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

This document comprises in-depth policy white papers from the five Modal Councils, the Special Committee on Freight and the eleven topical Working Groups listed below. Please note that the chapter numbers have changed as the modal council and freight papers are now listed first.

1. Active Transportation
2. Freight
3. Highways and Streets
4. Public Transportation
5. Rail Transportation
6. Connected and Automated Vehicles
7. Data Management and Analytics
8. Funding and Finance
9. Operations
10. Performance-based Management
11. Planning
12. Project Delivery: Engineering
13. Project Delivery: Environmental Protection
14. Research and Innovation
15. Safety
16. Transportation System Security and Resilience

TPF will prioritize issue areas from all 16 white papers to formulate the draft of formal FAST Act policy recommendations for the AASHTO Board of Directors.

TIMELINE

- **May 2018**: Formally kick off the FAST Act reauthorization effort at the TPF meeting; *2018 AASHTO Spring Meeting, Franklin, TN*
- **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*
- **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 prioritize policy issue areas based on 16 white papers received.
- **May 2019**: TPF to identify the priority policy issue areas for further discussion; *2019 AASHTO Spring Meeting, Park City, UT*

- **August 8-9, 2019**: TPF to hold an in-person special session to consider all priority issue areas, then draft policy resolutions for AASHTO Board; *Minneapolis, MN*
- **October 2019**: AASHTO Board of Directors to consider and formally adopt the AASHTO reauthorization policy package; *2019 AASHTO Annual Meeting, St. Louis, MO*
- **October to November 2019**: AASHTO staff to develop visual complements of the reauthorization package 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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1: Active Transportation

INTRODUCTION AND BACKGROUND

The AASHTO committees developed 11 topical reauthorization white papers for consideration by the Transportation Policy Forum (TPF). The modal councils are now developing their reauthorization white papers, which may include proposals from the committee white papers and/or entirely new policy proposals. The following is the draft Council on Active Transportation white paper. The Council white paper indicates where ideas/proposals from the committee white papers are included, as well as new proposals.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE 1-1: Safely Deploy Cooperative and Automated Transportation Technologies

- **Current Federal Policy:** None
- **Issue:** With the emergence of cooperative and automated transportation (CAT), the highest priority for AASHTO and state DOTs is the safety of transportation system users. It is estimated that over 90 percent of fatal vehicle crashes are a result of human error, some of which could be significantly mitigated through CAT technologies. CAT has the potential to positively influence the safety of vehicle occupants, transportation maintenance and construction workers, bicyclists, and pedestrians. There is however a recognition that innovative technology is inherently accompanied by uncertainties, which increases risk and makes the safety of these new technologies paramount. Although connected and autonomous vehicles are currently emerging, there are other existing, proven automated technologies, such as headlamp designs, that should be increasingly deployed while connected and autonomous vehicles are being developed and tested.
- **Recommendations:**
  - Additional data must be developed, collected and analyzed on the safety of connected and automated vehicles, including data regarding the ability of vehicles to detect and stop for pedestrians and bicyclists. Non-proprietary data generated by automobile manufacturers, technology developers, research organizations, and public agencies should be shared with decision makers.
  - While CAT technologies are being developed and tested, increase efforts to deploy existing proven automation technologies.
  - Government regulators and lawmakers should revise and/or remove outdated safety laws, regulations and guidance when the data unequivocally demonstrates a technology’s ability to provide an equivalent or higher level of safety. However, the legislative and regulatory framework that reflects the mix of vehicle styles, ages and technologies throughout the transition to new technologies should be kept in place.

ISSUE 1-2: Expand Eligibilities for the Surface Transportation Block Grant Program Set-Aside for Transportation Alternatives and Make State DOTs Eligible Recipients Under This Program

- **Current Federal Policy:** 23 U.S.C. 133(h), 23 USC 206
- **Issue:** Although state DOTs use significant state resources to administer the Surface Transportation Block Grant Transportation (STBGP) set-aside for Transportation Alternatives (TA), state DOTs are not eligible recipients of TA funding. Similar programs, such as the Recreational Trails Program, allow states to be reimbursed for costs incurred in administering the program, up to seven percent
of the apportionment made to the state each year (23 USC 206(d)(2)(H)), and one percent of Recreational Trails Program monies are returned to USDOT each year to administer the program (23 USC 133(h)(5)(B)). Thus, it is important that state DOTs be allowed to use a portion of the TA program funds for expenses associated with administering these funds.

In addition, the current prohibition of state DOT sponsorship/eligibility for TA funds hinders fund obligation as local government sponsors are often reluctant to use federal funding for small projects. As such, state DOTs should be able to sponsor local projects and receive project grants, at the request of the local agency.

Also, TA funding is available only for infrastructure related and environmental projects. The Recreational Trails Program, however, includes eligibility for maintenance of existing trails and educational programs to promote safety and environmental protection.

**Recommendations:**
- State DOTs should be reimbursed for eligible costs incurred in administering the TA program, up to seven percent of the apportionment made to the state each year.
- Restore the authority for states to receive TA funding and administer TA projects, at the request of a local agency.
- Allow state DOTs to transfer STBG set-aside funding for Transportation Alternatives suballocated for locally-selected projects each year to another Transportation Alternatives Program eligible project if the locality fails to spend their obligation authority.
- Allow TA funds to be used for non-infrastructure programs that focus on preservation, safety, public education, enforcement, and/or public outreach.

**ISSUE 1-3: Streamline the Delivery of Surface Transportation Block Grant Transportation Alternatives Program Projects and Revise the Set-Aside Funding Calculation**

- **Current Federal Policy:** 23 U.S.C. 133(h)(1)(A)
- **Issues:** Applying the full range of federal requirements to the much smaller Transportation Alternatives (TA) projects inhibits the efficient delivery of those projects. Often, 50 percent or more of TA funding is spent on preliminary engineering activities to meet federal requirements, leaving little money for project construction. In addition, local public agencies are typically unfamiliar with federal processes, which slows down project delivery. Simplifying the federal requirements for TA projects would greatly expedite project delivery.

  Also, the current TA set aside is a fixed dollar amount. This fixed amount does not allow the TA program to grow throughout time as do other percentage based programs.

- **Recommendations:**
  - Develop a Task Force consisting of state DOTs and local transportation agency representatives to make recommendations to USDOT on streamlining federal processes and expediting project delivery for TA projects.
  - Change the TA set-aside from a specific dollar amount to a percentage so that the TA Set-aside funding is tied to increases/decreases in overall transportation funding.

**ISSUE 1-4: Allow Non-Infrastructure Eligibilities under the Highway Safety Improvement Program**

- **Current Federal Policy:** 23 USC 148
- **Issue:** The FAST Act restricted Highway Safety Improvement Program (HSIP) eligibility and eliminated the ability to use HSIP funds for public awareness and education efforts. These changes are inconsistent with the intent of state Strategic Highway Safety Plans, which contain a multidisciplinary approach to reducing fatalities and serious injuries on all public roads. There should also be additional flexibility to use HSIP funds for pilot experimental, temporary installations, for
example, testing the viability of protected active transportation lanes. The lack of flexibility in safety project selection in the HSIP program, particularly non-infrastructure related activities, stifles innovative safety improvements that lead to crash reductions and reduced highway fatalities.

- **Recommendations:**
  - Allow states to use a portion of HSIP funds for non-infrastructure safety programs such as behavioral efforts, public awareness, education, research, and pilot or experimental projects.
  - Allow HSIP funds to be used for pilot experimental, temporary installations, for example, testing the viability of protected active transportation lanes.

**ISSUE 1-5: Adoption of Public Rights-of-Way Accessibility Guidelines (PROWAG)**

- **Current Federal Policy:** 28 CFR 36
- **Issue:** The Americans with Disabilities Act strives to ensure access to the built environment for people with disabilities. To facilitate this access, the U.S. Access Board is responsible for developing and updating design guidelines known as the ADA Accessibility Guidelines (ADAAG), which focus primarily on facilities. These guidelines are adopted in regulation and used by the U.S. Department of Justice and the U.S. Department of Transportation in setting enforceable standards that the public must follow. However, ADAAG is intended for vertical (buildings and facilities) rather than horizontal (sidewalks and street crossings) construction, which has created uncertainty in transportation agencies regarding ADAAG application. In addition, several state DOTs are being required, as the result of litigation, to implement suboptimal accessibility solutions that were truly intended for buildings, not transportation facilities.

  As such, 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. The Access Board collaboratively developed 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. Adoption of PROWAG in regulation would provide transportation agencies with solid, researched solutions for accessibility within their transportation corridors and ensure consistency across the country in the application of accessibility features within the streetscape.

- **Recommendation:** Finalize in regulation, the Public Rights of Way Accessibility Guidelines (PROWAG).

**CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS**

- ISSUE 3-2: Flexibility, Transferability and Set-aside Programs
- ISSUE 6-1: Deploying CAV Technologies in the Safest Manner Possible is Paramount
- ISSUE 6-3: Any New Laws or Regulations Must Maintain the Current Federal-State Regulatory Paradigm and Any Changes Should Be Done Collaboratively with the States
- ISSUE 6-4: State Laws Concerning the Operation of Connected and Automated Vehicles Need to be Uniform and Consistent
- ISSUE 6-6: CAVs Will Produce Significant Amounts of Data and There is a Data Governance Gap
- ISSUE 6-7: The Deployment of CAVs Will Continue to Require a Collaborative Approach
- ISSUE 8-4: Eliminate Rescissions of Contract Authority
- ISSUE 8-6: Increase Flexibility and Transferability of Funding
- ISSUE 8-7: Maintain the Current Balance of Funding Among Highways, Transit, and Highway Safety
• ISSUE 8-10: Reduce and Simplify Regulations, Requirements, Data Collections, and Process to Expedite the Process
• ISSUE 9-2: Communications Technology for Highway Operations
• ISSUE 9-7: Public Safety Radio Communication Spectrum
• ISSUE 11-5: Make State DOTs and MPOs Eligible Recipients under the Set Aside from the Surface Transportation Block Grant Program (aka transportation alternatives program)
• ISSUE 12-14: Small/Local Projects and Transportation Alternatives Projects
• ISSUE 15-1: Non-infrastructure Eligibilities under the Highway Safety Improvement Program
• ISSUE 16-4: Provide More Flexibility in Use of Federal Funds for Preventive and Response Actions to System Disruptions
2: Freight

INTRODUCTION AND BACKGROUND

The Fixing America’s Surface Transportation (FAST) Act advanced federal policy on freight and goods movement by establishing a national freight program. Recognizing the clear national interest in addressing freight bottlenecks and enhancing the multimodal movement of goods, the FAST Act created a discretionary grant program for freight projects and a freight formula program for states.

Below are specific proposals from AASHTO’s Special Committee on Freight to improve the national freight program and assist states in their efforts to move goods safely, efficiently, and reliably.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE 2-1: 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 Highway Freight Network (NHFN) and the National Multimodal Freight Network (NMFN) will not allow states to attain the comprehensive goals set forth in MAP-21 and the FAST Act and do not take into account the geographic and economic differences in 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 NHFN as critical urban and rural corridors still leaves an unduly limited and disconnected network. For the NMFN, the current draft network is limited and does not include all of the National Highway System (NHS) roads nor critical rural and urban transportation links. Since states are required to complete state freight plans, which must then be approved by U.S. DOT, a framework exists to identify and define the freight network in any given state.

- **Recommendations:**
  - Expand eligibility of the National Highway Freight Program to include all of the NHFN. Eliminate the 2% rule so states can spend funds on any NHFN route (to include Critical Urban Freight Corridors and Critical Rural Freight Corridors).
  - Remove restrictions on state authority to add mileage to the NHFN 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’s freight plan.

ISSUE 2-2: Expand Eligible Activities Through National Highway Freight Program

- **Current Federal Policy:**
  - FAST Act Section 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 Section 1105; 23 U.S.C. 117 establishes the Nationally Significant Freight and Highway Projects (NSFHP) program to provide financial assistance—competitive grants, currently now...
known as Infrastructure for Rebuilding America (INFRA) grants, or credit assistance—“for nationally or regionally significant freight and highway projects.”

- **Issue:** The use of the nation’s transportation system for freight is increasing, and with it the need for integrated solutions to better move freight throughout the country. Currently, no more than 10% of NHFP formula funding may be used for intermodal, freight rail, or water transportation. Integrated freight management solutions, freight safety programs, and research supporting future investments should be codified as eligible for NHFP and INFRA funds in new surface transportation reauthorization legislation.

- **Recommendation:** Reform the National Highway Freight Program, both the formula program to states and the discretionary program (INFRA), to more clearly include eligibility for investment in integrated freight technology, management, and operations strategies and solutions, etc.), and research supporting future investments. Remove the 10% multimodal cap in order to provide flexibility for states to use their discretion in determining the amount of NHFP formula funding to go toward multimodal freight projects identified in the state’s freight investment plan and to invest more in multimodal projects if appropriate for that state. Eligibility should include multi-state proposals and projects, for regions and corridors to improve freight intermodal connectivity.

### ISSUE 2-3: Changes to Infrastructure for Rebuilding America (INFRA) Discretionary Grant Program

- **Current Federal Policy:** FAST Act Section 1105; 23 U.S.C. 117

- **Issue:** The FAST Act established a new discretionary grant program for Nationally Significant Freight and Highway projects. Grant eligibility is limited to highway projects on the NHFN, highway or bridge projects on the NHS, railway-highway grade crossing or grade separation projects, or intermodal or rail projects, including those within the boundaries of public or private freight facilities. Under the FAST Act, not more than $500 million in aggregate of the $4.5 billion authorized for INFRA grants (previously known as FASTLANE grants) over fiscal years 2016 to 2020 may be used for grants to freight rail, water (including ports), or other freight intermodal projects that make significant improvements to freight movement on the National Highway Freight Network.

- **Recommendations:**
  o Reauthorize the program and remove the caps used for grants to freight rail, water (including ports), or other freight intermodal projects.
  o Add eligibility to use funds on any portion of a state’s multimodal freight network as defined in a state’s freight plan.
  o Minimize annual changes to Infrastructure for Rebuilding America (INFRA) Discretionary Grant Program for consistency in grant applications and award criteria.

### ISSUE 2-4: Make Consistent the Financial Planning Requirements among the Required Performance-Based Planning Documents

- **Current Federal Policy:**
  o 49 USC Section 70202, State Freight Plans
  o 23 USC Section 119, National Highway Performance Program
  o 23 U.S.C. Section 135, Statewide and Nonmetropolitan Planning
  o 23 CFR Section 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 Section 135 requires a fiscally constrained four-year program of projects. The State Freight Plan under 49 USC Section 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 results 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 all financial plan requirements associated with any federally-required plan be on a consistent duration that allows for coordinated decision making at the state level. Performance management regulations should be improved to reduce the unfunded mandate burden on state DOTs.

**ISSUE 2-5: Reinstate the National Cooperative Freight Research Program**

- **Current Federal Policy:** To maximize the effectiveness of state DOTs’ research and training activities, FHWA carries out or funds a host of activities necessary to support a vibrant nationwide research and training program including research administration, communication, coordination, conferences, and partnerships with other national and international organizations.

