



**Summary of
Budget Resolution and
Senate Infrastructure Investment and Jobs Act (H.R. 3684)**

Updated August 27, 2021

BUDGET RESOLUTION

The House of Representatives approved on Tuesday, August 24, 2021, a roughly \$3.5 trillion budget resolution (S. Con. Res. 14) by a vote of 220 to 212 on party lines. The vote will allow the House Democrats to move forward with a two-track process that includes reconciliation with the Build Back Better Act spending priorities outlined in President Joe Biden’s jobs and families plan and consideration on September 27, 2021, of the Infrastructure Investment and Jobs (IIJA) Act (H.R. 3684), which includes a five-year reauthorization of surface transportation programs.

The Senate approved the budget resolution on Wednesday, August 11, 2021, by a vote of 50-49 on party lines. But the outcome in the Senate is far from assured, as every Senate Democrat will need to get on board for the effort to be successful. Arizona Senator Kyrsten Sinema and West Virginia Senator Joe Manchin have questioned the need for trillions in new spending.

On the House side, Speaker Nancy Pelosi (D-CA) overcame opposition from a group of nine House moderates, led by Josh Gottheimer (D-NJ), who threatened to withhold their votes on the budget resolution unless Speaker Pelosi brought up the bipartisan IIJA first. Speaker Pelosi could afford to lose only three votes in the House and needed near unanimity among Democrats to pass the budget resolution. Progressives in the House have rejected the idea of voting on IIJA before the reconciliation bill and have warned that they have enough members to vote against the IIJA, therefore preventing it from passage in the House. In the end, Speaker Pelosi reached a compromise with the moderate Democrats that allowed the budget resolution to come to a vote as noted above and a commitment that the House would consider IIJA by September 27, 2021.

The budget resolution provides reconciliation instructions to 13 House and 12 Senate committees to advance the reconciliation bill. It instructs these committees to report legislation consistent with these budgetary targets to the Budget Committee by September 15. The Budget Committee will then combine the legislation and prepare it for floor consideration. Reconciliation will allow the Democrats to pass the Build Back Better Act without the threat of a Republican filibuster.

Senate Transportation-related Budget Reconciliation Instructions:

- Committee on Banking, Housing, and Urban Affairs: \$332 billion
- Committee on Commerce, Science, and Technology: \$83 billion
- Committee on Environment and Public Works: \$67 billion

House Transportation Budget Reconciliation Instructions include:

- Committee on Transportation and Infrastructure: \$60 billion
- Committee on Science, Space, and Technology: \$45.5 billion
- Committee on Energy and Commerce: \$486.5 billion

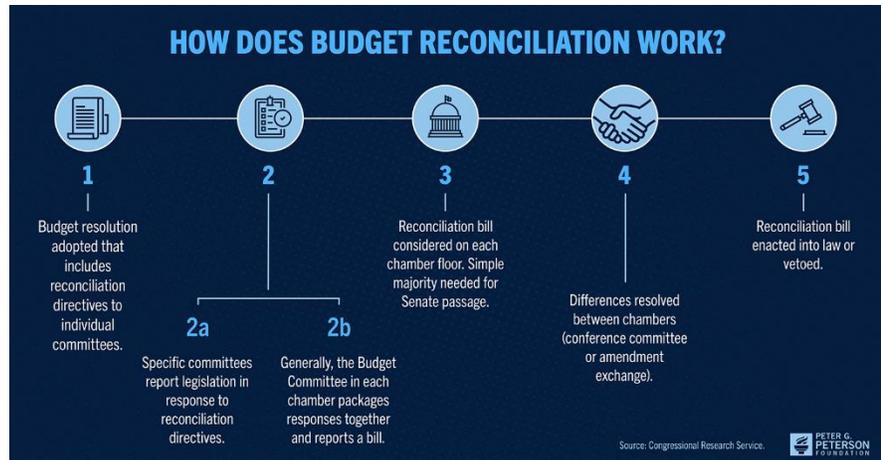
RECONCILIATION 101

Reconciliation starts with the congressional budget resolution. If the budget calls for reconciliation, it tells certain committees to change spending, revenues, deficits, or the debt limit by specific amounts.

Each committee writes a bill to achieve its target, and if more than one committee is told to act, the Budget Committee puts the bills together into one big bill.

Reconciliation does come with restrictions. Named for Senator Robert Byrd, the Byrd rule (Section 313 of the Congressional Budget Act) was first adopted in

the mid-1980s to limit extraneous provisions from inclusion in reconciliation bills. Because reconciliation bills are considered using expedited procedures in the Senate, the Byrd rule is aimed at preventing the use of reconciliation to move a legislative agenda unrelated to spending or taxes, and to some extent it limits Congress' ability to use reconciliation to increase deficits – at least over the long-term.



The Byrd rule prohibits the inclusion of “extraneous” measures in reconciliation, defining “extraneous” as follows:

BUDGET Highlights of the Tool of Reconciliation	
Permitted Changes	Not Permitted
Mandatory Spending Levels	Provisions without budgetary effect
Revenue Levels	Provisions outside the reporting committee's jurisdiction
The Debt Limit	Provisions increasing the deficit beyond the budget window Provisions affecting Social Security

- Measures with no budgetary effect (i.e., no change in outlays or revenues)
- Measures that worsen the deficit when a committee has not achieved its reconciliation target
- Measures outside the jurisdiction of the committee that submitted the title or provision
- Measures that produce a budgetary effect that is merely incidental to the non-budgetary policy change
- Measures that increase deficits for any fiscal year outside the reconciliation window
- Measures that recommend changes in Social Security

More information on reconciliation is at the House Committee on the Budget website ([here](#)).

INFRASTRUCTURE INVESTMENT AND JOBS (IIJA) ACT

On Tuesday, August 10, 2021, the U.S. Senate approved the roughly \$1 trillion H.R. 3684 – [Infrastructure Investment and Jobs \(IIJA\) Act](#). The bill passed with strong bipartisan support by a vote of 69-30. The bill includes the surface transportation reauthorization slated to expire at the end of September 2021. ITS America’s statement on the Infrastructure Investment and Jobs Act is [here](#).

IIJA includes \$550 billion in new federal investment, of which about \$274 billion would go to the U.S. Department of Transportation (DOT). Of that amount, \$110 billion would be allocated for roads, bridges, and other major projects, \$66 billion would be reserved for passenger rail and freight, and more than \$39 billion for public transit.

