



The Economic Impact of Federal Investments in Massachusetts



Prepared by the Office of Senator Elizabeth Warren
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Executive Summary

When Elizabeth Warren was elected to the Senate in 2012, she pledged to find ways to deliver federal resources for local economic development and infrastructure projects to improve the lives of Massachusetts families and businesses.¹ She said that “we need to invest in our future. We need to work together to invest in the things that create the conditions for our people to prosper and our economy to grow.” Her policy agenda called for investments in “renewable [e]nergy and [e]nergy [e]fficiency[,]... [g]ood public schools, good public universities, and good technical training [that] can give us a workforce better than any in the world... upgrad[ing] our aging roads, bridges, mass transit and rail, water and sewage lines, broadband internet.”²

She also proposed significant federal investments in research, noting that “Massachusetts is a world leader in the research that produces new products and new industries—and creates the demand for new technical jobs, in addition to supporting non-technical jobs throughout the economy. Increasing our support for this kind of research helps Massachusetts and helps the country... creating a Commonwealth and country that continue to lead the world in the research and innovations and that powers our economy across generations.”³

During her 11 years in Congress, Senator Warren has fulfilled these promises, working with the Massachusetts delegation to help secure outstanding federal funding for dozens of infrastructure, public safety, research, transportation, and other projects in

the Commonwealth. This new analysis provides a summary of this work. While not a comprehensive survey of all federal funding flowing to Massachusetts during this period, the analysis found over \$50 billion in federal support since Senator Warren took office in 2013,⁴ for hundreds of projects in diverse communities across Massachusetts—demonstrating her commitment to the people of the Commonwealth and her success in the Senate.

In just the past three years, Senator Warren has worked with President Biden and the Massachusetts delegation to help obtain approximately \$20 billion in federal funding⁵ for projects in Massachusetts through four historic pieces of legislation: the *American Rescue Plan Act* (ARPA), the *Infrastructure Investment and Jobs Act* (Bipartisan Infrastructure Bill, or BIL), the *Chips and Science Act* (CHIPS), and the *Inflation Reduction Act* (IRA). Two of these bills were passed with Republican support, and two were passed by Democrats alone. These four bills have funded hundreds of projects and created thousands of jobs in Massachusetts.

In October 2023, Senator Warren chaired a field hearing of her Senate Banking, Housing, and Urban Affairs Subcommittee on Economic Policy, at the University of Massachusetts Lowell (UMass Lowell). Local, state, and federal officials were invited to share their insights on the transformative impact of historic federal funding on Massachusetts and its residents. At the hearing, Massachusetts Governor Maura Healey testified that “federal infrastructure funding will not only help Massachusetts make long-overdue repairs to our

¹ Boston Herald, “Elizabeth Warren: America must ‘invest in itself,’” K.C. Myers, February 26, 2012, <https://www.bostonherald.com/2012/02/26/elizabeth-warren-america-must-invest-in-itself/amp/>.

² *Id.*

³ *Id.*

⁴ Data obtained from the Congressional Research Service on federal flows of funds into Massachusetts, including over \$34 billion from the CARES Act, \$15 billion from the American

Rescue Plan, \$2.9 billion from the Bipartisan Infrastructure Law, and billions more from the Inflation Reduction Act and other sources of federal funds.

⁵ Lowell Sun, “\$8B in federal infrastructure funding to Mass.,” Melanie Gilbert, October 20, 2023, <https://www.lowellsun.com/2023/10/20/8b-in-federal-infrastructure-funding-to-mass/>.

roads, rails, and bridges; it will allow us to create good, accessible jobs, and strengthen community and coastal resilience.”⁶ UMass Lowell Chancellor Julie Chen echoed the Governor’s sentiment and highlighted how federal funding “creates bold ideas and innovative theories, ultimately transforming them into tangible technology and societal impact.”⁷ Dr. Mary Bourque, Co-Executive Director of the Massachusetts Association of School Superintendents, further affirmed the positive impact stating that recent federal investments have propelled “positive change” in schools across the Commonwealth.⁸

Joining the chorus of support were several other witnesses:

- Lou Antonellis, business manager of the International Brotherhood of Electrical Workers, Local 103, shared that “billions of dollars... are already hard at work helping businesses, homeowners, and school districts in communities across the Commonwealth”;
- Carlos Monje, the Under Secretary of Transportation, emphasized “investments are making our roads safer... making transit more affordable, reliable, and accessible; and reconnecting communities that have been divided by past transportation decisions”; and
- Dr. Kathleen Hogan, the Principal Deputy Under Secretary for Infrastructure U.S. Department of Energy, claimed that BIL and IRA “are truly historic investments in renewing American infrastructure for decades to come.”⁹

The hearing concluded that federal investments are essential for a thriving Massachusetts. These investments strengthen our infrastructure and education system, create jobs, empower communities, and spark innovation. This report provides additional information on the federal funding that Senator Warren fought for and won to

help local communities and residents throughout the Commonwealth. This includes:

- **Building Roads and Bridges:** Senator Warren has fought for and helped obtain funding to repair and replace key bridges that pose safety risks to drivers, pedestrians, and businesses, including the Bourne and Sagamore Bridges on Cape Cod, and four bridges in Lowell. Most recently, federal officials announced that the Commonwealth had obtained \$372 million to replace the Sagamore Bridge, a vital link to Cape Cod.
- **Providing Broadband Access to All Corners of the Commonwealth:** During Senator Warren’s two terms, the Commonwealth has secured a total of \$185 million in federal funding which will be used to connect almost every home and business in Massachusetts with affordable, high-speed broadband. The investments are will serve an estimated 16,000 locations including, those that currently lack high-speed internet access.
- **Investing in Public Transit and Energy Infrastructure:** Senator Warren has fought for and helped bring back hundreds of millions of dollars to improve public transportation in Massachusetts, advocating for and winning federal funding for the Green Line extension in Boston and electric school buses across the Commonwealth. She worked with members of the state’s congressional delegation to secure over \$500 million in funding to support local businesses that are creating new clean energy technologies.
- **Funding for Research and Innovation:** Senator Warren has worked to meet her promise of obtaining billions of dollars in federal funding for basic scientific research in the Commonwealth, benefiting researchers and businesses, and preserving Massachusetts as a leader in job growth and innovation. She helped

⁶ On File with the Office of U.S. Senator Elizabeth Warren.