- **Issue:** Throughout its history, a core element of the FHWA Research, Development, and Technology Transfer’s (RD&T) mission has been to promote innovation and improvement in the highway system. Over the last decades, this critical mission element has developed into a broad array of research and technology activities covering the spectrum of advanced research, applied research, technology transfer, and implementation. The National Cooperative Freight Program, however, was last authorized under SAFETEA-LU. MAP-21 and the FAST ACT provided much more emphasis on freight, while simultaneously reducing funding for freight research at the national level. States are concerned that freight research needs are not being met solely through the National Cooperative Highway Research Program (NCHRP). A dedicated national freight research program is needed.

- **Recommendation:** Reestablish the NCFRP to provide research products to assist states in their delivery of freight transportation projects with funding beyond the amount prescribed for the federally managed Research Technology & Education programs and State Planning & Research funded programs.

**ISSUE 2-6: Establish Office of Multimodal Freight Transportation within U.S. DOT Office of the Secretary**

- **Current Federal Policy:** Various modal offices with the U.S. Department of Transportation play a role in freight planning and programs.

- **Issue:** There is no centralized office within U.S. DOT to address multimodal domestic and international freight planning needs across modal administrations.

- **Recommendation:** Establish and fund an Office of Multimodal Freight Transportation within the U.S. DOT Office of the Secretary to address multimodal domestic and international freight planning needs across modal administrations. There is precedent for such an office. The former Office of Intermodalism was established in ISTEA at the Secretarial level and helped to coordinate intermodal policy and programs.

**CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS**

- ISSUE 8-1: Increase Federal Funding
- ISSUE 8-7: Maintain the Current Balance of Funding Among Highways, Transit, and Highway Safety
- ISSUE 8-10: Reduce and Simplify Regulations, Requirements, Data Collections, and Process to Expedite the Process
• ISSUE 9-4: Expand Eligible Activities Though National Highway Freight Program
• ISSUE 10-3: Performance Management Regulations Should Be Improved to Reduce the Burden on State DOTs
• ISSUE 10-4: Make Consistent the Financial Planning Requirements among the Required Performance-Based Planning Documents
• ISSUE 11-1: 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
• ISSUE 11-4: Fiscal Constraint
• ISSUE 11-8: Expand the Extent of both the Primary Highway Freight System and National Multimodal Freight Network
• ISSUE 11-9: Streamline and Simplify the Development and Updating of the Multitude of Transportation Plan Documents Currently Required of States
• ISSUE 14-1: Increase Research, Technology & Education Program Funding Levels
• ISSUE 14-4: Support for Associated National Research Programs
3: Highways and Streets

INTRODUCTION

A working group consisting of members of the Council on Highways and Streets reviewed the 95 reauthorization recommendations identified in the 11 working group white papers presented at the 2018 AASHTO Annual Meeting and discussed additional topics for consideration within the Council’s Reauthorization White Paper. These recommendations were then reviewed by the full membership of the Council.

At the end of this white paper are additional issues culled from the 11 working group white papers that were identified as of “higher importance” to the Council members based on two recent surveys.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE 3-1: Stability of the Highway Trust Fund

- **Current Federal Policy:** N/A
- **Issue:** The Highway Trust Fund (HTF) does not currently allow for continuity and consistency in the Federal-Aid program, and solvency is the root of this issue. The HTF needs to become robust enough that it no longer struggles and threatens the transportation funding that so many states depend upon. This program needs to grow to continue providing transportation projects that result in great benefits to our nation. A larger and more stable HTF will provide for the transportation system that our citizens need.

  The challenges resulting from the continued threat of insolvency are many. In the short-term, continuing resolutions release obligation limitation piecemeal throughout the year, causing State DOTs to have difficulty: obligating projects in monthly lettings, leading to lettings with state funds and the build-up of large AC balances; and having enough state funds to let projects and make progress payments while awaiting obligation limitation to become available for federal reimbursement. In addition, having state funds unnecessarily tied up while waiting for federal funds delays the ability to begin more projects using state dollars. In the long term, long-range transportation planning is difficult when future funding levels in the HTF are unknown because the DOTs must guess at the level of general-fund transfers that may be approved. Additionally, State DOTs may be unnecessarily conservative in funding projects to avoid over-obligating funds that might have to be covered by the state in the event future federal reimbursement levels drop.

  The HTF is funded through fees assessed to the users of the highway system, but the fee has not increased in over 25 years, and thus is not nearly large enough to cover current costs, let alone the massive reconstruction efforts needed across our country. With more robust and reliable funding, State DOTs would not have to set aside state funds to temporarily cover the federal share and could more strategically utilize available state and federal funding.

  AASHTO has provided Congress with numerous alternative methods to fund transportation at the federal level. Between 2013 and 2018, 56 percent of the states passed legislation to increase their state gas taxes; we feel the time is right to take this action on a federal level to shore-up the HTF. It is in the nation’s best interest to provide funding through the HTF to cover our surface transportation infrastructure needs and ensure that the program becomes a dependable source of revenue for the next decade.
Recommendation: Stabilize the HTF. Fund the HTF through long-term solutions that provide funding at levels that meet the demand of the economic and mobility needs of our citizens. Such solutions would eliminate the need to use general fund monies to supplement the HTF.

ISSUE 3-2: Flexibility, Transferability and Set-aside Programs

- **Current Federal Policy:** N/A
- **Issue:** To ensure the most effective use of Federal funding, increased flexibility of and transferability between the various Federal programs is necessary. Some set-aside programs have such strict guidelines for use, or their purposes are so specific, that they simply do not apply to the needs of the state or they cannot easily be applied. Challenges include limitations in the flexibility of set-aside programs that prevent States from prioritizing projects based on local needs, as well as the limitations in the ability of DOTs to maximize the use of available funding if a partner is not ready to begin a set-aside project (for example, MPO allocations). In the end, these monies may not be well utilized; they sit for years losing buying power, and some eventually lapse and are lost. Reducing or eliminating set-aside programs would allow DOTs and their partners greater freedom in selecting and implementing priority projects.

  Deploying funds productively is important to the states, and each state understands best how to meet both the national and state needs. States with programs meeting the intent of the various federal programs should have broad trust to spend their funding appropriately. The states would be able to make greater use of federal-aid programs if there were reductions in both the regulations pertaining to these programs and the sheer number of restrictive set-aside programs.

  **Recommendation:** The federal transportation programs should be reexamined for need, applicability, and additional flexibility and transferability among the programs.

ISSUE 3-3: Flexibility in Participation Percentages

- **Current Federal Policy:** N/A
- **Issue:** Core programs with 80-, 90-, or 100-percent federal-aid participation greatly free-up state dollars that can be used on local projects without the typically restrictive federal rules. This increases the buying power of those dollars, and allows them to be used with greater efficiency. States should be allowed to choose the level of federal, state, and local funding participation in order to extend the reach of their limited transportation dollars and to use them in the most efficient and effective ways possible.

  A state may be forced to use a sizeable percentage of its program on set-aside programs in any given year. Since so many of these programs are not one-size-fits-all, the levels of federal funding participation should be the choice of the state. In addition, set participation percentages may require a state or local agency to set aside dollars in anticipation of letting specific federal projects, which ties up those funds while waiting for the project to be let (preventing other projects from being let sooner using the funds that are being set aside for match). Some local entities wait years to build up enough funds to match a needed transportation project, but if let as a 100%-federal-share project it could be let without waiting for local funds to become available.

  With this added flexibility, State DOTs could tailor the federal/state/local funding split to specific situations and projects and further maximize the use of all available funding sources.

  **Recommendation:** Allow transportation agencies to choose the level of federal share for set-aside programs.
ISSUE 3-4: Railroad/Highway Grade Crossing Safety

- **Current Federal Policy:** 23 USC 120 and 130
- **Issue:** For the at-grade rail-highway crossing program, there is a conflict between programs authorized in 23 USC 120 and 23 USC 130. Section 120 allows for 100 percent participation for certain safety projects as well as projects within Indian reservations, national parks, and monuments. Section 130 sets federal-aid participation at 90 percent. Thirty-five states plus the District of Columbia (with the Federal Highway Administration’s concurrence) incorrectly authorized 863 Section 130 projects at 100% rather than at 90% as currently provided in Section 130(f), and thus were required to reimburse the 10-percent difference, totaling over $26 million. This money was paid back into a fund that has been described as “difficult to use in the first place.”

  For example, the installation of medians to prevent drivers from going around railroad gates is a common finding of vehicle/train collision reports where lights and gates are already present. The difficulty comes when the local agency is required to follow federal procurement rules for low-dollar-value projects. Other issues involve local agencies not being able to do design work such as sidewalk design, median work, etc., so the State must provide these design services.

  In addition to the inconsistent match requirements and the difficulty in using federal funds for low-cost projects, the incentive pavement for at-grade crossing closures in 23 USC 130 (h), currently set at $7,500 per crossing, does not offer enough incentive to locals to close the crossings. Federal cost participation needs to be increased to better encourage crossing closures and consolidation.

- **Recommendation:** Allow use of 23 USC 130 funds at 100 percent federal participation (as is the case with Section 120 funds), and make the funding less restrictive to use. In addition, increase the incentive offered to locals to close at-grade rail crossings.

ISSUE 3-5: Reduction of Regulations

- **Current Federal Policy:** N/A
- **Issue:** To streamline project delivery and improve transportation and environmental outcomes, there is a need to modernize the processes associated with substantive environmental laws, such as the Endangered Species Act, the Clean Water Act and the Clean Air Act. Many of these processes have not been updated for decades and require steps that provide little value in protecting natural and human resources. One helpful step that could be accomplished for project delivery would be the ability to purchase right-of-way earlier in the NEPA process without having to prepare a waiver. Many projects are delayed because right-of-way cannot be purchased until the NEPA process is completed.

  Also, the different requirements between US DOT modal administrations in implementing the same laws (Buy America, Civil Rights) are confusing and burdensome.

- **Recommendations:**
  - Modernize the processes in substantive environmental to expedite project delivery and improve transparency and environmental outcomes.
  - Incentivize regulatory agencies to work with transportation agencies to complete environmental rules and permitting in a timely manner.
  - Establish a framework for project prioritization to allow for state validation in low-risk scenarios.
  - Synchronize federal requirements between US DOT modal Administrations.

CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS

- ISSUE 1-2: Expand Eligibilities for the Surface Transportation Block Grant Program Set-Aside for Transportation Alternatives and Make State DOTs Eligible Recipients Under This Program
• ISSUE 2-3: Changes to Infrastructure for Rebuilding America (INFRA) Discretionary Grant Program
• ISSUE 4-1: Retain, Strengthen and Expand the Federal Program for Public Transportation; Retain the Mass Transit Account within the Highway Trust Fund
• ISSUE 4-5: Establish a New Four-year Pilot Program that Combines Requirement Certification under the Buy America Program with the Altoona Test Requirements, Creating One Set of Certifications with the Federal Transit Administration
• ISSUE 5-6: Section 130 – Railway Highway Crossing Program
• ISSUE 8-1: Increase Federal Funding
• ISSUE 8-2: Fix the Federal Highway Trust Fund and Strengthen Federal Transportation Funding
• ISSUE 8-5: Preserve the Current Federal/State Matching Ratio Requirements
• ISSUE 8-6: Increase Flexibility and Transferability of Funding
• ISSUE 9-5: Improve Buy America Requirements
• ISSUE 11-1: 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
• ISSUE 11-6: Make More Flexible the Projects that can be Funded through the Congestion Mitigation and Air Quality (CMAQ) Improvement Program
• ISSUE 12-3: Right of Way Acquisition Processes
• ISSUE 12-7: Reduce Federal Regulation of State Policies and Procedures Through Reduction of Requirements, Less Frequent Reviews, and Delegation
• ISSUE 12-8: Buy America
• ISSUE 12-14: Small/Local Projects and Transportation Alternatives Projects
• ISSUE 13-8: Allow Utility Relocations to Start Earlier
• ISSUE 14-1: Increase Research, Technology & Education Program Funding Levels
• ISSUE 14-6: Redefine “Manufactured Products” Requirement within Buy America Law
### Additional Priority Issues of the Council on Highways and Streets

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4: Public Transportation

**INTRODUCTION AND BACKGROUND**

The availability of high-quality and high-frequency public transportation services in rural and urbanized areas are a core strategy for enhancing regional and national economic competitiveness. Increased and sustained investments in public transportation infrastructure provides positive economic returns and supports thousands of transit-related manufacturers and suppliers of goods located across the nation. By providing 10.59 billion passenger-trips annually (APTA 2017 Public Transportation Fact Book, March 2017), the availability of public transportation services is also essential to achieving personal mobility; enhancing connectivity to employers; and reducing air pollution and other environmental impacts while improving efficiency. As Congress considers the reauthorization of the current federal surface transportation law, Fixing America’s Surface Transportation (FAST), AASHTO recommends the following policy and programmatic changes to the Federal Public Transportation Title (Title III).

**SPECIFIC POLICY ISSUES AND RECOMMENDATIONS**

**ISSUE 4-1: Retain, Strengthen and Expand the Federal Program for Public Transportation; Retain the Mass Transit Account within the Highway Trust Fund**

- **Current Federal Policy:** The FAST Act authorized $61.1 billion for transit programs with funding provided from both the Mass Transit Account (MTA) of the Highway Trust Fund (HTF) and the General Fund (GF). As of FY 2020, annual HTF outlays are estimated to exceed receipts by $16 billion in FY 2020, growing to more than $23 billion by FY 2027.

- **Issue:** Public transportation provides personal mobility that significantly contributes to national goals and policies in support of global economic competitiveness, energy independence, environmental sustainability, congestion mitigation and emergency preparedness. Also, on an individual user basis public transportation saves money, reduces the carbon footprint of households and provides people with choices, freedom and opportunities.

- **Recommendations:**
  - Increase federal funding for both rural and urban area public transportation services to enhance regional and national economic competitiveness and promote community vitality.
  - Prioritize increases in formula-based program funding, including funding to address bus and rail modernization and rural transit, while also providing funds for the non-formula New Start/Small Start program.
  - Implement a long-term sustainable revenue strategy that (1) addresses the insolvency of the federal Highway Trust Fund; (2) preserves a separate Mass Transit Account; (3) proportionately grows the highway and transit programs and mitigates the current infrastructure deficit; and (4) supports new transformative infrastructure investments.
  - Increase the flexibility and transferability of federal highway and transit funding.

**ISSUE 4-2: Maintain the Current Maximum Federal Funding Match Ratios for Public Transit Programs to Support Rural and Urban Communities, Individuals with Disabilities and Seniors and Our Nation’s Transit Infrastructure**

- **Current Federal Policy:** 49 U.S. Code § 5307, 5309, 5310, 5311, and 5339

- **Issue:** On a national basis, state and local financial support for public transportation services far exceed the current federal support. Nonetheless, the current federal share is essential to ensure that current services are retained. As such, the federal government should not shift additional costs.
to states/local governments by reducing the current level of federal participation in operating and capital projects. Congress should honor the existing federal shares authorized for transit operating and capital programs, including the transit New Start program. Lowering the federal share for projects also makes it more difficult to compete for discretionary or flexible highway funds, especially those subject to the Metropolitan Planning Organization process.

- **Recommendation:** Preserve the current federal/non-federal matching ratio requirements for federal-aid eligible transit projects.