The bill’s new spending for the DOT includes, but is not limited to, the following programs:

- \$12.5 billion for National Infrastructure Investments
- \$500 million for Strengthening Mobility and Revolutionizing Transportation Grant Program
- \$5 billion for Safe Streets and Roads for All Grants
- \$27.5 billion for the Bridge Replacement, Rehabilitation, Preservation, Protection, and Construction program
- \$9.24 billion for a Bridge Investment Program
- \$5 billion for a National Electric Vehicle Formula Program
- \$3.2 billion for the Nationally Significant Freight and Highways Projects program (supports an increase in baseline funding to the INFRA grant program)
- \$150 million to carry out the Reduction of Truck Emissions at Port Facilities Program
- \$95 million for the University Transportation Centers Program
- \$500 million for the Reconnecting Communities Pilot Program

IIJA includes an estimated \$550 billion five-year (FY22-26) surface transportation reauthorization. The bill includes the Senate Committee on Environment and Public Works S. – 1931 [Surface Transportation Reauthorization \(STRA\) Act](#)¹ and Senate Committee on Commerce, Science, and Transportation S. 2016 – [Surface Transportation Investment \(STIA\) Act](#).² The legislation broadly integrates the other two bills reported by the Committees and mostly carries over the FAST Act policy for Federal Transit Administration (FTA) programs based on Senate Banking, Housing, and Urban Affairs Committee input.

The bill transfers \$90 billion for highway programs and \$28 billion for transit programs for a total of \$118 billion from the General Fund of the U.S. Treasury to keep the Highway Trust Fund solvent over the life of the reauthorization (FY22-26).

¹ S. 1931, the Surface Transportation Reauthorization Act of 2021 was approved by the Senate Committee on Environment and Public Works on May 26, 2021, by a 20-0 vote. The bill provides \$303.5 billion for billions for highways, bridges, bike/ped infrastructure, research, and alternative fuel vehicle infrastructure.

² S. 2016, the Surface Transportation Investment Act of 2021 was approved by the Senate Committee on Commerce, Science, and Transportation on June 16, 2021, by a 25-3 vote. The bill provides \$78 billion in funding for multimodal and freight investments, safety, and rail programs.

Approximate funding for the reauthorization of the FAST for programs that align with ITS America's policy objectives:

- \$350 billion for Highway Programs under the Federal Highway Administration
- \$10.5 billion for Safety Programs, including Federal Motor Carrier Safety Administration (FMCSA) Programs and National Highway Traffic Safety Administration (NHTSA) Programs
- \$91 billion for Public Transit Programs under the FTA
- \$16.1 billion for Mega Programs

SUMMARY OF TECHNOLOGY PROGRAMS AND ELIGIBILITY WITHIN PROGRAMS

The bill includes many new opportunities to deploy intelligent transportation technologies, for which ITS America has strongly advocated for a long time, starting with maintaining the Fixing America's Surface Transportation (FAST) Act technology eligibility. The 2015 FAST Act made technologies, such as vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I), eligible under the following programs:

- [Congestion Mitigation and Air Quality Improvement](#)
- [Highway Safety Improvement](#)
- [Surface Transportation Block Grant](#)
- [National Highway Performance Program](#)
- [Transportation Infrastructure Finance and Innovation Act](#)
- [National Highway Freight Program](#)
- [Railway-Highway Crossings Program](#)
- [Highway Research and Development Program](#)
- [Technology and Innovation Deployment Program](#)
- [Intelligent Transportation Systems Program](#)
- [Advanced Transportation and Congestion Management Technologies Deployment Program](#)

ITS America led the advocacy effort to expand technology eligibility in IIJA to the following programs and a number of other programs not listed. There are examples where a program listed above is also listed below because it added new technology eligibility, most notably first-time eligibility for cybersecurity under the National Highway Performance Program and Surface Transportation Block Grant Program.

- National Highway Performance Program (11105) – measures to protect segments of the National Highway System from cybersecurity threats
- Federal Share Payable (11107) – federal share payable of up to 100 percent for V2I for work zones prior to or during roadway construction activities.
- Surface Transportation Block Grant Program (11109) – measures to protect a transportation facility from cybersecurity threats, installation of electric vehicle charging infrastructure and vehicle-to-grid infrastructure, and current and emerging intelligent transportation technologies, including the ability of vehicles to communicate with infrastructure, buildings, and other road users
- Congestion Mitigation and Air Quality Improvement Program (11115) – micromobility, including bike shares and shared scooters

- Rural Surface Transportation Grant Program (11132) – transportation demand management system and on-demand mobility services
- Carbon Reduction Program (11403) – advanced transportation and congestion management technologies, infrastructure-based intelligent transportation systems, and V2I
- Congestion Relief Program (11404) – technology use for high occupancy vehicle toll lanes, cordon pricing, parking pricing, or congestion pricing, and on-demand microtransit
- Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Program (11406) – intelligent transportation systems
- Advanced Transportation Technologies and Innovative Mobility Deployment Program (13006) – vehicle-to-pedestrian (V2P) technology, stranded DSRC infrastructure assets to C-V2X technology, and Mobility-on-Demand
- National Infrastructure Project Assistance (21201) – technologies that will allow for future connectivity and automation
- Safe Streets and Roads for All Grant Program (24112) – innovative technologies to promote safety
- Strengthening Mobility and Revolutionizing Transportation Grant Program (25005) - coordinated automation, connected vehicles, and intelligent sensor-based infrastructure
- Public Transportation (11130) – construction or installation of traffic signaling, prioritization systems, and fare collection systems for a bus rapid transit corridor or dedicated bus lanes

Innovative technologies will be a key factor in evaluating applications for many of the new programs, including the \$40 billion in bridge investment (the “single largest dedicated bridge investment since the construction of the interstate highway system”) and the Reduction of Truck Emissions at Port Facilities Program (11402). Finally, the bill invests:

- \$7.5 billion in EV charging infrastructure funding
- \$7.5 billion for zero- and low-emission buses and ferries
- \$73 billion to build a more robust electric grid

IIJA ramps up funding significantly for two existing competitive grant programs that factor the extent to which an applicant applies innovative technology:

- National Significant Freight and Highway Projects Program, known as “INFRA,” is providing \$8 billion over five years, including \$4.8 billion from the Highway Trust Fund and an additional \$3.2 billion in appropriated funds.
- IIJA would codify, for the first time, a statutory basis for the highly popular RAISE Grant Program (formerly known as BUILD) and fund it at \$7.5 billion over the life of the reauthorization.