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

secure more than \$530 million in federal funding for two local companies for innovative battery manufacturing, \$19.7 million¹⁰ to establish the Northeast Microelectronics Coalition Hub in the Commonwealth, and dozens of National Science Foundation awards to Massachusetts research institutions.

- **Supporting Firefighters:** Since 2013, Massachusetts fire departments have received over \$270 million through the Assistance to Firefighters Grant (AFG) and the Staffing for Adequate Fire and Emergency Response (SAFER) grant programs supported by Senator Warren. Recipients have included the Saugus Fire Department, the Holyoke Fire Department, and the Athol Fire Department, among dozens of others.
- **Advocating for Massachusetts Community Projects:** Senator Warren fought for hundreds of millions in federal funding for community projects across Massachusetts, including child care, education, housing, clean water, and transportation projects. These initiatives have included the City of Malden’s Lead Line Replacement Program, a Domestic Violence Emergency Shelter in Quincy, a Childcare Facility in Stoneham, affordable housing in Boston, Lake Waushakum Clean Water Project in the City of Framingham, and Massachusetts General Hospital Center for Immigrant Health, among others.

Senator Warren continued to announce new federal support for Massachusetts through the end of 2023. In addition to the \$372 million to replace the Sagamore Bridge, she announced – as part of the

2024 National Defense Authorization Act – \$37 million in funding for a child development center at Hanscom Air Force Base, \$70 million in construction funds for the Lincoln Lab, and \$18.5 million for a barracks addition in Natick. On December 31, 2023 she announced that the Central Massachusetts Regional Planning Commission had received a \$480,000 BIL grant to plan and develop safer streets in the region.¹¹ And even as this report went to press, in February 2024, the Federal Aviation Administration announced that Logan Airport would receive \$12 million in federal assistance for control tower improvements.¹²

Senator Warren’s record of fighting for key priorities for Massachusetts families has paid huge dividends. It has resulted in critical federal support for infrastructure and broadband, basic research, a cleaner environment, and dozens of projects to support workers, families, and communities in the Commonwealth.

¹⁰ Office of Senator Elizabeth Warren, “Warren Announces Legislative Priorities Included in 2024 National Defense Authorization Act,” press release, December 14, 2023, <https://www.warren.senate.gov/newsroom/press-releases/warren-announces-legislative-priorities-included-in-2024-national-defense-authorization-act>.

¹¹ Office of Senator Elizabeth Warren, “Warren Secures Half-Million Federal Grant to Improve Street Safety in Central Massachusetts,” press release, December 21, 2023,

<https://www.warren.senate.gov/newsroom/press-releases/warren-secures-half-million-federal-grant-to-improve-street-safety-in-central-massachusetts>.

¹² Boston Herald, “Boston Logan International Airport in line for \$12M from feds to upgrade control tower,” February 15, 2024, <https://www.bostonherald.com/2024/02/15/boston-logan-international-airport-in-line-for-12m-from-feds-to-upgrade-control-tower/>

Federal Funds to Rebuild Massachusetts Roads and Bridges

Bridges are the lifelines of many communities in the Commonwealth, connecting us to work, school, and essential services; allowing businesses to move goods and people efficiently; and serving as “passageways to the rest of the world, and an integral part of the economy.”¹³ Every bridge in the Commonwealth should be safe, routinely serviced, and open for travel. But in Massachusetts, too many of our bridges are in disrepair.

In 2022, MassBudget studied the conditions the nearly 8,000 bridges in Massachusetts using MassDOT data, and found that 644 are structurally deficient.¹⁴ Of the nearly 127 million average daily bridge crossings in Massachusetts, 14.3 million are on structurally deficient bridges.¹⁵ Cars and trucks are not the only type of travel threatened by disrepair: seven of the 20 structurally deficient bridges with the highest traffic volume carry MBTA rail and two carry Amtrak service.¹⁶

In 2021, Senator Warren helped pass the Bipartisan Infrastructure Law¹⁷ which included \$9.5 billion in total funding for Massachusetts that is set to be distributed between 2022-2027, including a minimum of \$1.1 billion in funding for bridge

replacements and repairs.¹⁸ As of October 2023, \$6 billion in BIL funding has been announced to support nearly 200 projects across the Commonwealth.¹⁹

The City of Lowell is slated to receive \$21.4 million in funding through the Bipartisan Infrastructure Law’s Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program²⁰ to support the rehabilitation or preservation of four bridges:

- Broadway Street Bridge over the West Canal
- Market Street Bridge over the Merrimack Canal
- Lawrence Street Bridge over the River Meadow Brook
- Swamp Locks Pedestrian Bridge over the Lower Pawtucket Canal

RAISE grants provide a unique opportunity for the federal government to invest in road, rail, transit, and port projects that promise to achieve national objectives.²¹ Senator Warren and other members of the Massachusetts delegation advocated for a grant received by Lowell, which is the largest RAISE award in Massachusetts and ranked among the top 50 largest allocations in the nation in 2023.²²

City Manager Tom Golden described the benefits of this funding: “An infusion of funds of this magnitude creates an incredible opportunity for the

¹³ Office of U.S. Senator Elizabeth Warren, “New Congressional Report Elevates Urgent Calls of Community Leaders to Replace Cape Cod Bridges,” report, October 17, 2023, p. 5, <https://www.warren.senate.gov/newsroom/press-releases/new-congressional-report-elevates-urgent-calls-of-community-leaders-to-replace-cape-cod-bridges>.

