is a capital investment (eligible under FHWA programs) or a maintenance activity and not eligible for reimbursement.

- *Recommendation:*
 - Congress is urged to grow federal surface transportation funding significantly above the current FAST Act funding levels and to make the deployment of connected and automated vehicle infrastructure needs eligible for funding beyond the historical aspect of funding only capital expenses to include maintenance activities critical or helpful to the proper and safe operation of CAVs.
 - Flexibility is needed in the federal aid procurement rules to reflect that the CAV equipment is not the same as procurement for a more traditional construction project and that other considerations need to be made.
 - State DOTs are committed to maintaining their assets in as good a condition as possible given the resources available to them. At this point, state DOTs do not know what, or if, minimum conditions are needed for ADS to operate effectively or what the minimum condition levels should be. The state DOTs look forward to working with other public and private sector partners in updating the practical meaning of state of good repair in a world of deployed CAVs.
 - AASHTO recommends additional federal funding for building new testbeds and maintaining existing ones, with the industry and technology developers testing their hardware and applications on such testbeds. This will enable infrastructure owners and technology developers to better understand each other's requirements. That should lead to better standards and, ultimately, better infrastructure.

ISSUE #6: CAVs Will Produce Significant Amounts of Data and There is a Data Governance Gap

- *Current Federal Policy:* None
- *Issue:* The data concerns of CAVs are complex and the needed laws, regulations, and guidance are simply not well known at this time. It is very likely that CAVs will collect and transmit massive amounts of data from an array of sensors and cameras. These data will become extremely valuable to many different players and actors. For example, AV data could include origin-destination and ridership data (for better planning) or the condition of pavements, signs, and road markings (for better asset management). Should such information become available to state and local transportation officials through AVs, the improved data quality would likely facilitate improved planning and decision making. The availability of such information from AVs also could reduce some state data collection costs, freeing up personnel and funds for other important uses. However, this data would likely be valuable and useful to others as well. The private sector would likely monetize it some way and would also be collecting it. Law enforcement could use the information as evidence of a crime that was committed near a vehicle.

Further, AASHTO has a number of concerns about the data being generated by CAVs specifically in a testing environment, which we are currently in:

- Who is this information intended to be shared with?
- Will state and local law enforcement agencies, state DOTs, and insurance companies have access?
- Will data sharing be the prerogative of the individual manufacturers, or will there be regulation about which entities have access?
- Who owns and controls this data: the vehicle owner, the manufacturer, or a government agency?

Without controls in place to regulate or monitor use of the data that CAVs are currently collecting and clarification over who "owns" the data that AVs generate, fears over invasions of privacy will likely increase. To complicate matters, most state agencies are subject to government records

requests, which can become very burdensome if the data can be tied to specific instances. Data sharing should be evaluated carefully to determine which data is able to be shared with all entities.

- **Recommendation:**
 - Continue to collaborate with industry to better understand data issues and develop consensus on future paths forward related to the collection, sharing, and use of data related to CAVs.
 - Because the industry is in the preliminary testing phase of AVs operating on public roadways, AASHTO strongly recommends the broad sharing of information associated with crashes and near-misses occur so that collective learning can happen while still protecting proprietary information of the technology developers.
 - The data for which events are shared includes non-crash data such as since “near miss” and disengagement events which can be as important as crash scenarios when assessing road conditions. Currently, the data recording is suggested to be limited to fatal crashes, personal injury crashes, and crashes involving towed vehicles.

ISSUE #7: The Deployment of CAVs Will Continue to Require a Collaborative Approach

- **Current Federal Policy:** NHTSA Automated Driving Systems 2.0 Policy Guidance
- **Issue:** In NHTSA's *Automated Driving Systems 2.0: A Vision for Safety* they specifically state that “Collaboration is essential as our Nation embraces the many technological developments affecting our public roadways.” AASHTO agrees with this statement and looks forward to working collaboratively with NHTSA, local governments, and the private sector on the testing and deployment of connected and automated vehicles. For example, infrastructure owners and operators want more information from the automakers about what infrastructure elements they need in order to be successful. The advent of ADS and connected technology represents a new paradigm in the relationship between these two segments of the transportation community. We recognize that automakers work in a very competitive environment, and may be challenged to reach consensus on their needs. Similarly, road agencies range in size and capability and don't often speak with a uniform voice. However, if we are to provide infrastructure that supports these new technologies, both physical and digital infrastructure, clearer guidance from the automaker industry would be helpful.
- **Recommendation:**
 - Greatly expanded overall industry collaboration to include broader and active participation from the private sector as well as more public sector agencies. There are existing structures in place—such as the Cooperative Automated Transportation (CAT) Coalition, the Connected Vehicle Pooled Fund Study, and the Collision Avoidance Metrics Partnership—that bring together state and local DOT representatives, research partners, USDOT, auto industry, original equipment manufacturers, and technology vendors. In addition, we would like to see more engagement from non-traditional, original equipment manufacturers.
 - Establish a structured advisory and deployment coordination program between automakers, original equipment manufacturers and government that would support the development and deployment of vehicle and infrastructure innovation to support mobility, goods movement and safety. Utilize groups to design future federal funding requests and proposed federal policy changes within Congress.

AASHTO FAST ACT REAUTHORIZATION

2: Data Management and Analytics

INTRODUCTION AND BACKGROUND

The Committee on Data Management and Analytics addresses data issues that are inherently cross disciplinary and multi modal. Policy and legislation on data tends to be limited to concerning data for a specific purpose, such as safety or performance measures; there are no explicit policy resolutions or legislative language that addresses Data as a whole, or as a practice. Because of this, the Committee on data recommends as part of a policy and legislative agenda to disseminate and promote the AASHTO Core Data Principles and focus strategically on a few important policy issues; unfunded mandates, specifically dictated data sources and data security. The Core Data Principles are developed to help AASHTO members and data practitioners maintain good data practices for all data uses.

The Principles are:

- Principle 1 – VALUABLE: Data is an asset—Data is a core business asset that has value and is managed accordingly.
- Principle 2 – AVAILABLE: Data is open, accessible, transparent and shared —Access to data is critical to performing duties and functions, data must be open and usable for diverse applications and open to all.
- Principle 3 – RELIABLE: Data quality and extent is fit for a variety of applications—Data quality is acceptable and meets the needs for which it is intended.
- Principle 4 – AUTHORIZED: Data is secure and compliant with regulations—Data is trustworthy and is safeguarded from unauthorized access, whether malicious, fraudulent or erroneous
- Principle 5 CLEAR: There is a common vocabulary and data definition —Data dictionaries are developed and metadata established to maximize consistency and transparency of data across systems.
- Principle 6 – EFFICIENT: Data is not duplicated —Data is collected once and used many times for many purposes.
- Principle 7 – ACCOUNTABLE: Decisions maximize the benefit of data Timely, relevant, high quality data are essential to maximize the utility of data for decision making.

Issues concerning data as it relates to specific disciplines can be found in the reauthorization recommendations regarding those disciplines, notable instances are

- Paper 1: Connected and Automated Vehicles issue #6; CAVs Will Produce Significant Amounts of Data and There is a Data Governance Gap
- Paper 3: Funding and Finance issue #10 Reduce and Simplify Regulations, Requirements, Data Collections, and Process to Expedite the Process
- Paper 5: Performance Based Management issue #3; Performance Management Regulations Should Be Improved to Reduce the Burden on State DOTs
- Paper 6: Planning issue #7; Mitigate the Burden of Data Collection Related to the Performance-Based Planning and Performance Management Regulations
- Paper 10: Safety issue #2; Data Protection
- Paper 11: Transportation System Security and Reliability issue #7: Promote Cyber Security Strategies

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE #1: Unfunded Mandates

- *Issue:* It is of great concern to the Committee on Data Management and Analytics that policies and legislation may be proposed or enacted that create unfunded mandates regarding data collection and management. Instead, a focus on the core data principles at a broad level, allows for the unique needs of each state to be met within a data driven approach to address management and operation of the transportation system.
- *Recommendations:* The data committee recommends that if a data requirement is proposed or stated that sufficient resources be made available outside of simple federal eligibility flexibility to manage the required data in accordance with the seven AASHTO Core Data Principles detailed above.

ISSUE #2: Privacy, Security, Cyber Security

- *Issue:* Data privacy and data security must be considered in any recommendations regarding data as it relates to transportation and transportation issues. Transportation initiatives are subject to privacy and security rulings made outside of transportation's purview. In the era of big data, probe data, commercially collected, bought and sold data, any legislation regarding data privacy and security must be gravely and thoughtfully considered.
- *Recommendation:* The focus and resources associated with data security needs to be integrated with any elements in the rapidly evolving world of connected and autonomous vehicles. As the vehicles themselves and the associated intelligent infrastructure are dependent on the flow of data, data security becomes a greater operational concern.

AASHTO FAST ACT REAUTHORIZATION

3: Funding and Finance

INTRODUCTION AND BACKGROUND

The Fixing America's Surface Transportation (FAST) Act was signed into law on December 4, 2015. The FAST Act authorizes Federal highway, highway safety, transit, and rail programs for five years from Federal fiscal years (FY) 2016 through 2020. The FAST Act authorized \$305 billion from both the Highway Trust Fund (HTF) and the General Fund (GF) of the United States Treasury. The bill preserved HTF solvency with general fund transfers totaling \$70 billion through 2020.

The nation needs a significant increase in federal transportation formula funding, beyond FAST Act funding levels, along with timely, sustainable, long-term funding to meet national needs for economic competitiveness, connectivity, safety and security. New transportation revenue options should be considered to supplement or replace the deteriorating federal revenue stream. As investment needs grow, HTF revenues derived from fuel taxes will continue to decline due mainly to increased vehicle fuel efficiency.

Additionally, the FAST Act includes a \$7.6 billion rescission of unobligated contract authority scheduled for July 2020. Congress should avoid using rescissions of highway contract authority because they impede state DOT flexibility in programming Federal dollars and can result in cuts to highway funding and services, reducing transportation system performance.

The Committee on Funding and Finance is charged with identifying specific policy issues and recommendations related to funding and finance. This white paper presents recommended policies for consideration by AASHTO and the Transportation Policy Forum.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE #1: Increase Federal Funding

- *Current Federal Policy:* The FAST Act authorized \$305 billion from both the Highway Trust Fund (HTF) and the General Fund (GF) of the United States Treasury. It provided \$225 billion in HTF contract authority over five years for the Federal-Aid Highway Program and \$61 billion over five years for Federal transit programs. It also includes funding for highway safety, authorized general funding for rail, and increased emphasis on freight investments through new highway program elements supported by the HTF.
- *Issue:* Our nation is currently faced with aging infrastructure, a growing national population, and a major transportation funding shortfall. The American Society of Civil engineers has identified a \$1.1 trillion funding gap for surface transportation between 2016 and 2025. It is essential to increase federal funding for surface transportation to sustain national and regional connectivity and mobility for people and business. The federal government must connect the nation. Reducing that role or proposing turnback of the system is not appropriate. The states cannot fund a dynamic and efficient national transportation system alone.
- *Recommendation:* Congress is urged to increase federal surface transportation funding significantly above the current FAST Act funding levels. Enhanced federal funding is required for both rural and

urban areas of the country to improve the quality of life and to increase the Nation's economic vitality, well-being, and competitiveness.

ISSUE #2: Fix the Federal Highway Trust Fund (HTF) and Strengthen Federal Transportation Funding

- *Current Federal Policy:* The HTF serves as the backbone of Federal highway and transit programs and was once supported solely by user fees. Since 2008, the HTF has been sustained by supplementing user fees through a series of General Fund transfers now amounting to \$140 billion. According to the Congressional Budget Office, annual HTF spending at current levels plus inflation is estimated to exceed receipts by \$16 billion in FY 2020, growing to \$23 billion by FY 2027.
- *Issue:* HTF revenues, mainly derived from fuel taxes, will continue to decline due to increased vehicle fuel efficiency and growing use of alternative fuel vehicles. Absent legislation, in FY 2021, the HTF is expected to experience a significant cash shortfall leading to an estimated 40 percent drop in highway obligations from the year before, or from \$46.2 billion to \$27.7 billion, and a near zeroing out of the Mass Transit Account.
- *Recommendation:* Congress must provide sustainable, certain, long-term funding to the HTF to support multi-year legislation. There is no shortage of technically feasible tax and user fee options that Congress and the Administration can consider. See the "Matrix of Illustrative Surface Transportation Revenue Options" appendix for a menu of options to fix the HTF and strengthen Federal surface transportation funding, including funding from the General Fund. Congress should continue to fund the development and implementation of revenue alternatives to the motor fuel tax, such as the Surface Transportation System Funding Alternatives Program, which was established under the FAST Act and provides \$95 million over five years to states to demonstrate alternative revenue methods that incorporate a user fee structure to maintain the long-term solvency of the HTF.

ISSUE #3: Prioritize Formula-based Federal Funding

- *Current Federal Policy:* The Federal-aid Highway Program is a Federally-assisted state program that is rooted in Article 1, Section 8 of the United State Constitution and confirmed by 23 U.S.C 145. Currently, approximately 90 percent of the Federal highway program funds are distributed to the states by formula. This approach of emphasizing formula funds has a decades long track record of success in supporting long-term capital improvements across the United States. This enables funds to be distributed to states in a stable and predictable manner and allows the Federal program to efficiently deliver projects that have been identified and prioritized through the statewide and metropolitan planning processes.
- *Issue:* Recently proposals have been advanced that would greatly increase the discretionary funding programs, with projects chosen by the Federal Government. These proposals combine the discretionary programs with requirements that states and others greatly increase their contributions or greatly leverage Federal dollars. For a variety of reasons, many states cannot leverage funding beyond the current matching requirements. This makes it critical that Congress continue to recognize the importance of continuing the current prioritization of formula funding over discretionary funding. Using discretionary programs, the Federal government must solicit applications and review them before awarding funds which delays the deployment of funds. In addition, not only are grant applications costly in both time and dollars, such grant dollars are uncertain by nature preventing states from properly planning. This results in lost efficiency and added complexity to processes and project delivery. More funding for discretionary programs will likely result in an even lengthier processing timeframe making them an inefficient way to increase investments in transportation infrastructure.

- *Recommendation:* Congress should continue to prioritize formula funding over discretionary funding. State and local governments have existing plans and processes in place and can put new Federal formula funds to work promptly.

ISSUE #4: Eliminate Rescissions of Contract Authority

- *Current Federal Policy:* Congress has used rescissions of highway contract authority as budgetary offsets. An \$856 million rescission in unobligated contract authority was enacted in June 2017 and a \$7.6 billion rescission is scheduled for July 2020 under the FAST Act. The \$7.6 billion rescission would be derived from Federal-aid Highway Program categories other than those that are exempt including: Highway Safety Improvement Program, Railway-Highway Crossing Program, and sub-allocated portions of the STBGP. Non-exempt program dollars are required to be rescinded from unobligated balances remaining on that date on a proportional basis.
- *Issue:* Rescinding previously-authorized highway contract authority greatly impedes the flexibility of state departments of transportation to program Federal dollars and could result in hard cuts to highway funding.
- *Recommendation:* Congress is urged to repeal the scheduled FY 2020 rescission and avoid using rescissions of highway contract authority. However, if a rescission is imposed, no funding categories should be exempt. States should have the flexibility to choose among all the funding categories to rescind so they can reduce the negative impact of the rescission on transportation service and performance.

ISSUE #5: Preserve the Current Federal/State Matching Ratio Requirements

- *Current Federal Policy:* While there are exceptions, 23 U.S.C. 120 generally requires most federal-aid transportation projects to have an 80 percent federal share and a 20 percent state matching share. This 80/20 Federal/Non-Federal funding share means Federal support is focused on larger capital projects and leverages state and local dollars to be used for a much broader array of projects.
- *Issue:* This 80/20 Federal/Non-Federal funding match has a proven track record of success. Many states have recently raised revenues, however, some states remain challenged to meet the 20 percent non-Federal match requirements. States and local governments already provide approximately 75 percent of transportation funding for highways and transit. Achieving national goals require our federal partners to contribute an equitable share. There are significant needs for state and other non-federal transportation funding to operate and maintain the federal system as well as provide capital, operating, and maintenance funding for non-federal, state and local transportation systems. The current matching requirements allow state and local dollars to be used to match federal funds and also to be used for non-federal transportation.
- *Recommendation:* Maintain the current federal/state matching ratio requirements for projects and explore innovative match strategies (e.g., the sale of toll credits).

ISSUE #6: Increase flexibility and transferability of funding

- *Current Federal Policy:* The total amount of Federal highway funding apportioned to a state is divided among the individual apportioned programs. Each program has rules that are not always flexible regarding how the funds may be used. Each program is governed by transferability provisions that are established in statute.
- *Issue:* AASHTO supports increased flexibility in programs and in transferring funding among the programs. Such reform would enable states to direct funding to better meet their needs, whether for preservation, capacity, safety or other needs. This flexibility in directing funds is especially important when overall funding is insufficient.

- *Recommendation:* AASHTO recommends increased transferability/flexibility of highway program funds.

ISSUE #7: Maintain the current balance of funding among highways, transit, and highway safety

- *Current Federal Policy:* The Highway Trust Fund supports highway, transit, and highway safety programs. The FAST Act also added a new National Highway Freight Program (NHFP) and a new discretionary program entitled the Nationally Significant Freight and Highway Programs (now known as Infrastructure for Rebuilding America or INFRA) within the highway program. Additionally, the general fund supports rail programs.
- *Issue:* The current funding balance along with transferability and flexibility allows states to direct available funding to meet highway, safety, and transit needs. The most recent FHWA Conditions and Performance report estimated the highway backlog at \$836 billion and a transit backlog of \$90 billion. States need all the tools to address such a high level of need.
- *Recommendation:* Maintain the current balance of funding among highways, transit and highway safety from the HTF and continue General Fund support for rail programs.

ISSUE #8: Support for Financing Tools

- *Current Federal Policy:* Title 23 authorizes a number of beneficial transportation financing tools, including the Transportation Infrastructure Finance and Innovation Act (TIFIA), Grant Anticipation Revenue Vehicles (GARVEEs), State Infrastructure Banks (SIBs), and Private Activity Bonds (PABs).
- *Issue:* While not a substitute for adequate funding, states need access to financing tools to help maximize the value of existing resources, particularly when federal funding is insufficient.
- *Recommendation:* While most projects require Federal support in the form of direct funding rather than financing incentives, Congress should continue to support the financing tools currently provided and support new innovative financing tools.

ISSUE #9: Provide Flexibility to Toll Federal-aid Highways

- *Current Federal Policy:* In most cases, federal law (23 USC 301) restricts states from tolling Federal-aid Highways, which eliminates a potential source of revenue. The Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP) was authorized under Section 1216(b) of TEA-21 to permit up to three existing Interstate facilities to be tolled to fund needed reconstruction on Interstate corridors that could not otherwise be adequately maintained or functionally improved without the collection of tolls.
- *Issue:* In some states, a portion of the transportation facilities cannot be adequately maintained or functionally improved without toll collection; however, federal law imposes restrictions on states from tolling Interstate routes.
- *Recommendation:* Provide increased tolling flexibility to states.