All told, this is potentially billions of dollars for new technology investments.

The bill expands DOTs research focus and reauthorizes the Intelligent Transportation Systems Program Advisory Committee, including:

- Study of Impacts on Roads from Self-Driving Vehicles (11504)
- Report on Emerging Alternative Fuel Vehicles and Infrastructure (11511)

- Emerging Technology Research Pilot Program (13005)
- Research on Connected Vehicle Technology (24219)
- Advanced Transportation Research (25012)
- Open Research Initiative (25013)

The Committee on Banking, Housing, and Urban Affairs Democratic and Republican leadership has struggled for months over transit funding levels, among other issues, and has not released a new transit title for the FAST Act reauthorization. As a result, Mobility on Demand (MOD), a key priority for ITS America is not included in the bill. The association successfully established MOD under FTA programs in the House-passed INVEST in America Act (H.R. 3684) and will continue to look for avenues to establish MOD within FTA programs.

Banking, Housing, and Urban Affairs Chairman Sherrod Brown (D-OH) blamed ranking member Pat Toomey (R-PA) for the Committee not producing a transit title. “It’s awfully hard to get an agreement when one of the two players doesn’t particularly support the whole concept of public transit,” Brown said. Toomey has previously raised concerns over the levels of funding that transit agencies received in COVID-19 response and relief bills.

INSTALLATION OF EV CHARGING INFRASTRUCTURE AMENDMENT

The Senate failed to reach an agreement on passing additional amendments after a weekend of negotiation. As a result, Senate Majority Leader Charles Schumer (D-NY), on Sunday evening, August 8, 2021, declared, “Amendments are no longer in order.” The Senate disposed of 23 amendments out of more than 350 amendments.

The consequence of the Senate not reaching an agreement on which amendments would be offered is that an amendment that ITS America strongly supported that would have allowed for the installation of electric vehicle charging infrastructure in the right-of-way of Federal-aid highways was not considered. In a letter to Senate Majority Leader Chuck Schumer (D-NY), Minority Leader Mitch McConnell (R-KY), Committee on Environment and Public Works (EPW) Chairman Tom Carper (D-DE), and EPW Ranking Member Shelley Moore Capito (R-WV), ITS America’s President and CEO Shailen Bhatt wrote that ITS America strongly supports “Senate Amendment 2456 to H.R. 3684 Infrastructure Investment and Jobs Act sponsored by Senator Dianne Feinstein (D-CA) to provide for electric vehicle charging at park-and-rides and rest areas.” The language was in prior drafts of the bipartisan infrastructure bill but was removed due to strong opposition from the National Association of Truck Stop Operators (NATSO). ITS America’s letter to the Senate is [here](#).

TECHNOLOGY PROGRAMS AND ELIGIBILITY WITHIN PROGRAMS

TITLE I—FEDERAL-AID HIGHWAYS TITLE I

SUBTITLE A—AUTHORIZATIONS AND PROGRAMS

Sec. 11105. National Highway Performance Program.

- Makes eligible measures to protect segments of the National Highway System from cybersecurity threats.

Sec. 11107. Federal Share Payable.

- Makes Federal share payable of up to 100 percent for V2I for work zones prior to or during roadway construction activities.

Sec. 11109. Surface Transportation Block Grant Program.

- Makes measures to protect a transportation facility otherwise eligible for assistance under this section from cybersecurity threats.
- Makes eligible installation of electric vehicle charging infrastructure and vehicle-to-grid infrastructure.
- Makes eligible the installation and deployment of current and emerging intelligent transportation technologies, including the ability of vehicles to communicate with infrastructure, buildings, and other road users.
- Funding average per year is \$14.4 billion from the HTF.

Sec. 11115. Congestion Mitigation and Air Quality Improvement Program.

- Makes eligible micromobility, including bikesharing and shared scooters.
- Funding average per year for CMAQ is \$2.64 billion from the HTF.

Sec. 11118. Bridge investment program.

- Innovative technologies will be a factor in evaluating applications for competitive grant programs to assist State, local, Federal, and tribal entities in rehabilitating or replacing bridges, including culverts, and eligibility for large projects and bundling of smaller bridges.
- Requires that at least 50 percent of the program support bridges with total eligible project costs of more than \$100 million.
- Funding average is \$653 million per year from the HTF and \$653 million from the General Fund.

Sec. 11130. Public Transportation.

- Makes eligible the construction or installation of traffic signaling, prioritization systems, and fare collection systems for a bus rapid transit corridor or dedicated bus lanes.

Sec. 11132. Rural Surface Transportation Grant Program.

- Establishes a rural surface transportation grant program to provide grants on a competitive basis to eligible entities to improve and expand the surface transportation infrastructure in rural areas.

- Technology project eligibility includes projects that develop, establish, or maintain an integrated mobility management system, a transportation demand management system, or on-demand mobility services.
- Funding is \$400 million per year from the HTF.

Sec. 11133. Bicycle Transportation and Pedestrian Walkways.

- Makes eligible bicycle and shared micromobility.
- The definition of electric bicycle is a bicycle that is equipped with fully operable pedals, a saddle or seat for the rider, and an electric motor of less than 750 watts; that can safely share a bicycle transportation facility with other users of such facility; and that is a class 1, class 2, or class 3 electric bicycle. Classes of electric bicycles are:
 1. Class 1 Electric Bicycle: an electric bicycle, other than a class 3 electric bicycle, equipped with a motor that—(I) provides assistance only when the rider is pedaling; and (II) ceases to provide assistance when the speed of the bicycle reaches or exceeds 20 miles per hour.
 2. Class 2 Electric Bicycle: an electric bicycle equipped with a motor that may be used exclusively to propel the bicycle; and is not capable of providing assistance when the speed of the bicycle reaches or exceeds 20 miles per hour.
 3. Class 3 Electric Bicycle: an electric bicycle equipped with a motor that provides assistance only when the rider is pedaling; and ceases to provide assistance when the speed of the bicycle reaches or exceeds 28 miles per hour.

Sec. 11135. Updates to Manual on Uniform Traffic Control Devices.

- Directs the Secretary of Transportation to update the MUTCD, and to include updates:
 - On the protection of vulnerable road users (as defined in section 148(a) of title 23, United States Code)
 - On supporting the safe testing of automated vehicle technology and any preparation necessary for the safe integration of automated vehicles on public streets
 - On the appropriate use of variable message signs to enhance public safety; and updates on the minimum retroreflectivity of traffic control devices and pavement markings
- Require that the Manual on Uniform Traffic Control Devices be updated every four years

SUBTITLE C—PROJECT DELIVERY AND PROCESS IMPROVEMENT

Sec. 11304. Intelligent Transportation Systems.