¹⁴ MassBudget, “A Bridge Too Far: Sagging Investment Leaves 644 Massachusetts Bridges Structurally Deficient,” Hallah Elbeidy and Phineas Baxandall, August 30, 2022, <https://massbudget.org/2022/08/30/a-bridge-too-far/>.

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ U.S. Senate, “Roll Call Vote 117th Congress - 1st Session,” https://www.senate.gov/legislative/LIS/roll_call_votes/vote117/vote_117_1_00276.htm.

¹⁸ Office of U.S. Senator Ed Markey, “Markey, Warren, Trahan Golden Announce \$21.4 Million in Bipartisan

Infrastructure Law Funding for Lowell Bridges,” press release, June 26, 2023, <https://www.markey.senate.gov/news/press-releases/markey-warren-trahan-golden-announce-214-million-in-bipartisan-infrastructure-law-funding-for-lowell-bridges>.

¹⁹ The White House, “Bipartisan Infrastructure Law State Fact Sheets,” resources, Massachusetts, <https://www.whitehouse.gov/build/resources/state-fact-sheets/>.

²⁰ *Id.*

²¹ U.S. Department of Transportation, “About RAISE Grants,” <https://www.transportation.gov/RAISEgrants/about>.

²² Office of U.S. Senator Ed Markey, “Markey, Warren, Trahan Golden Announce \$21.4 Million in Bipartisan Infrastructure Law Funding for Lowell Bridges,” press release, June 26, 2023, <https://www.markey.senate.gov/news/press-releases/markey-warren-trahan-golden-announce-214-million-in-bipartisan-infrastructure-law-funding-for-lowell-bridges>.

City of Lowell to rehabilitate and preserve the four bridges in need of repair. Lowell is a city of canals—the bridge repairs will provide safe access for residents, improve quality of life in neighborhoods and make our infrastructure that much more secure.”²³

In addition to the \$21.4 million in RAISE grants for the City of Lowell, the following grants were awarded in Massachusetts in FY2022 and FY2023:

- City of Brockton, \$7.8 million for the preliminary design and engineering work to reconstruct approximately 5.2 miles of roadway on approximately 20 streets in downtown Brockton.²⁴
- City of New Bedford, \$1.7 million for the city’s Blue Lane Working Waterfront Connector Project, which will reconstruct three continuous major roadways in the Port of New Bedford.²⁵
- Massachusetts Department of Transportation, \$20.25 million for design and construction services for center running bus lanes, enhanced bus stops, a bi-directional separated bike lane, and sidewalk improvements on the Lynnway multimodal Corridor in Lynn,

²³ Office of U.S. Senator Ed Markey, “Markey, Warren, Trahan Golden Announce \$21.4 Million in Bipartisan Infrastructure Law Funding for Lowell Bridges,” press release, June 26, 2023, <https://www.markey.senate.gov/news/press-releases/markey-warren-trahan-golden-announce-214-million-in-bipartisan-infrastructure-law-funding-for-lowell-bridges>.

²⁴ Office of U.S. Senator Ed Markey, “Markey, Warren Celebrate More Than \$7 Million to Revitalize Roadway Safety in Downtown Brockton,” press release, June 28, 2023, <https://www.markey.senate.gov/news/press-releases/markey-warren-celebrate-more-than-7-million-to-revitalize-roadway-safety-in-downtown-brockton>.

²⁵ City of New Bedford, “City Awarded \$1.7M Raise Grant From U.S.Dot For Blue Lane Working Waterfront Connector Project,” blog post, <https://www.newbedford.ma.gov/blog/news/city-awarded-1-7m-raise-grant-from-u-s-dot-for-blue-lane-working-waterfront-connector-project/>.

²⁶ U.S. Department of Transportation, “Raise Grants Raise Awards FY 2022,”

between the General Edwards Bridge and Broad Street.²⁶

- City of Boston, \$20 million for transit and complete street improvements to three transit corridors in the Roxbury neighborhood, including a 0.88-mile section of Melnea Cass Boulevard, a 0.46-mile section of Malcolm X Boulevard, and a 1.28-mile section of Warren Street.²⁷

Senator Warren has also recognized the critical need to replace and modernize the aging Bourne and Sagamore Bridges in Cape Cod to address the region's 21st-century economic, social, and environmental needs and challenges.²⁸ In July 2023, she engaged with 36 Cape Cod community stakeholders, including state and local elected officials, Tribal leaders, and community organizations, seeking their input on the impact of the deteriorating bridges on communities, businesses, and residents.²⁹ Based on the responses they received, Senators Warren and Markey, along with Representative Keating, released a report in October 2023 outlining the economic implications of the bridges’ current state.³⁰

https://www.transportation.gov/sites/dot.gov/files/2022-09/RAISE%202022%20Award%20Fact%20Sheets_1.pdf.

²⁷ *Id.*

²⁸ Mass.gov, “Cape Bridges,” <https://www.mass.gov/cape-bridges>.

²⁹ Office of U.S. Senator Elizabeth Warren, “Warren Requests Information on Impacts of Current and Future State of Bourne and Sagamore Bridges from Cape Cod Stakeholders,” press release, July 21, 2023,

<https://www.warren.senate.gov/oversight/letters/warren-requests-information-on-impacts-of-current-and-future-state-of-bourne-and-sagamore-bridges-from-cape-cod-stakeholders>.

