

The **INFRASTRUCTURE INVESTMENT and JOBS ACT**

Infrastructure Investment and Jobs Act Summary of Select Provisions

As mentioned in our previous newsletter, the Infrastructure Investment and Jobs Act promises a number of relevant funding opportunities in the coming years. Institutions of higher education (IHE) are eligible partners for the following federal programs established in or amended by the IIJA. Programs are listed in the order they appear in the bill, not in any priority order. For more information on any of these programs or federal opportunities, please contact the Office of Government Relations.

- **Wildlife crossings pilot program** (SEC. 11123. § 171.)

Establish a competitive wildlife crossings pilot program to provide grants for projects that seek to achieve (1) a reduction in the number of wildlife-vehicle collisions; and (2) in carrying out the purpose described in paragraph (1), improved habitat connectivity for terrestrial and aquatic species.

Eligible entities: State highway agency, or an equivalent of that agency; a metropolitan planning organization, a unit of local government; a regional transportation authority; a special purpose district or public authority with a transportation function, including a port authority; an Indian tribe. Eligible entities can partner with or make grants to IHE

- **Pollinator-friendly practices on roadsides and highway rights-of-way** (SEC. 11528. § 332.)

Establish a program to provide grants to eligible entities to carry out activities to benefit pollinators on roadsides and highway rights-of-way, including the planting and seeding of native, locally-appropriate grasses and wildflowers, including milkweed.

Eligible entities: a State department of transportation; an Indian tribe; or a Federal land management agency can consult with IHE

- **Center of excellence on new mobility and automated vehicles** (SEC. 13006.(c))

Establish a Center of Excellence to collect, conduct, and fund research on the impacts of new mobility and highly automated vehicles on land use, urban design, transportation, real estate,

equity, and municipal budgets. (Not later than 1 year after the date of enactment of the Surface Transportation Reauthorization Act of 2021)

Partnerships: the Secretary shall enter into appropriate partnerships with any IHE or public or private research entity

- **Open challenge and research proposal pilot program** (SEC. 13006.(e))

Establish an open challenge and research proposal pilot program under which eligible entities may propose open highway challenges and research proposals that are linked to identified or potential research needs.

Eligible entities: a state; a unit of local government; a university transportation center; a private nonprofit organization; a private sector organization working in collaboration with eligible entities; and any other individual or entity that the Secretary determines to be appropriate.

- **Transportation education and training development and deployment program** (SEC. 13007.(b))

Establish a program to make grants to educational institutions or State departments of transportation, in partnership with industry and relevant Federal departments and agencies—“(A) to develop, test, and review new curricula and education programs to train individuals at all levels of the transportation workforce; or “(B) to implement the new curricula and education programs to provide for hands-on career opportunities to meet current and future needs.

- **Transportation Resilience and Adaptation Centers of Excellence** (SEC. 13009. § 520.)

The Secretary shall designate 10 regional Centers of Excellence for Resilience and Adaptation and 1 national Center of Excellence for Resilience and Adaptation, which shall serve as a coordinator for the regional Centers, to receive grants to advance research and development that improves the resilience of regions of the United States to natural disasters and extreme weather by promoting the resilience of surface transportation infrastructure and infrastructure dependent on surface transportation.

Eligible entities: IHE or a consortium of nonprofit organizations led by an IHE

- **National multimodal cooperative freight research program** (SEC. 21204. § 70205.)

Establish and support a national cooperative freight transportation research program (Not later than 1 year after the date of enactment)

Advisory committee: include IHE

The national research agenda includes research in the following areas: “(1) Improving the efficiency and resiliency of freight movement, including— “(A) improving the connections between rural areas and domestic and foreign markets; “(B) maximizing infrastructure utility, including improving urban curb-use efficiency; “(C) quantifying the national impact of blocked railroad crossings; “(D) improved techniques for estimating and quantifying public benefits derived from freight transportation projects; and “(E) low-cost methods to reduce congestion at bottlenecks. “(2) Adapting to future trends in freight, including— “(A) considering the impacts of e-commerce; “(B) automation; and “(C) zero-emissions transportation. “(3) Workforce

considerations in freight, including— “(A) diversifying the freight transportation industry workforce; and “(B) creating and transitioning a workforce capable of designing, deploying, and operating emerging technologies.

- **Rail research and development center of excellence (SEC. 22413.)**

The Secretary shall award grants to establish and maintain a center of excellence to advance research and development that improves the safety, efficiency, and reliability of passenger and freight rail transportation.