- Requires the Secretary to develop guidance for using existing flexibilities with respect to the systems engineering analysis.
- Requires the Secretary to ensure that the guidance clarifies criteria for low-risk and exempt intelligent transportation system projects to minimize unnecessary delays or paperwork burdens.

SUBTITLE D—CLIMATE CHANGE

Sec. 11401. Grants for Charging and Fueling Infrastructure.

- Establishes a grant program to deploy publicly accessible electric vehicle charging infrastructure, hydrogen fueling infrastructure, propane fueling infrastructure, and natural gas fueling

infrastructure along designated alternative fuel corridors or in certain other locations that will be accessible to all drivers of electric vehicles, hydrogen vehicles, propane vehicles, and natural gas vehicles.

- Considerations for receiving a grant include information on protecting personal privacy and cybersecurity; and how infrastructure installation can be responsive to technology advancements, such as accommodating autonomous vehicles, vehicle-to-grid technology, and future charging methods.
- Funds may be used to acquire and install traffic control devices located in the right-of-way to provide directional information to publicly accessible electric vehicle charging infrastructure, hydrogen fueling infrastructure, propane fueling infrastructure, or natural gas fueling infrastructure acquired, installed, or operated with the grant.
- Funding average is \$1 billion per year.

Sec. 11402. Reduction of Truck Emissions at Port Facilities.

- Establishes a grant program to reduce idling and emissions at port facilities.
- This section requires the Secretary to study how ports would benefit from electrification and to study emerging technologies that reduce emissions from idling trucks.
- Funding is \$50 million per year from the HTF.

Sec. 11403. Carbon Reduction Program.

- Establishes a carbon reduction program to reduce transportation emissions.
- Technology eligible projects include:
 - Advanced truck stop electrification systems
 - Advanced transportation and congestion management technologies
 - Infrastructure-based intelligent transportation systems capital improvements
 - Installation of V2I communications equipment
 - Deployment of alternative fuel vehicles, including the acquisition, installation, or operation of publicly accessible electric vehicle charging infrastructure or hydrogen, natural gas, or propane vehicle fueling infrastructure
- Eligible projects also include:
 - Projects or strategies designed to support congestion pricing
 - Shifting transportation demand to nonpeak hours or other transportation modes
 - Increasing vehicle occupancy rates or otherwise reducing demand for roads, including electronic toll collection, and travel demand management strategies and programs
 - Allow states and other eligible entities with stranded Dedicated Short-Range Communications (DSRC) infrastructure assets to retrofit those assets to Cellular Vehicle-to-Everything (CV2X) technology
 - MOD projects and strategies to reduce transportation emissions including shared or pooled vehicle trips
- Formula funding average is \$1.3 billion per year.

Sec. 11404. Congestion Relief Program.

- Establishes a congestion relief program to provide grants to States, local governments, and metropolitan planning organizations for projects in large, urbanized areas to advance innovative, integrated, and multimodal solutions to congestion relief in the most congested metropolitan areas.

- Allows States and MPOs to compete for grants for eligible projects within urbanized areas containing populations of more than 1,000,000 people.
 - Grant awards shall not be less than \$10,000,000.
- Eligible technology use for deployment and operation of a system that implements or enforces high occupancy vehicle toll lanes, cordon pricing, parking pricing, or congestion pricing; and deployment and operation of mobility services, including establishing account-based financial systems, commuter buses, commuter vans, express operations, paratransit, and on-demand microtransit.
- Funding average is \$50 million per year from the HTF.

Sec. 11406. Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) program.

- Establishes a formula and competitive grant program to help States improve the resiliency of transportation infrastructure.
 - Using this program, the DOT shall establish Community Resilience and Evacuation Route Grants for projects that strengthen and protect evacuation routes including technology projects, installation of communications, and intelligent transportation system equipment and infrastructure.
- Funding average is \$1.46 billion per year from the HTF and \$280 million from the General Fund.

SUBTITLE E—MISCELLANEOUS

Sec. 11504. Study of Impacts on Roads from Self-Driving Vehicles.

- Directs the Secretary to initiate a study on the existing and future impacts of self-driving vehicles to transportation infrastructure, mobility, the environment, and safety, including impacts on the Interstate System, urban roads, rural roads, corridors with heavy traffic congestion, and transportation systems optimization, and any other areas or issues relevant to operations of the Federal Highway Administration that the Secretary determines to be appropriate.
- In carrying out the study, the Secretary shall consider the need for and recommend any policy changes to be undertaken by the Federal Highway Administration on the impacts of self-driving vehicles and for both rural and urban communities, including:
 - A discussion of the impacts that self-driving vehicles will have on existing transportation infrastructure, such as signage and markings, traffic lights, and highway capacity and design
 - The impact on commercial and private traffic flows
 - Infrastructure improvement needs that may be necessary for transportation infrastructure to accommodate self-driving vehicles
 - The impact of self-driving vehicles on the environment, congestion, and vehicle miles traveled, and the impact of self-driving vehicles on mobility
- The Secretary shall convene and consult with a panel of national experts in both rural and urban transportation.
 - Participants may include operators and users of the Interstate System, including private sector stakeholders; States and State departments of transportation; metropolitan planning organizations; the motor carrier industry; representatives of public transportation agencies or organizations; highway safety and academic groups; nonprofit entities with experience in transportation policy; National Laboratories;

environmental stakeholders; and self-driving vehicle producers, manufacturers, and technology developers.

Sec. 11510. Cybersecurity Tool; Cyber Coordinator.

- Requires the FHWA to develop a tool within two years that would assist transportation authorities in identifying, detecting, protecting against, responding to, and recovering from cyber incidents.
- Requires the FHWA to use the cybersecurity framework established by the National Institute of Standards and Technology to establish a structured cybersecurity assessment and development program and to provide for a period of public review and comment on the tool.
- Requires the FHWA to designate an office as a “cyber coordinator” for monitoring; provide to transportation authorities a secure method of notifying a single Federal entity of cyber incidents; monitor cyber incidents that affect transportation authorities; alert transportation authorities to cyber incidents that affect those transportation authorities; investigate unaddressed cyber incidents that affect transportation authorities; and provide to transportation authorities educational resources, outreach, and awareness on fundamental principles and best practices in cybersecurity for transportation systems.