ISSUE #10: Reduce and Simplify Regulations, Requirements, Data Collections, and Process to Expedite the Process

- *Current Federal Policy:* Preserve useful program and policy reforms and support additional opportunities to streamline and simplify the federal surface transportation programs.
- *Issue:* Notwithstanding efforts by AASHTO, current Federal surface transportation programs are subject to significant requirements and processes. Appropriate reduction of such requirements will save money, increase efficiency, and allow more funding to be used to improve transportation services. Some requirements are particularly tied to finance and funding. Under the current uncertain federal funding conditions, performance management, asset management, and financial

planning requirements have far less value for decision making and risk is multiplied. If federal transportation appropriations are not known at the beginning of the federal fiscal year, financial planning, financial forecasting, programming, performance, and asset management are adversely affected. This is further accentuated if these decision systems use financial optimization methods over long-time frames. Many of the financial planning and forecasting requirements are associated with the statutory language “reasonably expected to be available.” For such purposes it is critical to know both ‘how much funding and when the funding will reasonably be available.’

- **Recommendation:** There are financial process difficulties caused by federal funding uncertainty in the fiscal constraint and financial planning provisions related to the State Long Range Plan, the Statewide Transportation Improvement Program, the Asset Management Plan, and Performance Management. Defining “reasonably expected to be available” is important. Fiscal constraint and other financial requirements in planning and programming are excessive and should be reduced. At most, they should be imposed for no more than the STIP timeframe. States should have the option to do financial estimates for longer periods if desired.

Other AASHTO committees’ white papers will identify additional Title 23 statutory and regulatory recommendations to improve project delivery to supplement these financial and funding recommendations. Because any inefficient process requirements reduce funding available to improve transportation services, other inefficiencies need to be addressed. They directly affect the ultimate result we all seek---a better transportation system.

Exhibit 1: Estimated Highway Trust Fund Receipts and Outlays

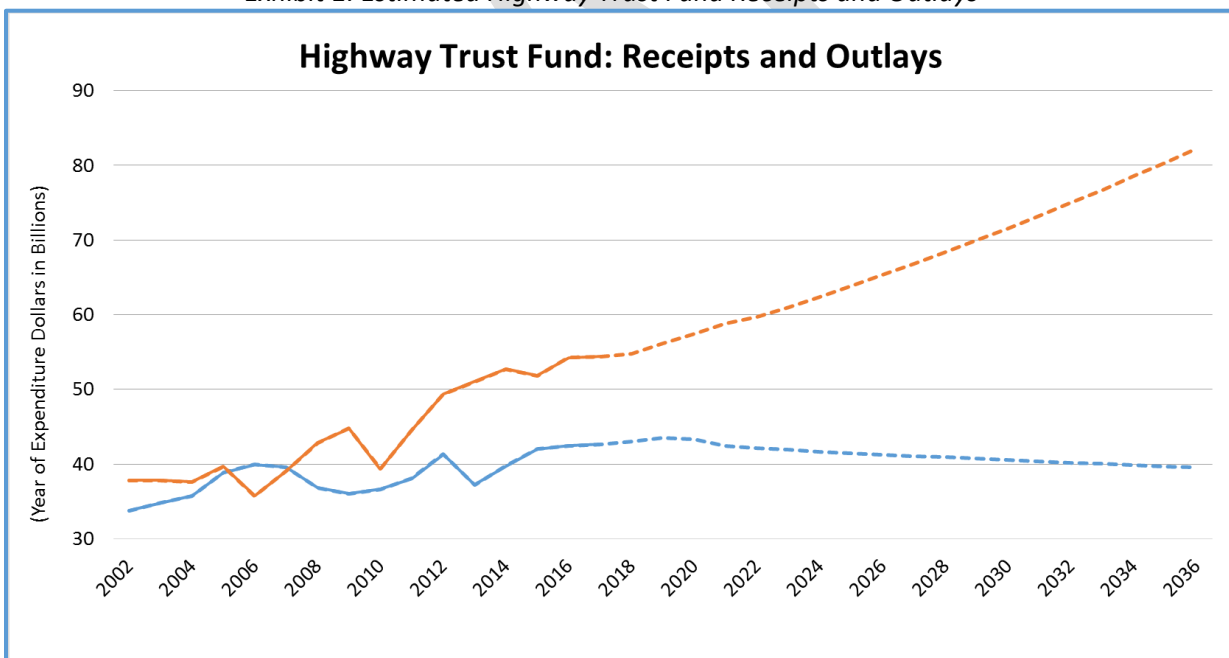


Exhibit 2: Estimated Highway Trust Fund and General Fund Obligations

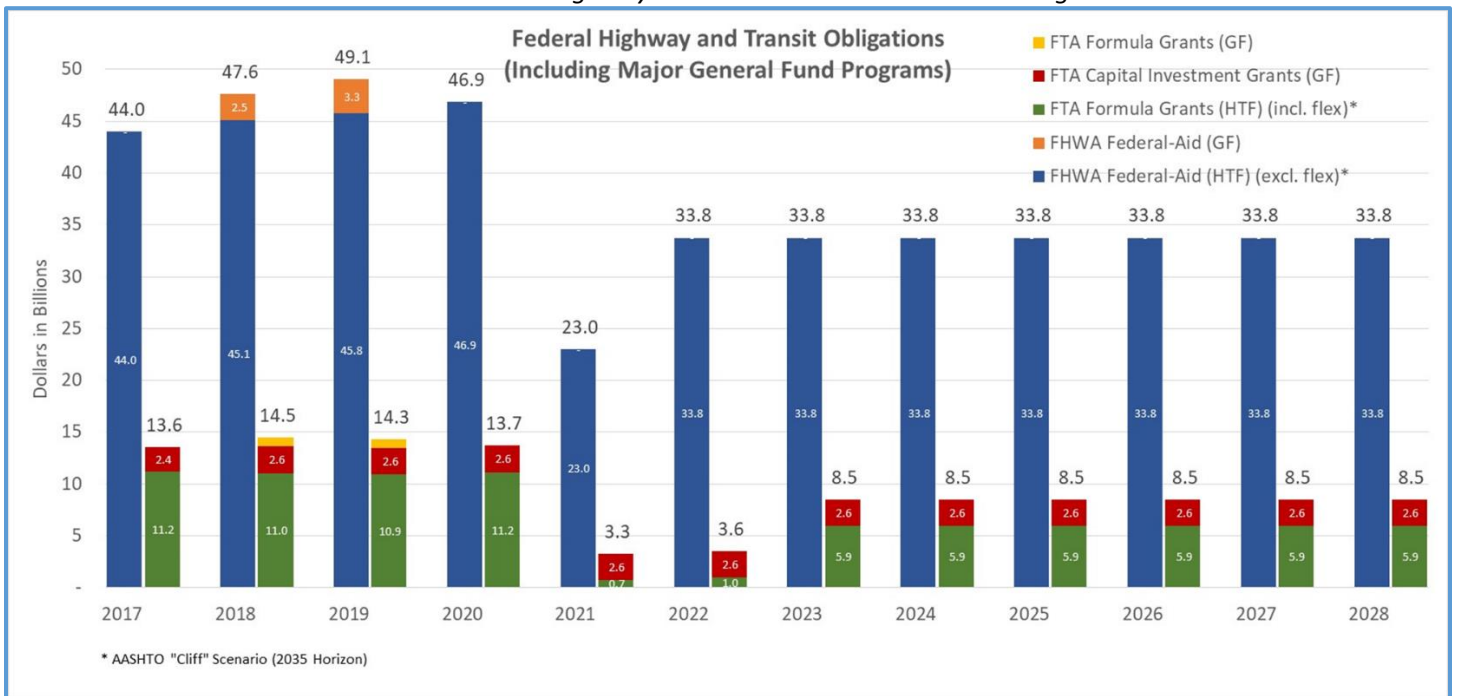


Exhibit 3: Estimated Highway Trust Fund Obligations

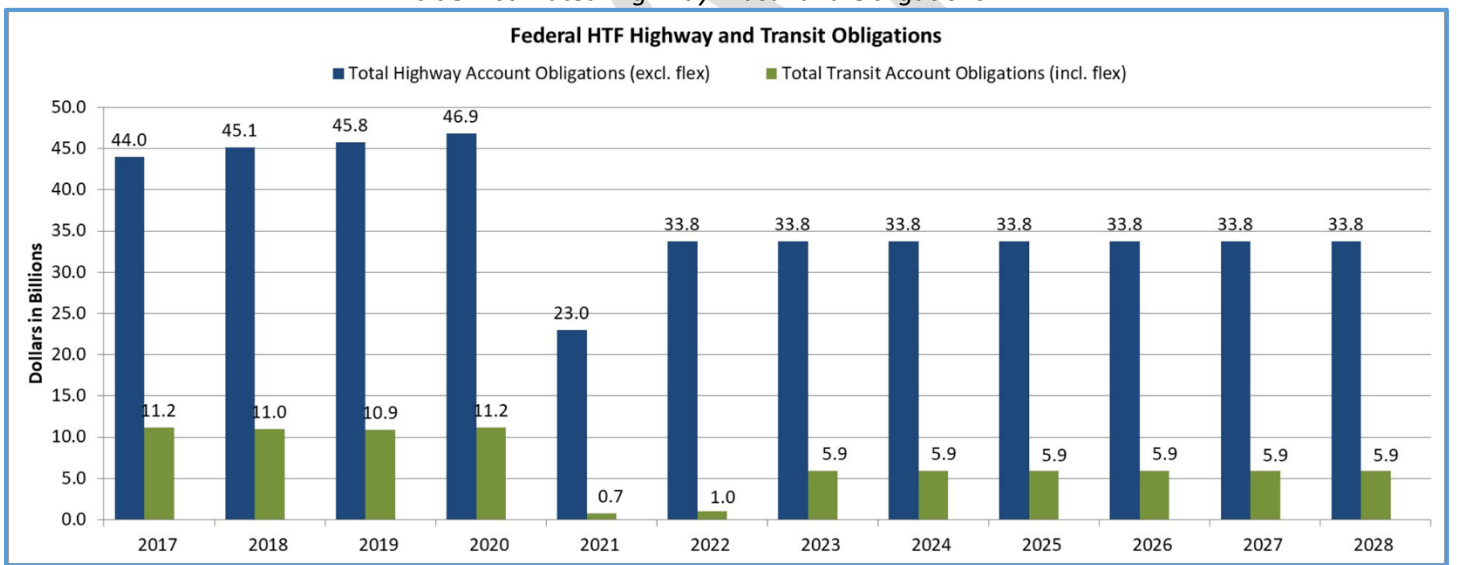


Exhibit 4: Matrix of Illustrative Surface Transportation Revenue Options

(\$ in Billions)				
	Illustrative Rate or Percentage Increase	Description of Mechanism/ Increase	Current Yield Estimate	Estimated 5-Year Revenues
Existing HTF Funding Mechanisms				
Diesel Excise Tax	20.0¢	¢/gal increase in current rate	\$8.8	\$42.2
Gasoline Excise Tax	15.0¢	¢/gal increase in current rate	\$21.8	\$102.1
MFT Indexing of Current Rate to CPI (Diesel)	--	¢/gal excise tax		\$3.7
MFT Indexing of Current Rate to CPI (Gas)	--	¢/gal excise tax		\$8.8
Truck and Trailer Sales Tax	20.0%	increase in current revenues, structure not defined	\$0.6	\$4.2
Truck Tire Tax	20.0%	increase in current revenues, structure not defined	\$0.1	\$0.5
Heavy Vehicle Use Tax	20.0%	increase in current revenues, structure not defined	\$0.2	\$1.2
Other Existing Taxes				
Minerals Related Receipts	25.0%	increase in/reallocation of current revenues, structure not defined	\$2.2	\$11.6
Harbor Maintenance Tax	25.0%	increase in/reallocation of current revenues, structure not defined	\$0.4	\$2.3
Customs Revenues	5.0%	increase in/reallocation of current revenues, structure not defined	\$1.8	\$9.7
Income Tax - Personal	0.5%	increase in/reallocation of current revenues, structure not defined	\$6.7	\$36.0
Income Tax - Business	1.0%	increase in/reallocation of current revenues, structure not defined	\$2.8	\$15.0
License and Registration Fees				
Drivers License Surcharge	\$5.00	dollar assessed annually	\$1.1	\$5.8
Registration Fee (Electric LDVs)	\$100.00	dollar assessed annually	\$0.0	\$0.1
Registration Fee (Hybrid LDVs)	\$50.00	dollar assessed annually	\$0.2	\$0.9
Registration Fee (Light Duty Vehicles)	\$5.00	dollar assessed annually	\$1.2	\$6.4
Registration Fee (Trucks)	\$100.00	dollar assessed annually	\$1.1	\$5.8
Registration Fee (All vehicles)	\$5.00	dollar assessed annually	\$2.3	\$12.2
Weight and Distance Based Fees				
Freight Charge - Ton (Truck Only)	10.0¢	¢/ton of domestic shipments	\$1.2	\$6.3
Freight Charge - Ton (All Modes)	10.0¢	¢/ton of domestic shipments	\$1.4	\$7.7
Freight Charge - Ton-Mile (Truck Only)	0.5¢	¢/ton-mile of domestic shipments	\$10.1	\$53.9
Freight Charge - Ton-Mile (All Modes)	0.5¢	¢/ton-mile of domestic shipments	\$21.4	\$114.5
Transit Passenger Miles Traveled Fee	1.0¢	¢/ passenger mile traveled on all transit modes	\$0.6	\$3.0
Vehicle Miles Traveled Fee (Light Duty Vehicles)	1.0¢	¢/LDV vehicle mile traveled on all roads	\$27.2	\$145.6
Vehicle Miles Traveled Fee (Trucks)	1.0¢	¢/truck vehicle mile traveled on all roads	\$2.7	\$14.7
Vehicle Miles Traveled Fee (All Vehicles)	--	¢/ vehicle mile traveled on all roads	\$29.9	\$160.3
Sales Taxes on Transportation Related Economic Activity				
Freight Bill - Truck Only	0.5%	percent of gross freight revenues (primary shipments only)	\$3.1	\$16.8
Freight Bill - All Modes	0.5%	percent of gross freight revenues (primary shipments only)	\$3.9	\$20.8
Sales Tax on New Light Duty Vehicles	1.0%	percent of sales	\$2.4	\$12.9
Sales Tax on New and Used Light Duty Vehicles	1.0%	percent of sales	\$3.5	\$18.6
Sales Tax on Auto-related Parts & Services	1.0%	percent of sales	\$2.3	\$12.5
Sales Tax on Diesel	2.0%	percent of sales (excl. excise taxes)	\$2.5	\$13.6
Sales Tax on Gas	2.0%	percent of sales (excl. excise taxes)	\$8.6	\$46.1
Tire Tax (LDVs)	1.0%	of sales of LDV tires	\$0.3	\$1.8
Sales Tax on Bicycles	1.0%	percent of sales	\$0.1	\$0.3
Other Excise Taxes				
Container Tax	\$15.00	dollar per TEU	\$0.7	\$3.5
Imported Oil Tax	\$2.50	dollar/ barrel	\$5.8	\$30.9

Description of Mechanism/ Increase		
Existing HTF Funding Mechanisms		Current Revenues
Diesel Excise Tax	<p>Federal motor fuel tax rates are currently 18.4 cents per gallon for gasoline, gasohol and special fuels (rates on special fuels vary, but average about 18.4 cents), and 24.4 cents per gallon for diesel.</p> <ul style="list-style-type: none"> o Pros – Large revenue yield with small rate change; a tried-and-true user fee; ease of administration o Cons – Long-term sustainability issues; strong public opposition; somewhat regressive 	\$10.7 \$ in billions
Gasoline Excise Tax		\$25.4 \$ in billions
MFT Indexing of Current Rate to CPI (Diesel)		
MFT Indexing of Current Rate to CPI (Gas)		
Truck and Trailer Sales Tax	<p>A federal sales tax of 12% is imposed on the retail sales price for the first sale of all tractors and trucks over 33,000 pounds in gross vehicle weight (GVW) and trailers over 26,000 pounds in GVW, including parts and accessories associated with the sale.</p> <ul style="list-style-type: none"> o Pros – Strong sustainability that tracks with inflation; strong history that is easy to administer; reasonably acceptable from a public/political perspective; tax at national level creates even playing field; recover heavy vehicles' cost to the system o Cons – Revenue potential is limited; unstable and highly cyclical; no relationship with system use; disincentive to purchase newer vehicles 	\$3.1 \$ in billions
Truck Tire Tax	<p>A federal tax is imposed on the purchase of all tires with a maximum rated load over 3,500 pounds. The tax is justified in part because it helps to recover some of the additional system damage costs caused by heavier vehicles. The current tax rate is 9.45¢ for every 10 pounds of maximum capacity that exceeds 3,500 pounds.</p> <ul style="list-style-type: none"> o Pros – Strong correlation between tax and user benefit/impact; easy and cost-effective to administer o Cons – Does not raise a lot of revenue 	\$0.5 \$ in billions
Heavy Vehicle Use Tax	<p>An annual fee is currently imposed on all trucks 55,000 pounds Gross Vehicle Weight (GVW) or greater. The tax rate is \$100 plus \$22 for each 1,000 pounds of GVW in excess of 55,000 pounds, up to a maximum annual fee of \$550 (thus, all trucks with GVW greater than 75,000 pounds pay the maximum).</p> <ul style="list-style-type: none"> o Pros – Strong correlation between tax and user benefit/impact; easy and cost-effective to administer o Cons – Does not raise a lot of revenue 	\$1.2 \$ in billions

