Federal Programs Supporting the U.S. Semiconductor Supply Chain and Workforce

The CHIPS and Science Act of 2022 provides the Department of Commerce with $52.7 billion over five years to develop programs and activities to boost semiconductor manufacturing and research in the United States while also investing in American workers. The Department has established two CHIPS for America offices responsible for implementing the law: the CHIPS Program Office responsible for $39 billion in incentives to encourage investment in facilities and equipment in the United States, and the CHIPS Research and Development (R&D) Office responsible for $11 billion to develop a robust domestic R&D ecosystem.

The CHIPS Program Office's two funding opportunities seek applications for:

- Projects for the construction, expansion, or modernization of commercial facilities for the fabrication of leading-edge, current-generation, and mature-node semiconductors
- Projects for the construction, expansion, or modernization of semiconductor materials and manufacturing equipment facilities

The purpose of CHIPS R&D programs is to advance the development of semiconductor technologies and to enhance the competitiveness of the U.S. semiconductor industry. To address semiconductor R&D ecosystem gaps, CHIPS for America will invest in four integrated programs.

Approximate funding allocations are anticipated to be, at minimum:

National Semiconductor Technology Center (NSTC)	$5 billion
National Advanced Packaging Manufacturing Program (NAPMP)	$3 billion
CHIPS Metrology Program	$519 million
CHIPS Manufacturing USA Institute	$200 million

The industry needs a robust, holistic, and inclusive R&D ecosystem to support the growth in chip manufacturing that CHIPS for America is spurring. The investments made in R&D will fortify our domestic manufacturers, driving innovation throughout the U.S. economy and strengthening every sector that relies on semiconductors.

Additional CHIPS Federal Funding Programs

The CHIPS and Science Act of 2022 establishes and provides appropriations for several additional funding programs to support the U.S. semiconductor supply chain.

A summary of some of these programs are included below. For the most up-to-date information, including instructions on how to participate, please contact the federal agency responsible for administering the specific program.

Department of Defense: CHIPS for America Defense Fund

The Department of Defense is administering $2 billion to implement the Microelectronics Commons, is a CHIPS and Science Act-funded national network for onshore, microelectronics hardware prototyping, lab-to-fab transition of semiconductor technologies and semiconductor workforce training. The Department of Defense announced in September 2023 a first tranche of awards: nearly $240 million dollars to eight regional "innovation hubs" around the country. These hubs will be part of the Department and the United States' effort to spur development of a domestic microelectronics manufacturing industry. The Defense Department-led Microelectronics Commons aims to enable the demonstration of at-scale commercial viability that is required to close the gap between university, small business, and other laboratory innovations and marketplace adoption that exist now, which prevent the best ideas in technology from reaching the market.

The eight hubs and its members span 35 states, the District of Columbia, and Puerto Rico. These hubs will focus on microelectronic development in areas like electromagnetic warfare: secure computing at the tactical edge and the internet of things; artificial intelligence hardware; 5G and 6G Wireless; and quantum technology.

The Northeast Microelectronics Coalition Hub; Massachusetts	$19.7 million
Silicon Crossroads Microelectronics Commons Hub; Indiana	$32.9 million
California Defense Ready Electronics and Microdevices Superhub Hub; California	$26.9 million
Commercial Leap Ahead for Wide Bandgap Semiconductors Hub; North Carolina	$39.4 million
Southwest Advanced Prototyping Hub; Arizona	$39.8 million
Midwest Microelectronics Consortium Hub; Ohio	$24.3 million
Northeast Regional Defense Technology Hub; New York	$40 million
California-Pacific-Northwest AI Hardware Hub; California	$15.3 million

For more information, please visit the Department of Defense's Microelectronics Commons website here.

Department of State: CHIPS for America International Technology Security and Innovation Fund

The Department of State, in coordination with the U.S. Agency for International Development, the Export-Import Bank, and the U.S. International Development Finance Corporation, is administering $500 million to support international information and communications technology security and semiconductor supply chain activities, including supporting the development and adoption of secure and trusted telecommunications technologies, semiconductors, and other emerging technologies. For more information, please visit the Department of State's International Technology Security and Innovation Fund website here.

National Science Foundation: CHIPS for America Workforce and Education Fund

The CHIPS and Science Act's investments in the U.S. National Science Foundation will help the United States remain a global leader in innovation. Implementation of this legislation will be key to ensuring that ideas, talent and prosperity are unleashed across all corners of the nation. The U.S. National Science Foundation (NSF) is administering $200 million over five years to accelerate development of the

domestic semiconductor workforce. For more information, please visit the NSF's CHIPS and Science Act website here.