Sec. 11511. Report on Emerging Alternative Fuel Vehicles and Infrastructure.

- Not later than 1 year after the date of enactment of this Act, to help guide future investments for emerging alternative fueling infrastructure, the Secretary shall submit to Congress and make publicly available a report that:
 - Includes an evaluation of emerging alternative fuel vehicles and projections for potential locations of emerging alternative fuel vehicle owners during the 5-year period beginning on the date of submission of the report
 - Identifies areas where emerging alternative fueling infrastructure will be needed to meet the current and future needs of drivers during the 5-year period beginning on the date of submission of the report
 - Identifies specific areas, such as a lack of pipeline infrastructure, that may impede deployment and adoption of emerging alternative fuel vehicles
 - Includes a map that identifies concentrations of emerging alternative fuel vehicles to meet the needs of current and future emerging alternative fueling infrastructure
 - Estimates the future need for emerging alternative fueling infrastructure to support the adoption and use of emerging alternative fuel vehicles
 - Includes a tool to allow States to compare and evaluate different adoption and use scenarios for emerging alternative fuel vehicles, with the ability to adjust factors to account for regionally specific characteristics.

TITLE III—RESEARCH, TECHNOLOGY, AND EDUCATION

Sec. 13001. Strategic Innovation for Revenue Collection.

- Directs DOT to provide grants to test the feasibility of a road usage fee and other user-based alternative revenue mechanisms to maintain the Highway Trust Fund’s solvency.
- *Details:*

- Reauthorizes and renames the Surface Transportation System Funding Alternatives Program to continue the program to test the feasibility of a road usage fee and other user-based alternative revenue mechanisms to help maintain the long-term solvency of the Highway Trust Fund through pilot projects at the State, local, and regional level.
- The Secretary shall ensure that, in the aggregate, the pilot projects carried out using funds provided under this section meet the following objectives:
 - To test the design, acceptance, equity, and implementation of user-based alternative revenue mechanisms, including among differing income groups, and rural and urban drivers, as applicable.
 - To provide recommendations regarding adoption and implementation of user-based alternative revenue mechanisms.
 - To quantify and minimize the administrative costs of any potential user-based alternative revenue mechanisms.
 - To test a variety of solutions, including the use of independent and private third-party vendors, for the collection of data and fees from user-based alternative revenue mechanisms, including the reliability and security of those solutions and vendors.
 - To test solutions to ensure the privacy and security of data collected for the purpose of implementing a user-based alternative revenue mechanism.
 - To conduct public education and outreach to increase public awareness regarding the need for user-based alternative revenue mechanisms for surface transportation programs.
 - To evaluate the ease of compliance and enforcement of a variety of implementation approaches for different users of the surface transportation system.
 - To ensure, to the greatest extent practicable, the use of innovation.
 - To consider, to the greatest extent practicable, the potential for revenue collection along a network of alternative fueling stations.
 - To evaluate the impacts of the imposition of a user-based alternative revenue mechanism on transportation revenues; personal mobility, driving patterns, congestion, and transportation costs; and freight movement and costs.
 - To evaluate options for the integration of a user-based alternative revenue mechanism with nationwide transportation revenue collections and regulations; toll revenue collection platforms; transportation network company fees; and any other relevant transportation revenue mechanisms.
- A State or a group of States; a local government or a group of local governments; or a metropolitan planning organization or a group of metropolitan planning organizations are entities eligible to apply for a grant under this section.
- The section also increases the federal share for the program to 80 percent of the total cost of a project carried out by an eligible entity that has not otherwise received a grant under this section, and 70 percent of the total cost of a project carried out by an eligible entity that has received at least 1 grant previously.
- Funding average is \$15 million per year.

Sec. 13002. National Motor Vehicle Per-Mile User Fee Pilot.

- Require DOT, working with the Treasury Department, to establish a pilot program to demonstrate a national motor vehicle per-mile user fee.

- *Details:*
 - Directs the Secretary, in coordination with the Secretary of the Treasury, to establish a pilot program to demonstrate a national motor vehicle per-mile user fee to restore and maintain the long-term solvency of the Highway Trust Fund and to improve and maintain the surface transportation system.
 - In carrying out the pilot program, the Secretary, in coordination with the Secretary of the Treasury, shall provide different methods that volunteer participants can choose from to track motor vehicle miles traveled, solicit volunteer participants from all 50 States, the District of Columbia, and the Commonwealth of Puerto Rico, ensure an equitable geographic distribution by population among volunteer participants, and include commercial vehicles and passenger motor vehicles.
 - Vehicle-miles-traveled collection tools include:
 - Third-party on-board diagnostic (OBD-II) devices
 - Smart phone applications
 - Telemetric data collected by automakers
 - Motor vehicle data obtained by car insurance companies
 - Data from the States that received a grant under section 6020 of the FAST Act (23 U.S.C. 503 note: Public Law 114–94) (as in effect on the day before the date of enactment of this Act)
 - Motor vehicle data obtained from fueling stations
 - Any other method that the Secretary considers appropriate
 - For the purposes of the pilot program, the Secretary of the Treasury shall establish, on an annual basis, per-mile user fees for passenger motor vehicles, light trucks, and medium- and heavy-duty trucks, which amount may vary between vehicle types and weight classes to reflect estimated impacts on infrastructure, safety, congestion, the environment, or other related social impacts.
 - The section also establishes a Federal System Funding Alternative Advisory Board to assist with providing the Secretary with recommendations related to the structure, scope, and methodology for developing and implementing the pilot program, carrying out the public awareness campaign, and developing a report.
- Average funding per year is \$10 million from the HTF.

Sec. 13004. Data Integration Pilot Program.

- Establish a DOT pilot program to provide research and develop models that integrate, in near-real-time, data from multiple sources, including geolocated weather conditions, roadway conditions, incidents, work zones, and other nonrecurring events related to emergency planning; and information from emergency responders; and to facilitate data integration between the Department, the National Weather Service, and other sources of data that provide real-time data with respect to roadway conditions during or as a result of severe weather events.
- Funding average is \$2.5 million per year from the General Fund.

Sec. 13005. Emerging Technology Research Pilot Program.

- Establishes a DOT pilot program to conduct emerging technology research.
- Research and development activities relating to leveraging advanced and additive manufacturing technologies to increase the structural integrity and cost-effectiveness of surface transportation infrastructure; and research and development activities (including laboratory and

test track supported accelerated pavement testing research regarding the impacts of connected, autonomous, and platooned vehicles on pavement and infrastructure performance) to reduce the impact of automated and connected driving systems and advanced driver assistance systems on pavement and infrastructure performance; and to improve transportation infrastructure design in anticipation of increased usage of automated driving systems and advanced driver-assistance systems.