Other Existing Taxes		Current Revenues
Minerals Related Receipts	<p>Oil, Gas, Minerals Lease - Royalty, Rent, Bonus, and Other Income (Partial Dedication) – The federal government receives various income from the extraction of oil, natural gas, and minerals from federal lands and offshore mining activities. Aside from a portion designated for the states, the remaining amount of these revenues currently goes to the federal General Fund which could be redirected for transportation purposes.</p> <ul style="list-style-type: none"> o Pros – Sustainable; can help to promote US energy independence o Cons – Diverts funds from US General Fund; link to transportation is not as strong as user fees; revenues could be volatile 	\$2.5 \$ in billions
Harbor Maintenance Tax	<p>This is an existing revenue mechanism, similar to customs duties and fees, that supports the federal Harbor Maintenance Trust Fund through an ad valorem tax on the value of passenger tickets and declaring commercial cargo loaded onto or unloaded from vessels using federally maintained harbors. The current tax is largely used to pay for harbor dredging and thus primarily benefits deep-draft oceangoing vessels carrying cargo on trans-oceanic routes.</p> <ul style="list-style-type: none"> o Pros – Largely sustainable; would not require major administrative effort or expansion of legal authority o Cons – Portion levied on imports could increase international trade laws conflicts; tax is not levied on US exporters that use much of the local highway system around ports 	\$1.4 \$ in billions
Customs Revenues	<p>(Partial Dedication) – Customs duties are imposed at varying rates on various imported goods passing through US international gateways and currently go to the General Fund of the US Treasury. A number of interest groups, as well as the National Surface Transportation Policy and Revenue Study Commission, have suggested that given the role transportation infrastructure plays in facilitating the import of goods, a portion of current customs duties should be allocated to support transportation investment.</p> <ul style="list-style-type: none"> o Pros – Small percentage of current revenues provides significant revenues; highly sustainable o Cons – Diverts or expands a mechanism that is currently used and viewed as an important US General Fund revenue source 	\$37.5 \$ in billions
Income Tax - Personal	<p>(Partial Dedication) – A national income tax for transportation could be created fairly easily and inexpensively by dedicating a portion of the existing tax or by adding an across-the-board increase to current personal and/or corporate income tax rates.</p> <ul style="list-style-type: none"> o Pros – Small percentage tax yields significant revenue; strong sustainability; inflation-neutral; easy to administer and enforce; relatively progressive 	\$1,038.0 \$ in billions
Income Tax - Business	<ul style="list-style-type: none"> o Cons – Support for dedicating revenues to transportation needed though good transportation aids income growth; strong political opposition; weak link to economic efficiency and equity; negative impacts on the federal budget 	\$162.0 \$ in billions

License and Registration Fees		Current Count	
Drivers License Surcharge	States charge a fee for issuing drivers' licenses. In some cases, the fee simply recovers the cost of administering the licensing programs. In many states, however, license fees also are used as a source of funding for transportation or other purposes. o Pros – Significant revenue yield; well-established in each state with minimal additional administrative cost o Cons – Strong public and political opposition; different licensing practices in each state; infringes on states' reliance on this fee; poor social equity	221,711,918	Licenses
Registration Fee (Electric LDVs)	All states impose annual vehicle registration and related fees, and at least half the states raise more than a quarter of their dedicated transportation revenues through this mechanism. The structure of registration fees varies widely, from a flat per vehicle fee to a schedule of rates based on factors such as vehicle type, weight, age, horsepower, and value. o Pros – Small federal fee; sustainable; well-established; little additional administrative cost; could charge for indirect impacts such as carbon emissions o Cons – No relation to system use; could be viewed as double taxation at the federal level due to the existing heavy vehicle use tax; infringes on states' reliance on this fee	294,596	Vehicles
Registration Fee (Hybrid LDVs)		4,828,487	Vehicles
Registration Fee (Light Duty Vehicles)		247,644,981	Registrations
Registration Fee (Trucks)		11,498,561	Registrations
Registration Fee (All vehicles)		259,143,542	Registrations
Weight and Distance Based Fees		Current Activity	
Freight Charge -Ton (Truck Only)	Ton or Ton-Mile – Freight-related taxes could be imposed on a pure tonnage or ton-mile basis. A ton-based tax would charge shippers a flat fee for every ton of freight moved. Variations of these taxes have been imposed by a few states in the past, but there has not been an equivalent tax imposed at the federal level. o Pros – Decent revenue yield potential; justifiable as a transportation user fee; potential positive impact on efficient system use o Cons – Strong trucker/rail opposition; impact of tax heaviest on low-value bulk items; significant implementation, administration, and compliance issues; not a viable short-term option	11	billions of tons
Freight Charge - Ton (All Modes)		13	billions of tons
Freight Charge - Ton-Mile (Truck Only)		1,984	billions of ton-miles
Freight Charge - Ton-Mile (All Modes)		4,243	billions of ton-miles
Transit Passenger Miles Traveled Fee	Distance based fee on transit passenger trips. o Pros – Could provide direct user funding for transit infrastructure o Cons – Does not raise significant revenues; potentially significant administrative and compliance issues; social equity issues	58.3	billions of passenger-miles

Vehicle Miles Traveled Fee (Light Duty Vehicles)	Drivers can be charged for the total number of miles traveled (VMT), regardless of the road used or the time of day. The fee can be charged in a number of ways. Oregon launched its OReGO Program in 2015, which is the nation's first operable road usage charge (RUC) system. Under this system, over 1,300 vehicles pay a per mile fee in lieu of the state gas tax, with either a global positioning system (GPS) enabled mileage reporting device (MRD), or an MRD without GPS. Several other states have launched RUC pilots. o Pros – Large revenue yield potential; highly sustainable; appropriate user fee; leads to more efficient use of system o Cons – Public and political opposition is high, especially on privacy grounds; considerable costs and challenges (institutional, administrative, and cultural); not enough real-world experience with implementation; not a viable short-term option	2,849.7	billions of vehicle-miles
Vehicle Miles Traveled Fee (Trucks)		287.9	billions of vehicle-miles
Vehicle Miles Traveled Fee (All Vehicles)		3,137.6	billions of vehicle-miles
Sales Taxes on Transportation Related Economic Activity		Current Economic Activity	
Freight Bill - Truck Only	A freight waybill tax would serve as a sales tax on the shipping costs for freight. Such a tax could be modeled on the aviation system tax, in which passenger and freight users who rely on the same infrastructure and carriers all contribute to fund the system. The air-freight waybill tax currently provides 5 percent of contributions to the federal Airport and Airway Trust Fund	\$726.4	\$ in billions
Freight Bill - All Modes	o Pros – Large revenue yield potential; reasonably equitable o Cons – Expensive to administer and enforce; more of an indirect user fee, as not directly related to system use	\$891.3	\$ in billions
Sales Tax on New Light Duty Vehicles	Most likely levied as a percentage of the total sales price for either all new or new/used vehicle purchases (similar to the existing sales tax on trucks and trailers). o Pros – Small fee could raise significant revenue; highly sustainable, captures revenues from alternative fuel vehicle users; could likely be implemented through either existing state tax mechanisms or imposed through vehicle manufacturers	\$273.4	\$ in billions
Sales Tax on New and Used Light Duty Vehicles	o Cons – Could cannibalize a traditionally important state/local transportation and general fund revenue source; limited user-benefit correlation	\$409.8	\$ in billions
Sales Tax on Auto-related Parts & Services	Similar to the vehicle sales tax, a national sales tax could be established on all products and services related to vehicle use, including part and accessories, lubricants, and repairs. o Pros – Small tax rate could yield relatively large revenues; strong sustainability; justifiable as a flexible, dedicated source for transportation o Cons – Significant administrative and compliance issues; social equity issues; little relationship with system use; limited public acceptance; potential to disincentive repairs and create safety issues	\$264.2	\$ in billions

Sales Tax on Diesel	A national sales tax on motor fuels could be imposed as a percentage of motor fuel costs. A handful of states currently impose a motor fuels sales tax, most in the 4% to 6% range, as a supplement to a traditional cent per gallon tax (note: not all states that impose a motor fuels sales tax dedicate all of the resulting revenues to transportation). The revenue generation capabilities of a national motor fuels sales tax would be driven by several variables, including the price of fuel, the tax collection point (e.g., at the pump vs. points along the distribution network), the basis for the tax (e.g., inclusion vs. exclusion of state and local taxes), and the imposition of tax ceilings or floors.	\$72.6 \$ in billions
Sales Tax on Gas	o Pros – Small percentage tax raises significant revenues; sustainable in the short term; provides flexible, dedicated transportation funding o Cons – Fuel price volatility could lead to unpredictable revenue levels; unsustainable in the long-term; political/public resistance can build during price spikes	\$256.0 \$ in billions
Tire Tax (LDVs)	A national tax on light-duty vehicle tires for both tires on new vehicles and replacement tires. Would likely be implemented in conjunction with the current federal truck tire tax. o Pros – Provides a counter light-duty vehicle balance to the current truck tire tax; highly sustainable; strong user-benefit correlation o Cons – Does not raise significant revenues; may discourage timely replacement of worn tires	\$26.1 \$ in billions
Sales Tax on Bicycles	A national sales tax on bicycles. o Pros – Could provide direct user funding for bike related infrastructure o Cons – Does not raise significant revenues; potentially significant administrative and compliance issues; social equity issues	\$6.2 \$ in billions
Other Excise Taxes		Current Activity
Container Tax	A national fee imposed on some or all containers moving through the US. If the charge is only assessed on imports, it can be expected to raise approximately one-third less revenues. Revenues from such a fee would be strictly dedicated to fund freight investment activities. o Pros – Raises a decent level of funding relative to freight needs; moderate implementation, administration, and compliance costs; strong sustainability o Cons – Does little to promote efficient system use; potential international trade laws conflicts; could have regional equity issues	48,381,723 TEUs
Imported Oil Tax	A tax on imported oil charged as either a fixed amount per barrel of oil or as a percentage on the value of imported oil. o Pros – Small fee could raise significant revenue; can help to promote US energy independence o Cons – Broad nature of tax creates limited user pay/benefit relationship (e.g., home heating oil would be taxed for transportation); raises geographical equity issues; could raise broader free trade issues	1.8 billions of barrels

AASHTO FAST ACT REAUTHORIZATION

4: Operations

INTRODUCTION AND BACKGROUND

In recent years State DOTs have increasingly focused on ways of improving highway and transportation system operations. The demand for effective transportation operations solutions is increasing rapidly due to volume increases and technology development. Building and maintaining capacity is not always enough to ensure optimum or even satisfactory throughput. This is the case not only in congested metropolitan areas but also in other areas that face seasonal traffic peaks or in cases of vehicle crashes, landslides or other incidents that result in traffic jams and require a response.

Recognizing the importance of operations, for years the Federal program has embraced eligibility for capital investments that have a particular focus on improving highway operations. These include investments in improved traffic signalization and message signs and, more recently, such items as capital technology investments to facilitate vehicle-to-infrastructure (V2I) communications, such as dedicated short-range communications (DSRC) equipment. AASHTO also strongly supports flexibility for State DOTs in using Federal funds for eligible purposes, including capital expenditures that will assist highway operations. AASHTO is also strongly committed to research and demonstration programs to help advance the practice of improving highway and transportation system operations.

Below are some specific proposals to improve the Federal transportation programs and assist states in providing an excellent operating environment on the highways and transportation systems that they build and maintain.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

Issue #1: Strengthen Eligibility for Investments in Transportation System Management and Operations (TSMO) and Related Technology

- *Current Federal Policy:* Eligibility for funding TSMO and related technology from National Highway Performance Program (NHPP), Surface Transportation Program (STP), Surface Transportation Block Grant (STBG) Program, Congestion Mitigation and Air Quality Improvement (CMAQ) Program, and Highway Safety Improvement Program (HSIP)
- *Issue:* The use of TSMO strategies and technologies is expanding. The states have dramatically increased the use of TSMO and it is difficult to continue to increase investment in TSMO due to overall budgetary constraints. Additionally, funding is sometimes split by planning partner region (e.g., controlled by an MPO) when the states would like to use it statewide.
- *Recommendation:* States should have broader control to utilize existing funding sources, and overall transportation funding should be increased.

Issue #2: Communications Technology for Highway Operations

- *Current Federal Policy:* None
- *Issue:*
 - There is little federal direction regarding communications between vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication. Some States are unsure if they should invest in Dedicated Short-Range Communications (DSRC) or 5G, or both for V2I communications, which

slows the advancement of this technology. Nationwide interoperability, including further deployment of DSRC, is essential.

- The Security Credential Management System (SCMS) is currently a proof-of-concept message security solution for V2V and V2I communication. SCMS involves significant cost, which can discourage State investment into CAV technologies.
- *Recommendation:* A universal, seamless approach to security management and CAV communication is essential for the widespread deployment of connected vehicles. The Federal government should quickly lead this development through standardization and appropriate research and technology demonstration programs. This will help states better understand when and how to make investments that they consider appropriate.

Issue #3: Establish a Permanent Transportation Operations Program Budget Line Item within USDOT Funding to help Ensure Better Sharing of Quality Practices and Accelerate Development of Solutions for Consideration by the States

- *Current Federal Policy:* None
- *Issue:* States need help determining when to apply their scarce apportioned funds to investments that facilitate effective, efficient, and safe operations on the highways and transportation system.
- *Recommendation:*
 - Congress should appropriate additional money to fund such a permanent transportation operations discipline and program at USDOT to assist states in determining when to apply their scarce apportioned funds to investments that facilitate effective, efficient, and safe operations on the highways and transportation system. Such a program could focus on supporting private and public sector integration of operations technologies, interstate operations management solutions, and a leadership forum and clearinghouse for operations best practices. It could also continue funding for the National Operations Center of Excellence and provide research funding for operations technology development and data utilization, including the Cooperative Automated Transportation (CAT) Coalition
 - Establish a structured advisory and deployment coordination program between automakers, original equipment manufacturers and government that would support the development and deployment of vehicle and infrastructure innovation to support mobility, goods movement and safety. Utilize groups to design future federal funding requests and proposed federal policy changes within Congress. Note: the Committee Responsible for Paper 1, Connected and Automated Vehicles, should be notified that this recommendation has been included.

Issue #4: Expand Eligible Activities Though National Highway Freight Program

- *Current Federal Policy:*
 - FAST Act § 1116; 23 U.S.C. 167 establishes a National Highway Freight Program (NHFP) that funds activities that “must contribute to the efficient movement of freight on the [NHFN] and be identified in a freight investment plan included in [the State’s freight plan.]”
 - FAST Act § 1105; 23 U.S.C. 117 establishes the Nationally Significant Freight and Highway Projects (NSFHP) program to provide financial assistance—competitive grants, known as INFRA grants, or credit assistance— “for nationally or regionally significant freight and highway projects.”
- *Issue:* The use of the nation’s highway system for freight is increasing, and the need for integrated solutions to better move freight throughout the country is increasing. Integrated freight management solutions and freight safety programs do not currently qualify as eligible activities for NHFP or INFRA funds.

- *Recommendation:* Reform the National Highway Freight Program, both formula program to States and the discretionary program (INFRA), to more clearly include eligibility for investment in integrated freight management solutions (e.g., intermodal systems, freight lanes on interstates, and parking and staging areas) and freight safety programs (platooning, remote sensing technology, etc.), including for emergency responders. Eligibility should include multi-state proposals, such as for regions and corridors.

Issue #5: Improve Buy America Requirements

- *Current Federal Policy:* 23 U.S.C. § 313: Buy America -- states "The Secretary of Transportation shall not obligate any funds ... unless steel, iron, and manufactured products used in such project
- *Issue:* AASHTO supports investment in America and use of American-made products. However, at times U.S. made products are difficult to find, whether due to scarcity or notable cost differential. Buy America was originally intended for products made primarily of steel (like steel poles). It is extremely difficult to try to apply this law to signal controllers, utility equipment, vehicles, etc.
- *Recommendation:* USDOT should improve the Buy America waiver application, policies, and processes to ensure timely consideration and determinations that reduce schedule and cost burdens to state transportation agencies.

Issue #6: Update National ITS Architecture Rule 940

- *Current Federal Policy:* Under the 17-year old National ITS Architecture Rule, 23 CFR 940: "ITS projects shall conform to the National ITS Architecture and standards in accordance with the requirements contained in this part. Conformance with the National ITS Architecture is interpreted to mean the use of the National ITS Architecture to develop a regional ITS architecture, and the subsequent adherence of all ITS projects to that regional ITS architecture. Development of the regional ITS architecture should be consistent with the transportation planning process for Statewide and Metropolitan Transportation Planning."
- *Issue:* States have mainstreamed systems engineering into their ITS project process, and they will continue to use good systems engineering processes in ITS projects. However, keeping up with the National ITS Architecture requirements unnecessarily increases the costs of projects and in some cases can delay or add time to our projects.
- *Recommendation:* This policy should be reformed to modernize it.

AASHTO FAST ACT REAUTHORIZATION

5: Performance-based Management

INTRODUCTION AND BACKGROUND

MAP-21 and the FAST Act required USDOT to develop federal performance management rules governing State DOTs and others. In May 2018, U.S. DOT completed the development of the new regulations pertaining to the federal performance management requirements as part of 23 CFR § 490, *National Performance Management Measures* and 23 CFR § 515, *Asset Management Plans*. These regulations require State DOTs to establish and report on making progress towards achieving targets for a set of federal performance measures related to safety, asset condition, and system operations. In addition, U.S. DOT updated existing regulations related to the transportation planning process (23 U.S.C. § 135, *Statewide and Nonmetropolitan Planning* and 23 U.S.C. § 134, *Metropolitan Transportation Planning*) to make them consistent with federal law. These updates modified existing transportation planning to a performance-based approach to support the national goals specified in 23 USC 150(b) which related to safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays.

State DOTs are at the early stages of implementing the new and updated Federal performance management regulations. The first four-year reporting cycle started on January 1, 2018 and will go through December 31, 2021. State DOTs will first report their targets for the federal performance measures on October 1, 2018 and the first indication of making progress to achieving those targets will not come until the beginning of CY2020. During the time that first regulation was published (May 2015) and the last one was finalized (July 2018) State DOTs have gained significant experience and understanding related to the complexities of collecting, analyzing, managing and reporting on the data; the significant cost (time and money) in addressing the regulations; and the unexpected consequences of trying to address a set of national performance measures alongside state-based performance measures.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE #1: Federal Funding Apportionment Should Not be Tied to Target Achievement

- *Current Federal Policy:* The Federal-aid Highway Program is a Federally-assisted state program that is rooted in Article 1, Section 8 of the United State Constitution and confirmed by 23 U.S.C 145. Currently, approximately 90 percent of the Federal highway program funds are distributed to the states by formula. This approach of emphasizing formula funds has a decades-long track record of success in supporting long-term capital improvements across the United States. This approach enables funds to be distributed to states in a stable and predictable manner and allows the Federal program to efficiently deliver projects that have been identified and prioritized through the statewide and metropolitan planning processes.
- *Issue:* 23 CFR 490 implemented the new performance management statute so that State DOTs are required to establish performance targets for federal performance measures and report on how they have made progress on achieving those targets. Current performance management regulations—correctly—do not tie meeting or making substantial progress towards meeting the federal performance management targets to federal funding apportionment.
- *Recommendations:*

- While AASHTO member states support the use of performance management to improve the transportation system, we remain opposed to using performance measures and the achievement of federal performance management targets as the basis for apportioning or allocating federal funds among the State DOTs.
- AASHTO recommends that the federal performance management regulations be clarified to make clear that a principal purpose of the requirements is to provide an authoritative source to communicate with decision-makers and the public on the condition of the national highway system as a whole and be part of a larger story to communicate the unmet transportation needs.