Department of Commerce: Public Wireless Supply Chain Innovation Fund

The Department of Commerce's National Telecommunications and Information Administration (NTIA) is administering a $1.5 billion program to support U.S. competitiveness in telecommunications technologies. Although these funds are not focused on semiconductors directly, their goals and objectives are closely tied to, depend on, and will further the U.S. semiconductor ecosystem. For more information, please visit NTIA's Public Wireless Supply Chain Innovation Fund website here.

Summary of Additional CHIPS Funding Programs

Agency	Name	Amount
Department of Defense	CHIPS for America Defense Fund	$2 billion
Department of State	CHIPS for America International Technology Security and Innovation Fund	$500 million
National Science Foundation	CHIPS for America Workforce and Education Fund	$200 million
Department of Commerce's National Telecommunications and Information Administration	Public Wireless Supply Chain Innovation Fund	$1.5 billion

Additional Federal Incentives for Semiconductor Manufacturers and Suppliers

Department of the Treasury: 48D Advanced Manufacturing Investment Credit

The Department of Treasury is implementing a CHIPS Investment Tax Credit (ITC) for capital investments in facilities with the primary purpose of manufacturing semiconductors or semiconductor manufacturing equipment and are integral to the operation of the facility. The ITC is expected to be up to 25% of qualified capital expenditures. The Department provides an Elective Pay option for taxpayers that makes the ITC effectively refundable, allowing semiconductor and semiconductor equipment manufacturers to receive the full value of the credit. The credit is generally available for qualified property that began construction after enactment of the CHIPS Act (August 9, 2022) and placed in service after December 31, 2022. Treasury published proposed regulations for the Section 48D credit in March 2023 and is considering public feedback before issuing the final rule. For more information, please visit the Department of the Treasury's latest ITC press release here and see the proposed rule here. For more information on Elective Pay, see here.

Department of the Treasury: 45X: Advanced Manufacturing Production Tax Credit

The Department of the Treasury has a credit for specific eligible components or equipment within the clean energy supply chain produced and sold in the United States. The credit is available for finished equipment and component parts of both onshore and offshore wind power generation facilities, solar power generation facilities, electricity inverter equipment, energy storage equipment, and critical minerals refined to a minimum purity standard, which may include select critical minerals also used in the semiconductor industry or solar-relevant chips. The credit is also directly available for the production of photovoltaic wafers, a semiconducting wafer that uses photovoltaic cells as a substrate. For more information, please visit the Department of the Treasury's website here.

Additional Federal Funding Opportunities for Semiconductor Ecosystem Members

Department of Agriculture: Electric Infrastructure Loan & Loan Guarantee Program

The Department of Agriculture's Electric Infrastructure Loan Programs provide investment capital in the form of loans and loan-guarantees for the maintenance and improvement of electric infrastructure in areas where commercial capital is not available. This type of investment increases economic opportunity and quality of life in rural communities nationwide by maintaining a seamless electric network for all Americans, regardless of where they live. The loans and loan guarantees finance the construction of electronic distribution, transmission, and generation facilities, including system improvements and replacement required to furnish and improve electric service in rural areas, as well as demand side management, energy conservation programs, and on grid and off grid renewable energy systems. For more information, please visit the Department of Agriculture's website here.

Department of Agriculture: Rural Business Development Grants

The Department of Agriculture provides grant money to assist with economic development planning and/or the financing or expansion of rural businesses. The purpose of the program is to promote economic development and job creation projects through the awarding of grant funds to eligible entities. Rural Business Development Grant money must be used for projects that benefit rural areas or towns outside the urbanized periphery of any city with a population of 50,000 or more. There is no maximum grant amount; however, smaller requests are given higher priority. There is no cost sharing requirement. For more information, please visit the Department of Agriculture's website here.

Department of Agriculture: Rural Business Investment Program

The Department of Agriculture Rural Business Investment Company (RBIC) program provides vital access to capital for businesses in rural areas. The program provides a license to newly formed developmental capital organizations to help meet the equity capital investment needs in rural communities. For more information, please visit the Department of Agriculture's website here.

Department of Energy: Grid Resilience and Innovation Partnerships Program

The Department of Energy's Grid Resilience and Innovation Partnerships (GRIP) Program provides funding to enhance grid flexibility and improve the resilience of the power system against growing threats of extreme weather and climate change. The programs will accelerate the deployment of projects that will help ensure the reliability of the power grid. For more information, please visit the Department of Energy's website here.