³⁰ Office of U.S. Senator Elizabeth Warren, “New Congressional Report Elevates Urgent Calls of Community Leaders to Replace Cape Cod Bridges,” report, October 17, 2023, <https://www.warren.senate.gov/newsroom/press-releases/new-congressional-report-elevates-urgent-calls-of-community-leaders-to-replace-cape-cod-bridges>.

The report highlighted the dire economic consequences of the bridges' structural deficiencies, demonstrating how they hinder Cape Cod businesses, communities, and residents. The frequent lane closures for maintenance disrupt local businesses and their employees, while residents rely on these bridges for daily needs, including access to food, goods, and essential services.³¹ Additionally, the bridges are a public health and public safety risk as the bridges are “the only emergency route off of Cape Cod,” and the “gridlock caused by bridge congestion adds a dangerous amount of time to the...ability to respond to emergencies.”³² Failure to replace the Cape Cod Bridges would have devastating consequences for the region. The deteriorating structures would necessitate more frequent closures, disrupting commuter and tourism travel, increasing transportation costs, and limiting access to medical and emergency services.

The report found that replacing the bridges would have significant benefits for Cape Cod residents and the economy. It would provide a sense of certainty for the region's economy, which supports a labor force of over 100,000 and generates \$1.5 billion in tourism revenue annually.³³ It would improve the quality of life for residents by reducing congestion and improving access to essential services.

In July 2023, the Senate Energy and Water Development subcommittee included \$350 million in federal funding for the Cape Cod Canal Bridges in the fiscal year (FY) 2024 Appropriations bill, which represents a major victory in the effort to secure federal funding for the project to replace the

aging Bourne and Sagamore Bridges on Cape Cod.³⁴

“Securing \$350 million in the Senate Appropriations bill is a critical win in the decades-long effort to replace the aging Cape Cod Canal bridges,” said Senator Warren. “We will continue pushing to ensure this funding is signed into law and appreciate our ongoing partnership with Governor Healey, the Biden administration and Senate Appropriations Committee Chair Murray as we continue to prioritize this federal investment in our infrastructure.”³⁵

And in December 2023, after years of advocacy by Senator Warren and other members of the Massachusetts delegation, the Department of Transportation announced that the Commonwealth had been awarded \$372 million to rebuild the Sagamore Bridge – a significant downpayment on the funds needed for a complete replacement, and a “signal[] [that] the state could be in a good position to grab an even bigger chunk of federal help: More than \$1 billion in grant funding that it applied for... through the federal Bridge Investment Program.”³⁶

³¹ *Id.*

³² *Id.*

³³ *Id.*

³⁴ Office of U.S. Senator Elizabeth Warren, “Senators Warren, Markey Secure \$350M for Cape Cod Canal Bridges in FY24 Appropriations Bill,” press release, July 21, 2023, <https://www.warren.senate.gov/newsroom/press-releases/senators-warren-markey-secure-350m-for-cape-cod-canal-bridges-in-fy24-appropriations-bill>.

³⁵ Boston Globe, “In step forward for aging Cape Cod bridges, Senate proposes \$350 million for replacement,” Tal Kopan

and Matt Stout, July 21, 2023,

<https://www.bostonglobe.com/2023/07/21/metro/cape-cod-bridges-replacement-elizabeth-warren-edward-markey-maura-healey-biden/>.

³⁶ Boston Globe, “In a ‘breakthrough,’ Biden administration awards Mass. nearly \$400 million toward Cape bridge project,” Matt Stout, December 15, 2023, <https://www.bostonglobe.com/2023/12/15/metro/cape-cod-bridges-biden-372-million-maura-healey-elizabeth-warren/>.

Providing Broadband Access to All Corners of the Commonwealth

Broadband is essential for education, healthcare, jobs, civic engagement, and economic development. It allows citizens to connect with loved ones and grow their small businesses. But too many Massachusetts residents, particularly those living in Western Massachusetts, lack access to high-speed internet.³⁷ Only 39% of residents in Berkshire County,³⁸ 46% of residents in Franklin County,³⁹ and 48% of residents in Hampshire County have high speed internet.⁴⁰ There's also a wide equity gap in internet access. In the Commonwealth's wealthiest counties, over 70% of households have high-speed internet.⁴¹ In the least wealthy counties, less than 60% do.⁴²

The COVID-19 pandemic brought the issue of broadband in education to the forefront as many students were forced to turn to online learning. During the October 2023 Senate Banking Field Hearing, Senator Warren invited Dr. Mary Bourque, co-executive director of the Massachusetts

Association of School Superintendents, to testify on the significance of federal infrastructure investments in education. Dr. Bourque shared in her testimony that, "with Covid-19, the shift to on-line learning shined the light on educational inequalities that had to be urgently addressed.... Students from low-income households or those without access to technology and internet connectivity struggled to participate in distance learning, leading to disparities in educational opportunities."⁴³ She further emphasized in her written testimony that "Federal funds helped with the installation of Broadband internet which provided communities high speed connectivity that was reliable and stable... Our rural and urban areas in particular benefitted from the increased technological access and opportunities to learn[.]"⁴⁴

Senator Warren has a record of fighting for affordable broadband infrastructure and other digital connectivity technology projects.⁴⁵ Just since 2020, Senator Warren has worked with the Massachusetts Congressional Delegation to secure at least \$185 million in federal funding to expand broadband access throughout the Commonwealth.⁴⁶

³⁷ Commonwealth of Massachusetts, Office of the State Auditor, "Public Infrastructure in Western Massachusetts: A Critical Need for Regional Investment and Revitalization," October 5, 2021, <https://www.mass.gov/doc/public-infrastructure-in-western-massachusetts-a-critical-need-for-regional-investment-and-revitalization/download>

³⁸ Telegram & Gazette, "In Massachusetts, many still lack broadband access," Ledyard King and Mike Stucka, July 7, 2021, <https://www.telegram.com/story/news/2021/07/07/gda-broadband-local-ma-nteg/47205641/>; Data Wrapper, "Broadband access varies wildly," Mike Stucka / USA TODAY, <https://datawrapper.dwcdn.net/9LhSS/8/>.