- Funding is \$5 million per year from the General Fund.

Sec. 13006. Research and Technology Development and Deployment.

- Expands the objectives of the **Turner Fairbank Highway Research Center** to support research on non-market ready technologies in consultation with public and private entities. It establishes an open challenge and research proposal pilot program that provides grants for proposals to research needs or challenges identified or determined to be important by the Secretary.
- It expands the **Technology and Innovation Deployment Program** by adding a focus on accelerated market readiness efforts, including new and innovative construction technologies for smarter, accelerated project delivery.
 - Funding average is \$110 million per year from the HTF. The program is funded at \$67 million per year under the FAST Act.
- The modified **Advanced Transportation Technologies and Innovative Mobility Deployment Program** formerly **Advanced Transportation and Congestion Management Technologies Deployment Program** includes intermodal connectivity and a rural set aside of not less than 20 percent.
 - The bill would expand the program's objectives to include improving the mobility of people and goods, improving the durability, and extending the life of transportation infrastructure, and preserving the environment, among other objectives.
 - The bill makes vehicle-to-pedestrian technology eligible.
 - It includes language that would allow states and entities with stranded DSRC infrastructure assets from the FCC's decision on the 5.9 safety band to retrofit those assets to V2X technology. Would allow an 80 percent federal match specific to these projects.
 - Funding average per year is \$60 million (flat) from the Technology Innovation Deployment Program, Highway Research and Development Program and Intelligent Transportation Systems Program and the federal share is up to 50 percent.
- This section also authorizes a new **Center of Excellence** to collect, conduct, and fund research on the impacts of new mobility, such as docked and dockless bicycles and electric scooters, and automated vehicles on land use, urban design, transportation, real estate, equity, and municipal budgets.
- The **Highway Research & Deployment Program** would receive an average of \$147 million per year from the HTF. The program is funded at \$125 million per year under the FAST Act.
- The **Intelligent Transportation Systems Program** would receive an average of \$110 million per year from the HTF. The program is funded at \$100 million per year under the FAST Act.
- The **University Transportation Centers** would receive an average of \$81 million per year from the HTF. The UTC program is funded at \$377.5 million over the five years of the FAST Act.

DIVISION B—SURFACE TRANSPORTATION INVESTMENT ACT OF 2021

TITLE I – MULTIMODAL AND FREIGHT TRANSPORTATION

SUBTITLE B – MULTIMODAL INVESTMENT

Sec. 21201. National Infrastructure Project Assistance.

- The bill establishes the National Infrastructure Project Assistance Program. Provides single- or multi-year grants to projects generating national or regional economic, mobility, or safety benefits for large and small-scale projects.
 - Eligible projects include highway or bridge projects, freight intermodal or freight rail projects, railway-highway grade separation or elimination projects, intercity passenger rail projects, and certain public transportation projects.
 - In selecting project grants, the USDOT will take into consideration technologies that will allow for future connectivity and automation.
- Average funding per year is \$2 billion from the General Fund.

Sec. 21202. Local and Regional Project Assistance.

- The bill authorizes \$1.5 billion a year from the general fund for the Local and Regional Project Assistance Program (the RAISE/BUILD program) for surface transportation projects that will have significant local or regional impacts.
 - Eligible projects include highway or bridge projects, passenger or freight rail projects, port infrastructure projects, and surface transportation components of airport projects, among other surface transportation projects.
 - In selecting project grants, the USDOT will take into consideration the extent to which the project adopts innovative technologies. The section would limit the size of each grant to \$25 million and provide an equal split between rural and urban areas.
- Average funding per year is \$1.5 billion from the General Fund.

Sec. 21204. National Multimodal Cooperative Freight Research Program.

- The bill would authorize an average of \$1.2 billion in general funds each year in addition to funds provided through the Highway Trust Fund for the Nationally Significant Freight and Highway Projects grant program (commonly referred to as INFRA).
- This section would increase the amount of funds that can go towards multimodal freight projects.
- Average funding per year is \$3.8 billion from the General Fund.

TITLE IV – HIGHWAY AND MOTOR VEHICLE SAFETY

SUBTITLE A—HIGHWAY TRAFFIC SAFETY

Sec. 24102. Highway Safety Programs.

- The bill creates new Highway Safety Program eligibilities to educate drivers to prevent misuse or misunderstanding of new vehicle technology. Funding is \$1.89 from the HTF.

SUBTITLE B—VEHICLE SAFETY

Sec. 24208. Crash Avoidance Technology.

- Require the DOT to promulgate a rule to establish minimum performance standards with respect to crash avoidance technology.
- Require all new motor vehicles to be equipped with a forward collision warning and automatic emergency braking system that alerts the driver if the distance to a vehicle ahead or an object in the path of travel ahead is closing too quickly and a collision is imminent; and automatically applies the brakes if the driver fails to do so; as well as a lane departure warning and lane keeping assist system that warns the driver to maintain the lane of travel and corrects the course of travel if the driver fails to do so.

Sec. 24209. Reduction of Driver Distraction.

- The Reduction of Driver Distraction section requires the DOT to conduct research regarding the installation and use on motor vehicles of driver monitoring systems to minimize or eliminate driver distraction, driver disengagement, automation complacency by drivers, and foreseeable misuse of advanced driver-assist systems, and, if warranted based on the results of the study, require a rulemaking.

Sec. 24214. Hood and Bumper Standards.

- The Hood and Bumper Standards section requires the DOT to examine updating hood and bumper safety standards for motor vehicles considering, in particular, crash avoidance technologies and technologies to prevent injuries and fatalities suffered by pedestrians, bicyclists, or other vulnerable road users.

Sec. 24219. Research on Connected Vehicle Technology.

- The Research on Connected Vehicle Technology section requires the DOT to conduct research to examine how connected vehicle systems can safely account for bicyclists and other vulnerable road users.
- *Details:*
 - NHTSA, in collaboration with Intelligent Transportation Systems Joint Program Office and the FHWA, shall—
 - Not later than 180 days after the date of enactment of this Act, expand to pedestrian research efforts to ensure that bicyclists and other vulnerable road users will be incorporated into the safe deployment of connected vehicle systems.
 - Not later than 2 years after the date of enactment of this Act, submit to Congress and make publicly available a report describing the findings of the research efforts.