Eligible entities: IHE or consortium of IHE

Grant funds awarded shall be used for basic and applied research, evaluation, education, workforce development, and training efforts related to safety, project delivery, efficiency, reliability, resiliency, and sustainability of urban commuter, intercity highspeed, and freight rail transportation, to include advances in rolling stock, advanced positive train control, human factors, rail infrastructure, shared corridors, grade crossing safety, inspection technology, remote sensing, rail systems maintenance, network resiliency, operational reliability, energy efficiency, and other advanced technologies.

- **Safety data initiative (SEC. 25011.)**

Establish the “Safety Data Initiative” to promote the use of data integration, data visualization, and advanced analytics for surface transportation safety through the development of innovative practices and products for use by Federal, State, and local entities.

Eligible entities: a State; a unit of local government; a transit agency or authority; a metropolitan planning organization; any other subdivision of a State or local government; an IHE; and a multi-State or multijurisdictional group.

Activities: applied research; tools and practices; data sharing

- **Advanced Research Projects Agency–Infrastructure (SEC. 25012. § 119.)**

Establishing ‘Advanced Research Projects Agency–Infrastructure’ to support the development of science and technology solutions— “(1) to overcome long-term challenges; and “(2) to advance the state of the art for United States transportation infrastructure.

ARPA-I goals: (A) to advance the transportation infrastructure of the United States by developing innovative science and technology solutions that— “(i) lower the long-term costs of infrastructure development, including costs of planning, construction, and maintenance; “(ii) reduce the lifecycle impacts of transportation infrastructure on the environment, including through the reduction of greenhouse gas emissions; “(iii) contribute significantly to improving the safe, secure, and efficient movement of goods and people; and “(iv) promote the resilience of infrastructure from physical and cyber threats; and “(B) to ensure that the United States is a global leader in developing and deploying advanced transportation infrastructure technologies and materials.

ARPA-I will fund infrastructure research projects that— “(A) advance novel, early-stage research with practicable application to transportation infrastructure; “(B) translate techniques, processes, and technologies, from the conceptual phase to prototype, testing, or demonstration; “(C) develop advanced manufacturing processes and technologies for the domestic manufacturing of novel transportation-related technologies; and “(D) accelerate transformational

technological advances in areas in which industry entities are unlikely to carry out projects due to technical and financial uncertainty.

Research proposals: An eligible entity may submit to the Director an unsolicited research proposal at such time, in such manner, and containing such information as the Director may require, including a description of— “(A) the extent of current and prior efforts with respect to the project proposed to be carried out using the assistance, if applicable; and “(B) any current or prior investments in the technology area for which funding is requested...

ARPA-I shall seek partnerships with minority serving institutions and university transportation centers to accomplish the goals of ARPA-I.

Eligible entities: a unit of State or local government; an IHE; a commercial entity; a research foundation; a trade or industry research collaborative; a federally funded research and development center; a research facility owned or funded by the Department; a collaborative that includes relevant international entities; and a consortia of 2 or more eligible entities

- **Advanced transportation research initiative – open research initiative (SEC. 25013. § 5506.)**

Establish an advanced transportation research pilot program under which the Secretary shall establish a process for eligible entities to submit to the Secretary unsolicited research proposals

Eligible entities: a State agency; a local government agency; an IHE, including a university transportation center; a nonprofit organization, including a nonprofit research organization; and a private sector organization working in collaboration with any eligible entity

- **Public transportation innovation. (SEC. 30007.)**

The Secretary shall competitively select at least 1 facility to conduct testing, evaluation, and analysis of low or no emission vehicle components intended for use in low or no emission vehicles; and to conduct directed technology research

The Secretary shall enter into a contract or cooperative agreement with, or make a grant to, at least 1 IHE to operate and maintain a facility to conduct testing, evaluation, and analysis of low or no emission vehicle components, and new and emerging technology components, intended for use in low or no emission vehicles.

- **Battery recycling research, development, and demonstration grants (SEC. 40207.(f))**

Multiyear grants to eligible entities for research, development, and demonstration projects to create innovative and practical approaches to increase the reuse and recycling of batteries, including by addressing— (i) recycling activities; (ii) the development of methods to promote the design and production of batteries that take into full account and facilitate the dismantling, reuse, recovery, and recycling of battery components and materials; (iii) strategies to increase consumer acceptance of, and participation in, the recycling of batteries; (iv) the extraction or recovery of critical minerals from batteries that are recycled; (v) the integration of increased quantities of recycled critical minerals in batteries and other products to develop markets for recycled battery materials and critical minerals; (vi) safe disposal of waste materials and components recovered during the recycling process; (vii) the protection of the health and safety

of all persons involved in, or in proximity to, recycling and reprocessing activities, including communities located near recycling and materials reprocessing facilities; (viii) mitigation of environmental impacts that arise from recycling batteries, including disposal of toxic reagents and byproducts related to recycling processes; (ix) protection of data privacy associated with collected covered battery-containing products; (x) the optimization of the value of material derived from recycling batteries; and (xi) the cost-effectiveness and benefits of the reuse and recycling of batteries and critical minerals.