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.*

⁴³ On file with the Office of U.S. Senator Elizabeth Warren.

⁴⁴ On file with the Office of U.S. Senator Elizabeth Warren.

⁴⁵ Office of U.S. Senator Elizabeth Warren, "Senator Warren and Representative Kahele Urge FCC to Advance Broadband and Spectrum Access for Native Communities," press release, August 2, 2022, <https://www.warren.senate.gov/oversight/letters/senator-warren-and-representative-kahele-urge-fcc-to-advance-broadband-and-spectrum-access-for-native-communities>;

[warren-and-representative-kahele-urge-fcc-to-advance-broadband-and-spectrum-access-for-native-communities](https://www.warren.senate.gov/oversight/letters/senator-warren-and-representative-kahele-urge-fcc-to-advance-broadband-and-spectrum-access-for-native-communities); Office of U.S. Senator Elizabeth Warren, "Senators Introduce Bill to Ensure Americans Keep Broadband Access During the Pandemic," press release, July 3, 2020, <https://www.warren.senate.gov/oversight/letters/senators-introduce-bill-to-ensure-americans-keep-broadband-access-during-the-pandemic>; Office of U.S. Senator Elizabeth Warren, "Senators Warren and Markey Urge FCC to Take Emergency Action to Ensure Students, Workers, and Patients Have Equal Access to the Internet during COVID-19 Outbreak," press release, March 20, 2020, <https://www.warren.senate.gov/oversight/letters/senators-warren-and-markey-urge-fcc-to-take-emergency-action-to-ensure-students-workers-and-patients-have-equal-access-to-the-internet-during-covid-19-outbreak>.

⁴⁶ Office of U.S. Senator Elizabeth Warren, "Statement from Senators Warren, Markey on Massachusetts Receiving \$175 Million in Funding for Broadband Projects," press release, September 2, 2021, <https://www.warren.senate.gov/newsroom/press-releases/statement-from-senators-warren-markey-on-massachusetts-receiving-175-million-in-funding-for-broadband-projects>;

In 2020, Senators Warren and Markey, along with Representatives Neal and McGovern helped secure \$10.2 million through the Federal Communication Commission’s *Connect America Fund* to Westfield Gas and Electric, the region’s public utility supplying electric, natural gas, and high-speed internet service.⁴⁷ In 2021, Senator Warren and other members of the Massachusetts Congressional delegation worked to obtain \$175 million in federal funding from the Capital Projects Fund (CPF) to improve broadband access in communities across Massachusetts.⁴⁸

This CPF funding will provide an estimated 16,000 Massachusetts locations, homes, and businesses, with high-speed internet – a number which represents 27% of those who still lack high-speed internet in Massachusetts.⁴⁹

The funding Senator Warren worked to bring to the Commonwealth will bridge the connectivity gap for thousands of Massachusetts households, and will particularly benefit low-income communities who disproportionately lack access to broadband internet.

“Access to reliable, high-speed Internet is one of the best tools for unlocking economic opportunity, and I am proud to have helped a number of Western Massachusetts communities secure funding to build publicly-owned, fiber-optic broadband networks,”

[broadband-projects](https://www.mass.gov/info-details/capital-projects-fund-cpf); Mass.gov, “Capital Projects Fund (CPF),” <https://www.mass.gov/info-details/capital-projects-fund-cpf>.

⁴⁷ Office of U.S. Senator Elizabeth Warren, “Warren, Markey, Neal, McGovern Announce \$10.2 Million of Federal Investment in Western Massachusetts Broadband Infrastructure,” press release, February 14, 2020, <https://www.warren.senate.gov/newsroom/press-releases/warren-markey-neal-mcGovern-announce-102-million-of-federal-investment-in-western-massachusetts-broadband-infrastructure>.

⁴⁸ Office of U.S. Senator Elizabeth Warren, “Statement from Senators Warren, Markey on Massachusetts Receiving \$175 Million in Funding for Broadband Projects,” press release, September 2, 2021, <https://www.warren.senate.gov/newsroom/press->

said Senator Warren. “We’re going to keep fighting in Congress until every home and business in the Commonwealth has access to affordable, high-speed broadband.”⁵⁰

[releases/statement-from-senators-warren-markey-on-massachusetts-receiving-175-million-in-funding-for-broadband-projects](https://www.mass.gov/info-details/capital-projects-fund-cpf); Mass.gov, “Capital Projects Fund (CPF),” <https://www.mass.gov/info-details/capital-projects-fund-cpf>.

⁴⁹ Commonwealth Magazine, “Massachusetts gets \$145 million to expand broadband,” Shira Schoenberg, October 6, 2022, <https://commonwealthmagazine.org/economy/massachusetts-gets-145-million-to-expand-broadband/>.

⁵⁰ Office of U.S. Representative Jim McGovern, “McGovern, Warren, Markey, Neal Announce \$10.2 Million of Federal Investment in Western Massachusetts Broadband Infrastructure,” press release, February 18, 2020, <https://mcGovern.house.gov/news/documentsingle.aspx?DocumentID=398467>.

Investing in Public Transit and Energy Infrastructure

Public transportation is an essential service that directly influences economic growth and access to employment in the Commonwealth.⁵¹ Boston is one of the most congested metropolitan areas in the country, a problem stemming from historic underinvestment and outdated infrastructure.⁵² The federal government has a responsibility to invest in public transit in Massachusetts and across the country, and Senator Warren has fought hard to obtain federal funding for and to improve public transit.