ISSUE #2: Continue to Focus on Implementation of the Performance Management Regulations

- *Current Federal Policy:*
 - 23 USC § 134, *Metropolitan Transportation Planning*
 - 23 USC § 135, *Statewide and Nonmetropolitan Planning*
 - 23 CFR § 490, *National Performance Management Measures*
 - 23 CFR § 515, *Asset Management Plans*
- *Issue:* The new and updated performance management regulations were developed and published over a six year time period beginning in 2013 and ending in 2018 with the publication of the final rule regarding 23 CFR § 490, *National Performance Management Measures, Subpart H* and FTA Safety final rule in July 2018. State DOTs are currently working to implement the first required aspect of these provisions, which is to establish targets for the federal performance measures, incorporate those targets into the planning process, and report on progress towards achieving targets. The first comprehensive report document for the first reporting cycle will not be developed and published until CY2022 at the earliest. And, AASHTO has recommended that no consideration be given to changes to existing regulations that would increase requirements until after at least two full reporting cycles in order to give the State DOTs time and experience in addressing the regulations.
- *Recommendations:*
 - AASHTO opposes additional federal performance measures; associated performance management requirements; and any other new complexities regarding federal performance measures.
 - To the extent a state or an MPO wants to pursue any additional steps in performance management, it is free to do so without additional federal rules or statutes.
 - AASHTO recommends that no consideration be given to making changes to existing performance management regulations that would increase burdens until multiple reporting cycles by states have occurred.
 - AASHTO supports selected reforms to reduce the burden of performance measurement and management on State DOTs and looks forward to working with USDOT on these reforms.

ISSUE #3: Performance Management Regulations Should Be Improved to Reduce the Burden on State DOTs

- *Current Federal Policy:* 23 CFR § 490, *National Performance Management Measures*
- *Issue:* State DOTs have only recently begun to understand and appreciate the resources required of them to implement the Federal performance management regulations. First there is the direct and indirect cost of setting performance targets for the federal performance measures. In some cases, like the safety measures, State DOTs were already collecting and analyzing the required data and it was not a heavy lift to address the new federal safety performance management regulations.

However, for other performance measures, specifically system performance, the state DOTs are now required to collect, manage, and analyze a significantly larger data set; calculate performance measures that are new to the industry; and establish targets that have little to no historical trend data. While the NPMRDS data may be free, the resources required to analyze it requires real effort and specialized expertise to develop and analyze.

Second, there is the burden place upon state DOTs to be held accountable for assets that are not in the control or performance of an asset they do not control. For example, state DOTs are responsible for meeting targets for all NHS bridges and pavement condition regardless of who owns and maintains the asset. In some cases, the state DOT has no control over establishing the targets for these assets and must incorporate them into the state-based targets. However, the state DOT is held accountable for target achievement and not the asset owner. Also, rural states are now required to report on congestion on rural highways, including very low volume routes that could become congested only due extreme weather, unusual accidents or other non-routine events. Such congestion is out of the control of the state DOT and the congestion-related measurements in rural areas. In this case, the resources required to conduct the analysis are a misdirection of planning effort.

Finally, the performance management provisions place a lot more burden on the state DOTs to coordinate with many other transportation agencies regarding the development of planning documents, establishing targets and assessing performance. While the incremental changes required by the various performance management provisions may seem small, taken all together the amount of additional work is significant and costly.

- *Recommendations:*
 - Identify and implement thoughtful ways to reduce the burden associated with the development of performance measures (including collecting and setting targets) for current performance measures:
 - Additional financial resources could be given to state DOTs to analyze data;
 - Decisions could be made to collect less data or not to have to report targets on certain roadways.
 - Ensure state DOTs are held accountable for only those assets within their control.

ISSUE #4: Make Consistent the Financial Planning Requirements among the Required Performance-Based Planning Documents

- *Current Federal Policy:*
 - 49 USC § 70202, *State Freight Plans*
 - 23 USC § 119, *National Highway Performance Program*
 - 23 U.S.C. § 135, *Statewide and Nonmetropolitan Planning*
 - 23 CFR § 515, *Asset Management Plans*
- *Issue:* Certain Federal surface transportation programs are subject to significant planning requirements and processes. In particular, certain planning documents require a financial plan tied to a certain number of years in the future. For example, the Statewide Transportation Improvement Program (STIP) under 23 USC § 135 requires a fiscally constrained four year program of projects. The State Freight Plan under 49 USC § 70202 requires a five year financial plan for the projects listed in it. The asset management plan regulations impose a non-statutory ten year financial plan requirement for the projects listed in it. Currently, the significant uncertainty associated with federal funding conditions result in the financial planning requirements associated with the STIP, State Freight Plan, and asset management plan have far less value for decision making with risk and uncertainty being multiplied.

- *Recommendation:*
 - AASHTO recommends that all financial plan requirements associated with any federally-required plan be consistent with the four year duration that has been historically required of the STIP and could be of longer duration if so desired by a state DOT.

ISSUE #5: Minimum Condition Levels for NHS Bridges and Pavements Could Encourage a Worst-First Asset Management Approach

- Current Federal Policy:
 - 23 USC § 119, National Highway Performance Program
 - 23 CFR § 515, Asset Management Plans
- Issue: Current federal law requires that states utilize and document an asset management plan for the NHS. State DOTs must also manage the transportation system well beyond the designated NHS. One of the principles of asset management is to focus on reducing life-cycle costs, not on addressing the “worst first” for the transportation network. FHWA’s current guidance states that a successful asset management program “must have moved away from a ‘worst first’ investment strategy, and instead have adopted investment principles that are based on life cycle costing and incorporate life-cycle planning principles.” Current federal law set minimum condition levels for NHS bridges in poor condition and also requires U.S. DOT to establish a minimum condition level for Interstate System pavement. If the minimum conditions are not met, the State would be required to redirect certain funds to improve those conditions until the minimum conditions are met.

A core principle of transportation asset management is to provide the treatment at the right time in the life cycle of the asset. This may mean the option not to treat the worst item or segment first may be the most cost effective for the system. State DOTs are concerned that the minimum condition requirements for NHS bridges and Interstate System pavement may force State DOTs into adopting a worst-first approach to asset management.

- Recommendation:
 - Eliminate the minimum condition requirements written into law for both NHS bridges and Interstate System pavement.
 - Ensure that the minimum condition requirements for NHS bridges and Interstate System pavement do not force a State DOT to adopt a worst first approach to asset management.

AASHTO FAST ACT REAUTHORIZATION

6: Planning

INTRODUCTION AND BACKGROUND

MAP-21 and the FAST Act required USDOT modify planning statutes governing State DOTs and MPOs to, among other things, ensure that planning is performance-based. Implementation of the statute has resulted in updated planning regulations (23 CFR Part 450; 49 CFR 613) as well as new regulations pertaining to the federal performance management requirements as part of 23 CFR § 490, *National Performance Management Measures* and 23 CFR § 515, *Asset Management Plans*. The updated *Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning* rule updates modified the then-existing transportation planning requirements to a performance-based approach to support the national goals specified in 23 USC 150(b): goals related to safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays. The performance and asset management regulations require State DOTs to establish and report on making progress towards achieving targets for a set of federal performance measures related to safety, asset condition, and system operations.

State DOTs are at the early stages of implementing the new and updated federal performance management and performance-based planning regulations. Now, all updated long range transportation plans must be performance-based and incorporate the performance targets set by each State DOT. Statewide Transportation Improvement Programs (STIPs) must now include references to how a plan of projects will enable a State DOT to reach its targets. The first four-year reporting cycle started on January 1, 2018 and will go through December 31, 2021. During the time since the first regulation was published (May 2015) and the last one was effective (May 2018) State DOTs have gained significant experience and understanding related to the complexities associated with implementing the performance-based planning regulations. The experience of the State DOTs is that the analysis cost associated with the regulations was underestimated by federal estimates and that it would be beneficial for U.S. DOT and Congress, working with the State DOTs, to find ways of reducing the overall financial personnel time burden associated with the new regulations and requirements. This would still leave a thorough planning process but enable states to deliver programs and projects more efficiently and at less cost.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE #1: Do Not Increase Any Regulatory Burdens Related to Planning but Rather Look for Opportunities to Reduce Burdens and Unnecessary Requirements While Maintaining a Thorough Planning Process

- *Current Federal Policy:*
 - 23 USC § 134, *Metropolitan Transportation Planning*
 - 23 USC § 135, *Statewide and Nonmetropolitan Planning*
 - 23 CFR § 490, *National Performance Management Measures*
 - 23 CFR § 515, *Asset Management Plans*
- *Issue:* The new and updated performance management and performance-based planning regulations were developed and published over a six year time period beginning in 2013 and ending

in 2018 with the publication of the final rule regarding 23 CFR § 490, *National Performance Management Measures, Subpart H*. As of May 2018, State DOTs are now required to implement the performance-based planning process articulated in the updated 23 CFR § 450, Subpart B, *Statewide and Nonmetropolitan Transportation Planning and Programming*. Further, State DOTs are currently in the middle of completing the first aspect of performance management provisions which requires them to establish targets for the federal performance measures, incorporate those targets into the planning process (STIP and long range transportation plan (LRTP)), and report on making progress towards achieving targets. The first comprehensive report documenting the first reporting cycle will not be developed and published until CY2022 at the earliest. AASHTO has long cautioned against complicating changes to these regulations until after at least two reporting cycles in order to give the State DOTs time and experience in addressing the regulations. As set forth more fully in this paper, AASHTO opposes any complicating changes or additions to the updated performance-based planning regulations and would welcome opportunities to simplify processes and requirements, reduce administrative and regulatory burdens, expedite project delivery, and increase State flexibility. This can be done while leaving in place a thorough planning process.

- **Recommendations:**
 - AASHTO opposes any complicating changes or additions to the updated performance-based planning regulations included in 23 CFR § 450, Subpart B. There should be time to implement and evaluate the most recent changes.
 - Within that framework, AASHTO would welcome opportunities to simplify processes and requirements, reduce administrative and regulatory burdens, expedite project delivery, and increase State flexibility.
 - To the extent a state wants to pursue any additional steps related to improving its performance-based planning process, it is free to do so without additional federal rules or statutes.

ISSUE #2: Enhance Flexibility and Avoid Imposing New Administrative Burdens, whether through statute, Rulemakings, or Guidance

- **Current Federal Policy:** None
- **Issue:** AASHTO urges federal decision makers to continue to look for ways to reduce regulatory burdens and improve agency effectiveness consistent with the national goal of “reduced project delivery delays”. In addition, states and metropolitan planning organizations need flexibility to accelerate implementation of projects to meet national and state goals.
- **Recommendations:**
 - AASHTO opposes new program mandates in general, ranging from new program process requirements, to required investment levels in certain activities (e.g., suballocation of CMAQ funds), to design related mandates (e.g., practical design).
 - AASHTO supports additional flexibility in state’s ability to expeditiously complete planning and project delivery processes and in a state’s ability make the best investment decisions for the state without siloed programs, and that any program growth should be in the most flexible categories.

ISSUE #3: Maintain the Existing Balance of Authority among State DOTs, MPOs, and Rural Planning Organizations

- **Current Federal Policy:**
 - 23 USC § 134, *Metropolitan Transportation Planning*
 - 23 USC § 135, *Statewide and Nonmetropolitan Planning*

- *Issue:* The FAST Act generally maintained the balance of authority that was updated in MAP-21 with the option of State DOTs to establish Rural Planning Organizations and to maintain the existing relationships between State DOTs and MPOs. The performance management regulations implemented in 23 CFR § 490 added some additional requirements for State DOTs and MPOs to work more closely together in terms of establishing performance targets and incorporating those targets into the various short and long range plans. However, the performance management regulations did not make any significant changes to the balance of authority between the State DOTs and MPOs.
- *Recommendation:*
 - AASHTO recommends that the balance of authority that currently exists among State DOTs, MPOs, and rural planning organizations remain and not be upset or changed through new legislation, rulemakings, or guidance.

ISSUE #4: Fiscal Constraint

- *Current Federal Policy:*
 - 23 USC § 134, *Metropolitan Transportation Planning*
 - 23 USC § 135, *Statewide and Nonmetropolitan Planning*
 - Various FHWA Guidance
- *Issue #4a: Update Laws, Regulations and/or Guidance so that “Fiscal Constraint” Requirements do not impede the Ability of State DOTs to Develop and Deliver Transportation Projects*
Programming of federal transportation dollars is based on the four-year window through the statewide transportation improvement program (STIP). FHWA has decided, by interpretation, to impose a duplicative fiscal constraint requirement, not included in statute or rule, on completing the NEPA process for a project. Specifically, FHWA has interpreted that, to receive NEPA approval a project must come from a fiscally constrained STIP or TIP. See FHWA website, “Transportation Planning Requirements and Their Relationship to NEPA Process Completion.” Yet it is hard to estimate cost and include a project, or even a phase of a project (such as preliminary engineering), in a fiscally constrained STIP or TIP until the NEPA process is complete, as that process helps define the final project (and in some cases the NEPA process results in a no build decision). So, the fiscal constraint requirement for projects undergoing NEPA review creates instability in the STIP or TIP, as an overestimate of costs keeps other projects out of the STIP or TIP and an underestimate results in excess projects being included in the fiscally constrained STIP or TIP: at least until the NEPA process is completed and any adjustment made. USDOT should revise its current practice and allow the completion of the NEPA process for a project regardless of whether the project or a phase of it is included in a fiscally constrained STIP or TIP. This will expedite environmental review. And it will not violate the principle of fiscal constraint because, even with this recommended change, the project cannot advance to construction unless it is in a fiscally constrained STIP or TIP.
- *Recommendation:* AASHTO recommends decoupling fiscal constraint from NEPA so fiscal constraint does not have to be met prior to a NEPA decision.
- *Issue #4b: Reconsider More Broadly the Extent of “Fiscal Constraint” Requirements*
In addition to the recommendation made above (#4a), the entire concept of “fiscal constraint” regulation in planning warrants reconsideration. Simply, a State cannot spend or obligate more funds than it has. Programming of federally assisted transportation projects is subject to “fiscal constraint” rules which are a complex set of rules that measure projects against budget resources at multiple points in the planning process. Fiscal constraint of Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Programs (STIPs) by year is not required in statute, but is required by USDOT rules. States, MPOs and transit agencies should be allowed to

develop and implement plans based on realistic financial assumptions. The complex technical “fiscal constraint” rules are not what prevent excessive spending, rather it is the limited resources that keep spending in check. The rules, however, limit flexibility and impose excessive requirements, especially when they must be applied in the context of unpredictable rescissions and delayed appropriations. Federal decision makers can reduce the inflated workload for U.S. DOT as well as for regulatory-burdened States and others by removing fiscal constraint regulatory requirements that are not compelled by statute and by reconsidering statutory requirements, such as by shortening the applicable time period to one where resources can reasonably be anticipated, such as the four year STIP cycle.

- *Recommendation:* AASHTO recommends reexamining fiscal constraint requirements and reducing them, such as by applying them to fewer decision points and shortening the applicable time frames.

ISSUE #5: Make State DOTs and MPOs Eligible Recipients under the Set Aside from the Surface Transportation Block Grant Program (aka transportation alternatives program)

- *Current Federal Policy:* 23 U.S.C. 133(h)(4)(B)
- *Issue:* State DOTs and MPOs are not eligible recipients of project funding under a set aside of the Surface Transportation Block Grant Program (STBG) (either as a project sponsor or to administer the program). However, it does take resources (time and money) to administer the program for those funds, set aside by 23 U.S.C. 133(h) and sometimes referred to as “transportation alternatives” or “transportation enhancements”. In addition, a number of State DOTs have been project sponsors and implemented a number of programs that are now combined under this element of the STBG Set Aside program. Thus, it is important that States and MPOs be allowed to use a portion of the STBG program funds for administrative expenses associated with the subsection (h) set aside and that they be allowed to receive grants to carry out projects.
- *Recommendation:* New legislation should ensure that state agencies (including state DOTs) and MPOs are included in the list of eligible entities that may receive STBG Set Aside funds (subsection (h)), such that State DOTs and MPOs have the ability to implement projects and designate a limited amount of discretionary funding to allow for flexibility in sound program and project management and oversight.

ISSUE #6: Make More Flexible the Projects that can be Funded through the Congestion Mitigation and Air Quality (CMAQ) Improvement Program

- *Current Federal Policy:* 23 U.S.C. 149
- *Issue:* The projects eligible for CMAQ funding are limited by a variety of conditions. For example, prior to MAP-21, FHWA guidance set a three-year cap on the use of CMAQ funds for operating assistance. Updated guidance allows new transportation services (e.g., transit and passenger rail services, traffic operation centers, etc.) to “taper down” the last year of operating assistance over two additional years (i.e., to spend 3 years of operating assistance over a 5-year period). Beyond five years, operating costs are not eligible for CMAQ funding.
- *Recommendations:* AASHTO recommends increasing the flexibility in the use of CMAQ funds, including but not limited to by:
 - Eliminating the limit on the use of CMAQ funds for ITS and Transit operations. States should be able to continue to use CMAQ for these projects as long as they continue to demonstrate net air quality benefits.
 - Requiring obligation of the CMAQ funds in PM 2.5 non-attainment and maintenance areas only when it is determined that the non-attainment issue results from transportation activities.

- Making explicit that technology deployments such as Connected and Automated Vehicles are eligible for funding under CMAQ.

ISSUE #7: Mitigate the Burden of Data Collection Related to the Performance-Based Planning and Performance Management Regulations

- *Current Federal Policy:*
 - 23 USC § 134, *Metropolitan Transportation Planning*
 - 23 USC § 135, *Statewide and Nonmetropolitan Planning*
 - 23 CFR § 490, *National Performance Management Measures*
 - 23 CFR § 515, *Asset Management Plans*
- *Issue:* The new performance-based planning regulations and performance management regulations create a data intensive environment where State DOTs are having to collect, store, analyze, and report significantly more data and information. Implementation of the national-level performance measures has been dependent on the availability of quality data and many State DOTs and MPOs have determined that the cost associated with the data collection is significantly more than estimated by FHWA.
- *Recommendations:*
 - Consistent with recommendation Issue #1, above, look for opportunities to reduce the scope and/or amount of data required to be collected and handled by State DOTs, including but not limited to items 2, 3, and 4 immediately below.
 - Use a collaborative approach to develop more consistent and/or streamlined or simplified data collection, analysis, and management practices. FHWA should work collaboratively with state DOTs in an effort to establish less burdensome methodologies for collecting data related to implementation of the planning and performance management requirements in MAP-21.
 - Allocate additional funding (from accounts other than apportionments for programs) to State DOTs specifically to mitigate the cost of data collection, analysis and management.
 - Create legal safe havens as appropriate to facilitate sharing of data across safety organizations without concerns for the legal and litigation concerns associated with 23 USC 409 and 23 USC 148(h)(4).