**ISSUE 4-3: Maintain and grow the Bus/Bus Facility formula and discretionary program**

- **Current Federal Policy:** 49 U.S. Code § 5339(a)(b)
- **Issue:** Section 5339 in MAP-21 created a new hybrid (formula/discretionary) Bus and Bus Facilities grant program. The increased weight given to formula funds was consistent with AASHTO policy emphasizing formula funds. The FAST Act change replaced the previous Section 5309’s 100 percent discretionary Bus and Bus Facilities program and provided funding to address extraordinary needs for the rehabilitation and replacement of buses and bus related equipment; and to rehabilitate existing or construct new bus-related support facilities; transfer stations; and intermodal facilities. In FY2018, $366 million was awarded in discretionary program funds out of a request of $2.2 billion. This oversubscription shows the strong need to maintain and grow the overall bus and bus facilities program, both formula and discretionary components.
- **Recommendation:** Using current federal appropriated funding levels as a baseline for formula and discretionary funds, provide increased formula and discretionary funding. Direct USDOT to consider industry comments, including comments of state DOT’s, on criteria for discretionary grants.

**ISSUE 4-4: Support the Goals of Safety Management Systems (SMS), the Public Transportation Agency Safety Plan (PTASP), and State of Good Repair (SGR)**

- **Issue:** The Public Transportation Agency Safety Plan (PTASP) final rule requires those transit agencies affected by the rule to incorporate SMS policies and procedures into final Safety Plans. While state DOTs support the federal goals of Safety Management Systems (SMS), PTASP, and State of Good Repair, without authorizing a source of funding for implementation, an unfunded mandate has been created and imposed upon states and their sub-recipients. The PTASP final rule defers FTA Sections 5310 and 5311-only providers from having to comply with the new rule. Reauthorization is an opportunity for Congress to eliminate this uncertainty by formally exempting FTA Sections 5310 and 5311 providers from the requirements.
- **Recommendation:** Codify the current the PTASP exemption for FTA Section 5310 and 5311 providers and provide funding to support implementation for systems receiving funding from the Urbanized Area Formula Program (49 U.S.C. 5307) and have “100 or fewer” vehicles in ‘peak’ revenue service.
ISSUE 4-5: Establish a New Four-year Pilot Program that Combines Requirement Certification under the Buy America Program with the Altoona Test Requirements, Creating One Set of Certifications with the Federal Transit Administration

- **Current Federal Policy:** Processes outlined in 49 CFR Part 661 (Buy America) and 49 CFR Part 665 (Model Bus Testing Program) are inefficient and costly for state departments of transportation and bus manufacturers.

- **Issue:** AASHTO’s Council on Public Transportation is supportive of the Buy America program, which mandates, according to 49 CFR 661 (§ 661.13 Grantee responsibility), that all funding recipients of the Federal Transit Administration (FTA) purchasing vehicles must verify that the manufacturer has complied with Buy America program requirements, including pre- and post-award inspections. However, prior to transferring ownership of the vehicle(s), bus manufacturers must also submit to the Model Bus Testing Program or the Altoona Test (49 CFR Part 665).

- **Recommendation:** Establish a new pilot program that would require the manufacturer to directly provide a single certification to the Federal Transit Administration demonstrating compliance with Buy America and Altoona Test requirements.

ISSUE 4-6: Congress Should Direct the Government Accountability Office to Study Streamlining the Federal Transit Grant Approval Process

- **Current Federal Policy:** None

- **Issue:** State DOTs are required to submit a unified program of projects to FTA to authorize the use of funds for a wide range of activities. The program of projects may include routine and recurring activities such as the replacement of bus and bus related equipment as well as more complex activities, including but not limited to construction of new facilities or deployment of new technologies. Frequently, approval of routine and recurring activities in a grant are held up while FTA works through issues pertaining to new initiatives. To speed project delivery and reduce delays in the procurement of routine and recurring activities, AASHTO is proposing that GAO review and provide recommendations on streamlining/expediting the current approval process.

- **Recommendation:** Direct the Government Accountability Office to study the federal transit grant approval process for routine and recurring procurements (e.g., buses), provide recommendations to Congress and U.S. DOT on effective strategies for streamlining existing processes/practices, and work with the stakeholder community to take action and implement the study’s recommendations.

ISSUE 4-7: Reauthorize the Transit Cooperative Research Program

- **Current Federal Policy:** 49 U.S. Code § 5312 - Public transportation innovation

- **Issue:** Research conducted through the Transit Cooperative Research Program (TCRP) and directly by the FTA remains a high priority for states. These activities promote best practices and facilitate the deployment of new technologies, thereby enhancing increases in operational efficiency. In support of these efforts, TCRP, as outlined under “§ 5312 Public transportation innovation” of the 2015 FAST Act, should be reauthorized.

- **Recommendation:** Preserve and enhance funding to support the Transit Cooperative Research Program.

ISSUE 4-8: Enhance Opportunities and Streamline Regulations for State DOTs and Transit Providers to Partner with Technology and Other Companies to Improve the Service Delivery to Communities

- **Current Federal Policy:** None

- **Issue:** State DOTs remain committed to improving public transportation services for our nation’s most vulnerable populations, including elderly individuals, individuals with disabilities, and disabled veterans. The traditional method of fixed-route or route deviation services, however, may not be
the most effective or appropriate service model for individual mobility needs, especially in remote or rural areas. In cases, some federal regulations are viewed as potential obstacles to such partnerships. To enhance customer-focused access to health care, first-mile/last-mile connectivity and better accessibility the FTA should work with states and service providers to partner with and integrate the eligibility of app-based transportation services.

- **Recommendation:** Authorize the use of new technologies and services (e.g., Transportation Network Companies) to support the provision of federally-aided public transportation services.

**ISSUE 4-9: Expanding Research Grants and Funding to Explore Mobility Opportunities Through Connected and Automated Vehicle Technology**

- **Current Federal Policy:** None
- **Issue:** State DOTs hope that the Federal Transit Administration’s Strategic Transit Automation Research (STAR) plan results in greater innovation and improvements in transit service delivery to urban and rural communities and for those most in need of mobility assistance. Connected and Automated Vehicle (CAV) technology deployment is an unprecedented opportunity to improve service delivery. Notwithstanding, state DOTs are looking to FTA to research, test and safety deploy these emerging technologies. FTA research should also include an assessment of the impact of CAVs on labor; opportunities to retrain existing employees and train the employees needed in the future to maintain and support these technologies; and assess the infrastructure needed to support deployment. State partnerships with FTA are critical to success of the STAR plan’s implementation.
- **Recommendation:** Provide funding for; expand research in; and facilitate the deployment of CAV technology to enhance mobility alternatives for individuals that may be unable to use or are not served by traditional public transportation services.

**ISSUE 4-10: Encourage Ongoing Federal and State Coordination of the Coordinated Council for Access and Mobility**

- **Current Federal Policy:** FAST Act Section 3006(c) Coordinated Mobility
- **Issue:** Established in 2004 by Executive Order 13330, the Coordinated Council for Access and Mobility (CCAM) is a federal interagency transportation council that serves to improve mobility, employment opportunities and access to community services for persons who are transportation-disadvantaged. Chaired by Secretary of Transportation, the CCAM is comprised of eight cabinet level departments, the Social Security Administration and the National Council on Disability. In 2015, Congress codified the CCAM in the FAST Act (Section 3006(c)), calling for a strategic plan that outlines roles and responsibilities of each interagency member, addresses recommendations concerning local coordination of transportation services and proposes changes to federal and regulations that will eliminate barriers to local transportation coordination. CCAM is vital to the future of federal-state coordination of human services transportation and its work has only begun.
- **Recommendation:** Support the U.S. DOT’s and Federal Transit Administration’s efforts to develop and lead the Coordinating Council on Access and Mobility (CCAM) and encourages Congress to promote the cooperative, ongoing collaborative efforts at the federal and state level in the authorization of surface transportation programs. Congress should encourage other federal agencies, for example the Department of Health and Human Services and the Department of Veterans Affairs, to more fully participate in the CCAM and to work with the Federal Transit Administration and states to develop a cost-allocation methodology that incorporates and recognizes the efficiencies of public transportation services.
ISSUE 4-11: Support the Commuter Tax Benefit and Restore the Employer Deductible for Transportation Fringe Benefits to Employees

- **Current Federal Policy:** None
- **Issue:** The Commuter Tax Benefit is an employer-provided, transportation fringe benefit that can cover the costs of an employee’s commute up to a monthly cap of $260 (as of 2018) by transit or vanpool or up to $20 per month by bicycle. The benefit can also be used for the cost of qualified parking (with a separate monthly cap of $260). The benefit can be offered pretax, as a subsidy, or in combination. However, Congress limited the benefit in the Tax Cuts and Jobs Act of 2017 by restricting an employer’s ability to deduct the cost of providing the benefit. While recognizing the value of the commuter tax benefit by retaining key elements, including the personal deduction for employees and allowing employers the ability not to pay payroll taxes on the amount provided, Congress also created new tax liabilities for tax-exempt entities that offer transportation benefits.
- **Recommendation:** Restore the employer-provided tax deduction for offering pre-tax transit benefits (referred to as Qualified Transportation Fringe Benefits); and make permanent at the level of deduction no less than that provided for parking.

ISSUE 4-12: National Transit Database Reporting

- **Current Federal Policy:** 2018 NTD Policy Manual – Commuter vs. Intercity Service
- **Issue:** In 2018, FTA issued new policies for the 2018 National Transit Database reporting year. Included in the new reporting policies was a provision that redefined commuter bus, rail, and ferry services of more than 90-minutes in duration as intercity service. The new reporting policies require the sponsor of such services to conduct extensive and expensive statistical analysis to qualify for commuter eligibility/meet NTD reporting thresholds. The 90-minute trip duration is arbitrary in that it does not take into account the effects of traffic/related congestion; availability of or proximity to affordable housing; and/or other economic factors impacting commute times for individuals that choose to use public transportation services.
- **Recommendation:** Prohibit the Federal Transit Administration (FTA) from implementing National Transit Database (NTD) policy changes and reporting clarifications for Report Year 2018 pertaining to commuter vs. intercity services. This prohibition shall be effective as of October 1, 2018, until repealed.

ISSUE 4-13: Cooperative Procurements

- **Current Federal Policy:** FAST Act Section 3019 – Innovative Procurement
- **Issue:** State Departments of Transportation include specifications based on a variety of factors when creating a procurement contract for rolling stock and/or equipment. The factors are inherent to the state and its region, including geographic considerations of use. Section 3019 of the FAST Act introduced new language affecting the procurement process when using federal funding. By definition, states that wish to enter into a cooperative procurement contract (State Cooperative Procurement Schedules) initiated under Section 3019, must allow grantees across the United States (regardless of location or proximity to the contract parties) to access and purchase vehicles and equipment off its master schedule contract. This provision can create an efficient and cost-effective method for vehicles and equipment procurement. However, this provision has created new challenges and concerns for states that enter into cooperative procurements. Some of those challenges include, but are not limited to: the ability of vendors to meet the vehicle and equipment needs of sub-recipients in a timely manner within the contracting state. The contracting state is investing significant resources to support out-of-state demand with only the ability to charge no more than one percent for administrative fees, a benefit that provides little benefit to the state’s
transportation system. Another challenge/concern involves the procurement rules or regulations of individual states that may prohibit the sale of vehicles and equipment to other states. Also, the vehicles and equipment included in the master schedule contract may include unique, geographical location specifications not suitable for grantees throughout the United States.

- **Recommendation:** Clarify the intent of Section 3019 Innovative Procurement and its cost-effective, efficient procurement tools while adding flexibility for states. Change the mandatory language to permissive language, granting the contracting states the flexibility and ability to prioritize vehicle and equipment needs of (1) in-state sub-recipients, (2) regional grantees and (3) other grantees outside of the contracting state’s region. Region is defined as FTA regions.

**CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS**

- ISSUE 3-1: Stability of the Highway Trust Fund
- ISSUE 3-2: Flexibility, Transferability and Set-aside Programs
- ISSUE 3-5: Reduction of Regulations
- ISSUE 6-2: The Future of Transportation Includes Connected and Automated Vehicles
- ISSUE 6-5: State DOTs Need Additional Funding and Flexibility in Order to Deploy CAV Technologies and Accommodate CAV Vehicles
- ISSUE 6-7: The Deployment of CAVs Will Continue to Require a Collaborative Approach
- ISSUE 8-1: Increase Federal Funding
- ISSUE 8-2: Fix the Federal Highway Trust Fund and Strengthen Federal Transportation Funding
- ISSUE 8-3: Prioritize Formula-based Federal Funding
- ISSUE 8-5: Preserve the Current Federal/State Matching Ratio Requirements
- ISSUE 8-6: Increase Flexibility and Transferability of Funding
- ISSUE 8-7: Maintain the Current Balance of Funding Among Highways, Transit, and Highway Safety
- ISSUE 9-5: Improve Buy America Requirements
- ISSUE 12-8: Buy America
- ISSUE 14-1: Increase Research, Technology & Education Program Funding Levels
- ISSUE 14-4: Support for Associated National Research Programs
- ISSUE 14-6: Redefine “Manufactured Products” Requirement within Buy America Law
5: Rail Transportation

INTRODUCTION AND BACKGROUND

Rail transportation is a vital component of the nation’s multimodal transportation network. Whether transporting passengers or freight, a dependable rail network requires comprehensive legislation to support safe, efficient and cost-effective mobility. The AASHTO Council on Rail Transportation has identified specific policy issues and recommendations related to passenger rail. This white paper presents recommended policies for consideration by the AASHTO Transportation Policy Forum.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE 5-1: States as Railroads

- **Current Federal Policy**: 49 U.S.C §270
- **Issue**: The System Safety Program works to improve railroad safety through structured, proactive processes and procedures developed and implemented by railroads. It applies to “Railroads that operate intercity or commuter passenger train service on the general railroad system of transportation and railroads that provide commuter or other short-haul rail passenger train service in a metropolitan or suburban area (as described by 49 U.S.C. 20102(2)), including public authorities operating passenger train service.” (49 U.S.C. §270.1) State DOTs are committed to safety, service quality, and reliability of the rail network; however, it is important to clarify that States, and political subdivisions of States, who sponsor, but do not operate intercity passenger rail services, are not railroads nor are they railroad carriers. This clarification is critical as States do not need to endure additional regulatory burdens as they endeavor to utilize the rail mode as part of the nation’s multimodal transportation network.
- **Recommendation**: In 2017, Senator Deb Fischer (R-NE) introduced the Railroad Advancement of Innovation and Leadership with Safety (RAILS) Act. Section 225 of the bill includes language that clarifies that States are not rail carriers if they do not operate a rail service. AASHTO recommends the language be incorporated into reauthorization:

  **SEC. 225. APPLICABILITY TO STATES.**
  Not later than 180 days after the date of the enactment of this Act, the Secretary shall revise part 270 of title 49, Code of Federal Regulations, to exclude a State, or a political subdivision of a State, that provides equipment, track, right-of-way, or financial support for intercity passenger service pursuant to section 209 of the Passenger Rail Investment and Improvement Act of 2008 (division B of Public Law 110–432; 49 U.S.C. 24101 note) if such State or political subdivision does not directly operate such service.