The Green Line Extension

One of Senator Warren’s top priorities when she was elected to the Senate was to obtain funding for the Green Line extension in Boston. In 2014, she fought to secure \$100 million in funding in the fiscal year 2015 appropriations bill for the Massachusetts Department of Transportation and the Massachusetts Bay Transportation Authority’s Green Line Extension Project.⁵³ The Green Line Extension Project (GLX) opened its Union Branch in March 2022 and Medford Branch in December 2022.⁵⁴ Today, GLX significantly reduces vehicle trips and air emissions while improving access to quick and reliable public transit service in historically underserved areas. The project is expected to support increased ridership of more

than 50,000 passenger trips per day in the coming years.⁵⁵

Federal Transportation Funding for Massachusetts from the Bipartisan Infrastructure Act

Federal funding for public transportation agencies is primarily provided through the public transportation program administered by the Department of Transportation’s Federal Transit Administration (FTA). The *Bipartisan Infrastructure Investment and Jobs Act* (BIL) authorized the federal public transportation program from FY2022 to FY2026.⁵⁶

Massachusetts secured approximately \$5.3 billion in federal highway formula funding for highways and bridges, \$32 million in 402 formula funding for highway safety traffic programs, and \$40.5 million to augment commercial motor vehicle safety efforts, all based solely on formula funding in BIL.⁵⁷ Additionally, Massachusetts secured \$2.8 billion over five years under the BIL to improve public transportation options, \$63 million over five years to support the expansion of an EV charging network, and \$244 million for infrastructure development for airports over five years, among several transportation projects that will benefit Massachusetts.⁵⁸ The funding will also provide Massachusetts with critical resources to upgrade the MBTA – including improvements to its Green, Red,

⁵¹ American Public Transportation Association, “Public Transportation Facts,” <https://www.apta.com/news-publications/public-transportation-facts/>.

⁵² Office of the Mayor, “Imagine Boston 2030: A PLAN FOR THE FUTURE OF BOSTON,” June 2018, https://www.boston.gov/sites/default/files/embed/file/2018-06/imagine20boston202030_pages2.pdf.

⁵³ Office of U.S. Senator Elizabeth Warren, “\$100 Million for Green Line Extension Included in Senate FY15 Appropriations Bill,” press release, June 7, 2014, <https://www.warren.senate.gov/newsroom/press-releases/2014/06/07/100-million-for-green-line-extension-included-in-senate-fy15-appropriations-bill>.

⁵⁴ Massachusetts Bay Transportation Authority, “Green Line Extension (GLX),” <https://www.mbta.com/projects/green-line-extension-glx>.

⁵⁵ Mass.gov, “Green Line Extension Project,” <https://www.mass.gov/green-line-extension-project-glx>.

⁵⁶ Federal Transit Administration, “Bipartisan Infrastructure Law,” <https://www.transit.dot.gov/BIL>.

⁵⁷ U.S. Department of Transportation, “The Bipartisan Infrastructure Law Will Deliver for Massachusetts,” https://www.transportation.gov/sites/dot.gov/files/2022-01/BIL_Massachusetts.pdf.

⁵⁸ *Id.*

Orange, and Silver Lines⁵⁹ – and regional transit systems, modernize their fleets, and improve the resiliency of transit infrastructure by installing upgrades such as a buried fiber optic cable network.⁶⁰

Clean Buses: Powering a Sustainable Future for Transportation

Federal investments in transportation are critical to tackling the climate crisis. The transportation sector is the nation's largest source of greenhouse gas emissions⁶¹ and must undergo a significant transformation to achieve net-zero emissions. Throughout her Senate career, Senator Warren has been a tireless advocate, ensuring that Massachusetts receives its fair share of federal funding for a cleaner and more sustainable transportation future.

Most notably, the Federal Transit Administration (FTA) awarded nearly \$220 million the last two years under its BIL-funded Low- and No-Emission Bus and Bus Facilities programs.⁶² These awards will help replace diesel buses with electric and hybrid buses across the Commonwealth. Further, these kinds of investments not only make transit agencies more reliable, but also give transit riders a quieter, more pleasant experience, and communities cleaner air.⁶³

In his testimony at Senator Warren's October field hearing, Carlos Monje Jr., the Under Secretary of

Transportation for Policy at the U.S. Department of Transportation, highlighted the importance of these investments. He highlighted the LRTA award, stating, "these kinds of investments not only make transit agencies more reliable, but also give transit riders a quieter, more pleasant experience, and communities cleaner air. Furthermore, they include "efforts to prepare our transportation workforce for these newer technologies, including through apprenticeships, on-the-job training, and instructional training."⁶⁴

He continued, noting that "[a] good example is the \$6.9 million award provided to the Lowell Regional Transit Authority (LRTA) in June to purchase hybrid-electric buses to replace older vehicles that have reached their useful life and to launch a workforce development program to provide on-the-job and instructional training for the maintenance and operation of hybrid electric vehicles."⁶⁵

Investments from the BIL have gone to support transit programs, including the MBTA, which received \$116 million; the Southeastern Regional Transit Authority, which received \$12.2 million; the Massachusetts Department of Transportation, which received \$4.1 million; and the Berkshire Regional Transit Authority, which received \$2.5 million.⁶⁶ In fiscal year 2022, Massachusetts received more than 10 percent of the total funding from the BIL, and

⁵⁹ Massachusetts Bay Transportation Authority, "Building a Better T," <https://www.mbt.com/projects>.

⁶⁰ Massachusetts Bay Transportation Authority, "Commuter Rail Safety and Resiliency Program," <https://www.mbt.com/projects/commuter-rail-safety-and-resiliency-program>.

⁶¹ U.S. Environmental Protection Agency, "Fast Facts on Transportation Greenhouse Gas Emissions," <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>.

