

## **The Infrastructure Investment and Jobs Act:** Overview of the legislation as it relates to BENS

The Infrastructure Investment and Jobs Act, signed into law on November 15th, funds projects and grants to build more resilient, modern, and secure infrastructure across the United States. This overview examines specific national security provisions of the bill that are most relevant to ongoing and forthcoming BENS efforts, which include: securing critical supply chains and the industrial base, addressing climate risk, promoting best resiliency practices, and bolstering cybersecurity.

### **Securing Critical Supply Chains & Industrial Base** **Critical Mineral Research, Mining, and Reclamation**

To address the extraction process of critical minerals, the bill seeks to expand R&D and processing efforts to expand critical mineral supplies. To this end, the bill creates the Earth Mapping Resource Initiative and provides the U.S. Geological Survey (USGS) with a \$320 million budget in FY22-26 to study topography and identify mineral resources. This effort aims to promote rare earth mineral research, extraction, and separation. It also funds a critical minerals supply chain research facility that would partner with an academic institution to demonstrate the commercial feasibility of a full-scale integrated rare earth element extraction and separation facility and refinery. In addition, the bill calls for the federal government to provide local authorities with datasets and tools to assess their supply chain challenges. This also comes in the form of new industrial research and assessment centers, which will inform best practices to improve supply chain resilience.

### **Clean Energy Technology**

To help ensure access and more efficient use of critical minerals for battery technology, the bill funds research, processing, and recycling grants. Further up the supply chain, the bill creates a \$100 million grant program with funding through FY24 for the processing and development of critical minerals and metals that will help put new batteries and energy infrastructure on the market. The bill also calls for increased coordination in battery production, recycling, and research with allies; creates battery material processing grants of \$3 billion through FY26 that will be awarded to entities building, innovating, or expanding new battery materials processing; and creates another \$3 billion grant program with funding through FY26 to encourage the manufacturing and recycling of batteries. The bill additionally mandates a plan for modeling and forecasting the demand for critical minerals for energy technology.

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## **Freight**

Access to important nodes along the supply chain is a sticking point throughout the bill, which builds on the National Multimodal Freight Policy established in 49 USC 70101.

- To identify weaknesses, it mandates updated state-level assessments of issues related to supply chain issues such as inventory, e-commerce, military freight, and extreme weather.
- It sets up an Office of Multimodal Freight and Infrastructure policy to inform freight efforts.
- The bill establishes a system for freight corridors and multi-state compacts. Compacts can receive federal grants of up to \$2 million and are guided by multi-state freight corridor committees filled by representatives from stakeholder groups along the supply chain.

## **Build America, Buy America**

Title IX of the bill passes the “Build America, Buy America” Act, creating a significant new rule requiring every federal agency to impose a domestic preference on all infrastructure projects that receive federal funding. Agencies cannot provide federal financial assistance for a project “unless all of the iron, steel, manufactured products, and construction materials used in the project are produced in the United States,” which is a major expansion of domestic preferences for infrastructure projects that formerly applied to specific types of infrastructure projects. The Act provides for public interest waivers of the domestic preference if the products produced in the U.S. are not sufficient quality and reasonably available or if inclusion of American-made products would increase the cost of the overall project by more than 25 percent. Title IX of the bill also requires the Office of Management and Budget to establish a Made in America Office which reports on the procurement of foreign products pursuant to trade agreements or defense memorandums of understanding.

## **Expanded and Diversified Sourcing**

The bill features a suite of efforts to strengthen domestic supply chains, make them more inclusive, and diversify and strengthen foreign suppliers. Based on lessons learned from the COVID-19 pandemic, the bill calls for expanded personal protective equipment manufacturing capacity. China-focused efforts include a study on the impact of forced labor in China on the EV Supply chain.

## **Addressing Climate Risk**

### **Energy Sector Investments**

The bill focuses on alternative fuel options, investments in electric vehicles, and programs for energy-efficient infrastructure to promote energy resiliency.

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- To increase transportation energy efficiency and reduce carbon emissions in the sectors by 2050, the bill invests in a \$200 million (FY22-FY26) EV battery recycling and second-life application program.
  - A suite of programs is established to identify demand for EVs and make recommendations on the development, adoption, and integration of EVs into the transportation and energy sectors. This aims to accelerate the use of alternative transportation for state government vehicles, taxis, ridesharing services, mass transit, school buses, and ferries by allocating \$500 million for increasing publicly accessible charging stations.
  - To further EV R&D efforts, measures are expanded to improve data collection on EV integration with electricity grids, as well as the environmental impact of the vehicles.

To target carbon emissions, the bill requires research into the development and commercialization of alternative fuel options.

- A grant program is established to advance the development of clean hydrogen in the transportation, utility, industrial, commercial, and residential sectors.
- A \$8 billion grant program is established to create at least four regional clean hydrogen hubs to help develop a national clean hydrogen network and deployment program.
- The bill also requires research into how micro-reactors and small modular reactors can enhance energy resilience and reduce carbon emissions, as well as how pumped storage hydropower can facilitate the long-duration storage of intermittent renewable electricity.

Other energy-efficiency efforts include promoting energy improvements through a \$10 million grant program for efficient materials in the construction and maintenance of public schools and nonprofit buildings, as well as implementing measures to expand the Energy Information Administration's international energy data resources to understand the use of energy in various countries.