ISSUE 5-2: Amtrak National Network and Amtrak Northeast Corridor

- **Current Federal Policy**: 49 U.S.C. §11101
- **Issue**: In December 2015, for the first time in U.S. transportation legislation history, Amtrak reauthorization was included as part of the federal surface transportation bill. A total of $8.05 billion of funding is authorized for Amtrak grants for FY2016 – 2020. The FAST Act departs from the previous Amtrak funding allocation method of capital and operating grants and now provides funding that corresponds with Amtrak’s main business lines – the Northeast Corridor and the National Network. A total of $2.596 billion is authorized for Amtrak projects along the Northeast...
Corridor and $5.454 billion for projects along the Amtrak National Network. Amtrak operates a nationwide rail network, serving more than 500 destinations in 46 states, the District of Columbia and three Canadian provinces, on more than 21,400 miles of routes. It is essential to maintain Federal financial support sufficient to enable the operation of the long distance passenger train network at least at current levels, which would help ensure that many states and regions are connected to the rail and transportation system and maintain a national passenger rail network. It is also important to maintain Federal financial support for Amtrak’s Northeast Corridor as it is the busiest railroad in North America, with approximately 2,200 Amtrak, commuter and freight trains operating over some portion of the Washington-Boston route each day.

- **Recommendation:** Reauthorize funds for the Amtrak National Network and the Amtrak Northeast Corridor in order to continue efficient and effective passenger rail mobility.

**ISSUE 5-3: High-speed, Intercity, Passenger, and Freight Rail Grants**

- **Current Federal Policy:** 49 U.S.C. §11301, §11302, §11303
- **Issue:** A total of $2.2 billion is authorized for FY 2016 – 2020 for rail funding in the FAST Act through the Consolidated Rail Infrastructure and Safety Improvements Grant (CRISI, §11301), The Federal-State Partnership for State of Good Repair Grant Program (SGR, §11302), and the Restoration and Enhancement Grant Program (R&E, §11303). The bullets below highlight authorized fund amounts, program eligibility requirements, and recommended language to support cross border investment as State DOTs need the ability to expand the grant funds over the border in Canada to enhance intercity passenger rail service:
  - The **Consolidated Rail Infrastructure and Safety Improvements Grant Program** authorizes $1.1 billion for projects that aim to enhance safety, efficiency and reliability of passenger and freight rail transportation systems. There is broad project eligibility that focuses on capital, regional and corridor planning, research, workforce development, training projects, and environmental analyses including plans or analyses that would extend services into Canada.
  - The **Federal-State Partnership for State of Good Repair Grant Program** authorizes $997 million for capital projects to replace or rehabilitate qualified railroad assets and ultimately reduce the current state of good repair backlog. Projects may include enhancements to commuter rail service, however, each project, at a minimum, must demonstrate enhancements to intercity passenger rail service or assets. The eligible activities include capital projects to replace existing assets in-kind or with assets that increase capacity or service levels; ensure that service can be maintained while existing assets are brought into a state of good repair; and bring existing assets into a state of good repair.
  - The **Restoration and Enhancement Grant Program** authorizes $20 million each year from FY2016 – 2020 for operating assistance to initiate, restore, or enhance intercity passenger rail service. The grants are limited to three years of operating assistance per route and may not be renewed. It is recommended that the program priorities include new frequencies on pre-intercity passenger rail corridors and service restoration expansion into Canada.

- **Recommendation:** Reauthorize the Consolidated Rail Infrastructure and Safety Improvements Grant Program, State of Good Repair Grant Program, and the Restoration and Enhancement Grant Program at no less than FY19 funding levels and support cross border investment.

**ISSUE 5-4: Federal – State Committees**

- **Current Federal Policy:** 49 U.S.C. §11204, §11305, §24101
- **Issue 4a (§11204):** State-Amtrak Intercity Passenger Rail Committee (SAIPRC) was established under the FAST Act to further implement Section 209 of the Passenger Rail Investment and Improvement
Act of 2008 (PRIIA) and to promote mutual cooperation and planning related to Amtrak’s rail operations and related activities on State-supported routes. SAIPRC members represent Amtrak, the Federal Railroad Administration, and 21 agencies in 18 states responsible for funding 29 Amtrak routes. State-Supported Intercity Passenger Rail (IPR) Services are Amtrak routes 750 miles or less outside the Northeast Corridor (which runs from Boston to Washington). Per federal statute, states are responsible for funding the costs of each state-supported route. Altogether, the 29 State-Supported IPR Services carry approximately one-half of all Amtrak riders nationwide and represent an important and growing part of the Amtrak national network. States contribute approximately $750 million in ticket revenue and direct payments to Amtrak. Over ten years, ridership on the State-Supported IPR Services has grown by 25%. It is important that Congress reauthorize SAIRPC to continue the partnership working to promote innovative practices and investment programs that support a vibrant and efficient State and national passenger rail network to meet the growing needs of traveling public and encourage economic growth.

Recommendation: Reauthorize the State-Amtrak Intercity Passenger Rail Committee.

Issue 4b (§11305): Congress authorized the Northeast Corridor Commission (NEC) in the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) and charged it with developing a formula to allocate NEC capital and operating costs based on usage, making recommendations to Congress, and facilitating collaborative planning. The Commission is comprised of members from each of the NEC states, Amtrak, and the U.S. DOT, with non-voting representatives from freight railroads and states with connecting corridors. Following authorization in 2008, the Commission was chartered in 2010 to focus on near-term strategies to stabilize the NEC and establish a foundation for future growth through unified regional action. The NEC is the busiest rail corridor in the United States, carrying over 800,000 daily weekday riders on over 2,000 daily commuter and intercity trains. The NEC is a critical link for Amtrak and the eight commuter railroads to the major economic centers of the Northeast. One half of all Amtrak riders nationwide utilize the NEC and almost two thirds of all commuter rail riders in the NEC Region rely on the NEC for some or all of their trip. The NEC rail network is an engine of economy activity for the United States. It is important that Congress reauthorize the Commission because the platform is vital to the successful development and implementation of an effective network on the Northeast Corridor.

Recommendation: Reauthorize the Northeast Corridor Commission.

Issue 4c (§24101): The Passenger Rail Investment and Improvement Act of 2008 directed Amtrak, states, FRA and industry to establish the Next Generation Corridor Equipment Pool Committee (NGEC) to standardize and streamline the process for designing and obtaining next-generation passenger rail equipment purchased with federal funding. NGEC is the national leader in standardization, acquisition, financing and management of passenger rail equipment. The Committee effectively developed 6 specifications that focus on single level car, bi-level car, single level train sets, diesel-electric locomotive, diesel multiple units, and dual-mode locomotive. Its document control procedures enable a review of the use of specifications and requests for modifications in order to continuously improve these specifications as new developments are conceived in vehicle production/manufacturing. The Committee has succeeded in lowering operating and maintenance costs and extending vehicle life expectancy. Lastly, NGEC sparked domestic production, invigorated the supply chain and created high-wage jobs. It is important that Congress reauthorize the committee in order to improve future equipment needs.

Recommendation: Reauthorize the Next Generation Corridor Equipment and Pool Committee.
ISSUE 5-5: Operation Lifesaver, Inc.

- **Current Federal Policy:** 49 U.S.C. §1418
- **Issue:** Operation Lifesaver, Inc. (OLI) is a nonprofit public safety education and awareness organization dedicated to reducing collisions, fatalities and injuries at highway-rail crossings and trespassing on or near railroad tracks. With a nationwide network of passionate volunteers, OLI provides free safety presentations and creates education programs and public awareness campaigns to reach audiences of all ages. The organization reached 2.1 million people directly via 21,226 safety presentations, 245 training sessions and 1,821 special events conducted by state programs nationwide in 2017. In addition, 333 CDL drivers and 1,912 school bus drivers were exposed to OLI’s online eLearning safety programs during the year. It is important for Congress to support OLI to promote education, enforcement and engineering to keep people safe around tracks and railway crossings.
- **Recommendation:** Reauthorize Operation Lifesaver, Inc.

ISSUE 5-6: Section 130 – Railway Highway Crossing Program

- **Current Federal Policy:** 23 U.S.C. §130
- **Issue:** The Railway-Highway Crossings (Section 130) Program provides funds for the elimination of hazards at railway-highway crossings. The FAST Act authorized $305 billion over the FY 2016 – 2020. The Section 130 Program has been correlated with a significant decrease in fatalities at railway-highway grade crossings. Since the Program’s inception in 1987 through 2014, for which most recent data is available, fatalities at these crossings have decreased by 57 percent. The Section 130 issues are highlighted below:
  - **Funding:** There was confusion regarding federal-local contribution matches for Section 130 eligible activities. Section 130 is funded at a 90% Federal contribution and 10% local matching contribution; however, 23 U.S.C 120 emphasizes a federal share up to 100% for certain highway safety projects, which includes certain railway-highway crossing closures. With two similar but different provisions, 35 states plus the District of Columbia incorrectly authorized projects at 100% federal match under Section 120 rather than the 90% match under Section 130. The FHWA is now requiring states to reimburse the federal aid program for the differential amount on rail-highway crossing authorized above the 90% share on or after April 14, 2016, which totals over $26 million. Furthermore, many railway-highway crossing projects are located in rural areas off the state highway system. Most of these small cities and counties do not have the financial resources to match the cost of these projects. Furthermore, many state transportation agencies do not have the authority in state law to provide matching highway funds for projects off of the state highway system. As a result, funding is inaccessible at rural locations where railway-highway crossing projects are mainly located.
  - **Incentive Payment:** States and railroads may make incentive payments of up to $7,500 for the permanent closure of railway-highway grade crossings. Although there are set aside funds to help incentivize communities to close grade crossings, the $7,500 limit is not enough to convince officials to support closing as these projects are substantially more expensive.
  - **Eligible Activity:** Section 130 funding is not allowed for the replacement of functionally obsolete warning devices. It is imperative to include funds for their replacement because they are imperative to the safe and efficient operation of railway-highway grade crossings.
- **Recommendations:**
  - Increase federal match for Section 130 program to 100% federal share similar to many other highway safety programs.
Increase the limit of $7500 incentive payment of Section 130 funds for the closing of a highway/railway grade crossing to $100,000.

Add eligibility of Section 130 funds for the replacement of functionally obsolete warning devices.

### CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS

- ISSUE 2-3: Changes to Infrastructure for Rebuilding America (INFRA) Discretionary Grant Program
- ISSUE 3-4: Railroad/Highway Grade Crossing Safety
- ISSUE 8-4: Eliminate Rescissions of Contract Authority
6: 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 under appropriate regulatory oversight to realize the saving of lives and to improve 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 connectivity using vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE 6-1: Deploying CAV Technologies in the Safest Manner Possible is Paramount

- **Current Federal Policy:** None
- **Issue:** The safety of all users of the transportation system is the most important consideration for AASHTO and state DOTs with respect to transportation 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 significantly mitigated through CAV technologies occurring on the transportation system. CAVs have the potential to 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 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 development and demonstration of connected and automated vehicles must continue and provide the data and examples necessary to establish the safety benefits of this technology.
Initiation, non-proprietary data generated by automobile manufacturers, technology developers, research organizations, and public agencies that may improve overall safety outcomes should be shared and the results made transparent to the public and decision makers.

- 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 6-2: The Future of Transportation Includes Connected and Automated Vehicles**

**Current Federal Policy:** None

**Issue:** While there has been significant focus on automated 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 agree that establishing a strong foundation for AVs requires ensuring robust connectivity for V2V and 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 of these new technologies. To date, 33 locations in the US are deploying 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 wasted. However, the lack of further federal direction regarding communications between V2V and V2I communication standards is creating uncertainty among state and local agencies. Absent clear direction, states and local agencies will likely make no significant implementation of CV technology since many states are unsure if they should invest in DSRC, 5G, or both for V2I communications. This uncertainty slows the advancement of this technology and future integration into our sleet and facilities.

**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 USDOT should support its use for connected vehicle applications. Also, DSRC should be protected solely for vehicle-to-everything (V2X) uses and the spectrum should not be shared for other uses.
- AASHTO also recognizes 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 developed that occurs now should not impede technological innovation and implementation 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 enable states to better understand when and how to make appropriate investment decisions.

**ISSUE 6-3: 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 vehicles (AVs) has the potential to disrupt this separation of design versus operation whereby motor vehicles are no longer driven by a person but by the AV systems (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 AV systems and affecting the how aspect of vehicles which is currently under the domain of states.

- **Recommendations:**
  - 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 the American Association of Motor Vehicle Administrators [AAMVA] and AASHTO) to assure the safe, efficient and effective deployment of CAVs.

**ISSUE 6-4: State Laws Concerning the Operation of Connected and Automated Vehicles Need to be Uniform and Consistent**

- **Current Federal Policy:** None
- **Issue:** Each state enacts laws and creates 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 automated) AVs. Another example 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.

AASHTO recognizes the need to foster innovation and the development of CAV technologies and to not penalize states or stifle innovation. In the current CAV development environment, state laws allowing the on-road testing of CAVs are an important aspect to the research and development of the CAV technology and their eventual wide-scale deployment. In addition, AASHTO recognizes the need of states working together to harmonize state-level traffic and vehicle rules to ensure CAVs can legally operate and ensure interstate commerce is not adversely affected.

- **Recommendations:**
  - 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 safe operation of such technologies.
  - State DOTs should continue to work through the Autonomous Vehicle Best Practices Working Group, hosted by the AAMVA that is providing states and other stakeholders with a venue in which to gather, organize and share information about the testing, operation and regulation of AVs.

**ISSUE 6-5: 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 their current infrastructure, 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 there is much learning about CV hardware deployment. 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 USDOT identifying the importance of signage, lane marking, and striping. 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 pavement marking for purpose of AV deployment is a capital investment (eligible under FHWA programs) or a maintenance activity and not eligible for reimbursement.

- **Recommendations:**
  - 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 necessary to the proper and safe operation of CAVs.
  - Flexibility is needed in the federal-aid procurement rules as they relate to both the purchase, installation, and maintenance of CAV technologies by a state DOT. The procurement and maintenance of CAV equipment is not the same as procurement for a more traditional civil infrastructure project and that other considerations need to be made. States need flexibility in procuring the services and equipment needed to install and maintain the computer technology assets.
  - State DOTs are committed to maintaining their assets in good a condition based on resource availability. 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 to allow industry and technology developers to test their hardware and applications on such testbeds. This will enable infrastructure owners and technology developers to better understand each other’s requirements, resulting in better standards and better infrastructure.

**ISSUE 6-6: 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 elements will become extremely valuable to many different stakeholders. 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 in some way and may also collect 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 to it?
  - Will data sharing be the prerogative of the individual manufacturers, or will there be regulation governing 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 collect, there needs to be clarification over who “owns” the data that AVs generate; otherwise fears over invasions of privacy will likely increase. To complicate matters, most state agencies are subject to open government records requests, which can become very burdensome. Data sharing should be evaluated carefully to determine which data is able to be shared with all entities.

- **Recommendations:**
  - 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. This would include a discussion on:
    - What data and information are important to collect;
    - What is the purpose of using the collected data and information purpose; and
    - Who and why should the data and information be shared with.
  - Due to the industry’s preliminary testing phase of AV operation on public roadways, AASHTO strongly recommends:
    - The broad sharing of information associated with crashes and near-miss occurrences so that collective learning can take place while still protecting proprietary information of the technology developers.
    - The data for which events are shared includes non-crash data such as “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.
    - Ensure that no personally identifiable information can be included in any of the data that are shared to protect the privacy of the individuals.