⁶² U.S. Department of Transportation, "The Economic Impact of Federal Investments in Massachusetts: Under Secretary of Transportation for Policy Carlos Monje Jr., Testimony before

the Senate Banking, Housing, and Urban Affairs Subcommittee on Economic Policy," October 20, 2023, <https://www.transportation.gov/economic-impact-federal-investments-massachusetts>.

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ Mass.gov, "Massachusetts Receives Almost \$189 Million in Federal Grant Funding Toward Clean Energy for Public Transportation," press release, August 18, 2022, <https://www.mass.gov/news/massachusetts-receives-almost-189-million-in-federal-grant-funding-toward-clean-energy-for-public-transportation>.

was second only to California in terms of total funding received.⁶⁷

As a member of the Senate Banking Committee, Senator Warren has also made the case for the need to tackle climate change by investing in electric school buses to replace diesel-powered ones.⁶⁸ Senator Warren has recognized that electrifying buses is one of the best ways to reduce air pollution and protect disadvantaged communities. For example, Black Americans nationwide are exposed to air that is nearly 40% more polluted by cars and trucks than white Americans.⁶⁹

Over 90% of school buses in the U.S. are diesel-powered, exposing millions of children to harmful exhaust that can lead to respiratory problems, asthma attacks, and other health issues.⁷⁰ Senator Warren has highlighted the benefits of electrifying the Commonwealth's school bus fleets and fought hard for investments in electric public vehicles to be included in the 2021 BIL. In March 2021, Senator Warren and Representative Andy Levin (D-MI),

⁶⁷ U.S. Department of Transportation, "The Economic Impact of Federal Investments in Massachusetts: Under Secretary of Transportation for Policy Carlos Monje Jr., Testimony before the Senate Banking, Housing, and Urban Affairs Subcommittee on Economic Policy," October 20, 2023, <https://www.transportation.gov/economic-impact-federal-investments-massachusetts>.

⁶⁸ Office of U.S. Senator Elizabeth Warren, "At Hearing, Warren Highlights How Climate Investments in Inflation Reduction Act Will Bring Down Public Health and Natural Disaster Costs," press release, August 4, 2022, <https://www.warren.senate.gov/newsroom/press-releases/at-hearing-warren-highlights-how-climate-investments-in-inflation-reduction-act-will-bring-down-public-health-and-natural-disaster-costs>.

⁶⁹ The New York Times, "People of Color Breathe More Hazardous Air. The Sources Are Everywhere," Hiroko Tabuchi and Nadja Popovich, September 7, 2021, <https://www.nytimes.com/2021/04/28/climate/air-pollution-minorities.html>.

⁷⁰ Pew, "States and School Districts Clear the Air With Electric School Buses," Yaron Miller and Brian Watts, September 19, 2023, <https://www.pewtrusts.org/en/research->

along with Senator Edward Markey (D-MA) and Representative Alexandria Ocasio-Cortez (D-NY), unveiled the *BUILD GREEN Infrastructure and Jobs Act*, which would have invested \$500 billion over ten years in state, local, and tribal projects to electrify school buses, railcars, fleet vehicles and modernize the nation's crumbling infrastructure.⁷¹

When President Biden signed into law the 2021 BIL, it authorized up to \$108 billion for public transportation – the largest federal investment in public transportation in the nation's history.⁷² The BIL included programs to replace diesel school buses, public buses, and train engines with electric vehicles. As part of this effort, the Environmental Protection Agency (EPA) received \$5 billion to award in rebates and grants over five years (FY 2022-2026) to help school districts transition to zero- and low-emission alternatives through its Clean School Bus Program (CSB).⁷³ The CSB program was modeled after Senator Warren's *BUILD GREEN Infrastructure and Jobs Act* and aims to improve air quality, reduce greenhouse gas emissions, and promote environmental justice.⁷⁴

[and-analysis/articles/2023/09/19/states-and-school-districts-clear-the-air-with-electric-school-buses](https://www.warren.senate.gov/newsroom/press-releases/warren-and-levin-markey-and-ocasio-cortez-unveil-the-build-green-infrastructure-and-jobs-act-to-jumpstart-the-transition-to-electric-transportation-and-modernize-infrastructure).

⁷¹ Office of U.S. Senator Elizabeth Warren, "Warren, Andy Levin, Markey, and Ocasio-Cortez Unveil the BUILD GREEN Infrastructure and Jobs Act to Jumpstart the Transition to Electric Transportation and Modernize Infrastructure," press release, March 18, 2021, <https://www.warren.senate.gov/newsroom/press-releases/warren-and-levin-markey-and-ocasio-cortez-unveil-the-build-green-infrastructure-and-jobs-act-to-jumpstart-the-transition-to-electric-transportation-and-modernize-infrastructure>.

⁷² Federal Transit Administration, "Bipartisan Infrastructure Law," <https://www.transit.dot.gov/BIL>.

⁷³ Environmental Protection Agency, "Clean School Bus Program," <https://www.epa.gov/cleanschoolbus>; Office of U.S. Senator Elizabeth Warren, "Senator Warren Encourages Massachusetts Communities to Apply for Electric School Bus Federal Grants," press release, June 28, 2023, <https://www.warren.senate.gov/newsroom/press-releases/senator-warren-encourages-massachusetts-communities-to-apply-for-electric-school-bus-federal-grants>.

⁷⁴ *Id.*

In 2022, five Massachusetts school districts secured a total of \$29,535,000 through the CSB program, enabling them to purchase 75 new, clean electric school buses.⁷⁵ The 2022 CSB awards included:⁷⁶

- \$9,875,000 to the Lower Pioneer Valley Educational Collaborative for 25 electric buses;
- \$9,875,000 to Lawrence for 25 electric buses;
- \$5,530,000 to New Bedford for 14 electric buses;
- \$3,860,000 to Fall River for 10 electric buses; and
- \$395,000 to Upper Cape Cod Regional Vocational Technical for 1 electric bus.