ISSUE #8: Expand the Extent of both the Primary Highway Freight System and National Multimodal Freight Network

- *Current Federal Policy:*
 - 23 U.S.C. 167, *National Freight Policy*
 - 49 U.S.C. 70103, *Interim National Multimodal Freight Network*
- *Issue:* The definition and limitations of the Primary Highway Freight System (PHFS) and National Multimodal Freight Network (NMFN) seem to be arbitrary and do not take into account the challenges of rural, large, land based states and other concerns of States. The PHFS network currently consists of 41,518 centerlines miles, including 37,436 centerline miles of Interstate and 4,082 centerline miles of non-Interstate roads. The designation of PHFS roads in various states has resulted in a limited and disconnected network. The ability of a State to designate some additional mileage to the PHFS as critical urban and rural corridors still leaves an unduly limited and disconnected network. For the MFN, the current draft network is limited and does not include all of the NHS road nor critical rural and urban transportation links.
- *Recommendations:*
 - Expand the PHFS to include all Interstate System roadways regardless of how much freight funding a state receives. Freight program eligibility should include all Interstates by default.

- Remove restrictions on state authority to add mileage to the PHFS and NMFN, including but not limited to mileage caps on critical urban and critical rural corridors.
- Add eligibility to use funds on any portion of a state's multimodal freight network as defined in a state freight plan.

ISSUE #9: Streamline and Simplify the Development and Updating of the Multitude of Transportation Plan Documents Currently Required of States

- *Current Federal Policy:* Various
- *Issue:* The new performance management provisions and updated performance-based planning provisions have required State DOTs to develop, update, and modify a host of transportation planning documents. What began with ISTEA in 1991 simply as a short range plan (STIP) and long range plan (LRTP) has mushroomed into a family of plans that focus on different topics, durations, update cycles, and level of detail. It appears that many of these planning documents have now conflated long-term visionary planning documents with short-term implementation plans. For example, several federal plans that states must complete are required to be updated every 4 or 5 years. These include Freight, Rail, and Safety. In the case of Freight and Rail, the requirements also call for a list of planned investments over the next 4 or 5-year period. Freight, for example, required the inclusion of a project list—the same list as a programming document of the STIP. It makes little sense that states are required to list programmed projects in two different places and requires valuable resources (time and money) to develop to different plans with similar information.
- *Recommendations:*
 - Make consistent the duration, updating cycle, and content of the many planning documents required of State DOTs.
 - All financial plan requirements associated with any federally-required plan should be no longer than the four year duration that has been historically required of the STIP and, if possible, shorter.

AASHTO FAST ACT REAUTHORIZATION

7: Project Delivery—Engineering

INTRODUCTION AND BACKGROUND

AASHTO believes that the states and the Federal government can continue the momentum of MAP-21 and the FAST Act by making further efficiency and effectiveness gains on transportation program and project delivery while continuing the state DOTs' responsible stewardship of taxpayer resources and both the human and natural environments. Streamlining processes and delegating authorities to the state DOTs will reduce costs, reduce delays, and provide more bang-for-the-buck to citizens for their transportation dollars.

As part of this effort, a survey was distributed to various AASHTO committees asking what causes delay, what drives costs up, and what changes would they propose at the federal level to improve these situations. Over 600 comments were received, and an ad-hoc task force reviewed the issues and proposed solutions in a wide range of areas including design, construction, right-of-way, utilities, maintenance, materials, and traffic engineering. The following are the issues considered to be the highest priority.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE #1: Adoption of PROWAG

- *Current Federal Policy:* 28 CFR 36, Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities
- *Issue:* The Americans with Disabilities Act (ADA) helps to ensure access to the built environment for people with disabilities. To facilitate this access, the US Access Board is responsible for developing and updating design guidelines known as the ADA Accessibility Guidelines (ADAAG), which are focused primarily on *facilities on sites*. These guidelines are currently used by the US Department of Justice and the US Department of Transportation in setting enforceable standards that the public must follow. However, sidewalks, street crossings, and other elements in the *public right-of-way* can pose different challenges to accessibility. While the current ADAAG addresses certain features common to public sidewalks, such as curb ramps, the Access Board determined more than a decade ago that additional guidance was necessary to address conditions and constraints unique to public rights-of-way.

Thus, the Access Board has been collaboratively developing guidelines for facilities within the public rights-of-way: the Public Rights-of-Way Accessibility Guidelines (PROWAG): which address transportation-specific issues, including access for blind pedestrians at street crossings, wheelchair access to on-street parking, and various constraints posed by space limitations, roadway design practices, slope, and terrain. Once these guidelines are adopted by the US Department of Justice, they will become enforceable standards under Title II of the ADA. Unfortunately, since the current "officially adopted" guidance is still the ADAAG, which is intended more for vertical than horizontal construction, there has been uncertainty in transportation agencies regarding what is or is not acceptable, and several agencies have been taken to court to implement suboptimal accessibility solutions that were truly intended for buildings, not transportation facilities. Adoption of the PROWAG would provide transportation agencies with solid, researched solutions for accessibility within their transportation corridors.

- *Recommendation:* Official adoption of the Public Rights of Way Accessibility Guidelines (PROWAG) is needed to ensure consistency across the country in the application of accessibility features within the streetscape. Adoption would also ensure that the horizontal construction guidelines are used by transportation agencies instead of the vertical construction guidelines.

ISSUE #2: Right of Way Acquisition from Federal Agencies

- *Current Federal Policy:* No specific law or regulation identified
- *Issue:* The acquisition of rights of way from federal agencies continues to delay and increase the cost of transportation projects. For example, much-needed projects in rural Alaska have been held up due to lengthy processes through the Bureau of Indian Affairs, which have delayed projects for more than a decade. Examples include Kwigillingok Airport improvements, Haines Highway, and Angoon Airport. Other agencies mentioned by states include the Bureau of Land Management, US Postal Service, USDA-Natural Resources Conservation Service, and others. FHWA should be an advocate for the states to help speed right-of-way acquisition with its sister agencies.
- *Recommendation:* Improve consistency and speed in acquiring right-of-way from federal agencies to promote fairness and speed up project delivery.

ISSUE #3: Right of Way Acquisition Processes

- *Current Federal Policy:* Various right of way laws and regulations
- *Issue:* Right of way procurement is consistently one of the top generators of delay in transportation project delivery. While many changes to laws and regulations as part of MAP-21 and the FAST Act have improved and streamlined the acquisition process, additional flexibilities could still provide benefit, including cost savings and delay reductions.
- *Recommendations:* Streamline the right of way acquisition process in numerous areas to simplify the process and speed acquisition without compromising the rights of the property-holder. Potential suggestions for further review include the following: allowing state procurement procedures to be used on federal-aid projects; allowing protective purchases with preliminary engineering funding (to be returned if not utilized in final design); increasing the waiver valuation threshold, or removing the threshold with the only qualifier being whether the assignment is complex or not; removing the 4(f) restriction on the Early Acquisition process (23 CFR 710.501) as it will better align itself with the Advance Acquisition process and a 4(f) review will still be conducted through the required acquisition-specific NEPA review; allowing states the option to use the “short form” for appraisals, which is quicker and less expensive.

ISSUE #4: Federal Bridge Inspection Audit Program

- *Current Federal Policy:* FHWA Bridge Inspection Program Audit Cycle
- *Issue:* Currently, FHWA performs a formal audit of each state’s Bridge Inspection Program on an annual basis. The State DOTs receive FHWA’s assessment, including compliance ratings for each of the 23 Federal metrics, at the end of the calendar year in which the audit was performed. The State DOT response, including Plans of Corrective Action and Improvement Plans, are due back to FHWA in February or March of the following year, meaning the inspection cycle for that year could be as much as a quarter of the way completed by the time corrections are put into place. Such a schedule does not allow sufficient time to implement corrective action before the following year’s audit period commences. If FHWA moved to a two-year audit cycle, State DOTs would have sufficient time to implement Plans of Corrective Action and Improvement Plans before the next audit cycle begins.

- *Recommendation:* Modify FHWA’s audit cycle of states’ bridge inspection programs to two years (or more) to allow time for the meaningful implementation of improvements and corrections recommended in the previous cycle.

ISSUE #5: Emergency Relief (ER) Program

- *Current Federal Policy:* 23 USC 125, Emergency Relief; 23 CFR 668, Emergency Relief Program
- *Issue:* Certain federal requirements slow the delivery of projects using Emergency Relief funds in declared emergencies. For example, more flexibility is needed with regard to contract requirements as well as with environmental and right of way reviews, as damage is often limited to repair of existing facilities to pre-damage condition, which in essence is replacing a previously-approved project. In addition, requiring a new letting for emergency projects often delays emergency repairs while expecting states to include federal requirements in state funded projects. Thus, for ER projects, DOTs should be allowed to change-order all federal requirements into a previously-let, state-funded project that did not contain the federal provisions. Finally, reimbursement of ER funds can be onerous and lengthy.
- *Recommendation:* Streamline federal requirements for transportation projects related to declared emergencies. Establish a panel to review current procedures and recommend changes to streamline projects consistent with the goals of the Emergency Relief Program.

ISSUE #6: Emergency and Tow Vehicles

- *Current Federal Policy:* FAST Act, Sec. 1410, Interstate Weight Limits; 23 USC 127, Vehicle Weight Limitations—Interstate System, subsections (m) and (r)
- *Issue:* The FAST Act increased the maximum gross vehicle weight allowance of an emergency vehicle on the Interstate System (and routes that provide reasonable access to the Interstate System) to 86,000 pounds, and exempted heavy-duty tow and recovery vehicles (regardless of weight) from Federal Interstate weight limits. These vehicles can create greater load effects in certain bridges than the previous legal loads. If not appropriately rated and posted (i.e., restricted), bridge safety, serviceability, and durability may be compromised by these vehicles. States recognize the safety and mobility benefits of facilitating prompt movement of emergency and tow vehicles. However, these two new weight-limit exemptions are not subject to state permit authority and are considered “unrestricted” exceptions; thus, every state is now required to re-evaluate the load rating for all Interstate bridges (and those that provide access to the Interstate) and post restrictions on those bridges that cannot safely carry these new maximum unrestricted vehicle loads.

An unintended consequence of the FAST Act is that hundreds—or potentially thousands—of bridges *in each state* now must be load-rated for the higher limits and “posted” with any applicable load restrictions. Furthermore, while the provision for emergency vehicles includes a stated maximum gross vehicle weight of 86,000 pounds and requirements as to axle limits, the heavy-duty tow and recovery vehicle provision does not state a weight limit and allows for the unspecified weight of a towing and towed vehicle combined, making it impossible for states to determine how to load rate the bridges and determine which ones must be posted. The unexpected additional costs associated with load-rating and posting thousands of bridges will cause financial burdens on state and local transportation agencies. Additionally, posting load restrictions on thousands of bridges on the nation’s Interstate System (and reasonable access roads) will likely create confusion among drivers that could affect the safety of the traveling public and operators of said emergency and heavy-duty tow and recovery vehicles. If these vehicles were to be subject to state permit authority, states would be able to designate appropriate routes, reducing the number of posted bridges, reducing costs for state and local governments, protecting bridges, and continuing to

facilitate prompt movement of emergency vehicles to the scenes of emergencies and prompt clearance of disabled vehicles from roads.

- *Recommendation:* Eliminate the FAST Act provisions concerning emergency vehicles and heavy-duty tow vehicles and allow states to accommodate these vehicles as they have done successfully in the past, through real-time permitting and other methods.

ISSUE #7: Buy America

- *Current Federal Policy:* 23 USC 313, Buy America; 23 CFR 635.410, Buy America Requirements
- *Issue:* The Buy America provisions of the Surface Transportation Assistance Act of 1982, 23 USC 313, state that the Secretary of Transportation “shall not obligate any funds authorized to be appropriated to carry out the Surface Transportation Assistance Act...unless steel, iron, and manufactured products used in such project are produced in the United States.” While State DOTs support the tenets of the Buy America Act, they need a more common-sense application of the provisions in law and regulation to ensure project delivery is not delayed. Currently, there is no consistent guidance from FHWA at a national level, which leaves states and FHWA Division Offices to interpret the rules, often varying widely from state to state. In addition, without specific guidance, states can be left with a strict interpretation, meaning that every single nut, bolt, washer, tie wire, etc., has to meet Buy America: and in many cases, the documentation does not exist to track the origins of those items, so states end up spending vast amounts of time on very small items.

In addition, components of specialty equipment used on movable bridges, cranes, ferries, bridge preservation work, research, etc., often contain parts not produced in the United States, and transportation agencies are not a large enough market to compel the companies producing this equipment to comply with Buy America. In one state, the inability to find American producers combined with the extreme delay in receiving waiver responses has resulted in a shift in focus away from extremely beneficial projects, such as purchasing sweeping and flushing equipment (CMAQ), to other types of work. The effectiveness of the nation’s surface transportation program is dependent on the availability of construction materials and equipment, some of which is sourced through global supply chains; thus, the Administration’s approach to reauthorization needs to address the competing needs of supporting American producers and the impact of increased delays in project delivery and the associated costs in terms of the safety and efficiency of the transportation system.

- Another problematic issue is related to the application of Buy America to utility relocations. Buy America should not apply to compensable utility relocations, as relocations are an entitlement provided by CFR. Forcing utility companies to comply with Buy America delays relocations for highway projects because transportation work is a small portion of their business, and many utility companies have existing contracts with national and international suppliers that do not allow them to purchase materials elsewhere.
- *Recommendations:*
 - Implement the exceptions to Buy America proposed previously by FHWA in Federal rule making, and reinstate the waiver process to ensure transportation projects are progressing without significant delays.
 - Develop clear guidelines on exceptions at the Federal level to create a consistent nationwide application of rules and reduce the burden, delays, and resources expended over small percentages of material.
 - Implement an exemption from Buy America for utility companies that are required to relocate their facilities as part of a transportation project.

ISSUE #8: Roadside Hardware

- *Current Federal Policy:* FHWA procedures for reviewing crash tests and issuing federal-aid eligibility letters.
- *Issue:* FHWA has proposed to cease issuing federal-aid eligibility letters for roadside hardware as of December 31, 2019. The potential termination of these letters greatly impacts how the state DOTs will approach the certification process going forward. State DOTs are committed to upgrading roadside hardware systems to the latest, safest standards in the Manual for Assessing Safety Hardware (MASH), and to providing a safe environment for errant vehicles on our roadsides. However, as the states and AASHTO have worked to implement a joint agreement made with FHWA in 2015 and meet the deadlines for transitioning to MASH-compliant devices, FHWA has announced that it is stepping back from its traditional role of reviewing crash tests and providing “eligibility letters” for roadside safety hardware. This is a concern for most states, as they have relied on these letters to certify compliance with the crash-test standards. In addition, if individual states took on this role of reviewing and certifying crashworthy devices for use on the nation’s roadways, the result could be as many as 50+ individual interpretations, leading to inconsistencies from state to state and increased costs from manufacturers who must now seek approvals from multiple entities.
- *Recommendation:* Ensure that FHWA continues to oversee the review and approval process for crash testing roadside safety hardware for use on the nation’s road and highway system.

ISSUE #9: Outdoor Advertising: Elimination of Tracking the Federal Aid Primary Route System

- *Current Federal Policy:* 23 USC 131, Control of Outdoor Advertising
- *Issue:* Currently, states are tasked with the control of outdoor advertising (i.e., billboards) along the National Highway System (NHS) and the Federal Aid Primary System (FAP) as it was designated on June 1, 1991. The FAP system has not been used in other areas of regulation for decades and it generally overlaps the NHS (as the NHS was, basically, a successor to the FAP system). In addition, some of the old FAP routes are now under city or county jurisdiction, so oversight of those billboards should be given to the local governments that control those routes. State and federal roadway and maintenance funds are not involved in these roads, so why should state and federal funding still be used to control and inventory signs on these roads? Thus, it makes sense to remove the requirement for the control of outdoor advertising on the FAP system from the federal requirements.
- *Recommendation:* Discontinue the regulatory oversight of billboards on the June 1, 1991, Federal Aid Primary System (FAP) routes by eliminating this requirement from 23 USC 131(t).

ISSUE #10: Outdoor Advertising: Nonconforming Signs

- *Current Federal Policy:* 23 CFR 750.707, Nonconforming Signs, subsections (d)(3) and (d)(5)
- *Issue:* Typically, when a highway project necessitates the relocation of an outdoor advertising sign (i.e., billboard), the sign is allowed to be moved perpendicularly off the right of way using relocation assistance funds. This move does not require a new outdoor advertising permit, and the sign owner is “made whole.” However, under current federal regulations, “nonconforming signs” (e.g., billboards greater than 825 sq. ft.) are treated differently and cannot be similarly moved. Rather, for nonconforming signs, a new *conforming* location has to be found or just compensation (i.e., paying for the “total loss” of the sign) must be paid to the permit holder. This is a time consuming, costly, and contentious process: and the cost of nonconforming sign removal can be in the hundreds of thousands of dollars. In addition, for signs on a Scenic Byway or All American road, the law doesn’t allow for reconstruction or relocation, only maintenance and upkeep. The unintended consequence is that federal law is protecting these nonconforming signs, which are personal property of private companies, essentially in perpetuity. However, case law indicates that outdoor

advertising sign permits are a privilege, not a right, and there is no fundamental right for them to be seen from the interstate. Thus, the solution is to change the above-mentioned federal regulations to allow for the movement of a nonconforming sign perpendicularly off the right of way by indicating that such movement is not considered a “new location” (since the mile marker does not change) and that the sign can only be moved in-kind, hence preserving their nonconforming structure status.

This would allow highway projects to move forward at less cost.

- *Recommendation:* Revise federal law/regulation to allow the relocation of nonconforming billboards to essentially to the same “location” perpendicular to the right of way, with permission from the landowner, when impacted by a highway project.

ISSUE #11: Outdoor Advertising: Bonus Act Program

- *Current Federal Policy:* 23 USC 131, Control of Outdoor Advertising, subsection (j); 23 CFR 750.713, Bonus Provisions
- *Issue:* There are 23 State DOTs that must still comply with the antiquated outdoor advertising control regulations of the Bonus Act of 1958. The Bonus Act is incongruent with the Highway Beautification Act (HBA) in many aspects and disrupts national uniformity in the erection and maintenance of outdoor advertising of signs/displays in areas adjacent to the Interstate: a basic program objective of the HBA. Applying the tenets of the Bonus Act often requires a State DOT to regulate outdoor advertising on sections of roadway that are no longer state highways. Additionally, the relocation of outdoor advertising signs as a result of highway projects within those sections of roadway that have been transferred to the local jurisdictions cost Federal dollars to relocate and compensate for loss. States that voluntarily participated in the Bonus Act (for an additional ½ of 1 percent of funding) are currently afforded only one avenue of exit from the program: the repayment of federal funds received during the early years of the program, as is stated in Bonus Act agreements signed between State DOTs and FHWA. It is understood that an FHWA Division Office administrative waiver could nullify the Bonus Act stipulations on a case-by-case basis (unless a nationwide blanket waiver was issued). However, it is recommended that federal law and regulations be amended so that the remedy would apply to all states seeking an exit from the Bonus Act agreement, which is outdated and causes problems for state DOTs in their regulation and control of outdoor signs along the Interstate.
- *Recommendation:* Allow States to exit the Bonus Act Program without penalty. The following sections should be amended:
 - Section 131(j) of Title 23, United State Codes, should be amended by striking “shall be entitled to receive the bonus payments” and all that follows through “provided in this section” and by inserting “shall no longer be bound by such agreement.”
 - 23 CFR 750.713 should be amended by striking § (j) and by inserting, “Specifically provides that any State which had entered into a bonus agreement before June 30, 1965, will no longer be bound by such agreement.”