### **Energy Infrastructure Investments**

The bill significantly invests in infrastructure improvements that focus on optimizing energy efficiency programs. It establishes a program to strategically deploy publicly accessible alternative fueling infrastructure, including electric, hydrogen, propane, and natural gas vehicles. Each state will be required to consider measures to promote greater electrification of the transportation sector as well.

To prevent the negative environmental impacts of these investments, the bill takes the following actions:

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- Allocates \$3 billion in significant battery recycling programs.
  - Establishes a \$750 million carbon capture program.
  - Ensures the U.S. has a viable domestic manufacturing and recycling capacity.
  - Allocates \$3.5 billion of funding for a direct air capture project program in areas with carbon-intensive fuel production.

## **Environmental Actions**

The bill takes considerable action to reduce emissions in the transportation, manufacturing, and storing of carbon dioxide. Targeting the transportation sector, a carbon reduction program is established to reduce the idling of trucks at port facilities. This program will study how ports would benefit from reduced emissions, which emerging technologies and strategies can accomplish this, and how much funding is required to test these strategies. The Energy Policy Act (2005) is also amended to create a funding program to develop a large-scale carbon dioxide transportation, manufacturing, and storing program.

The bill also establishes a grant program called the “Healthy Streets Program” to provide grants to deploy cool pavements and expand tree cover to mitigate urban heat, improve air quality, and reduce heat impacts to infrastructure. This program will have a \$100 million budget in FY2022-26.

## **Promoting Resilience**

### **Transportation, Water, and Other Sectors’ Resiliency Efforts**

The bill mandates an increase in resiliency efforts for the transportation, water, and energy sectors regarding natural disasters and unexpected weather events. This includes three grant programs with funding through FY2022-2026:

- \$5 billion for a grant program is established for entities to prevent electrical outages during unexpected events and enhance the resilience of the electric grid.
- \$1 billion for a program is established to provide federal financial assistance to entities to demonstrate innovative and new approaches to electric grid resilience.
- \$225 million for a grant program is established to award grants on a competitive basis to enable sustained cost-effective implementation of updated building energy codes.

Various programs are also established to quantify the risks these sectors face in order to mitigate issues and predict future problems. The bill creates a process to quantify annual risk for surface transportation systems. In the water and wastewater sector, the bill requires a report on the status of water infrastructure and investments into clean drinking water and water infrastructure to increase the safety and resilience of the sector. The bill also includes a grant program to award funding to enable sustained cost-effective implementation of updated building energy codes.

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## **Electric Grid Resiliency and Sustainability**

To increase the R&D of new and innovative approaches to electric grid resilience, the bill establishes a program to provide federal financial assistance to entities who demonstrate innovative thinking and development of resilience technologies. It also established the Transmission Facilitation Program, which aims to determine the long-term viability of electric power transmission lines. Information on the national power system will be trackable in the new online database, which includes data on the operation of the bulk power system in the contiguous 48 states.

### **Broadband**

The legislation's \$65 billion allocation of funding for broadband access aims to improve internet services for rural areas, tribal communities, and low-income families.

- The \$42 billion Broadband Equity, Access, and Deployment Program is established, which allocates grant funding to unserved internet areas.
- The \$600 million State Digital Equity Competitive Grant Program is established, which allocates grant funding to areas with underserved populations.
- The bill creates a \$1 billion grant program for the construction, improvement, and acquisition of middle mile infrastructure.
- To properly assess the brevity of broadband access, an online mapping tool is established to provide a geographic overview of broadband infrastructure.

These programs and policies align with recommendations made by the BENS Commission on the National Response Enterprise, which aims to improve effective emergency response, establish explicit coordination and communication channels, better connect resources, and implement emerging technologies.

## **Bolstering Cybersecurity**

### **Cybersecurity on Federal, State, and Local Levels**

The bill contains several provisions aimed at enhancing federal, state, and local cybersecurity in the wake of an increasing number of cyber intrusions, ransomware attacks, and personal data thefts in recent years. It includes \$2 billion to modernize and secure federal, state, and local IT and networks; protect critical infrastructure and utilities; and support public or private entities as they respond to and recover from significant cyberattacks and breaches. The bill takes the following actions:

- Creates a “cyber coordinator” housed within the Federal Highway Administration tasked with monitoring, alerting, and advising various transportation authorities of cyber incidents.
- Mandates the creation of a cybersecurity assessment and development

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program that will work jointly with the Transportation Security Administration and Cybersecurity Infrastructure Security Agency (CISA) to help bring local cybersecurity operations up to speed.

- Establishes a new public-private partnership program involving the Secretaries of Transportation and Homeland Security, Tribal authorities, state regulatory authorities, rural and municipal energy authorities, industry stakeholders, and the Electricity Reliability Organization which will work to upgrade the cybersecurity of all nodes of the U.S. energy grid, including critical defense infrastructure points controlled by the private sector, digitized public water systems, industry third party vendor practices, and incentivizing advanced cybersecurity technology investment.
- Enacts the State and Local Cybersecurity Improvement Act creating a DHS grant program funding cybersecurity improvements for state, local, tribal, and territorial entities.
- Creates a grant program administered by the Federal Emergency Management Agency that will provide \$1 billion over FY22-26 to improve state, local, tribal, and territorial cybersecurity.
- Empowers the Secretary of Homeland Security to declare that a significant cyber incident has occurred, giving the agency additional authorities to respond to, and recover from, the significant incident and establishing a “cyber response and recovery fund” which will finance response and recovery support for the incident through asset response activities and technical assistance such as vulnerability assessments and mitigation, technical incident mitigation, malware analysis, analytic support, threat detection and hunting, network protection, and others.