Eligible entities: (i) an IHE; (ii) a National Laboratory; (iii) a Federal research agency; (iv) a State research agency; (v) a nonprofit organization; (vi) an industrial entity; (vii) a manufacturing entity; (viii) a private battery-collection entity; (ix) an entity operating 1 or more battery recycling activities; (x) a State or municipal government entity; (xi) a battery producer; (xii) a battery retailer; or (xiii) a consortium of 2 or more entities

- **Critical minerals mining and recycling research** (SEC. 40210.)

In order to support supply chain resiliency, the Secretary, in coordination with the Director, shall issue awards, on a competitive basis, to eligible entities to support basic research that will accelerate innovation to advance critical minerals mining, recycling, and reclamation strategies and technologies for the purposes of— (A) making better use of domestic resources; and (B) eliminating national reliance on minerals and mineral materials that are subject to supply disruptions.

Eligible entities: IHE; National Laboratories; Nonprofit organizations; Consortia of entities

Activities funded by an award under this section may include— (A) advancing mining research and development activities to develop new mapping and mining technologies and techniques, including advanced critical mineral extraction and production— (i) to improve existing, or to develop new, supply chains of critical minerals; and (ii) to yield more efficient, economical, and environmentally benign mining practices; (B) advancing critical mineral processing research activities to improve separation, alloying, manufacturing, or recycling techniques and technologies that can decrease the energy intensity, waste, potential environmental impact, and costs of those activities; (C) advancing research and development of critical minerals mining and recycling technologies that take into account the potential end-uses and disposal of critical minerals, in order to improve end-to-end integration of mining and technological applications; (D) conducting long-term earth observation of reclaimed mine sites, including the study of the evolution of microbial diversity at those sites; (E) examining the application of artificial intelligence for geological exploration of critical minerals, including what size and diversity of data sets would be required; (F) examining the application of machine learning for detection and sorting of critical minerals, including what size and diversity of data sets would be required; (G) conducting detailed isotope studies of critical minerals and the development of more refined geologic models; or (H) providing training and research opportunities to undergraduate and graduate students to prepare the next generation of mining engineers and researchers.

- **21st century energy workforce advisory board.** (SEC. 40211.)

The Secretary shall establish a board, to be known as the “21st Century Energy Workforce Advisory Board”, to develop a strategy for the Department that, with respect to the role of the Department in the support and development of a skilled energy workforce

Board membership: 10-15 appointees, including those with expertise in the field of economics or workforce development; relevant traditional energy industries or emerging energy industries, including energy efficiency; secondary or postsecondary education; energy workforce

development or apprenticeship programs of States or units of local government; relevant organized labor organizations; or bringing underrepresented groups, including racial and ethnic minorities, women, veterans, and socioeconomically disadvantaged individuals, into the workforce.

- **Pumped storage hydropower wind and solar integration and system reliability initiative.** (SEC. 40334.)

The Secretary shall, to the maximum extent practicable, enter into an agreement with an eligible entity to provide financial assistance to the eligible entity to carry out project design, transmission studies, power market assessments, and permitting for a pumped storage hydropower project to facilitate the long-duration storage of intermittent renewable electricity. (Not later than September 30, 2023)

Eligible entities: an electric utility, including— “a political subdivision of a State, such as a municipally owned electric utility; or “an instrumentality of a State composed of municipally owned electric utilities; “an electric cooperative; or “an investor-owned utility; “an Indian Tribe or Tribal organization; “a State energy office; an IHE; and “a consortium of the eligible entities

- **Building, training, and assessment centers** (SEC. 40512.)

Provide grants to IHE and Tribal Colleges or Universities to establish building training and assessment centers— (1) to identify opportunities for optimizing energy efficiency and environmental performance in buildings; (2) to promote the application of emerging concepts and technologies in commercial and institutional buildings; (3) to train engineers, architects, building scientists, building energy permitting and enforcement officials, and building technicians in energy-efficient design and operation; (4) to assist institutions of higher education and Tribal Colleges or Universities in training building technicians; (5) to promote research and development for the use of alternative energy sources and distributed generation to supply heat and power for buildings, particularly energy-intensive buildings; and (6) to coordinate with and assist State-accredited technical training centers, community colleges, Tribal Colleges or Universities, and local offices of the National Institute of Food and Agriculture and ensure appropriate services are provided under this section to each region of the United States.