TITLE V – RESEARCH AND INNOVATION

Sec. 25001. Intelligent Transportation Systems Program Advisory Committee.

- The bill reauthorizes and expands the membership of the Intelligent Transportation Systems Program Advisory Committee from 20 members to 25 members, broaden areas of expertise and experience, sets member terms at three years, and provides for virtual meetings.

Sec. 25002. Smart Community Resource Center.

- Establish a smart community resource center to increase public access to information on transportation programs.
- Requires the DOT to create a website with resources on intelligent transportation system projects and smart community transportation projects—projects that use innovative technologies, data, and other means to address local challenges—including technical assistance, training, and examples of projects.

Sec. 25005. Strengthening Mobility and Revolutionizing Transportation Grant Program.

- The bill establishes the Strengthening Mobility and Revolutionizing Transportation Grant Program to provide grants to projects that incorporate innovative transportation technologies or uses of data, including coordinated automation, connected vehicles, and intelligent sensor-based infrastructure.
- The Secretary is directed to consider geographic diversity and select projects across rural, midsized, and large communities (no population cap).
- A SMART grant may be used to carry out a project that:
 - Demonstrates the use of automated transportation and autonomous vehicles, while working to minimize the impact on the accessibility of any other user group or mode of travel.
 - Vehicles that send and receive information regarding vehicle movements in the network and use vehicle-to-vehicle and vehicle-to-everything communications to provide advanced and reliable connectivity.
 - The deployment and use of a collective intelligent infrastructure that allows sensors to collect and report real-time data to inform everyday transportation-related operations and performance.
 - The integration of intelligent transportation systems with other existing systems and other advanced transportation technologies.
 - Innovative data and technological solutions supporting efficient goods movement, such as connected vehicle probe data, road weather data, or global positioning data to improve on-time pickup, and delivery, improved travel time reliability, reduced fuel consumption and emissions, and reduced labor and vehicle maintenance costs.
- The bill would authorize \$100 million annually from the general fund for the program.

Sec. 25006. Electric Vehicle Working Group.

- This section would establish a 25-member Electric Vehicle Working Group comprising a variety of Federal and non-Federal stakeholders to make recommendations on incorporating electric vehicles into the nation's transportation and energy systems.
- The Secretaries of Transportation and Energy will lead the working group, and the working group is required to prepare a series of reports to Congress on barriers to electric vehicle adoption and possible opportunities and solutions.

Sec. 25008. Coordination on Emerging Transportation Technology.

- This section would codify the Nontraditional and Emerging Transportation Technology Council, which aims to improve agency coordination to enable and regulate new and novel transportation technologies through adoption of best practices and identification of a lead modal administration for a given technology.

Sec. 25011. Safety Data Initiative.

The bill establishes the Safety Data Initiative through which the DOT can conduct demonstration projects, award grants, and use other strategies that develop new data visualization, sharing, and analytic tools that Federal, State, and local entities can use to enhance surface transportation safety. Activities include the sharing of data between and among Federal, State, and local transportation agencies, and leverage data from private sector entities. The goals of the data sharing activities include:

- The creation of data ecosystems to reduce barriers to the efficient integration and analysis of relevant datasets for use by safety professionals.
- The establishment of procedures adequate to ensure sufficient security, privacy, and confidentiality as needed to promote the sharing of sensitive or proprietary data.

Sec. 25012. Advanced Transportation Research.

- Establish an Advanced Research Projects Agency-Infrastructure (ARPA-I) to fund research and development on advanced transportation infrastructure technologies. ARPA-I would support novel, early-stage research as well as advance conceptual research into testing and development. The goals are to advance the transportation infrastructure of the United States by:
 - Developing innovative science and technology solutions that lower the long-term costs of infrastructure development, including costs of planning, construction, and maintenance.
 - Reduce the lifecycle impacts of transportation infrastructure on the environment, including through the reduction of greenhouse gas emissions.
 - Contribute significantly to improving the safe, secure, and efficient movement of goods and people; and promote the resilience of infrastructure from physical and cyber threats.
- The section would provide for a Director to lead ARPA-I and require that the Director ensure that the activities of ARPA-I do not duplicate other USDOT research activities and programs. This section would require an evaluation of how well ARPA-I is achieving its goals within three years.

Sec. 25013. Open Research Initiative.

- The bill establishes the Open Research Initiative for universities, nonprofit organizations, and other entities to submit research proposals to the Secretary. This section would require the Secretary to coordinate any research carried out under the pilot program with other DOT research activities to avoid duplication of efforts.

Sec. 25014. Transportation Research and Development 5-Year Strategic Plan.

- Requires the Transportation Research and Development Strategic Plan to be updated every five years. This section also would amend the Strategic Plan to include reducing transportation cybersecurity risks.

Sec. 25015. Research Planning Modifications.

- This section would require that annual research plans for the modal administrations describe the proposed research for the upcoming years and the potential impact of this proposed research.

- This section would also require the DOT to publish a database with information on individual research projects, including the objectives of a research project and the amount of funds provided to a research project.

Sec. 25016. Incorporation of Department of Transportation Research.

- Would require the Secretary to review the results of research conducted by the DOT every five years to identify opportunities to inform changes to laws, regulations, and policies that would improve the safety or efficiency of the transportation system.
- In conducting a review, the Secretary of Transportation shall identify any innovative practices, materials, or technologies that have demonstrable benefits to the transportation system and determine whether the practices, materials, or technologies require any statutory or regulatory modifications for adoption.
- The section would require the Secretary to report to Congress on changes made because of research conducted by the DOT, as well as any additional changes to statute or regulation.

Sec. 25017. University Transportation Centers Program.

- The bill would make technical revisions related to the University Transportation Centers Program (5018) and would require the Secretary to publish a description of the process used to select University Transportation Centers on the DOT's website.
- The bill adds a cybersecurity focus to connected vehicles, connected infrastructure, and autonomous vehicles. New language:
 - "Focused research. --The Secretary shall make a grant to 1 of the 10 regional university transportation centers established under this paragraph for the purpose of furthering the objectives described in subsection (a)(2) in the field of comprehensive transportation safety, congestion, connected vehicles, connected infrastructure, and autonomous vehicles including the cybersecurity implications of technologies relating to connected vehicles, connected infrastructure, and autonomous vehicles;"

Sec. 25020. Transportation Workforce Development.