**ISSUE 6-7: The Deployment of CAVs Will Continue to Require a Collaborative Approach**

- **Current Federal Policy:** USDOT Automated Vehicles 3.0: Preparing for the Future of Transportation (published October 2018)
- **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 successfully deploy the technology. 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, capability and perspective. However, if we are to provide infrastructure that supports these new technologies, both physical (roadways, bridges, traffic signals, signs, etc.) and digital (software applications, algorithms, business intelligence, mobile communications, etc.) clearer guidance from the automaker industry would be helpful.
- **Recommendations:**
  - Greatly expanded overall industry collaboration to include broader and active participation from both public and private sectors. Leverage 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. There should be more engagement from non-traditional original equipment manufacturers.

- Establish a structured advisory and deployment coordination program between automakers, original equipment manufacturers and government to support the development and deployment of vehicle and infrastructure innovation for enhanced mobility, goods movement and safety.

**CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS**

- ISSUE 1-1: Safely Deploy Cooperative and Automated Transportation Technologies
- ISSUE 4-8: Enhance Opportunities and Streamline Regulations for State DOTs and Transit Providers to Partner with Technology and Other Companies to Improve the Service Delivery to Communities
- ISSUE 4-9: Expanding Research Grants and Funding to Explore Mobility Opportunities Through Connected and Automated Vehicle Technology
- ISSUE 7-1: Unfunded Mandates
- ISSUE 7-2: Privacy, Security, Cyber Security
- ISSUE 8-1: Increase Federal Funding
- ISSUE 8-6: Increase Flexibility and Transferability of Funding
- ISSUE 9-2: Communications Technology for Highway Operations
- ISSUE 9-3: 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
- ISSUE 9-7: Public Safety Radio Communication Spectrum
- ISSUE 10-5: Minimum Condition Levels for National Highway System (NHS) Bridges and Pavements Could Encourage a Worst-First Asset Management Approach
- ISSUE 11-2: Enhance Flexibility and Avoid Imposing New Administrative Burdens, whether through statute, Rulemakings, or Guidance
- ISSUE 11-6: Make More Flexible the Projects that can be Funded through the Congestion Mitigation and Air Quality (CMAQ) Improvement Program
- ISSUE 14-1: Increase Research, Technology & Education Program Funding Levels
- ISSUE 14-2: Allow Highway Safety Improvement Program Funds to be used for Safety Related Research Activities
- ISSUE 14-3: Allow States to Use Non-SP&R Federal Funding when Contributing to Multi-State Pooled Fund Research Studies
- ISSUE 14-5: Recommend Third Strategic Transportation Research Program
- ISSUE 15-1: Non-infrastructure Eligibilities under the Highway Safety Improvement Program
- ISSUE 15-2: DATA PROTECTION
7: 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 specific purposes, 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. Therefore, the Committee on Data recommends AASHTO’s policy and legislative agenda to disseminate and promote the AASHTO Core Data Principles and focus strategically on a few important policy issues including 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.

AASHTO Core Data Principles are as follows:

- Principle 1 – VALUABLE: Data is an asset—Data is a core business asset having value and should be 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.

SPECIFIC POLICY ISSUES AND RECOMMENDATIONS

ISSUE 7-1: Unfunded Mandates

- Current Federal Policy: None.
- 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/underfunded 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.
- Recommendation: The data committee recommends that, if a data requirement is proposed or enacted, that sufficient resources be made available beyond simply providing for federal eligibility or flexibility to use funds for the purposes as that may require a diversion of resources from transportation services, to manage the required data in accordance with the seven AASHTO Core Data Principles detailed above.
ISSUE 7-2: Privacy, Security, Cyber Security

- **Current Federal Policy:** None.
- **Issue:** Transportation initiatives are subject to privacy and security rulings made both within and outside of transportation's purview. The focus and resources associated with data security need to be integrated with any elements in the rapidly evolving world of transportation data. From vehicles themselves and the associated intelligent infrastructure, to probes, crowdsourcing and any other sources and uses of data and operations that are dependent on the flow of data, data security becomes a greater operational concern.
- **Recommendation:** Data privacy and data security must be considered in any recommendations regarding data as it relates to transportation and transportation issues. 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.

CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS

- ISSUE 6-1: Deploying CAV Technologies in the Safest Manner Possible is Paramount
- ISSUE 6-6: CAVs Will Produce Significant Amounts of Data and There is a Data Governance Gap
- ISSUE 8-1: Increase Federal Funding
- ISSUE 8-6: Increase Flexibility and Transferability of Funding
- ISSUE 8-10: Reduce and Simplify Regulations, Requirements, Data Collections, and Process to Expedite the Process
- ISSUE 10-3: Performance Management Regulations Should Be Improved to Reduce the Burden on State DOTs
- ISSUE 11-7: Mitigate the Burden of Data Collection Related to the Performance-Based Planning and Performance Management Regulations
- ISSUE 15-2: DATA PROTECTION
- ISSUE 16-2: Promote All-Hazards Risk and Resilience Analysis for Critical Facilities
- ISSUE 16-7: Promote Cyber Security Strategies
8: 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 8-1: Increase Federal Funding

- **Current Federal Policy:** The FAST Act authorized $305 billion from both the HTF and the 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 turn back 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 8-2: Fix the Federal Highway Trust Fund 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 sources currently dedicated to 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 in federal share (for up to 50 percent of project cost) 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. If Congress does not provide money needed to increase federal surface transportation funding through options included in AASHTO’s Matrix of Illustrative Surface Transportation Revenue Options, Congress should provide the funds through other means.

ISSUE 8-3: 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 States 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 both in 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 8-4: 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 Surface Transportation Block Grant Program (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 and seriously delay project construction.

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 8-5: 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 highway 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 8-6: 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
AASHTO FAST ACT REAUTHORIZATION

for preservation, capacity, safety or other needs. This flexibility in directing funds is especially important when overall funding is insufficient.

- **Recommendation:** AASHTO recommends increased flexibility and transferability between highway program funds.

### ISSUE 8-7: 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.

- **Recommendations:**
  - Maintain the current balance of funding among highways, transit and highway safety from the HTF and continue General Fund support for rail programs.
  - Further increase flexibility within the STBG Program by expanding the state departments of transportations’ share of funding (which will be reduced to 45 percent by FY 2020 under the FAST Act) which can be used in any area within a state. This flexibility includes each state’s ability to direct more of its own STBG program funding to their local partners, over and above sub allocated STBG Program funds, if they so wish.

### ISSUE 8-8: 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 to maximize revenue-raising opportunities in light of federal funding challenges.

### ISSUE 8-9: 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 8-10: 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

<table>
<thead>
<tr>
<th>Existing Highway Trust Fund Funding Mechanisms</th>
<th>Illustrative Rate or Percentage Increase</th>
<th>Definition of Mechanism/Increase</th>
<th>Assumed 2018 Yield*</th>
<th>Total Forecast Yield 2019–2023</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing HTF Funding Mechanisms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel Excise Tax</td>
<td>20.0¢</td>
<td>¢/gal increase in current rate</td>
<td>$8.80</td>
<td>$42.20</td>
</tr>
<tr>
<td>Gasoline Excise Tax</td>
<td>15.0¢</td>
<td>¢/gal increase in current rate</td>
<td>$21.80</td>
<td>$102.10</td>
</tr>
<tr>
<td>Motor Fuel Tax Indexing of Current Rate to CPI (Diesel)</td>
<td>--</td>
<td>¢/gal excise tax</td>
<td>$3.70</td>
<td></td>
</tr>
<tr>
<td>Motor Fuel Tax Indexing of Current Rate to CPI (Gas)</td>
<td>--</td>
<td>¢/gal excise tax</td>
<td>$8.80</td>
<td></td>
</tr>
<tr>
<td>Truck and Trailer Sales Tax</td>
<td>20.0%</td>
<td>increase in current revenues, structure not defined</td>
<td>$0.60</td>
<td>$4.20</td>
</tr>
<tr>
<td>Truck Tire Tax</td>
<td>20.0%</td>
<td>increase in current revenues, structure not defined</td>
<td>$0.10</td>
<td>$0.50</td>
</tr>
<tr>
<td>Heavy Vehicle Use Tax</td>
<td>20.0%</td>
<td>increase in current revenues, structure not defined</td>
<td>$0.20</td>
<td>$1.20</td>
</tr>
<tr>
<td><strong>Other Existing Taxes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minerals Related Receipts</td>
<td>25.0%</td>
<td>increase in/reallocation of current revenues, structure not defined</td>
<td>$0.60</td>
<td>$3.40</td>
</tr>
<tr>
<td>Harbor Maintenance Tax</td>
<td>25.0%</td>
<td>increase in/reallocation of current revenues, structure not defined</td>
<td>$0.40</td>
<td>$1.90</td>
</tr>
<tr>
<td>Customs Revenues</td>
<td>5.0%</td>
<td>increase in/reallocation of current revenues, structure not defined</td>
<td>$1.90</td>
<td>$10.30</td>
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<tr>
<td>Income Tax - Personal</td>
<td>0.5%</td>
<td>increase in/reallocation of current revenues, structure not defined</td>
<td>$5.30</td>
<td>$28.40</td>
</tr>
<tr>
<td>Income Tax - Business</td>
<td>1.0%</td>
<td>increase in/reallocation of current revenues, structure not defined</td>
<td>$1.70</td>
<td>$8.90</td>
</tr>
<tr>
<td><strong>License and Registration Fees</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driver’s License Surcharge</td>
<td>$5.00</td>
<td>dollar assessed annually</td>
<td>$1.10</td>
<td>$6.10</td>
</tr>
<tr>
<td>Registration Fee (Electric Light Duty Vehicles)</td>
<td>$100.00</td>
<td>dollar assessed annually</td>
<td>$0.00</td>
<td>$0.20</td>
</tr>
<tr>
<td>Registration Fee (Hybrid Light Duty Vehicles)</td>
<td>$50.00</td>
<td>dollar assessed annually</td>
<td>$0.20</td>
<td>$1.30</td>
</tr>
<tr>
<td>Registration Fee (Light Duty Vehicles)</td>
<td>$5.00</td>
<td>dollar assessed annually</td>
<td>$1.30</td>
<td>$6.80</td>
</tr>
<tr>
<td>Registration Fee (Trucks)</td>
<td>$100.00</td>
<td>dollar assessed annually</td>
<td>$1.20</td>
<td>$6.30</td>
</tr>
<tr>
<td>Registration Fee (All Vehicles)</td>
<td>$5.00</td>
<td>dollar assessed annually</td>
<td>$1.30</td>
<td>$7.10</td>
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<td><strong>Weight and Distance Based Fees</strong></td>
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<tr>
<td>Freight Charge—Ton (Truck Only)</td>
<td>10.0¢</td>
<td>¢/ton of domestic shipments</td>
<td>$1.10</td>
<td>$5.80</td>
</tr>
<tr>
<td>Freight Charge—Ton (All Modes)</td>
<td>10.0¢</td>
<td>¢/ton of domestic shipments</td>
<td>$1.30</td>
<td>$7.10</td>
</tr>
<tr>
<td>Freight Charge—Ton-Mile (Truck Only)</td>
<td>0.5¢</td>
<td>¢/ton-mile of domestic shipments</td>
<td>$10.10</td>
<td>$54.20</td>
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<tr>
<td>Freight Charge - Ton-Mile (All Modes)</td>
<td>0.5¢</td>
<td>¢/ton-mile of domestic shipments</td>
<td>$21.60</td>
<td>$115.90</td>
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<tr>
<td>Transit Passenger Miles Traveled Fee</td>
<td>1.0¢</td>
<td>¢/ passenger mile traveled on all transit modes</td>
<td>$0.60</td>
<td>$3.20</td>
</tr>
<tr>
<td>Vehicle Miles Traveled Fee (Light Duty Vehicles)</td>
<td>1.0¢</td>
<td>¢/LDV vehicle mile traveled on all roads</td>
<td>$28.10</td>
<td>$155.70</td>
</tr>
<tr>
<td>Vehicle Miles Traveled Fee (Trucks)</td>
<td>1.0¢</td>
<td>¢/truck vehicle mile traveled on all roads</td>
<td>$2.90</td>
<td>$15.70</td>
</tr>
<tr>
<td>Vehicle Miles Traveled Fee (All Vehicles)</td>
<td>1.0¢</td>
<td>¢/ vehicle mile traveled on all roads</td>
<td>$32.00</td>
<td>$171.50</td>
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<tr>
<td><strong>Sales Taxes on Transportation Related Economic Activity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freight Bill - Truck Only</td>
<td>0.5%</td>
<td>percent of gross freight revenues (primary shipments only)</td>
<td>$3.80</td>
<td>$20.20</td>
</tr>
<tr>
<td>Freight Bill - All Modes</td>
<td>0.5%</td>
<td>percent of gross freight revenues (primary shipments only)</td>
<td>$4.60</td>
<td>$24.80</td>
</tr>
<tr>
<td>Sales Tax on New Light Duty Vehicles</td>
<td>1.0%</td>
<td>percent of sales</td>
<td>$2.80</td>
<td>$14.90</td>
</tr>
<tr>
<td>Sales Tax on New and Used Light Duty Vehicles</td>
<td>1.0%</td>
<td>percent of sales</td>
<td>$4.20</td>
<td>$22.40</td>
</tr>
<tr>
<td>Sales Tax on Auto-related Parts &amp; Services</td>
<td>1.0%</td>
<td>percent of sales</td>
<td>$2.70</td>
<td>$14.40</td>
</tr>
<tr>
<td>Sales Tax on Diesel</td>
<td>2.0%</td>
<td>percent of sales (excluding excise taxes)</td>
<td>$1.50</td>
<td>$7.90</td>
</tr>
<tr>
<td>Sales Tax on Gas</td>
<td>2.0%</td>
<td>percent of sales (excluding excise taxes)</td>
<td>$5.20</td>
<td>$28.00</td>
</tr>
<tr>
<td>Tire Tax (Light Duty Vehicles)</td>
<td>1.0%</td>
<td>of sales of LDV tires</td>
<td>$0.30</td>
<td>$1.40</td>
</tr>
<tr>
<td>Sales Tax on Bicycles</td>
<td>1.0%</td>
<td>percent of sales</td>
<td>$0.10</td>
<td>$0.30</td>
</tr>
<tr>
<td><strong>Other Excise Taxes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container Tax</td>
<td>$15.00</td>
<td>dollar per TEU</td>
<td>$0.70</td>
<td>$4.00</td>
</tr>
<tr>
<td>Imported Oil Tax</td>
<td>$2.50</td>
<td>dollar/ barrel</td>
<td>$4.50</td>
<td>$23.90</td>
</tr>
</tbody>
</table>
### Description of Mechanism/ Increase

<table>
<thead>
<tr>
<th>Existing HTF Funding Mechanisms</th>
<th>Current Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diesel Excise Tax</strong></td>
<td>$10.7 $ in billions</td>
</tr>
<tr>
<td><strong>Gasoline Excise Tax</strong></td>
<td>$25.4 $ in billions</td>
</tr>
<tr>
<td><strong>MFT Indexing of Current Rate to CPI (Diesel)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>MFT Indexing of Current Rate to CPI (Gas)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Truck and Trailer Sales Tax</strong></td>
<td>$3.1 $ in billions</td>
</tr>
<tr>
<td><strong>Truck Tire Tax</strong></td>
<td>$0.5 $ in billions</td>
</tr>
<tr>
<td><strong>Heavy Vehicle Use Tax</strong></td>
<td>$1.2 $ in billions</td>
</tr>
</tbody>
</table>