ISSUE #12: Preventive Maintenance

- *Current Federal Policy:* 23 USC 135, Statewide and Nonmetropolitan Transportation Planning, subsection (f)(8)
- *Issue:* Including preventive maintenance projects in the STIP and State Transportation Plan slows down the application of maintenance techniques to the road system. Delays caused by the STIP process can lead to pavements deteriorating past the point at which a given maintenance process is a viable improvement.

- *Recommendation:* Allow preventive maintenance projects to be conducted outside the STIP process. Alternately, allow for a general statement of preventive maintenance work in the STIP to promote needed flexibility in applying the most appropriate treatments at the best time and in the best locations.

ISSUE #13: Small/Local Projects and Transportation Alternatives Projects

- *Current Federal Policy:* 23 USC 133, Surface Transportation Block Grant Program, subsection (h); FAST Act, Sec. 1109, Transportation Alternatives Set-Aside of the Surface Transportation Block Grant Program
- *Issue:* Applying the full range of federal requirements to small projects inhibits the efficient delivery of those projects, which is further exacerbated by the sub-allocation of federal funds into small funding pots. For example, the sub-allocation of the Transportation Alternatives Set-Aside as mandated by federal requirements creates funding levels that are inefficient in delivering some projects. As much as 50% or more of TA funding can be spent on preliminary engineering activities when following the federal process, leaving less than half for project construction. In addition, local public agencies (LPAs) are typically unfamiliar with federal processes, which also slows down the delivery of such projects. Small projects are difficult for DOTs and local governments to manage because of the red tape surrounding them, despite their small nature. Simplifying federally-funded projects for local agencies would expedite project delivery and better match the amount of work and regulation to the simple nature of the projects. Alternatively, flexibility for local governments to use their own approved procurement processes could be beneficial: while there may be a need for a certification process for the LPAs, the certification could be in place for multiple years and save time in the long run.

In addition, there are many reasons to restore the authority for State DOTs to sponsor TAP projects. The current prohibition of state DOT sponsorship hinders fund obligation since local government sponsors are often reluctant to partner with federal funding for small projects. Instead, to maximize available dollars, one state has developed a process to convert TA funds to STP funds, which are then converted with state highways dollars. The state highway dollars are then used for local TAP projects, more than doubling the amount of funding to TA projects because local entities are willing to partner with the state funding, but not with federal dollars. Another example is an important project that is located within a small town that is not experienced enough to handle holding the contract for a larger project. If a town elects to have the State DOT hold a contract for a larger project, then it should be allowable.

- *Recommendations:*
 - Streamline federal processes for smaller transportation projects.
 - Restore the authority for states to sponsor Transportation Alternatives projects.

ISSUE #14: Coordination with Railroads

- *Current Federal Policy:* 23 CFR Part 646, Subpart B, Railroad-Highway Projects
- *Issue:* Restrictions and delays imposed on transportation agencies by railroad owners, either intentionally or unintentionally, significantly affect the timely delivery of public works projects, including pedestrian, bicycle, road and highway projects. Obtaining fair and equitable railroad agreements as well as ensuring that commitments are made in a timely manner is often a struggle and adds time and cost to these projects.

- *Recommendation:* Establish consistent requirements, commitments, and time frames across all public and private railroad owners to facilitate transportation work within and across railroad rights of way.

ISSUE #15: Drones/Unmanned Aircraft Systems (UAS)

- *Current Federal Policy:* 14 CFR 107, Small Unmanned Aircraft Systems
- *Issue:* Current restrictions on the use of drones are impeding the development of significant potential beneficial uses in such areas as preliminary design, right of way, bridge inspection, safety, and operations. The full potential of this continually evolving technology is not being realized, in part because regulation is unable to keep pace with the developing technology. Current restrictions include where and when drones can be flown, the amount of pre-planning needed, and the inability to fly over traffic. An example of a currently restricted use is the documentation of a crash site, which would allow for quicker clearing of the incident and potentially reduce secondary crashes.
- *Recommendation:* Expand flexibilities for transportation agencies to use drones in broader applications and with fewer restrictions to help realize the full potential of this continually evolving technology.

ISSUE #16: Relocation of Utilities

- *Current Federal Policy:* 23 USC 123, Relocation of Utility Facilities
- *Issue:* 23 USC 123 provides that states may be reimbursed with federal funds when the state pays for utility relocations for project construction.
- *Recommendation:* Amend 23 USC 123 to allow utility relocation to take place after a preferred alternative is identified but prior to NEPA completion with appropriate limitations to ensure the integrity of the NEPA process, and allow federal funds to be used for the relocation.

ISSUE #17: Delegation of Modifications to State Policies and Procedures

- *Current Federal Policy:* Stewardship and Oversight Agreements
- *Issue:* Attachment B to the standard Stewardship and Oversight Agreement requires FHWA approval for various policies and procedures, such as a States' standard specifications; pavement design policy; value engineering policy and procedures; liquidated damage rates; quality assurance program; and other matters.
- *Recommendation:* States should be authorized to approve modifications to these procedures without pre-approval by FHWA, subject to FHWA's ongoing oversight of the State's compliance with federal requirements.

ISSUE #18: Delegation of ITS Architecture

- *Current Federal Policy:* 23 CFR 940, Intelligent Transportation System Architecture and Standards
- *Issue:* Implemented as part of TEA-21 in 2001 (Sec. 5206(e)), requirements were established for ITS architecture at a time when the technology was in its initial development. Almost two decades later, with the maturation of ITS systems and architecture, reporting to the federal level on every project is time consuming and excessive. States can take on this responsibility.
- *Recommendation:* Eliminate the requirements for production of project-level, regional, and statewide ITS Architectures. States can be delegated this responsibility.

ISSUE #19: Delegation of Preventive Maintenance Projects

- *Current Federal Policy:* 23 USC 116, Maintenance, subsection (e)

- *Issue:* Under 23 USC 116(e), a State may use Federal-aid highway funds for a preventive maintenance project “if the State demonstrates to the satisfaction of the Secretary that the activity is a cost-effective means of extending the useful life of a Federal-aid highway.” Because this is a statutory requirement, FHWA cannot currently assign to States the authority to determine that a preventive maintenance project qualifies for federal reimbursement.
- *Recommendation:* This provision should be amended to allow States to determine that a preventive maintenance project meets the applicable criteria for federal reimbursement. This change would require an amendment to 23 USC 116(e).

ISSUE #20: Delegation of Authorization for Right-of-Way Acquisition

- *Current Federal Policy:* 23 USC 106, Project Approval and Oversight
- *Issue:* Currently, there is no specific authorization in 23 USC 106 (or elsewhere in Title 23) for States to assume FHWA’s responsibilities for authorizing federally funded right-of-way acquisitions. In addition, FHWA’s right-of-way regulations state that “as a condition of Federal funding under Title 23, the grantee shall obtain FHWA authorization in writing or electronically before proceeding with any real property acquisition using Title 23 funds, including early acquisitions under §710.501(e) and hardship acquisition and protective buying under §710.503.”
- *Recommendation:* New legislative authority should be established for States to voluntarily assume some or all of FHWA’s responsibilities for approval of right-of-way acquisitions, subject to the same legal protections that currently apply to the right-of-way acquisition process. This would require an amendment to 23 USC 106.

ISSUE #21: Delegation of Federal Funds Obligation Management

- *Current Federal Policy:* 23 USC 106, Project Approval and Oversight
- *Issue:* Currently, a State must obtain FHWA’s approval to obligate funds for a specific project. This is required to allow states to actually draw down specific Federal funds so that the State can seek reimbursement from FHWA for actual costs incurred. This approval is provided for a project after FHWA determines that all applicable Federal requirements have been met.
- *Recommendation:* A new legislative authority should be provided to allow States to assume FHWA’s responsibilities for determining that all federal requirements have been met, without the need for an individual project-level obligation approval by FHWA.

ISSUE #22: Delegation of Project Agreements

- *Current Federal Policy:* 23 CFR 630.106, Authorization to Proceed
- *Issue:* Currently, a State must obtain FHWA’s authorization to proceed before beginning work on any Federal-aid project, including an advance construction project. This authorization can be provided by FHWA for a project or a group of projects through or after the execution of a formal project agreement with the State, only after FHWA determines that all applicable Federal requirements have been met.
- *Recommendation:* States should be provided new legislative authority to assume FHWA’s responsibilities for determining that all federal requirements have been met prior to commencement of construction.

AASHTO FAST ACT REAUTHORIZATION

8: Project Delivery—Environmental Protection

INTRODUCTION AND BACKGROUND

Over the past decade, significant progress has been made toward the goal of streamlining environmental reviews for transportation projects. Average review times are faster, programmatic approaches are used more widely, and environmental documents are becoming more reader-friendly. This progress has been spurred by streamlining measures enacted in SAFETEA-LU, MAP-21, and the FAST Act, including the environmental review process in 23 USC 139. But even with this great progress, the environmental process still takes too long and is unduly costly and delay-prone. Some of the most persistent difficulties arise from the interaction among NEPA and other federal environmental laws, each with its own distinct procedures and requirements. Our recommendations focus on making continued improvement in the NEPA process itself, and in making the NEPA process work more smoothly with other federal requirements.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

NEPA / Environmental Review Process

ISSUE #1: Enhance Role of Lead Agency in Managing the NEPA Process

- *Issue:* Section 139 requires lead agencies to prepare a “coordination plan” when an EIS or EA is prepared, and requires that plan to include a “schedule for completion of the environmental review process for the project.” Section 139 requires both the initial schedule and any changes that “shorten” the schedule to be adopted by the lead agency with “concurrence” of all participating agencies and the project sponsor. As amended by the FAST Act, Section 139 now also requires the “status and progress” of all projects requiring an EA or EIS to be posted on the Permitting Dashboard; this requirement ensures that a current schedule showing key project milestones is posted on the Dashboard.
- *Recommendation:* Eliminate the requirement to obtain “concurrence” in project schedules, and clarify that posting on the Dashboard satisfies the requirement to maintain and update the project schedule under Section 139. Retain the existing requirement for lead agencies to consult with participating agencies and project sponsor in setting the schedule, for project schedules to be consistent with applicable legal requirements, and for schedules to be posted on the Dashboard. If disagreements arise about schedules, they can be resolved through elevation to the CEQ and/or the Permitting Council. These changes will help to ensure efficiency, flexibility, and transparency in setting project schedules, while minimizing the risk of bogging down the process over scheduling issues.

ISSUE #2: Provide a Consistent Legal Framework for Linking Planning and NEPA

- *Issue:* In its planning regulations, FHWA has recognized two distinct processes for linking transportation planning with the NEPA process, known as planning-environmental linkage (PEL): (1) a flexible process that was established in the regulations before MAP-21; and (2) a more restrictive process that was enacted in MAP-21 and is codified at 23 USC 168. The main difference between the two is that Section 168 requires the lead agency to obtain concurrence of cooperating agencies with approval roles. It is confusing to states to have two different PEL authorities with two different

processes and requirements. Moreover, the inflexibility of the Section 168 process means that it is rarely if ever used.

- *Recommendation:* Amend 23 USC 168 to conform that statutory process to the more flexible preexisting process that existed in FHWA's regulations (23 CFR Part 450) before Section 168 was enacted in MAP-21. The amendments to Section 168 should, at a minimum, eliminate the "concurrence" requirement.

ISSUE #3: Make All Categorical Exclusions Available for Use by Any Federal Agency

- *Issue:* Under current NEPA regulations, each federal agency adopts its own list of categorical exclusions (CEs) applicable to actions that the agency carries out. If multiple federal agency approvals are needed for the same project, and only one agency has an applicable CE, then that agency can issue as CE, but the other federal agencies must prepare an EA - slowing down the process unnecessarily. An existing law—49 USC 304—allows any USDOT agency to use any other USDOT's agency's CE, but this authority has two important limitations: (1) applies only to "multimodal projects," which are defined as projects that require approval from two or more USDOT agencies, and (2) it does not apply to agencies outside the USDOT. These restrictions are unduly limiting.
- *Recommendation:* Amend 49 USC 304 or enact new legislation authorizing any federal agency to apply a CE that had been adopted by any other federal agency; this authority would make CEs interchangeable among all federal agencies. For example, the Corps could apply a CE from FHWA's CE list. If this change is not made, Congress should at least amend 49 USC 304 to allow any USDOT agency to use any other USDOT agency's CE, regardless of whether the project is "multimodal."

ISSUE # 4: Clarify that Programmatic Agreements Can be Used to Authorize Additional CEs

- *Issue:* Most States have entered into Programmatic Agreements under which FHWA authorizes the State to make CE determinations on FHWA's behalf. In Section 1318 of MAP-21, Congress specifically authorized these types of Programmatic Agreements to include CEs for additional activities beyond those specifically listed as CEs in FHWA's NEPA regulations, as long as the additional CEs are "consistent with section 1508.4" of the CEQ's NEPA regulations. However, in rulemaking, FHWA has interpreted that statutory language in a way that effectively prevents that flexibility from being used: under FHWA's interpretation, additional activities can be included as CEs in a Programmatic Agreement only if the CEs are adopted through the same federal rulemaking process that FHWA would need to use in order to establish new CEs in its regulations. (See 78 Fed. Reg. 57587, 57581 (Sept. 19, 2013) ("The FHWA interprets section 1318(d)(3) as limiting this expanded authority to actions listed in regulation (i.e., all (c)-list CEs and the examples provided in the (d)-list) and any other CE that is added through a process consistent with the requirements of 40 CFR 1508.4.")) FHWA's interpretation is inconsistent with the statutory language, which only requires the additional CEs to be "consistent with section 1508.4" of the CEQ's regulations - a provision that defines a CE, but does not include any process requirements. FHWA's interpretation negates the flexibility that Congress intended to provide in Section 1318 of MAP-21.
- *Recommendation:* Clarify that additional CEs may be included in Programmatic Agreements between a State DOT and FHWA, without needing to undertake a federal rulemaking process. This clarification can be provided by amending Section 1318 of MAP-21 to provide that such CEs must be "consistent with the criteria for a Categorical Exclusion in section 1508.4 of title 40 ..."

ISSUE #5: Clarify and Expand NEPA Assignment Authorities

- *Issue:* Under 23 USC 327, States may assume, by written agreement, responsibilities of the USDOT under NEPA and related federal environmental laws for highway, transit, rail, and multimodal projects. To date, six States have successfully completed the application process, and several more are in the application process. Experience in assignment States has shown that assignment greatly reduces average completion times. But the application process currently takes 1 to 2 years to complete, and once States obtain assignment, they remain subject to a burdensome and complicated audit and renewal process. In addition, the assignment statute prohibits assignment of project-level air quality conformity determinations, which are an essential part of the NEPA process for many projects, and FHWA has interpreted the statute to further limit the range of responsibilities that can be assigned. Further clarification, simplification, and expansion of this program is needed.
- *Recommendation:* Clarify, simplify and expand streamlining authorities under 23 USC 327 as follows:
 - Standardize the information that States need to meet to apply for the NEPA assignment program; a checklist approach where states certify to meet certain requirements.
 - Require that the term of NEPA Assignment MOUs be a minimum of ten years, while maintaining the current four-year audit period.
 - Clarify and simplify the assignment audit process to focus on compliance with the substantive areas of the assignment MOU.
 - Clarify that assignment can include project-level air quality conformity determinations, as well as floodplain determinations, which FHWA has interpreted to be excluded from assignment.
 - Clarify that state attorneys' fees may be paid with federal funding, including court ordered payments of opposing counsel.

ISSUE #6: Allow Increased Use of Programmatic Agreements to Balance FHWA and State DOT Roles

- *Issue:* In States without NEPA assignment, the FHWA and State DOT carry out the environmental review process in partnership with one another. Much of the subject-matter expertise on environmental issues resides within the State DOT on issues ranging from endangered species to historic preservation to traffic forecasting. But because FHWA is the lead agency, many routine functions must be carried out by FHWA staff, even when the substantive work has been done by the State DOT. It is wasteful and inefficient for a State DOT to prepare a report, draft a transmittal letter, and then wait for FHWA to sign the letter. It would be far more efficient to allow the State DOT to carry out routine inter-agency coordination tasks, while maintaining regular communication with FHWA. This increased efficiency would also free up FHWA's limited staff resources to focus on issues such as program oversight and major project decisions.
- *Recommendation:* Authorize FHWA to enter into programmatic agreements under which State DOTs (without NEPA assignment) could take on increased responsibility for carrying out routine FHWA responsibilities during the NEPA process, including but not limited to: requesting concurrence in findings of de minimis impact under Section 4(f) of the USDOT Act; submitting Biological Assessments under Section 7 of the Endangered Species Act; preparing and circulating air quality conformity determinations under the Clean Air Act; initiating and carrying out Section 106 consultation activities under the National Historic Preservation Act, including submittal of historic preservation reports to consulting parties (but not including government-to-government consultation with tribes). FHWA would retain responsibility for all final decisions, while maximizing the opportunity for State DOTs acting under FHWA oversight to carry out the procedures leading up to those final decisions. In addition, direct FHWA to amend its regulations to remove the

requirement for FHWA approval of State DOT procedures and policies for routine activities such as public involvement and noise mitigation.

ISSUE #7: Establish Project Delivery Innovation Pilot Program

- *Issue:* The NEPA process requires compliance with a host of other federal environmental laws, each of which is implemented by separate regulations, under the jurisdiction of different agencies. Streamlining the NEPA process alone will not be successful without also streamlining compliance with the other federal laws that also must be addressed as part of the same process. Yet efforts to amend or improve those other laws have not been successful, at least to date. Because other federal environmental laws are subject to complex and prescriptive regulations, agencies are highly restricted in their ability even to consider innovative practices that could yield “win-win” solutions for infrastructure development and the environment. One possible solution is to borrow from the “SEP-15” model used by FHWA - an experimental program that allows the agency to waive certain requirements on a project-specific basis as a way to test innovative approaches, which can inform future changes to the agencies regulations. This same flexibility should be provided to other agencies.
- *Recommendation:* Establish a pilot program, modeled on SEP-15, that would allow USDOT modal administrations and federal environmental agencies to waive or otherwise modify their own requirements to develop innovative practices to streamline project delivery and achieve positive environmental outcomes. The flexibility provided under this framework would include appropriate safeguards—including interagency consultation and public notice and involvement—to ensure adherence to federal environmental laws, regulations, and policies. For example, all federal agencies required to consult on a project would need to agree to the inclusion of the project in the pilot program, consulting resource agencies would need to determine that equal or improved environmental outcomes would be achieved, and no agency would be allowed to override or modify requirements that fall within another agency's authority.