- Would call for a National Academy of Sciences study on the workforce needs of intelligent transportation technologies and systems industry. Using the results of this study, the section would require the Secretary to create a working group and a plan to address the recommendations and issues outlined in the National Academy of Sciences' study.
- This section would also require the Secretary to conduct a public service announcement campaign to increase awareness of career opportunities in the transportation sector across diverse segments of the population.

Sec. 25027. GAO Study on Improving the Efficiency of Traffic Systems.

- Requires the Secretary to implement GAO recommendations related to cybersecurity risk management and cybersecurity workforce needs.
- GAO would also be required to study the DOT's approach to managing cybersecurity for its systems and information, including the roles, responsibilities, and reporting relationships of senior officials with respect to cybersecurity.

TITLE VII—GENERAL PROVISIONS

Sec. 27003. Department of Transportation Spectrum Audit.

- Not later than 18 months after the date of enactment of this Act, the Assistant Secretary of Commerce for Communications and Information and the Secretary shall jointly conduct an audit of the electromagnetic spectrum that is assigned or otherwise allocated to the Department as of the date of the audit.
- The Assistant Secretary of Commerce for Communications and Information and the Secretary shall include in the report submitted under subsection (a)(2), with respect to the electromagnetic spectrum that is assigned or otherwise allocated to the Department as of the date of the audit—
 - Each particular band of spectrum being used by the Department
 - A description of each purpose for which a particular band described in paragraph (1) is being used, and how much of the band is being used for that purpose
 - The State or other geographic area in which a particular band described in paragraph (1) is assigned or allocated for use
 - Whether a particular band described in paragraph (1) is used exclusively by the Department or shared with another Federal entity or a non-Federal entity
 - Any portion of the spectrum that is not being used by the Department

DIVISION D—ENERGY

TITLE I—GRID INFRASTRUCTURE AND RESILIENCY

SUBTITLE A—GRID INFRASTRUCTURE RESILIENCE AND RELIABILITY

Sec. 40112. Demonstration of Electric Vehicle Battery Second-Life Applications for Grid Services.

Section directs the Secretary of Energy to establish a demonstration project for second-life applications of electric vehicle batteries as aggregated energy storage installation to provide services to the electric grid.

TITLE II—SUPPLY CHAINS FOR CLEAN ENERGY TECHNOLOGIES

Sec. 40207. Battery Processing and Manufacturing.

Would establish within DOE an effort to ensure that the U.S. has a viable battery materials processing industry as well as create a battery manufacturing and recycling grant program. It would authorize \$3 billion total over five years for battery material processing grants and would authorize \$3 billion over five years for battery manufacturing and recycling grants.

Sec. 40208. Electric Drive Vehicle Battery Recycling and Second-Life Applications Program.

The Secretary of Energy shall carry out a program of research, development, and demonstration of second-life applications for electric drive vehicle batteries that have been used to power electric drive vehicles, and technologies and processes for final recycling and disposal of the devices. Funding is \$200 million for each of FY22-26.

TITLE V—ENERGY EFFICIENCY AND BUILDING INFRASTRUCTURE

SUBTITLE D—SCHOOLS AND NONPROFITS

Sec. 40541. Grants for Energy Efficiency Improvements and Renewable Energy Improvements at Public School Facilities.

This section supports grants for the installation of alternative fueled vehicle infrastructure on school grounds for— (i) exclusive use of school buses, school fleets, or students; or (ii) the general public; and the purchase or lease of alternative fueled vehicles to be used by a school, including school buses, fleet vehicles, and other operational vehicles. \$500 million for the period of FY22-26.

TITLE I HIGHWAY TRUST FUND

Bill would extend the Highway Trust Fund’s expenditure authority until October 2026, as well as the Sport Fish Restoration and Boating Trust Fund and the Leaking Underground Storage Tank Trust Fund (Sec. 80101).

It would extend highway-related taxes set to expire at the end of fiscal year 2022 through fiscal year 2028, while pushing 2023 expirations to 2029 (Sec. 80102) and would transfer \$90 billion to the Highway Account of the Highway Trust Fund and \$28 billion to the Mass Transit Account of the Highway Trust Fund (Sec. 80103).

DIVISION J APPROPRIATION TO THE U.S. DEPARTMENT OF TRANSPORTATION

Division J Appropriations to the U.S. Department of Transportation including more than \$184 billion in direct appropriations to the U.S. Department of Transportation over five years, including \$47.2 billion for Federal Highway Administration Highway Infrastructure Programs, including:

- \$27.5 billion for the Bridge Replacement, Rehabilitation, Preservation, Protection, and Construction program
- \$9.24 billion for a Bridge Investment Program
- \$5 billion for a National Electric Vehicle Formula Program
- \$3.2 billion for the Nationally Significant Freight and Highways Projects program (supports an increase in baseline funding to the INFRA grant program)
- \$150 million to carry out the Reduction of Truck Emissions at Port Facilities Program
- \$95 million for the University Transportation Centers Program
- \$500 million for the Reconnecting Communities Pilot Program

IJA includes significant new funding for safety programs, including Federal Motor Carrier Safety Administration (FMCSA) and National Highway Traffic Safety Administration (NHTSA).

- The bill includes \$673 million for FMCSA.
- NHTSA would receive \$750 million for crash data programs, \$549 million for Vehicle Safety and Behavioral Research Programs and \$310 million for Supplemental Highway Safety Programs.

For the Office of the Secretary National Infrastructure Investments, IJA includes:

- \$12.5 billion for National Infrastructure Investments
- \$500 million for Strengthening Mobility and Revolutionizing Transportation Grant Program
- \$5 billion for Safe Streets and Roads for All Grants

- \$7.5 billion for Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants (formerly BUILD)
- \$5 billion for National Infrastructure Project Assistance Grant Program (Nationally Significant Projects)

The bill also includes sizable appropriations funding for transit at \$39 billion, including \$5.25 billion for Low-No Emission Bus Grants, \$7.5 billion for clean buses and ferries, and rail at \$66 billion. The bill also includes about \$73 billion to modernize the nation's power and electricity grid.

ITS America acknowledges members' policy and education efforts during the Senate consideration of the Infrastructure Investment and Jobs Act, including the Arizona Department of Transportation, Central Ohio Transit Authority, Pennsylvania Department of Transportation, Texas Department of Transportation, Utah Department of Transportation, and The Ray.

For more information on ITS America's Summary of the Budget Resolution and Infrastructure Investment and Jobs Act, please contact ITS America's Vice President of Public Policy and Legislative Affairs Ron Thaniel at rthaniel@itsa.org.