- **Institution of higher education-based industrial research and assessment centers** (SEC. 457.(b)) Funding to institution of higher education-based industrial research and assessment centers “(A) to provide in-depth assessments of small- and medium-sized manufacturer plant sites to evaluate the facilities, services, and manufacturing operations of the plant sites; “(B) to identify opportunities for optimizing energy efficiency and environmental performance, including implementation of— “(i) smart manufacturing; “(ii) energy management systems; “(iii) sustainable manufacturing; “(iv) information technology advancements for supply chain analysis, logistics, system monitoring, industrial and manufacturing processes, and other purposes; and “(v) waste management systems; “(C) to promote applications of emerging concepts and technologies in small- and medium-sized manufacturers (including water and wastewater treatment facilities and federally owned manufacturing facilities); “(D) to promote research and development for the use of alternative energy sources to supply heat, power, and new feedstocks for energy-intensive industries; “(E) to coordinate with appropriate Federal and State research offices; “(F) to provide a clearinghouse for industrial process and energy efficiency technical assistance resources; and “(G) to coordinate with State-

accredited technical training centers and community colleges, while ensuring appropriate services to all regions of the United States.

- **Centers of excellence for stormwater control infrastructure technologies** (SEC. 50217.(b))

3-5 competitively funded centers of excellence for new and emerging stormwater control infrastructure technologies, to be located in various regions throughout the United States that conduct research on new and emerging stormwater control infrastructure technologies that are relevant to the geographical region in which the center is located, including stormwater and sewer overflow reduction, other approaches to water resource enhancement, alternative funding approaches, and other environmental, economic, and social benefits, with the goal of improving the effectiveness, cost efficiency, and protection of public safety and water quality; (ii) maintain a listing of— (I) stormwater control infrastructure needs; and (II) an analysis of new and emerging stormwater control infrastructure technologies that are available; (iii) analyze whether additional financial programs for the implementation of new and emerging, but proven, stormwater control infrastructure technologies would be useful; (iv) provide information regarding research conducted under clause (i) to the national electronic clearinghouse center for publication on the Internet website established under paragraph (3)(B)(i) to provide to the Federal Government and State, Tribal, and local governments and the private sector information regarding new and emerging, but proven, stormwater control infrastructure technologies; (v) provide technical assistance to State, Tribal, and local governments to assist with the design, construction, operation, and maintenance of stormwater control infrastructure projects that use innovative technologies; (vi) collaborate with institutions of higher education and private and public organizations, including community-based public-private partnerships and other stakeholders, in the geographical region in which the center is located; and (vii) coordinate with the other centers to avoid duplication of efforts.

- **Pilot program on use of agricultural commodities in construction and consumer products** (SEC. 70501.)

A pilot program under which the Secretary shall partner with not less than 1 qualified institution to study the benefits of using materials derived from covered agricultural commodities in the production of construction products and consumer products, including— (1) cost savings relative to other commonly used alternative materials; (2) greenhouse gas emission reductions and other environmental benefits relative to other commonly used alternative materials; (3) life-cycle and longevity-extending characteristics relative to other commonly used alternative materials; (4) life-cycle and longevity-reducing characteristics relative to other commonly used alternative materials; (5) landfill quantity and waste management cost reductions; (6) product development and production scale-up; and (7) any other benefits that the Secretary determines to be appropriate.

Qualified institutions: a bioproducts research facility that— (A) is funded, in part, by a State; (B) is located within a reasonable distance, not to exceed 3 miles, of the primary residence hall of an IHE; (C) provides students opportunities to engage in research activities; and (D) provides opportunities for an IHE to collaborate with private enterprise.

- **Parren J. Mitchell entrepreneurship education grants.** (SEC. 100203.(b))

The Under Secretary shall award grants to eligible institutions to develop and implement entrepreneurship curricula.

Eligible entities: IHE

- **Minority Business Development Agency (MBDA) Rural Business Centers**
(SEC. 100302.)

the Under Secretary shall enter into a cooperative agreement with an eligible entity that provides that— (i) the eligible entity shall provide space, facilities, and staffing for the MBDA Rural Business Center; (ii) the Under Secretary shall provide funding for, and oversight with respect to, the MBDA Rural Business Center; and (iii) subject to subparagraph (B), the eligible entity shall match 20 percent of the amount of the funding provided

Eligible entities: a minority-serving institution; or a consortium of IHE that is led by a minority-serving institution.