Department of Transportation: Transportation Infrastructure Finance and Innovation Act (TIFIA)

The Department of Transportation's Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides credit assistance for qualified projects of regional and national significance, including many large-scale, surface transportation projects such as highway, transit, railroad, intermodal freight, and port access. Eligible applicants include state and local governments, transit agencies, railroad companies, special authorities, special districts, and private entities. Funding is provided as low-interest loans with flexible amortization. For more information, please visit the Department of Transportation's website here.

Department of Transportation: Rural Project Initiative (RPI)

A subprogram of TIFIA, the Department of Transportation's Rural Project Initiative (RPI) makes financing more accessible to small communities and offers a savings over traditional TIFIA loans and other commercial financing products. The Department of Transportation will finance up to 49% of an eligible project cost. Eligible projects include transportation infrastructure, pedestrian and bicycle infrastructure, and transit systems including stations and facilities. For more information, please visit the Department of Transportation's website here.

Department of Labor 2023 QUEST Disaster Recovery Dislocated Worker Grant: Workforce Agencies

The Department of Labor's Quality Jobs, Equity, Strategy and Training (QUEST) Dislocated Worker Grants program, administered through the Department's Employment and Training Administration, provides grants to unemployed and underemployed people to access, return to, or advance in high-quality jobs in infrastructure, environment and climate, the care economy, and other critical and growing industries. The grant program focuses on individuals whose employment was affected negatively by the pandemic and workers from historically underrepresented and underserved populations. The program aligns with the administration's Investing in America agenda — including historic investments through the Bipartisan Infrastructure Law, CHIPS and Science Act, and Inflation Reduction Act — and its efforts to drive an equitable economic recovery and align to business and industry demand. For more information, please visit the Department of Labor's website here.

Department of Labor: Building Pathways to Infrastructure Jobs Grant Program

The Department of Labor's Building Pathways to Infrastructure Jobs Grant Program provides $80 million in funds to enable partners in the public and private sectors to develop or scale workforce training programs to prepare job seekers in advanced manufacturing; information technology; and professional, scientific, and technical service occupations that support renewable energy, transportation, and broadband infrastructure sectors. These include occupations in the renewable energy and energy efficiency sectors; broadband and transmission expansion; advanced manufacturing, including biomanufacturing; and electrical, industrial, and civil engineers and technicians who facilitate the design, construction, modernization, and maintenance of the nation's infrastructure. This funding seeks to maximize the impact of the Biden-Harris Administration's historic infrastructure, manufacturing and clean energy investments. For more information, please visit the Department of Labor's website here.

Small Business Administration: Small Business Investment Companies Program

An SBIC is a privately owned company that's licensed and regulated by the SBA. SBICs invest in small businesses in the form of debt and equity. The SBA doesn't invest directly into small businesses, but it does provide funding to qualified SBICs with expertise in certain sectors or industries. Those SBICs then use their private funds, along with SBA-guaranteed funding, to invest in small businesses. SBICs invest in small businesses through debt, equity, or a combination of both. A typical SBIC investment is made over a 3-year period. A typical SBIC loan ranges from $250,000 to $10 million, with an interest rate between 9% and 16%. SBICs will invest in your business in exchange for a share of ownership in your company, such investments range from $100,000 to $5 million. Financing includes loans and ownership shares. Loan interest rates are typically between 10% and 14%. Investments range from $250,000 to $10 million. For more information, please visit the Small Business Administration's website here.

Small Business Administration: Small Business Lending Programs

Loans guaranteed by SBA range from small to large and can be used for most business purposes, including long-term fixed assets and operating capital.

The 7(a) Loan Program, SBA's primary business loan program, provides loan guaranties to lenders that allow them to provide financial help for small businesses with special requirements. 7(a) loans can be used for:

- Acquiring, refinancing, or improving real estate and buildings
- Short- and long-term working capital
- Refinancing current business debt
- Purchasing and installation of machinery and equipment, including AI-related expenses
- Purchasing furniture, fixtures, and supplies
- Changes of ownership (complete or partial)
- Multiple purpose loans, including any of the above

The maximum loan amount for a 7(a) loan is $5 million. Key eligibility factors are based on what the business does to receive its income, its credit history, and where the business operates. Your lender will help you figure out which type of loan is best suited for your needs.

For more information, please visit the Small Business Administration's website here.