- **Pros**
  - Diesel Excise Tax: Large revenue yield with small rate change; a tried-and-true user fee; ease of administration
  - Gasoline Excise Tax: 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
  - MFT Indexing of Current Rate to CPI: Strong correlation between tax and user benefit/impact; easy and cost-effective to administer
  - Truck and Trailer Sales Tax: Strong correlation between tax and user benefit/impact; easy and cost-effective to administer
  - Truck Tire Tax: Strong correlation between tax and user benefit/impact; easy and cost-effective to administer
  - Heavy Vehicle Use Tax: Strong correlation between tax and user benefit/impact; easy and cost-effective to administer

- **Cons**
  - Diesel Excise Tax: Long-term sustainability issues; strong public opposition; somewhat regressive
  - Gasoline Excise Tax: Revenue potential is limited; unstable and highly cyclical; no relationship with system use; disincentive to purchase newer vehicles
  - MFT Indexing of Current Rate to CPI: Does not raise a lot of revenue
  - Truck and Trailer Sales Tax: Revenue potential is limited; unstable and highly cyclical; no relationship with system use; disincentive to purchase newer vehicles
  - Truck Tire Tax: Does not raise a lot of revenue
  - Heavy Vehicle Use Tax: Does not raise a lot of revenue
### Other Existing Taxes

| Minerals Related Receipts | 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.  
  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 | **Current Revenues**  
  | | $2.5 | $ in billions |
| Harbor Maintenance Tax | 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.  
  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 | **Current Revenues**  
  | | $1.4 | $ in billions |
| Customs Revenues | 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.  
  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 | **Current Revenues**  
  | | $37.5 | $ in billions |
| Income Tax - Personal | 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.  
  o Pros – Small percentage tax yields significant revenue; strong sustainability; inflation-neutral; easy to administer and enforce; relatively progressive  
  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 | **Current Revenues**  
  | | $1,038.0 | $ in billions |
| Income Tax - Business |  
  | | $162.0 | $ in billions |
### License and Registration Fees

<table>
<thead>
<tr>
<th>License and Registration Fees</th>
<th>Current Count</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Driver’s License Surcharge</strong></td>
<td></td>
</tr>
</tbody>
</table>
| - 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

<table>
<thead>
<tr>
<th>Weight and Distance Based Fees</th>
<th>Current Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freight Charge -Ton (Truck Only)</strong></td>
<td></td>
</tr>
<tr>
<td>- 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.</td>
<td>11 billions of tons</td>
</tr>
</tbody>
</table>

| **Freight Charge - Ton (All Modes)** |               |
| - | 13 billions of tons |

| **Freight Charge - Ton-Mile (Truck Only)** |               |
| - 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 | 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 |
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.

### Pros
- Large revenue yield potential; highly sustainable; appropriate user fee; leads to more efficient use of system
- 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

### Current Economic Activity

<table>
<thead>
<tr>
<th>Sales Taxes on Transportation Related Economic Activity</th>
<th>Current Economic Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight Bill - Truck Only</td>
<td>$726.4 $ in billions</td>
</tr>
<tr>
<td>Freight Bill - All Modes</td>
<td>$891.3 $ in billions</td>
</tr>
<tr>
<td>Sales Tax on New Light Duty Vehicles</td>
<td>$273.4 $ in billions</td>
</tr>
<tr>
<td>Sales Tax on New and Used Light Duty Vehicles</td>
<td>$409.8 $ in billions</td>
</tr>
<tr>
<td>Sales Tax on Auto-related Parts &amp; Services</td>
<td>$264.2 $ in billions</td>
</tr>
<tr>
<td>Tax Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Sales Tax on Diesel</strong></td>
<td>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 percent to 6 percent 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. <strong>o</strong> Pros – Small percentage tax raises significant revenues; sustainable in the short term; provides flexible, dedicated transportation funding <strong>o</strong> Cons – Fuel price volatility could lead to unpredictable revenue levels; unsustainable in the long-term; political/public resistance can build during price spikes</td>
</tr>
<tr>
<td><strong>Sales Tax on Gas</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Tire Tax (LDVs)</strong></td>
<td>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. <strong>o</strong> Pros – Provides a counter light-duty vehicle balance to the current truck tire tax; highly sustainable; strong user-benefit correlation <strong>o</strong> Cons – Does not raise significant revenues; may discourage timely replacement of worn tires</td>
</tr>
<tr>
<td><strong>Sales Tax on Bicycles</strong></td>
<td>A national sales tax on bicycles. <strong>o</strong> Pros – Could provide direct user funding for bike related infrastructure <strong>o</strong> Cons – Does not raise significant revenues; potentially significant administrative and compliance issues; social equity issues</td>
</tr>
<tr>
<td><strong>Other Excise Taxes</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Container Tax</strong></td>
<td>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. <strong>o</strong> Pros – Raises a decent level of funding relative to freight needs; moderate implementation, administration, and compliance costs; strong sustainability <strong>o</strong> Cons – Does little to promote efficient system use; potential international trade laws conflicts; could have regional equity issues</td>
</tr>
<tr>
<td><strong>Imported Oil Tax</strong></td>
<td>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. <strong>o</strong> Pros – Small fee could raise significant revenue; can help to promote US energy independence <strong>o</strong> 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</td>
</tr>
</tbody>
</table>
CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS

- ISSUE 1-2: Expand Eligibilities for the Surface Transportation Block Grant Program Set-Aside for Transportation Alternatives and Make State DOTs Eligible Recipients Under This Program
- ISSUE 1-3: Streamline the Delivery of Surface Transportation Block Grant Transportation Alternatives Program Projects and Revise the Set-Aside Funding Calculation
- ISSUE 1-4: Allow Non-Infrastructure Eligibilities under the Highway Safety Improvement Program
- ISSUE 2-2: Expand Eligible Activities Through National Highway Freight Program
- ISSUE 2-3: Changes to Infrastructure for Rebuilding America (INFRA) Discretionary Grant Program
- ISSUE 2-4: Make Consistent the Financial Planning Requirements among the Required Performance-Based Planning Documents
- ISSUE 2-5: Reinstate the National Cooperative Freight Research Program
- ISSUE 3-1: Stability of the Highway Trust Fund
- ISSUE 3-2: Flexibility, Transferability and Set-aside Programs
- ISSUE 3-3: Flexibility in Participation Percentages
- ISSUE 3-4: Railroad/Highway Grade Crossing Safety
- ISSUE 4-1: Retain, Strengthen and Expand the Federal Program for Public Transportation; Retain the Mass Transit Account within the Highway Trust Fund
- ISSUE 4-2: Maintain the Current Maximum Federal Funding Match Ratios for Public Transit Programs to Support Rural and Urban Communities, Individuals with Disabilities and Seniors and Our Nation’s Transit Infrastructure
- ISSUE 4-3: Maintain and grow the Bus/Bus Facility formula and discretionary program
- ISSUE 4-7: Reauthorize the Transit Cooperative Research Program
- ISSUE 5-6: Section 130 – Railway Highway Crossing Program
- ISSUE 6-5: State DOTs Need Additional Funding and Flexibility in Order to Deploy CAV Technologies and Accommodate CAV Vehicles
- ISSUE 7-1: Unfunded Mandates
- ISSUE 9-1: Strengthen Eligibility for Investments in Transportation System Management and Operations (TSMO) and Related Technology
- ISSUE 9-3: 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
- ISSUE 9-4: Expand Eligible Activities Though National Highway Freight Program
- ISSUE 10-1: Federal Funding Apportionment Should Not Be Tied to Target Achievement
- ISSUE 10-2: Continue to Focus on Implementation of the Performance Management Regulations
- ISSUE 10-3: Performance Management Regulations Should Be Improved to Reduce the Burden on State DOTs
- ISSUE 10-4: Make Consistent the Financial Planning Requirements among the Required Performance-Based Planning Documents
- ISSUE 10-6: Help Advance Progress Towards a More Flexible Transportation Program
- ISSUE 11-1: 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
- ISSUE 11-2: Enhance Flexibility and Avoid Imposing New Administrative Burdens, whether through statute, Rulemakings, or Guidance
- ISSUE 11-4: Fiscal Constraint
• ISSUE 11-6: Make More Flexible the Projects that can be Funded through the Congestion Mitigation and Air Quality (CMAQ) Improvement Program
• ISSUE 11-7: Mitigate the Burden of Data Collection Related to the Performance-Based Planning and Performance Management Regulations
• ISSUE 11-9: Streamline and Simplify the Development and Updating of the Multitude of Transportation Plan Documents Currently Required of States
• ISSUE 12-7: Reduce Federal Regulation of State Policies and Procedures Through Reduction of Requirements, Less Frequent Reviews, and Delegation
• ISSUE 14-1: Increase Research, Technology & Education Program Funding Levels
• ISSUE 14-2: Allow Highway Safety Improvement Program Funds to be used for Safety Related Research Activities
• ISSUE 14-3: Allow States to Use Non-SP&R Federal Funding when Contributing to Multi-State Pooled Fund Research Studies
• ISSUE 14-4: Support for Associated National Research Programs
• ISSUE 15-1: Non-infrastructure Eligibilities under the Highway Safety Improvement Program
• ISSUE 16-3: Modify Emergency Relief (ER) Program to be More Flexible and More Responsive to System Resilience Needs
• ISSUE 16-4: Provide More Flexibility in Use of Federal Funds for Preventive and Response Actions to System Disruptions
• ISSUE 16-7: Promote Cyber Security Strategies
9: 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, disasters 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 to 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 9-1: 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 a Metropolitan Planning Organization, or MPO) when the states would like to use it statewide.
- **Recommendation:** States should have broader control to use existing funding sources on TSM&O activities, and overall transportation funding should be increased.

ISSUE 9-2: Communications Technology for Highway Operations

- **Current Federal Policy:** None
- **Issues:**
  - There is little federal guidance regarding interaction between vehicle-to-vehicle (V2V) and V2I communication. Some states are unsure if they should invest in DSRC, 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.

**Recommendations:** 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 enable states to make informed decisions for investing resources toward these technologies.

**ISSUE 9-3: 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.
- **Recommendations:**
  - 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.

**ISSUE 9-4: 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 9-5: Improve Buy America Requirements

- **Current Federal Policy:** 23 U.S.C. Section 313: Buy America states “The Secretary of transportation shall not obligate any funds...unless steel, iron, and manufactured products used in such project are produced in the United States.” The provision is subject to certain waivers.
- **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 9-6: 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, and provide more deference to the states.

ISSUE 9-7: Public Safety Radio Communication Spectrum

- **Current Federal Policy:** 47 CFR 90, Private Land Mobile Radio Services “states the conditions under which radio communications systems may be licensed and used in the Public Safety, Industrial/Business Radio Pool, and Radiolocation Radio Services.”
- **Issue:** Specific radio frequency bandwidths are reserved for public safety use through §90.16 Public Safety National Plan, §90.19 Nationwide Public Safety Broadband Network, and §90.20 Public Safety Pool. However, there are interested parties who want to reassign portions of these bandwidths for commercial wireless purposes. DOTs use the Low band to UHF radio spectrum (42 MHz through 800 MHz Bands) and microwave systems (1GHz through 23 GHz) for their normal daily activities and for incident and emergency response.
- **Recommendation:** These frequencies should remain dedicated to public safety. More than half of the state DOTs utilize FCC §90 regulated wireless services for last-mile ITS device communications – including variable message signs (VMS), closed circuit television (CCTV) cameras, road weather information systems (RWIS), and highway advisory radios (HAR) – all of which are critical parts of traveler information and traffic incident management systems. Furthermore, as connected and automated vehicles (CAVs) become more prevalent, the need for vehicle-to-infrastructure (V2I)
communications increases. AASHTO, as well as several member states, have previously filed comments supporting this position in FCC dockets.

CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS

- ISSUE 1-1: Safely Deploy Cooperative and Automated Transportation Technologies
- ISSUE 2-2: Expand Eligible Activities Through National Highway Freight Program
- ISSUE 2-3: Changes to Infrastructure for Rebuilding America (INFRA) Discretionary Grant Program
- ISSUE 3-5: Reduction of Regulations
- ISSUE 4-5: Establish a New Four-year Pilot Program that Combines Requirement Certification under the Buy America Program with the Altoona Test Requirements, Creating One Set of Certifications with the Federal Transit Administration
- ISSUE 6-2: The Future of Transportation Includes Connected and Automated Vehicles
- ISSUE 6-6: CAVs Will Produce Significant Amounts of Data and There is a Data Governance Gap
- ISSUE 6-7: The Deployment of CAVs Will Continue to Require a Collaborative Approach
- ISSUE 8-1: Increase Federal Funding
- ISSUE 8-3: Prioritize Formula-based Federal Funding
- ISSUE 8-4: Eliminate Rescissions of Contract Authority
- ISSUE 8-6: Increase Flexibility and Transferability of Funding
- ISSUE 8-7: Maintain the Current Balance of Funding Among Highways, Transit, and Highway Safety
- ISSUE 11-6: Make More Flexible the Projects that can be Funded through the Congestion Mitigation and Air Quality (CMAQ) Improvement Program
- ISSUE 12-8: Buy America
- ISSUE 14-1: Increase Research, Technology & Education Program Funding Levels
- ISSUE 14-4: Support for Associated National Research Programs
- ISSUE 14-6: Redefine “Manufactured Products” Requirement within Buy America Law
10: 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, USDOT 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, USDOT 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 relate 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 10-1: 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 States 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 require 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 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 10-2: 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. 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 existing performance management requirements to reduce the burden of performance measurement and management on state DOTs and looks forward to working with USDOT on these reforms.

**ISSUE 10-3: 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 having little or no historical trend data.
While the NPMRDS data from FHWA may be free, the resources required to analyze it requires real effort and specialized expertise.

Second, there is the burden placed upon state DOTs to be held accountable for assets they do not own or manage but must set targets for. 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. 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 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 less critical roadways such as low volume roads.
  - Assessment of data collection requirements could be conducted and recommendations on the elimination of non-useful data could be made.
- Ensure state DOTs are held accountable for only those assets within their control.

**ISSUE 10-4: 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 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 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. Any longer duration would be at the election of a state DOT.
ISSUE 10-5: Minimum Condition Levels for National Highway System (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 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 USDOT 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 right 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.

- **Recommendations:**
  - Eliminate the minimum condition requirements written into law for both NHS bridges and Interstate System pavement.
  - If the minimum condition requirements are not eliminated, do not use the achievement of meeting the minimum condition requirements for NHS bridges or Interstate System pavement as the basis for apportioning or allocating federal funds among state DOTs.
  - 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.

ISSUE 10-6: Help Advance Progress Towards a More Flexible Transportation Program

- **Current Federal Policy:** None.
- **Issue:** Congress has, correctly, provided states with increased flexibility to transfer funds among categories to better align funding with state priority needs. Many states have a long history with incorporating performance goals into their planning processes to guide state programming decisions. Concurrently, Congress has established national performance goals and the states are implementing the performance management regulations established by FHWA. However, even with increased transferability among fund categories, states still face constraints to align available funding with priority needs.

- **Recommendation:** Authorize a pilot program that allows a limited number of states the option to treat all federal funds they receive during the pilot program years as having been apportioned to that state under the most flexible of the existing federal funding categories. The purpose of the pilot program is to demonstrate how states produce results toward state goals and needs using a flexible needs-based and outcome-oriented project prioritization and programming process. States that use performance indicators in their programming or project selection processes would be eligible to apply for the pilot program. The program would not eliminate statutory set-asides for geographic areas within such states or eliminate the applicability of federal performance requirements. Such a pilot would enable USDOT to consider the impact of
the increased flexibility – positive, negative, or neutral – on results, including under the federal transportation performance management process. The proposed pilot program will provide practical, real-world experience that will help inform future policy making.

CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS

- ISSUE 2-4: Make Consistent the Financial Planning Requirements among the Required Performance-Based Planning Documents
- ISSUE 6-5: State DOTs Need Additional Funding and Flexibility in Order to Deploy CAV Technologies and Accommodate CAV Vehicles
- ISSUE 7-2: Privacy, Security, Cyber Security
- ISSUE 8-3: Prioritize Formula-based Federal Funding
- ISSUE 8-6: Increase Flexibility and Transferability of Funding
- ISSUE 8-10: Reduce and Simplify Regulations, Requirements, Data Collections, and Process to Expedite the Process
- ISSUE 11-1: 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
- ISSUE 11-2: Enhance Flexibility and Avoid Imposing New Administrative Burdens, whether through statute, Rulemakings, or Guidance
- ISSUE 11-3: Maintain the Existing Balance of Authority among State DOTs, MPOs, and Rural Planning Organizations
- ISSUE 11-7: Mitigate the Burden of Data Collection Related to the Performance-Based Planning and Performance Management Regulations
- ISSUE 11-9: Streamline and Simplify the Development and Updating of the Multitude of Transportation Plan Documents Currently Required of States
- ISSUE 16-3: Modify Emergency Relief (ER) Program to be More Flexible and More Responsive to System Resilience Needs
INTRODUCTION AND BACKGROUND

The Moving Ahead for Progress in the 21st Century Act (MAP-21) and the FAST Act modified planning statutes governing state DOTs and Metropolitan Planning Organizations (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 set 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. State DOTs have found that the analysis cost associated with the regulations was underestimated by federal estimates and that it would be beneficial for USDOT and Congress, working with the state DOTs, to find ways of reducing the overall financial and 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 11-1: 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 requiring them to establish targets for the federal performance measures, incorporate those targets into the planning process (Statewide Transportation Improvement Program [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 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 or eliminate processes and requirements, reduce administrative and regulatory burdens, expedite project and program 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 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 11-2: 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., sub allocation of Congestion Mitigation and Air Quality Improvements, or CMAQ, funds), to design related mandates (e.g., practical design).
  - AASHTO supports the following:
    - Additional flexibility in state’s ability to expeditiously complete planning and project delivery processes
    - States’ ability to make the best investment decisions for the state without siloed programs
    - Any program growth should be in the most flexible categories.

**ISSUE 11-3: 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 as 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:**
  o AASHTO recommends the balance of authority that currently exists among state DOTs, MPOs, and rural planning organizations remain and not changed through new legislation, rulemakings, or guidance.

**ISSUE 11-4: Fiscal Constraint**

• **Current Federal Policy:**
  o 23 USC § 134, *Metropolitan Transportation Planning*
  o 23 USC § 135, *Statewide and Nonmetropolitan Planning*
  o 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 STIP. FHWA has decided, by interpretation, to impose a duplicative fiscal constraint requirement, not included in statute or rule, on completing the National Environmental Policy Act (NEPA) process for a project. Specifically, FHWA has interpreted that, to receive NEPA approval a project must come from a fiscally constrained STIP or Transportation Improvement Program (TIP). See FHWA website, “Transportation Planning Requirements and Their Relationship to NEPA Process Completion.” Yet it is impractical 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. 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 funded transportation projects is subject to “fiscal constraint” rules which are a complex set of rules measuring projects against budget resources at multiple points in the planning process. Fiscal constraint of TIPs and 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 STIP 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 need to reduce the inflated workload for USDOT as well as for regulatory-burdened states.

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

**ISSUE 11-5: 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.

- **Recommendations:**
  - New legislation should ensure state agencies (including state DOTs) and MPOs are included in the list of eligible entities to 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.
  - Should an MPO fail to spend their obligation authority in a fiscal year, a state DOT should be able to flex MPO STP set aside funding.

**ISSUE 11-6: 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:
Increase flexibility and decrease restrictions 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 11-7: 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 Issue 11-1’s recommendations, 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:
  - 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 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 11-8: 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) will not allow the states to attain the comprehensive goals in MAP-21 and FAST 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 NMFN, 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’s freight plan.

**ISSUE 11-9: 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 the Intermodal Surface Transportation Efficiency Act (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 many of these planning documents have now conflated long-term visionary planning documents with short-term implementation plans. For example, several federal plans mandating 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 numerous planning documents required of state DOTs and eliminate redundancy among these documents.
  - All financial plan requirements associated with any federally-required plan should be no longer than the four-year duration as has been historically required of the STIP and, if possible, shorter.
  - Allow states to consolidate these and other plans as needed and appropriate to reduce the burden.

**CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS**

- ISSUE 1-2: Expand Eligibilities for the Surface Transportation Block Grant Program Set-Aside for Transportation Alternatives and Make State DOTs Eligible Recipients Under This Program
- ISSUE 2-1: Expand the Extent of both the Primary Highway Freight System and National Multimodal Freight Network
- ISSUE 2-4: Make Consistent the Financial Planning Requirements among the Required Performance-Based Planning Documents
- ISSUE 3-2: Flexibility, Transferability and Set-aside Programs
- ISSUE 3-5: Reduction of Regulations
- ISSUE 6-1: Deploying CAV Technologies in the Safest Manner Possible is Paramount
- ISSUE 6-5: State DOTs Need Additional Funding and Flexibility in Order to Deploy CAV Technologies and Accommodate CAV Vehicles
• ISSUE 7-2: Privacy, Security, Cyber Security
• ISSUE 8-1: Increase Federal Funding
• ISSUE 8-4: Eliminate Rescissions of Contract Authority
• ISSUE 8-6: Increase Flexibility and Transferability of Funding
• ISSUE 8-10: Reduce and Simplify Regulations, Requirements, Data Collections, and Process to Expedite the Process
• ISSUE 9-1: Strengthen Eligibility for Investments in Transportation System Management and Operations (TSMO) and Related Technology
• ISSUE 10-1: Federal Funding Apportionment Should Not Be Tied to Target Achievement
• ISSUE 10-3: Performance Management Regulations Should Be Improved to Reduce the Burden on State DOTs
• ISSUE 10-4: Make Consistent the Financial Planning Requirements among the Required Performance-Based Planning Documents
• ISSUE 10-6: Help Advance Progress Towards a More Flexible Transportation Program
• ISSUE 13-9: Allow Conformity and Fiscal Constraint to be Determined Post-NEPA, Prior to Construction
• ISSUE 16-6: Reaffirm Security and Resilience as Factors in Statewide and Metropolitan Transportation Planning Processes
12: Project Delivery—Engineering

INTRODUCTION AND BACKGROUND

AASHTO believes that the state DOTs 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 12-1: 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) strives 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 focus 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. In addition, several agencies are being required, as the result of litigation, 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 12-2: 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 including Kwigillingok Airport, Angoon Airport, and Haines Highway. Other agencies mentioned by states include the Bureau of Land Management, US Postal Service, USDA-Natural Resources Conservation Service, and others. USDOT and FHWA should be advocates for the states with its sister departments and agencies to help speed right-of-way acquisition with their sister departments and agencies.
- **Recommendation:** Establish a set process and timeline, to include templates or model agreements, for acquiring right-of-way from federal agencies to promote fairness and speed up project delivery.

ISSUE 12-3: 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 reasons for 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.
- **Recommendation:** 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 12-4: Federal Bridge Inspection Program Audit

- **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 12-5: 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. 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, state 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 12-6: 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:** Rescind the FAST Act provisions concerning emergency vehicles and heavy-duty tow vehicles (23 USC 127(m) and (r)) and allow states to accommodate these vehicles as they have done successfully prior to the FAST Act, through real-time permitting or other methods. Another option is to modify 23 U.S.C. 127 (m) and (r) to allow states to apply for FHWA authority to use a permit system for subsection (m) and subsection (r) vehicles over 80,000 lbs. gross vehicle weight.

**ISSUE 12-7: Reduce Federal Regulation of State Policies and Procedures Through Reduction of Requirements, Less Frequent Reviews, and Delegation**

- **Current Federal Policy:** Stewardship and Oversight Agreements
- **Issue:** Attachment B to the standard Stewardship and Oversight Agreement requires FHWA review and approval for many state policies and procedures, such as a state’s standard specifications; pavement design policy; value engineering policy and procedures; liquidated damage rates; quality assurance program; and other matters. Attachment B also requires, in some cases, pre-approval of changes in such state policies and procedures even though statute does not call for pre-approval. Many of these FHWA reviews of state policies are annual and many of these requirements, including pre-approval of changes, are not specified by statute. These requirements should be reduced and made less frequent than annually.
- **Recommendation:** States should be authorized to approve modifications to these procedures without preapproval by FHWA, subject to FHWA’s ongoing oversight of the state’s compliance with federal requirements. Attachment B’s requirements should be reduced by authorizing states to modify their policies and procedures without preapproval, with review of those changes conducted no more frequently than every two years.

**ISSUE 12-8: 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 inspection equipment, 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 12-9: 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 12-10: 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 (with the exception of the National Truck Network for policies governing truck size and weight) 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 12-11: 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 the same “location” perpendicularly to the right of way, with permission from the landowner, when impacted by a highway project.

**ISSUE 12-12: 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.

• **Recommendations**: Allow States to exit the Bonus Act Program without penalty. The following sections should be amended:
  o 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."
  o 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 12-13: 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 12-14: 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 categories. 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 percent 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 use 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 administer the contract for a larger project. If a town elects to have the state DOT administer 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 12-15: 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 the commitments are made in a timely manner are often a struggle and adds time and cost to these projects.
- **Recommendation:** Establish, or authorize USDOT to 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, and provide USDOT the authority to enforce those provisions with the railroads Require USDOT to establish template/model agreements for standard activities conducted by the state DOTs in railroad right-of-way (and vice versa), and provide guidance on the establishment of agreements for special or more complex activities.

**ISSUE 12-16: 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 when reasonable safety measures can be accommodated to help realize the full potential of this continually evolving technology.

**ISSUE 12-17: 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 12-18: 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 12-19: 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 12-20: 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 12-21: 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 12-22: 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.

### CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS

- **ISSUE 1-2:** Expand Eligibilities for the Surface Transportation Block Grant Program Set-Aside for Transportation Alternatives and Make State DOTs Eligible Recipients Under This Program
- **ISSUE 1-3:** Streamline the Delivery of Surface Transportation Block Grant Transportation Alternatives Program Projects and Revise the Set-Aside Funding Calculation
- **ISSUE 1-5:** Adoption of Public Rights-of-Way Accessibility Guidelines (PROWAG)
- **ISSUE 3-3:** Flexibility in Participation Percentages
- **ISSUE 3-5:** Reduction of Regulations
- **ISSUE 4-5:** Establish a New Four-year Pilot Program that Combines Requirement Certification under the Buy America Program with the Altoona Test Requirements, Creating One Set of Certifications with the Federal Transit Administration
- **ISSUE 8-10:** Reduce and Simplify Regulations, Requirements, Data Collections, and Process to Expedite the Process
- **ISSUE 9-5:** Improve Buy America Requirements
- **ISSUE 9-6:** Update National ITS Architecture Rule 940
- **ISSUE 13-8:** Allow Utility Relocations to Start Earlier
- **ISSUE 13-10:** Provide Greater Flexibility for Early Acquisition of Right-of-Way
- **ISSUE 13-15:** Streamline Agency Involvement in Section 4(f) Decisions
- **ISSUE 14-6:** Redefine “Manufactured Products” Requirement within Buy America Law
- **ISSUE 15-3:** Opportunity to Take Corrective Action
- **ISSUE 16-3:** Modify Emergency Relief (ER) Program to be More Flexible and More Responsive to System Resilience Needs
- **ISSUE 16-4:** Provide More Flexibility in Use of Federal Funds for Preventive and Response Actions to System Disruptions
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 13-1: Enhance Role of Lead Agency in Managing the NEPA Process
- Issue: Section 139 requires lead agencies to prepare a “coordination plan” when an Environmental Impact Statement (EIS) or Environmental Assessment (EA) is prepared and requires the 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” from other agencies 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 Council on Environmental Quality (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 13-2: 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 the 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 13-3: 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 13-4: Maximize Use of CEs, Including Clarification 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.

- **Recommendations:**
  - 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 ...”
  - Direct USDOT to solicit public comment suggesting additional CEs and, promptly after the close of the comment process to publish an NRPM with any additional proposed CEs, with final action to follow promptly.
ISSUE 13-5: 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 assume federal NEPA responsibilities for transit, rail and multimodal projects, a state must first assume federal responsibilities for highways. To date, six states have successfully completed the application process, and several more are in the application process to assume federal responsibilities for highways. 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 are all 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, at their option, states may be assigned 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.
  - Remove the pre-condition for a state to have taken on NEPA assignment for highways prior to being able to take on NEPA assignment for rail and transit projects.
  - Add NEPA assignment authority to Title 49 to allow states to assume the federal NEPA responsibilities of any USDOT modal administration.

ISSUE 13-6: 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 a 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 13-7: 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 13-8: 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 to a utility relocation using an Environmental Impact Statement, Environmental Assessment, or Categorical Exclusion.

ISSUE 13-9: 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 included 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 process 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 13-10: 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 13-11: 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 13-12: 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 13-13: 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 13-14: 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 13-15: 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 13-16: Allow Alternatives to Providing “Replacement Parkland” under Section 6(f)**
- **Issue:** Section 6(f) and Land and Water Conservation Fund Act (LWFCFA) 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 LWCFA to allow flexibility for a public agency acquiring Section 6(f)-protected parkland to compensate for those impacts through enhancements to the existing park or other enhancements acceptable to the parkland owner. This mitigation method would still require approval of the National Park Service; but would simply allow broader flexibility as to the method used to compensate for impacts to parkland.

**Section 404 of the Clean Water Act**

**ISSUE 13-17: 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 wetlands within the highway median or operational right of way.
  - Expand opportunities for using non-reporting national and regional 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, assuming no loss of channel occurs.

**ISSUE 13-18: 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 allowing 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 13-19: 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 department of transportation 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 13-20: Require Interim Guidance to Be Issued at Time of Species Listing, and then a Full Recovery Plan

- 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 issue interim guidance at the time of listing of a threatened or endangered species, and then to issue a full recovery plan within 12 months of listing. 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 13-21: 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.

**ISSUE 13-22: Allow Project Sponsors to Serve as “Non-Federal Representatives” in Formal Consultation**

- **Issue:** Section 7 of the ESA allows a “designated non-federal representative,” typically the project applicant, to “conduct informal consultation and/or to prepare any biological assessment” on behalf of the federal action agency. See 50 CFR 203.02 and 402.08. This designation allows a project applicant, such as a state DOT, to initiate the Section 7 consultation process and perform much of the work that would otherwise need to be conducted by the federal action agency, such as FHWA. Under current regulations, the designated non-federal representative’s role is limited to informal consultation. This constraint creates inefficiencies with no offsetting benefits. Federal agencies should have the flexibility to designate a non-federal representative to serve during both informal and formal consultation.