ISSUE #8: Allow Utility Relocations to Start Earlier

- *Issue:* Utility relocations are a common source of delay in project schedules. Utility relocations tend to be time-consuming because they often require other regulatory approvals and involve property acquisition outside the transportation right-of-way. Utility relocations required for FHWA-approved projects also become subject to Buy America requirements, which may create further delays if compliant products are not readily available. In addition, utility relocations require extensive coordination and agreement with the utility companies, which generally are responsible for carrying out the relocations. To avoid project delays, it would be highly beneficial to allow utilities to begin relocating utilities before the NEPA process for the transportation project is complete. However, under FHWA’s NEPA regulations, construction work on the project—including the utility relocations, generally is not allowed to begin until after the NEPA process is completed. 23 CFR 771.113(a).)
- *Recommendation:* Direct FHWA to amend its NEPA regulations to allow utility relocations to begin prior to NEPA completion, with appropriate limitations to ensure the integrity of the NEPA process, and allow federal funds to be used for such relocation. Appropriate limitations would include (1) treating the utility relocation as a separate federal action, so that it’s subject to its own NEPA review before the utility relocation occurs; (2) allowing the utility relocation to occur only after a preferred alternative has been identified in the NEPA process for the transportation project, and prohibiting the utility relocation itself to be considered as a factor in approving an alternative; and (3) if federal funds are used for the utility relocation, requiring the State to reimburse those funds to FHWA if the transportation project is not approved and implemented within a defined time period (e.g., 20

years). This flexibility would apply when prepared an Environmental Impact Statement, Environmental Assessment, or Categorical Exclusion.

ISSUE #9: Allow Conformity and Fiscal Constraint to be Determined Post-NEPA, Prior to Construction

- *Issue:* For projects located in air quality nonattainment and maintenance areas, FHWA must make an air quality conformity determination (i.e., a finding that the project conforms to the State's plan for achieving federal air quality standards per 42 USC 7506(c)). The conformity determination, in turn, requires a finding that the project is include in a "fiscally constrained" metropolitan transportation plan and transportation improvement program (TIP). 40 CFR 93.108. These findings are required prior to completion of the NEPA process under current EPA and FHWA regulations and guidance. This requirement creates a Catch-22 for many large projects: without NEPA approval, it is difficult to confirm funding sources, but the NEPA process cannot be completed until funding sources are identified. The timing of the fiscal constraint determination can be especially challenging for large P3 projects and other innovative-finance projects, where funding and financing plans are not (and cannot be) resolved until after the NEPA process is complete.
- *Recommendation:* Allow flexibility to complete the NEPA with approval conditioned on making an air quality conformity and fiscal constraint determination before proceeding to construction. This approach would not change any substantive requirements related to fiscal constraint and project level conformity, it merely changes the timing of making these determinations. This change would be implemented with legislation directing FHWA and FTA to update their joint environmental and planning regulations (23 CFR Part 771 and Part 450), and directing EPA to make a corresponding change to its conformity regulations.

ISSUE #10: Provide Greater Flexibility for Early Acquisition of Right-of-Way

- *Issue:* Section 108 of Title 23 allows right-of-way to be acquired for a transportation project, under certain conditions, prior to completion of the NEPA process for the project itself. FHWA's right-of-way regulations (23 CFR Part 710) impose restrictions that are not required by the statute, in particular an absolute prohibition on early acquisition of property protected by Section 4(f)—i.e., any historic property, and publicly owned land within a park, recreation area, or wildlife or waterfowl refuge. This prohibition applies regardless of whether the Section 4(f) status of the property (e.g., its eligibility for the National Register of Historic Places) was known at the time the property was acquired, and the regulations allow no flexibility for FHWA to make exceptions. As a result, inadvertent acquisition of Section 4(f)-protected properties can permanently deprive a project of eligibility for federal funding.
- *Recommendations:* Direct FHWA to amend its regulations governing early right-of-way acquisition carried out with non-federal funds (23 CFR 710.501(b)) to remove the prohibition on acquiring Section 4(f) properties. All conditions specified in the statute would still need to be met. This change would ensure that the regulations provide the full degree of flexibility allowed under 23 USC 108.

Air Quality Conformity

ISSUE #11: Require Air Quality Conformity Only for the Current Air Quality Standards

- *Issue:* As required by the Clean Air Act, the EPA periodically reviews and updates the National Ambient Air Quality Standards (NAAQS), typically by replacing an old standard with a new, more stringent standard. When a new NAAQS is adopted, EPA issues rules for transitioning to the new standard. In a recent court decision, *South Coast v. EPA*, the U.S. Court of Appeals struck down an EPA rule that provided for the transition from the 1997 ozone standard to the stricter 2008

standard. The court held that even though the 1997 standard had been revoked and replaced by a stricter standard, States and MPOs still were required to continue making conformity determinations for the revoked 1997 standard. This decision will result in wasteful effort of demonstrating conformity to plans for achieving an air quality standard that has already been met.

- *Recommendation:* Require that when a new standard is established for a pollutant, transportation agencies only need to conform to the most recent standard for that pollutant. This would require an amendment to 42 USC 7506.

ISSUE #12: Allow Programmatic Air Quality Conformity Determinations

- *Issue:* Currently, air quality conformity determinations must be made when an MPO updates or amends its plan or TIP—regardless of whether the changes being made are likely to have any material effect on air quality. In addition, conformity determinations are required for every project (with the exemption of certain ‘exempt’ projects), even when there is no realistic chance that the project will cause the region to violate applicable air quality standards.
- *Recommendations:* Direct EPA to amend the transportation conformity regulations (40 CFR Part 93) to allow the USDOT, in consultation with EPA, to make programmatic conformity determinations that can be relied upon as the basis for demonstrating conformity for individual plans, programs, and projects. The programmatic conformity determinations could be made at a national, state or local level. Conditions could be specified in the regulations so that the programmatic determinations can be used only for plans, programs, and projects that meet specified criteria. If emissions budgets are exceeded, the State and MPO would need to resume making individualized conformity determinations.

ISSUE #13: Adjust Timing of Transportation Conformity Requirements to Align with SIP Approval

- *Issue:* After a NAAQS is established by EPA, nonattainment areas for that standard are designated. One year after this designation, transportation conformity applies. In concept, a conformity determination is a finding that a transportation plan, program, or project “conforms to” the motor vehicle emissions budgets in the State Implementation Plan (SIP) adopted by the State for achieving the NAAQS. But under the Clean Air Act, the SIP is not submitted until three years after nonattainment areas are designated. As a result, there is a two-year period in which conformity determinations are required but the SIP is not yet established, and this time period may become much longer if there are delays in EPA’s approval of the SIP. During this time, conformity determinations can only be made by proving that “build” emissions are no worse than “no build” emissions. It is paradoxical to require “conformity” to a SIP before the SIP has even been adopted.
- *Recommendation:* Amend the Clean Air Act (42 USC 7506(c)) to provide that transportation conformity requirements for a newly adopted NAAQS do not come into effect until six months after EPA approves the SIP motor vehicle emissions budgets for that NAAQS.

Section 106, 4(f), and 6(f)

ISSUE #14: Streamline Section 106 Requirements for Post-WWII Properties

- *Issue:* Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to identify all historic properties listed in or “eligible for” the National Register of Historic Places (NRHP), assess effects on those properties, and consult on ways to mitigate adverse effects. In addition, Section 4(f) of the USDOT Act imposed on USDOT agencies additional, stringent requirements to protect all historic properties listed in or eligible for the NRHP. Under National Park Service standards, properties under 50 years of age generally are not eligible unless they have

“extraordinary” significance. But in practice, this “50-year rule” has commonly been interpreted to mean that all structures older than 50 years of age must be evaluated for eligibility, and in many States, the 50-year threshold is measured from the anticipated date of construction - so the surveys include properties in the 40- to 50-year age range at the time the surveys are conducted. This means entire suburban subdivisions built in the 1970s must now be evaluated for National Register eligibility, and soon 1980s-era developments will need to be evaluated as well.

- *Recommendation:* Direct the Advisory Council on Historic Preservation to issue program comments or other exemption to streamline Section 106 reviews for common, post-World War II buildings, districts, neighborhoods and commercial development from Section 106 review, and establish a statutory Section 4(f) exemption for the same properties covered by that Section 106 exemption. Direct the National Park Service to reassess the 50-year age threshold used in determining eligibility for the National Register of Historic Places, particularly in related to post-WWII residential properties, and submit a report to Congress on whether the 50-year threshold should be modified.

ISSUE #15: Streamline Agency Involvement in Section 4(f) Decisions

- *Issue:* Section 4(f) of the Department of Transportation Act establishes requirements and considerations for USDOT to use land from a historic site, publicly owned park, recreation area, or wildlife and water fowl refuge. Implementing regulations require USDOT to coordinate and seek comments from “officials of jurisdiction” prior to making a 4(f) determination. Depending upon the resource, this could include the State Historic Preservation Office (SHPO), the Tribal Historic Preservation Office (THPO), the Advisory Council on Historic Preservation (ACHP), the National Parks Service, and/or the Fish and Wildlife Services (FWS). After coordination with these entities and public review, the evaluation is then required to be reviewed by the Department of the Interior (DOI), and sometimes the Department of Agriculture (DOA) and/or Department of Housing and Urban Development (HUD). This last level of review slows down project delivery and adds little value to the 4(f) determinations.
- *Recommendation:* Remove the requirement for DOI, DOA and/or HUD review for individual 4(f) evaluations. These agencies would still have the opportunity to comment as part of the NEPA process and/or as officials with jurisdiction, and could use that comment opportunity to raise any issues or concerns regarding potential impacts to Section 4(f) resources. This change would require amending 49 USC 303 and 23 CFR 774.5(a).

ISSUE #16: Allow Alternatives to Providing “Replacement Parkland” under Section 6(f)

- *Issue:* Section 6(f) and Land and Water Conservation Fund Act (LWCF) prohibits the conversion of property acquired or developed with LWCF grants to a non-recreational purpose without the approval of the National Park Service. Section 6(f) further directs NPS to approve such conversion only if the converted area is replaced with parkland of equal fair market value, location, and usefulness. These Section 6(f) requirements apply to the entire park for which an LWCF grant was received, even if the grant was used only for a small portion of the park. Consequently, where conversions of Section 6(f) lands are proposed for highway projects, no matter how small the conversion, replacement lands are necessary. Often, local officials would prefer for the State to make improvements to the existing property rather than finding replacement property, which could be at a different site; however, Section 6(f) specifically requires replacement parkland.
- *Recommendation:* Amend Section 6(f) of the LWCF to allow flexibility for a public agency acquiring Section 6(f)-protected parkland to compensate for those impacts through enhancements to the existing park. This mitigation method would still require approval of the National Park Service; the

change would simply allow broader flexibility as to the method used to compensate for impacts to parkland.

Section 404 of the Clean Water Act

ISSUE #17: Streamline Section 404 Compliance for Routine Road Maintenance Activities

- *Issue:* Many transportation projects require permits under Section 404 of the Clean Water Act for the discharge of dredged or fill material into “waters of the United States.” Section 404 permitting requirements can be a significant burden on transportation project development, especially for minor maintenance and construction activities that only impact man-made wetlands located adjacent to roads.
- *Recommendation:* Expand exemptions from Section 404 permitting for routine maintenance projects with minor impacts and streamline the use of Nationwide Permits for projects that remain subject to Section 404 as follows:
 - Clarify and expand exemptions in the Corps’ regulations (33 CFR Part 325) for activities involving maintenance and/or construction of roadside ditches, emergency activities, and impacts on low-quality wetlands within the highway median.
 - Expand opportunities for using non-reporting Nationwide Permits to greatly reduce timeframes for obtaining Section 404 permits.
 - Modify permitting requirements so that projects that require a relocation of a roadside ditch (that also carries a Water of the US) will not require mitigation above and beyond the replacement of the roadside ditch.

ISSUE #18: Allow Programmatic Approach to Compliance with Section 404(b)(1) Guidelines

- *Issue:* Section 404 of the Clean Water Act requires the U.S. Army Corps of Engineers to comply with EPA regulations—the “Section 404(b)(1) Guidelines”—when issuing Section 404 permits authorizing projects that impact wetlands and other waters under the Corps’ jurisdiction. The Guidelines require, among other things, that the Corps only issue a permit for the practicable alternative that causes the least impact to aquatic resources; this is the so-called ‘LEDPA’ requirement. In practice, inter-agency disagreements over interpretations of the LEDPA requirement are a frequent source of project delays. When applied rigidly, this requirement can effectively force the choice among alternatives to be based solely on small differences in wetland impacts, rather than a comprehensive and balanced comparison of impacts on all types of natural resources and communities.
- *Recommendation:* Create alternative process that allows approval of Section 404 permit for a surface transportation project to be approved pursuant to programmatic agreement with a State that ensures no-net-loss at watershed level, in lieu of making a LEDPA determination at the project level.

ISSUE #19: Allow Delegation of Section 404 Permitting Authority for Transportation Projects

- *Issue:* Under existing law, the Corps is responsible for issuing Section 404 permits, subject to EPA’s oversight and veto authority. The Corps has authority to delegate its permitting responsibilities to a State, but this is an all-or-nothing proposition; the State’s only option is to take on the entire program, a major burden. As a result, most States are reluctant to take on this responsibility (to date, only New Jersey and Michigan have done so). By contrast, the NEPA assignment program established under 23 USC 327 allows FHWA to assign all or a portion of its environmental responsibilities within a State; the scope of assignment under that program is determined by

negotiation between FHWA and the State. To date, six States are participating in the NEPA assignment program and several more are considering it. The flexibility allowed under the NEPA assignment program should be extended to the Section 404 program.

- *Recommendation:* Allow delegation of Corps permitting responsibility to a State for a subset of projects or activities as agreed by the Corps and the State, e.g., just for transportation projects. Providing this flexibility would encourage States to take over Section 404 permitting for at least a portion of the projects currently handled by the Corps, reducing the burden on the Corps' staff, while also promoting greater efficiency in the processing of permits for major public projects.

Endangered Species Act

ISSUE #20: Require Interim Guidance to Be Issued at Time of Species Listing

- *Issue:* The ESA requires recovery plans for all species listed as threatened or endangered, however for most listed species recovery plans are out of date or have not been developed. This creates numerous challenges for project sponsors in addressing threatened or endangered species as there is no guidance regarding species recovery goals or acceptable mitigation tools.
- *Recommendation:* Amend 16 USC 1533 to require Fish and Wildlife Services (FWS) and National Marine Fisheries Service (NMFS) to, at a minimum, issue interim guidance at the time of listing of a threatened or endangered species. The interim guidance would include general species recovery goals and acceptable species survey protocols and mitigation. The Services, federal action agencies, and project sponsors would be required to use the interim guidance in making effect determinations and in determining appropriate measures to avoid, minimize, and mitigate for impacts to the species. The interim guidance would remain in effect until the full recovery plan is developed and approved.

ISSUE #21: Provide a Framework for Exempting Projects with Minor Effects

- *Issue:* Section 7 of the ESA requires consultation for all federal actions with the potential to affect threatened and endangered species, and Section 10 of the ESA prohibits the taking (including incidental taking) of endangered species without a permit or incidental take authorization provided through Section 7 consultation. The existing statute and regulations do allow for exemptions or categorical determinations to be made for routine projects with minor impacts. By contrast, such flexibility is provided under other environmental laws - for example, Categorical Exclusions under NEPA and findings of *de minimis* impact under Section 4(f). Similar flexibility can be achieved through Programmatic Agreements under the ESA, but the negotiation of PAs is a lengthy process and where PAs exist, they often do not cover all of the species affected by a particular project.
- *Recommendation:* Amend 16 USC 1536 to require the Services to establish activities-based exemptions from the ESA, which would avoid the need for Section 7 consultation and incidental-take permits for specific types of routine activities, such as road maintenance projects. The availability of such exemptions could be limited to projects carried out by public agencies, such as State DOTs, where the State has committed to participate in ecosystem-scale efforts to protect and promote recovery of listed and other sensitive species.

AASHTO FAST ACT REAUTHORIZATION

9: Research and Innovation

INTRODUCTION AND BACKGROUND

Continuous improvement, fueled by research and innovation, is critical for State Departments of Transportation (DOT) to provide safe, world-class transportation services to their customers. In October 2013, AASHTO published policy recommendations and passed resolutions specific to the reauthorization effort at that time. Many of those efforts related to research and innovation still apply and are restated in this paper. In addition, the Special Committee on Research and Innovation, with input from the Research Advisory Committee, has approved additional policy recommendations to capture new opportunities for Congress to consider related to research and innovation.

State Planning and Research (SP&R) funding, which is set at 2% of the core Federal Transportation programs allocated to each state by formula, helps states conduct research, disseminate results and encourage implementation of research findings. State DOT Research programs rely on a required 25% minimum of SP&R funds to administer their Research, Development, and Technology Transfer (RD&T) activities. SP&R funds support a variety of transportation research needs that improve all modes and enable the transportation community to build safer, longer lasting infrastructure, in less time and for less money. RD&T projects directly contribute to innovative or improved 1) safety, 2) standards, 3) methods, 4) materials, 5) products, 6) programs and 7) services.

The state DOTs need well-managed research programs to make informed decisions and ensure a strong future for the transportation network. This FAST Act reauthorization should provide the funding and institutional framework to support the success of these programs.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE #1: Increase Research, Technology & Education Program Funding Levels

- *Current Federal Policy:* FFY18 funding request for the Federal Research, Technology & Education Program (RT&E) was [\\$418M which is the same amount requested for FFY17](#) and is a slight increase from FFY16 \$415M. The program is anticipated to remain constant for FFY19 as well, essentially representing a reduction in overall program funding due to increased costs in project delivery and not accounting for anticipated inflation growth.
- *Issue:* The FAST Act reduced the flexibility of MAP-21 funding by designating three new efforts to be funded from Highway Research and Development (R&D) funds, the Technology and Innovation Deployment Program (TIDP), and/or the Intelligent Transportation Systems Research program. These efforts include:
 - Establishment of a program to deploy advanced transportation and congestion management technologies (\$60 million per year) which is a competitive grant program that is open to local agencies and research institutions;
 - Competitive Grants to States to demonstrate user-fee-based alternative revenue mechanisms to ensure the long-term solvency of the Highway Trust Fund ([STSFA](#) \$15 million in FY 2016, \$20 million per year thereafter); and
 - [A study by the Transportation Research Board on needed upgrades and repairs to the Interstate Highway System](#) to meet the demands of the next 50 years (up to \$5 million for FFY2016).