- **Recommendation:** Direct the Services to amend the Section 7 regulations to allow a “designated non-federal representative” to act on behalf of the federal action agency during both informal and formal consultation. This change would promote streamlining by ensuring continuity in agency relationships throughout the consultation process rather than forcing a mid-course change when the process transitions from informal to formal consultation. It would also avoid bottlenecks that can occur when the federal agency’s staff resources are limited, or where officials with necessary expertise are not located in the project area. This change would not alter the Services’ role; it would simply allow a project applicant to consult directly with the Service in all stages of consultation rather than force the federal action agency to serve as an intermediary.

**CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS**

- ISSUE 3-5: Reduction of Regulations
- ISSUE 9-5: Improve Buy America Requirements
- ISSUE 11-4: Fiscal Constraint
- ISSUE 12-3: Right of Way Acquisition Processes
- ISSUE 12-8: Buy America
- ISSUE 12-17: Relocation of Utilities
- ISSUE 12-20: Delegation of Authorization for Right-of-Way Acquisition
- ISSUE 14-6: Redefine “Manufactured Products” Requirement within Buy America Law
14: Research and Innovation

INTRODUCTION AND BACKGROUND

Continuous improvement, fueled by research and innovation, is critical for state Departments of Transportation (DOTs) 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 two percent 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 percent 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 14-1: Increase Research, Technology & Education Program Funding Levels

- **Current Federal Policy:** FY 2018 funding request for the Federal Research, Technology & Education Program (RT&E) was $418 million which is the same amount requested for FY 2017 and is a slight increase from FFY16’s $415 million. The program is anticipated to remain constant for FY 2019 as well, essentially representing a reduction in overall program funding due inflation and other cost increases. 23 U.S.C 505(b)(1) Minimum Expenditures on Research, Development, and Technology Transfer Activities establishes funding for state research programs, separately from the above mentioned federally managed RT&E funded programs, by mandating a minimum of 25 percent of each state’s SP&R funding be dedicated to their respective research programs.

- **Issue:** The FAST Act reduced the flexibility of MAP-21 funding by designating three new efforts to be funded from several federal research funding sources, including 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:
  - A competitive grant program to deploy advanced transportation and congestion management technologies ($60 million per year) which is a competitive grant program 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 FY2016). 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 the GROW AMERICA legislative proposal from the Obama Administration, 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 increase in the overall funding, funding for existing federal research programs have effectively been reduced. After accounting for the three research funding emphasis areas newly specified by Congress, the FAST Act reduces the level of discretionary funding in the R&D, TIDP, and ITS programs by approximately 25 percent, or from about $292.5 million per year to about $232.5 million per year.

Assuming the project on advanced transportation and congestion management technologies, $678 million per year (including 5 percent average annual inflation projected to 2024) 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. This assumes only ATCMTD listed above is continued. If the other two sub-allocated programs are reauthorized, then additional funding would be needed to administer these programs.

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 $678 million necessary for the RT&E program.

**Recommendations:**
- Maintain the State Planning and Research program in its current, formula-based configuration and continue the 25 percent set-aside for research, development, and technology transfer activities in order for state DOTs to continue their commitments to research and implementation of innovative transportation technologies and processes in across the country.
- To maintain the current level of effort for federal RT&E programs, a budget level consistent with the current proportioning of funding is requested. Specifically, to account for inflation, reduced program flexibility, and increased project delivery costs since FY2016, a minimum budget of $678 million per year for RT&E is requested.

**ISSUE 14-2: 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.
- **Recommendation:** 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 14-3: Allow States to Use Non-SP&R Federal Funding when Contributing to Multi-State Pooled Fund Research Studies

- **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 of them require state funding matches.

- **Issue:** AASHTO supports flexibility for states to transfer 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 percent federal with no state match) for pooled fund studies which are a quarter of each state’s 2 percent SP&R funding allocation. For smaller states, increased flexibility to use other federal fund sources at 100 percent 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 and 2) Use Congestion Mitigation and Air Quality funding to contribute to a pooled fund study on connected and autonomous vehicles.

- **Recommendation:** AASHTO recommends legislation that allows states to use non-SPR apportioned federal highway funds for multi-state pooled fund studies (research) without requiring state match. This modest incentive could strengthen research on topics that are important to the nation’s infrastructure needs, as evidenced by multi-state support.

ISSUE 14-4: Support for Associated National Research Programs

- **Current Federal Policy:** To maximize the effectiveness of state DOTs’ R&T activities, the FHWA carries out or funds a host of activities necessary to support a vibrant nationwide R&T program including research administration, communication, coordination, conferences, and partnerships with other national and international organizations.

- **Issue:** Throughout its history, a core element of the FHWA RD&T’s mission has been to promote innovation and improvement in the American highway system. Over the last decades, this critical mission element has developed into a broad array of research and technology activities covering the spectrum of advanced research, applied research, technology transfer, and implementation.

- **Recommendation:** AASHTO recommends USDOT has sufficient, flexible funding to carry out its core support programs beyond the amount prescribed for the federally managed RT&E programs and state SP&R funding. Currently these programs include: 1) Exploratory Advanced Research Program, 2) Every Day Counts, 3) University Transportation Centers, 4) U.S. Secretary of Transportation’s Office of Research and Technology, and 5) National Highway Traffic Safety Administration. In addition, AASHTO supports reinstating the National Cooperative Freight Research Program, and continuation of the Transit Cooperative Research Program and the Behavioral Traffic Safety Cooperative Research program with funding beyond the amount prescribed for the federally managed RT&E programs and state SP&R funded programs. Lastly, AASHTO supports federal training, data, and knowledge management programs including Local/Rural Transportation Assistance Programs, National Highway Institute, and the National Transportation Library that should all be funded a levels adequate to meet the needs of state DOTs.
ISSUE 14-5: Recommend Third Strategic Transportation Research Program

- **Current Federal Policy:** The Strategic Highway Research Program (SHRP) and SHRP2 were widely supported national research efforts with no future Strategic Transportation Research program mandated going forward.

- **Issue:** Since the early 1980s, Congress has mandated two national studies of strategic highway transportation research needs. The original SHRP was initiated in response to a 1986 TRB Special Report titled *America’s Highways: Accelerating the Search for Innovation*. This five-year $150 million program focused on highway infrastructure needs for better materials and asphalt mixes, longer life pavements, cost-effective maintenance procedures, and chemical control of snow and ice on highways. This program has a major positive impact on our ability to construct and preserve the nation’s roadway infrastructure.

  In 2001, TRB once again responded to a Congressional mandate and published *Strategic Highway Research – Saving Lives, Reducing Congestion, and Improving Quality of Life*. The resulting SHRP2 looked at cost-effective ways to preserve infrastructure but ventured more into operational changes that would provide safer roads with adequate capacity and reliable travel times. Resulting products from SHRP2 included: cost-effective bridge designs for faster, longer lasting replacement; pavement preservation techniques for high-traffic roadways; methods to improve operations and extend highway capacity; innovative strategies for managing large, complex projects; behavioral studies for safer transportation facilities; and training for fast, multi-agency incident response. A large-scale implementation effort ensured that the state DOTs would benefit from these research results.

  In 2018, as technology is rapidly changing and impacting transportation more than ever, it is time to take the next step forward and address the major issues that are affecting the transportation system today in order to adapt and fully integrate technology and innovation into the transportation network. Potential focus areas include: advancing connected and autonomous technologies; incorporating safety related technologies; addressing infrastructure resiliency; and meeting the needs of multi-modal connectivity.

- **Recommendation:** AASHTO recommends Congress allocate $1 million for scoping a third Strategic Transportation Research Program.

ISSUE 14-6: 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](https://www.fhwa.dot.gov/buyamerica/955vehicles) 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 percent components made in the U.S.” This same finding could be said for assembled specialty items in the research and laboratory equipment industry.

- **Recommendations:**
USDOT should improve the Buy America definition, waiver application, exceptions, policies, and processes to ensure timely consideration and consistent application of the law across the country to reduce costs to state transportation projects.

Implement the exceptions to Buy America previously proposed by FHWA in Federal rule making, and streamline the waiver process to ensure transportation projects are progressing without significant delays.

Implement an exemption from Buy America requirement for research related equipment and materials for transportation research projects.

CROSS-REFERECE OF RELATED ISSUES IN OTHER WHITE PAPERS

- ISSUE 1-4: Allow Non-Infrastructure Eligibilities under the Highway Safety Improvement Program
- ISSUE 2-5: Reinstate the National Cooperative Freight Research Program
- ISSUE 3-1: Stability of the Highway Trust Fund
- ISSUE 3-5: Reduction of Regulations
- ISSUE 4-1: Retain, Strengthen and Expand the Federal Program for Public Transportation; Retain the Mass Transit Account within the Highway Trust Fund
- ISSUE 4-5: Establish a New Four-year Pilot Program that Combines Requirement Certification under the Buy America Program with the Altoona Test Requirements, Creating One Set of Certifications with the Federal Transit Administration
- ISSUE 4-7: Reauthorize the Transit Cooperative Research Program
- ISSUE 4-9: Expanding Research Grants and Funding to Explore Mobility Opportunities Through Connected and Automated Vehicle Technology
- ISSUE 6-1: Deploying CAV Technologies in the Safest Manner Possible is Paramount
- ISSUE 6-2: The Future of Transportation Includes Connected and Automated Vehicles
- ISSUE 6-5: State DOTs Need Additional Funding and Flexibility in Order to Deploy CAV Technologies and Accommodate CAV Vehicles
- ISSUE 8-1: Increase Federal Funding
- ISSUE 8-2: Fix the Federal Highway Trust Fund and Strengthen Federal Transportation Funding
- ISSUE 8-3: Prioritize Formula-based Federal Funding
- ISSUE 8-4: Eliminate Rescissions of Contract Authority
- ISSUE 8-6: Increase Flexibility and Transferability of Funding
- ISSUE 9-2: Communications Technology for Highway Operations
- ISSUE 9-3: 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
- ISSUE 9-5: Improve Buy America Requirements
- ISSUE 12-8: Buy America
- ISSUE 13-8: Allow Utility Relocations to Start Earlier
- ISSUE 15-1: Non-infrastructure Eligibilities under the Highway Safety Improvement Program
- ISSUE 16-5: Foster Collaboration in Preparing for System Disruptions
15: 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 15-1: 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, safety research, 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 that lead to crash reductions and reduced highway fatalities.

- **Recommendation:** Restore flexibility for states to use a portion of HSIP funds for non-infrastructure safety programs and for safety research.

ISSUE 15-2: 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.

- **Recommendation**: 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.*

**ISSUE 15-3: Opportunity to Take Corrective Action**

- **Current Federal Policy**: Financial penalties for noncompliance with federal requirements are imposed without an opportunity for states to enact legislation that corrects the issue.
- **Issue**: Injuries and fatalities associated with driving under the influence continues to be a serious concern, which is why states continue to strengthen state laws and policies to effectively address impaired driving. Failure to adhere to those specific federal requirements can result in a significant financial penalty against the state highway program. Due to the complexity of federal laws and regulations, coupled with the nuances associated with state laws, states can inadvertently fall out of compliance with federal requirements. Administration of current federal regulations neither provides states with informed advanced notification, nor an opportunity to take corrective action prior to imposition of financial penalties. As a result, states may not be aware of compliance issues and are unable to take corrective action before penalties are applied.
- **Recommendation**: Provide states with a reasonable opportunity to take corrective action to bring themselves back in compliance with federal impaired driving requirements prior to the imposition of financial penalties to the state highway program.

**CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS**

- ISSUE 1-4: Allow Non-Infrastructure Eligibilities under the Highway Safety Improvement Program
- ISSUE 6-6: CAVs Will Produce Significant Amounts of Data and There is a Data Governance Gap
- ISSUE 7-2: Privacy, Security, Cyber Security
- ISSUE 8-4: Eliminate Rescissions of Contract Authority
- ISSUE 12-4: Federal Bridge Inspection Program Audit
- ISSUE 14-2: Allow Highway Safety Improvement Program Funds to be used for Safety Related Research Activities
- ISSUE 16-4: Provide More Flexibility in Use of Federal Funds for Preventive and Response Actions to System Disruptions
16: 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 through a data-based analysis process as part of a planning process, 2) analyzing different mitigation and response strategies, 3) establishing collaborative partnerships with many different stakeholders, 4) implementing infrastructure design, construction and other actions selected for mitigation/response, and 5) implementing communications strategies to support resilience planning and design and to convey information to system users before and 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 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 16-1: 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, the effect of those strategies on improving the efficiency and effectiveness of the transportation system, 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).
- **Recommendation:** 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 human-caused threats to transportation system performance; the limitations current laws and rules impose on addressing security and resilience; the institutional structure for planning and designing 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. The Plan would not impose requirements upon states or authorize any federal official to impose requirements upon states, but would be available to state DOTs for their consideration as they implement federal transportation planning statutes and rules.
ISSUE 16-2: 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 face increasing pressures in anticipating and responding effectively to such disruptions in the future.

- **Recommendation:** States should be encouraged to conduct all-hazards risk and resilience analysis on critical transportation systems and networks (to be defined with criteria), which should include discrete assets and facilities such as communications networks and ITS systems. This analysis should incorporate considerations of risk and consequences within the federal approach of supporting transportation infrastructure, service continuity, and efficiency. Pilot studies should be funded that illustrate this approach as part of a state DOT’s asset management program.

ISSUE 16-3: 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 to and recovering from 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 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 16-4: 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.
- **Recommendation:** Expand eligibility of HSIP projects to include actions to improve system resilience while also enhancing safety.

**ISSUE 16-5: 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.
- **Recommendation:** The federal government should 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 16-6: 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)
- **Recommendation:**
  - The security and resilience planning factors should be retained as part of federal law. While states are fulfilling their obligations under the planning statutes, USDOT is encouraged to hold webinars or other activities to facilitate sharing of information by states of how they consider these two factors in the planning process.
  - 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 16-7: 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, building on the September 2018 National Cyber Strategy, which establishes suggested practices 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 from the General Fund of the Treasury of the Department of Homeland Security or, failing that, from the Department of Transportation, to protect vital national transportation command and control information technology resources. These important security needs should be supported by security agencies, not from transportation accounts that do not have funding sufficient to meet needs.

**CROSS-REFERENCE OF RELATED ISSUES IN OTHER WHITE PAPERS**

- ISSUE 1-4: Allow Non-Infrastructure Eligibilities under the Highway Safety Improvement Program
- ISSUE 6-1: Deploying CAV Technologies in the Safest Manner Possible is Paramount
- ISSUE 6-2: The Future of Transportation Includes Connected and Automated Vehicles
- ISSUE 7-2: Privacy, Security, Cyber Security
- ISSUE 8-1: Increase Federal Funding
- ISSUE 8-6: Increase Flexibility and Transferability of Funding
- ISSUE 8-10: Reduce and Simplify Regulations, Requirements, Data Collections, and Process to Expedite the Process
- ISSUE 10-6: Help Advance Progress Towards a More Flexible Transportation Program
- ISSUE 11-1: 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
- ISSUE 12-5: Emergency Relief (ER) Program
- ISSUE 12-13: Preventive Maintenance
- ISSUE 12-15: Coordination with Railroads
- ISSUE 12-19: Delegation of Preventive Maintenance Projects
- ISSUE 14-1: Increase Research, Technology & Education Program Funding Levels
- ISSUE 15-1: Non-infrastructure Eligibilities under the Highway Safety Improvement Program