In addition, USDOT is authorized to use up to \$10 million per year to develop, use, and maintain data sets and data analysis tools to assist State and Metropolitan Planning Organization performance management activities. (This was requested in GROW America, but was not intended to be funded from R&D.)

Because these new activities are mandated in the research title of the FAST Act without a commensurate increases in the overall funding, existing federal research programs have effectively been reduced. After accounting for the three research funding emphasis areas newly specified by the Congress, the FAST Act reduces the level of discretionary funding in the R&D, TIDP, and ITS programs by approximately 25%, or from about \$292.5 million per year to about \$232.5 million per year.

At a minimum, RT&E requires \$434M (FFY2016 \$415M plus inflation) plus the reinstitution of the above allocations of \$85M for a total requested amount of \$519M is necessary for State DOTs to participate in research and advancing technology solutions to support and improve the transportation system at State and local levels.

If the national formula funding were to change in the future, the impacted SP&R funds would need to be accounted for in another way in order to maintain the overall minimum amount of \$519M necessary for the RT&E program.

- *Recommendations:* To account for inflation, reduced program flexibility, and increased project delivery costs since FFY16, a budget of \$519M to RT&E is requested as well as maintain formula funding at 2% SP&R funding to continue the DOTs' commitments to researching and implementing innovative technologies and processes in transportation across the country via the RT&E program. [This supports the previous 2017 AASHTO Implementation Plan for FAST Act and MAP-21.](#)

ISSUE #2: Allow Highway Safety Improvement Program Funds to be used for Safety Related Research Activities

- *Current Federal Policy:* 23 U.S.C § 148 Highway Safety Improvement Program (a)(4)(B)- Inclusions
- *Issue:* During the FAST Act authorization process, the previous terminology in the above mentioned section was changed from "The term "highway safety improvement project" includes but is not limited to the following..." to "The term "highway safety improvement project" only includes a project for 1 or more of the following:" This has limited State DOTs from carrying out non-infrastructure projects that are within their State's Strategic Highway Safety Plan such as education, enforcement, and evaluation.
- *Recommendations:* Reinstate the MAP-21 language for the sub section above to again allow Highway Safety Improvement Program funded safety projects to include education, enforcement, and research activities. This will better allow DOTs to carry out State Strategic Highway Safety Plans with their respective safety offices and local and state enforcement agencies.

ISSUE #3: 100% Transferability of Federal Funding for Research Program

- *Current Federal Policy:* The FAST Act authorizes a single amount for each year for all apportioned highway programs combined. That amount is apportioned among the States, and each State's apportionment is then divided among the individual apportioned programs. Each program has transferability provisions that are statutorily set and the majority require State funding matches.
- *Issue:* AASHTO supports flexibility in transferring federal program funding among the different highway programs as it allows states to best meet their needs, which is especially important when overall funding is insufficient. Currently state DOTs can use SP&R funds (100% federal with no state match) for pooled fund studies which are a quarter of each state's 2% SP&R funding allocation. For

smaller states, increased flexibility to use other federal fund sources at 100% for pooled funds would strengthen the program and allow more states to participate in pooled fund studies.

Several examples include: 1) Transfer construction funding for an innovative pavement construction pooled fund study, 2) Use Congestion Mitigation and Air Quality funding to contribute to a pooled fund study on connected and autonomous vehicles, or 3) use of 100% bridge program funds for a bridge related pooled fund study.

- *Recommendation:* AASHTO recommends increased transferability/flexibility among highway program funds including 100% transferability of Federal highway program funds to the Research Program.

ISSUE #4: Redefine “Manufactured Products” Requirement within Buy America Law

- *Current Federal Policy:* 23 USC § 313 Buy America (1/1/2014); 23 CFR § 635.410 (4/1/2013)
- *Issue:* The intent of the Buy America Act is to support and encourage the nation’s materials and manufacturing industries, to promote quality materials being used in construction of public infrastructure, and to allow for consistent review of associated materials and costs nationwide. However, the requirement has had the unforeseen consequence of limiting DOTs’ abilities to carry out innovative research and testing of preassembled products or equipment not readily available within the United States. The waiver process outlined in the above law and regulation is an impractical burden for the DOTs to carry out and has resulted in less innovative product testing and research.

On April 17, 2018 FHWA granted a [Buy America Waiver for 955 vehicles](#) and equipment for 151 State DOT projects requested in 2016. In that waiver, the Agency acknowledged that “...FHWA is aware that in today’s global industry, vehicles are assembled with iron and steel components manufactured all over the world. The Agency also understands the difficulty of identifying vehicles that have 100% components made in the U.S.” This same finding could be said for assembled specialty items in the research and laboratory equipment industry.

- *Recommendations:* TBD

AASHTO FAST ACT REAUTHORIZATION

10: Safety

INTRODUCTION AND BACKGROUND

To make the most significant reductions in traffic fatalities and serious injuries, states combine efforts from multiple safety disciplines to implement the most effective countermeasure in the most efficient manner. This involves combining resources (such as funding and data) from various agencies with a role in traffic safety, including infrastructure, law enforcement, public education, emergency medical services, and public health. Reauthorization of the FAST Act should allow for sharing and combining resources to allow states the flexibility to address their safety.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE #1: Non-infrastructure Eligibilities under the Highway Safety Improvement Program

- *Current Federal Policy:* Highway Safety Improvement Program funds are restricted to use on specific activities and cannot be used for education, enforcement, or emergency medical service safety programs.
- *Issue:* The FAST Act (section 1113) amended 23 USC 148 to revise the definitions of what is a Highway Safety Improvement Project. The change effectively restricts HSIP eligibility to only 28 strategies, activities or projects listed in the legislation, eliminating the ability to use HSIP funds for public awareness and education efforts, infrastructure and infrastructure-related equipment to support emergency services, and enforcement of traffic safety laws that are identified in the states' Strategic Highway Safety Plans. SAFETEA-LU and MAP-21 had provided the flexibility to deploy additional enforcement to problem areas and help reverse a trend of increasing crashes on specific highway segments. The changes are inconsistent with the intent of a State's Strategic Highway Safety Plan (SHSP) which is a multidisciplinary approach to reducing highway fatalities and serious injuries on all public roads. The lack of flexibility in safety project selection in the HSIP program, particularly non-infrastructure related activities, stifles innovative safety improvements.
- *Recommendations:* Restore flexibility for states to use a portion of HSIP funds for non-infrastructure safety programs.

ISSUE #2: DATA PROTECTION

- *Current Federal Policy:* 23 USC 409 does not explicitly protect safety partner agencies from discovery when coordinating with the state DOT to analyze and report safety data.
- *Issue:* Under changes outlined by MAP-21 and FAST Act for US 23 148, state highway agencies are required to work with other state and regional safety agencies and organizations in the development of the Strategic Highway Safety Plans, Highway Safety Improvement Programs, and safety performance targets. This differs from the past. The entities include, but are not limited to Highway Safety Offices, transit agencies, partner safety organizations (e.g., health data and safety data linkages) and Metropolitan Planning Organizations. To adequately perform analyses and identify and prioritize safety improvements, data from multiple disciplines, including public health, must be incorporated. 23 USC 409 does not currently provide protection from discovery for the agencies that state DOTs will collaborate with. It is assumed the privilege does already exist, but without specific language in the code or guidance from FHWA, state DOTs' ability to collaborate on

analyzing and reporting safety data as openly as possible among the numerous safety partners will be limited. Similarly, this issue exists with data used for public transportation agency safety plans.

- *Recommendations:* Explicitly protect partner agencies' data from discovery when used for safety analysis, reporting, and implementation of safety programs. The intent of this proposed clarification is not to limit availability of data to the general public. Suggested wording:

Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, ~~or~~ planning or reporting the safety enhancement of potential accident sites, hazardous roadway conditions, or railway- highway crossings, pursuant to sections 130, 134, 135, 144, and 148 of this title or for the purpose of developing any Strategic Highway Safety Plan, Highway Safety Improvement Program or highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data. This bar to discovery and admissibility shall apply even if such information was originally created or held by an entity for some other purpose.

AASHTO FAST ACT REAUTHORIZATION

11: Transportation System Security and Resilience

INTRODUCTION AND BACKGROUND

Many state Departments of Transportation (DOTs) have faced significant disruptions to transportation system performance over the past five years for a variety of reasons. Flooding, extreme heat, wildfires, cyberattacks, critical infrastructure failure, coastal erosion, and storm surge are just some of the hazards state DOTs have had to respond to along with many of their partners. A focus on system disruptions, the ability of the transportation system to anticipate and respond to such disruptions, and the subsequent consequences to transportation system performance and to a state and its communities are primarily perceived as system resilience and security concerns. Many different components of a resilience and security strategy can influence overall effectiveness and success, including 1) anticipating potential threats as part of a planning process, 2) analyzing different mitigation and response strategies through a data-based analysis process, 3) establishing collaborative partnerships with many different stakeholders, and 4) implementing communications strategies to support resilience planning and design and to convey information to system users during a disruption. Viewing system security and resilience from a broad perspective, that is, from how system disruptions can be considered and prepared for in all state DOT functions, is a critical foundation for making the transportation system more resilient.

The Committee on Transportation System Security and Resilience (TSSR) is charged with identifying specific policy issues and recommendations related to security and resilience. This white paper recommends policies for consideration by AASHTO and the Transportation Policy Forum.

The Fixing America's Surface Transportation (FAST) Act, signed into law on December 4, 2015, included several requirements that reflected this concern for resilience and security:

- New requirements were created for the statewide and metropolitan transportation planning processes to consider projects/strategies to improve the resilience and reliability of the transportation system (security had been added in previous legislation).
- The Nationally Significant Freight and Highway Projects (NSFHP) program was established to support a nationally and regionally significant freight and highway projects that achieve a range of program goals including improving the reliability of the movement of freight and people; and enhancing the resiliency of critical highway infrastructure.
- Section 1432 placed limitations on the reconstruction of damaged facilities in the same location, and with the same capacity (as measured in anticipated traffic volumes), dimensions, and design, as it had before a declared emergency (Section 1432 applies to the reconstruction of roads, highways, railways, bridges and transit facilities that are either operational or under construction and are damaged by an incident resulting in one of the following: 1) an emergency declaration by the Governor of the State, with the concurrence of the Secretary of Homeland Security, or 2) an emergency or major disaster declaration by the President). Reconstruction activities covered by Section 1432 may not change the function or character, or extend beyond the footprint of the damaged facility. However, the reconstruction may include resiliency or hazard mitigation measures, as well as upgrades to codes and standards, as long as the reconstruction occurs within the existing right-of-way and in a manner that substantially conforms to the preexisting design, function and location.

- With respect to asset management,
 - MAP-21 codified in 23 U.S.C. 119 a requirement for state DOTs to develop and implement a risk-based Transportation Asset Management Plan (TAMP). Risks were considered anything that affects the condition of National Highway System (NHS) pavements and bridges and the performance of the NHS, including risks associated with current and future environmental conditions (such as extreme weather events, climate change, and seismic activity), financial risks (such as budget uncertainty), operational risks (such as asset failure), and strategic risks (such as environmental compliance) (23 CFR Part 515).
 - TAMP investment strategies were to collectively make or support progress toward, among other issues, achieving and sustaining a desired State of Good Repair over the life cycle of the assets.
 - "Critical infrastructure" was added to the considerations that a state may include in its asset management plan.
 - State DOTs were required to conduct periodic evaluations to determine if reasonable alternatives existed to roads, highways, or bridges that repeatedly require repair and reconstruction activities
- All prior National Highway Performance Program (NHPP) eligibilities were continued, and four new eligible categories were added, including one for projects that reduce the risk of failure of critical NHS infrastructure (defined as a facility where an incapacity or failure would have a debilitating impact in certain specified areas).

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE #1: National Transportation System Security and Resilience Plan

- *Current Federal Policy:* None
- *Issue:* Federal legislation has required the development of a National Freight Plan, a National Aviation Plan and a Critical Infrastructure Protection Plan, but no national plan exists for transportation system security or resilience. The intent of such a plan would be to identify the risks to the nation's transportation system from a range of sources, the types of physical, operational, institutional and technology strategies that might be considered by national and state transportation agencies, and recommendations on how such strategies can be funded. Note that the Cyber Security Strategy described in Issue #7 below could be subsumed in this effort. Of interest, such an effort was conducted prior to 9/11 where a National Academies panel was empowered to examine potential terrorist attacks against the nation's surface transportation system. This effort needs to be updated with a publicly available plan (it is assumed that such plans exist but are not available for public consumption).
- *Recommendations:* USDOT, DHS and other relevant agencies should be directed, in collaboration with states, transportation system operators, local jurisdictions and users of the transportation system, to develop a National Transportation System Security and Resilience Plan. This plan should identify the major natural and man-made threats to transportation system performance; the institutional structure for planning for, responding to and recovering from disruptions; proposed analysis methods that could be used by transportation agencies to assess vulnerabilities and risks; and the types of strategies to enhance system resilience.

ISSUE #2: Promote All-Hazards Risk and Resilience Analysis for Critical Facilities

- *Current Federal Policy:* There is no current law, regulation or policy relating to the use of an all-hazards risk and resilience analysis approach for critical assets.

- *Issue:* FAST required states to examine whether feasible alternatives exist for those locations where repeat reconstruction and repairs often occur, but no action was required to improve those locations where problems exist. FHWA and FTA pilot studies over the past five years has illustrated different approaches that can be used for examining the vulnerability of transportation assets to extreme weather hazards. The frequency of major system disruptions due to a variety of reasons has increased in recent years, and it seems likely that states will facing increasing pressures in anticipating and responding effectively to such disruptions in the future.
- *Recommendations:* States should conduct all-hazards risk and resilience analysis on critical transportation infrastructure (to be defined with criteria). This analysis should incorporate considerations of risk and consequences within the federal approach of supporting transportation infrastructure. Pilot studies should be funded that illustrate this approach as part of a state DOT's asset management program.

ISSUE #3: Modify Emergency Relief (ER) Program to be More Flexible and More Responsive to System Resilience Needs

- *Current Federal Policy:* Current law and regulations provide ER funds for declared emergencies; states take action and federal monies are used to reimburse the costs.
- *Issue:* Responding and recovering to a major disruption is a critical component of an effective system resilience strategy. Current procedures require unnecessarily lengthy and inefficient administrative burdens on states, with reimbursement of ER funds typically taking two to three years. System disruptions are increasing and it is important for the ER program to be structured and administered as efficiently as possible.
- *Recommendations:*
 - Conduct a comprehensive assessment of the ER program to identify where improvements can be made to: 1) allow advance planning for ER project implementation to include of a range of project strategies, 2) efficiently administer program funds, and 3) return the system to functional operation as quickly as possible and provide opportunities to incorporate resilience strategies into project design.
 - Allow ER projects to include actions that increase the resilience of the replacement project to future hazards. Allow ER funds to be used for actions outside of the right-of-way and/or for other strategies that improve the resilience of the damaged asset and/or facility.
 - Allow more flexibility with contract requirements and NEPA review as part of the ER program. For example, emergency projects should receive expedited clearances or waivers for environmental, right-of-way, and railroad certifications in order to recover from a disruption.
 - Allow DOTs to change order all required federal requirements into a previously-let, state-funded project that did not contain the federal provisions. Requiring a new letting for emergency projects often delays emergency repairs, while expecting states to include federal requirements in state-funded projects is unrealistic.

ISSUE #4: Provide More Flexibility in Use of Federal Funds for Preventive and Response Actions to System Disruptions

- *Current Federal Policy:* Current law and USDOT regulations have very specific eligibility requirements for different federal funding programs. In some cases, these requirements inhibit states from taking preventive actions with these funds that provide benefits to the states of reducing the risks of future disruptions. For example, Highway Safety Improvement Program (HSIP) funds are constrained in terms of what they can be used for.

- *Issue:* This issue can be considered a general concern for many federal transportation programs. In particular, there is a need to streamline the use of HSIP funds to allow for enhanced resilience actions.
- *Recommendations:* Expand eligibility of HSIP projects to include actions to improve system resilience while also enhancing safety.

ISSUE #5: Foster Collaboration in Preparing for System Disruptions

- *Current Federal Policy:* There is no current law or regulation that requires collaboration and coordination in preparing for, responding to and recovering from system disruptions.
- *Issue:* Experience with system disruptions has shown that the most effective preparation for, response to and recovery from includes very high levels of collaboration and coordination among many different agencies and groups. This coordination can be very challenging, especially when multiple states are involved in responding to a widespread disruption. Although emergency response agencies have an established collaboration and coordination framework for responding to major disruptions, nothing similar exists for collaborative planning efforts on the part of transportation system providers.
- *Recommendations:* Conduct a study and support pilot studies of collaborative system security and resilience planning efforts. The intent is to recommend alternative institutional structures for anticipating system disruptions that can then be linked to emergency response efforts.

ISSUE #6: Reaffirm Security and Resilience as Factors in Statewide and Metropolitan Transportation Planning Processes

- *Current Federal Policy:* Current law and USDOT regulations require the consideration of both security and resilience as part of the transportation planning process.
- *Issue:* System resilience and security will continue to be an important influence on transportation system performance, most likely increasing in importance. Although most concern in transportation has been in efficient response to disruptions, there is an important opportunity for considering resilience and security issues in the planning process (e.g., conducting systematic risk assessments)
- *Recommendations:*
 - The security and resilience planning factors should be retained as part of federal law. Statewide and metropolitan transportation plans should include a section on how proposed investment and operational strategies will improve system resilience, and describe additional steps they will be taking as part of the planning process to promote secure and more resilient transportation systems.
 - With the federal emphasis on performance-based planning and programming, the USDOT should be instructed to fund pilot studies on how security and resilience-related performance measures can be used to support performance-based transportation decision making.

ISSUE #7: Promote Cyber Security Strategies

- *Current Federal Policy:* There is no current law or regulation targeting the protection of vital transportation command and control information technology systems.
- *Issue:* Transportation systems are increasingly relying on sophisticated information technology systems to control operations and provide information to system users. Over the past 10 years, transportation systems have been the #1 target of terrorists worldwide, with increasingly more attacks occurring on system operations capabilities. Cyberattacks will likely be one of the major means of disrupting transportation systems in the nation in future years, but there is no consistent

approach, institutional infrastructure or standards directing effective protection of system operations control assets.

- *Recommendations*

- USDOT should be directed in collaboration with DHS and other relevant agencies to develop a National Transportation Cyber Security Strategy that establishes guidelines for protecting the nation's transportation cyber assets. Oversight might take the form of a National Commission or a National Academy of Sciences Committee.
- Targeted federal funding should be provided to protect vital national transportation command and control information technology resources.

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