In spring 2023, the EPA announced that applications had opened for the next cycle of the CSB program, which provides approximately \$400 million in grant funding for communities across the country for the upcoming year.⁷⁷ In June 2023, Senator Warren sent a letter to the Massachusetts Municipal Association, Massachusetts Association of School Superintendents, and 33 Commonwealth municipalities to encourage the Associations and their members to take full advantage of the EPA’s CSB program.⁷⁸

During her field hearing testimony, Dr. Bourque testified that the investment in clean buses is a “value statement on so many levels,” demonstrating that students’ health and the air quality of their

communities are valued.⁷⁹ Dr. Bourque also emphasized the disproportionate burden of air pollution on urban communities, underscoring the environmental justice aspect of federal investments in green school buses.

Cleaning up Brownfields

There are 40,000 “brownfields” – abandoned and neglected properties that are the sites of oil spills or releases of hazardous chemicals – in Massachusetts.⁸⁰ These brownfields currently endanger the safety and well-being of our residents, but have the potential to become community assets.⁸¹ In 1995, the EPA launched the Brownfields and Land Revitalization Program to help communities clean up and reuse these properties.⁸² Thanks to the BIL, the EPA’s Brownfields Program obtained a historic \$1.5 billion boost, and is poised to help more communities than ever address their economic, social, and environmental challenges.⁸³

EPA has provided Brownfields grants funded by BIL appropriations to nine communities in the Commonwealth. These grants included \$2 million for New Garden Park in Worcester, \$740,000 to the Westmass Area Development Corporation in Ludlow, and \$500,000 each to seven other communities (Table 1).

⁷⁵ *Id.*

⁷⁶ Environmental Protection Agency, “Biden-Harris Administration Announces More than \$29 Million from EPA’s Clean School Bus Program for Five Massachusetts School Districts,” press release, October 26, 2022, <https://www.epa.gov/newsreleases/biden-harris-administration-announces-more-29-million-epas-clean-school-bus-program>.

⁷⁷ Environmental Protection Agency, “Clean School Bus Program,” <https://www.epa.gov/cleanschoolbus>.

⁷⁸ Office of U.S. Senator Elizabeth Warren, “Senator Warren Encourages Massachusetts Communities to Apply for Electric School Bus Federal Grants,” press release, June 28, 2023, [https://www.warren.senate.gov/newsroom/press-](https://www.warren.senate.gov/newsroom/press-releases/senator-warren-encourages-massachusetts-communities-to-apply-for-electric-school-bus-federal-grants)

[releases/senator-warren-encourages-massachusetts-communities-to-apply-for-electric-school-bus-federal-grants](https://www.warren.senate.gov/newsroom/press-releases/senator-warren-encourages-massachusetts-communities-to-apply-for-electric-school-bus-federal-grants).

⁷⁹ On file with the Office of U.S. Senator Elizabeth Warren.

⁸⁰ Mass.gov, “Find Brownfield Sites,”

<https://www.mass.gov/info-details/find-brownfields-sites>.

⁸¹ Environmental Protection Agency, “Overview of EPA’s Brownfields Program,”

<https://www.epa.gov/brownfields/overview-epas-brownfields-program>.

⁸² *Id.*

⁸³ Environmental Protection Agency, “EPA Celebrates Over \$13.7M for Cleanup and Assessment at Polluted Brownfields Sites in Massachusetts,” press release, July 7, 2023, <https://www.epa.gov/newsreleases/epa-celebrates-over-137m-cleanup-and-assessment-polluted-brownfields-sites>.

Table 1: Brownfields Grants in Massachusetts with Funding Provided by the BIL⁸⁴			
Grant Recipient	Grant Type	Year	Amount
Berkshire Regional Planning Commission	Assessment	2022	\$500,000
City of Framingham	Assessment	2022	\$500,000
Town of Franklin	Cleanup	2023	\$500,000
City of Lynn	Cleanup	2023	\$500,000
Merrimack Valley Planning Commission	Assessment	2022	\$500,000
New Garden Park, Inc.	Cleanup	2023	\$2,000,000
Town of Ware	Cleanup	2023	\$500,000
Town of Westford	Cleanup	2023	\$500,000
Westmass Development Corporation	Cleanup	2023	\$740,000

Governor Healey described the huge benefits to these communities from this funding: “This unprecedented level of federal brownfields funding will help our Administration partner with local communities and regional planning agencies to clean up polluted and contaminated properties that are often in environmental justice communities. Together, we can transform these sites for beneficial uses like housing and renewable energy generation.”⁸⁵

In addition to fighting for funding for clean public transportation, Senator Warren is a champion of clean energy and local businesses driving the nation’s transition to a greener future.⁸⁶ In 2022, Senator Warren and her colleagues in the Massachusetts Congressional delegation celebrated the Department of Energy’s announcement that two Massachusetts companies, 6K Inc. and Ascend Elements, would receive more than \$530 million in federal funding to support innovation in battery manufacturing, recycling, and materials processing

Local Green Initiatives

⁸⁴ Environmental Protection Agency, “Brownfields Grant Fact Sheet Search,” <https://java.epa.gov/acrespub/gfs/>.

⁸⁵ U.S. Environmental Protection Agency, “EPA Celebrates Over \$13.7M for Cleanup and Assessment at Polluted Brownfields Sites in Massachusetts,” press release, July 7, 2023, <https://www.epa.gov/newsreleases/epa-celebrates-over-137m-cleanup-and-assessment-polluted-brownfields-sites>.

⁸⁶ Office of Senator Warren, “Warren, Levin Introduce The National Institutes of Clean Energy Act of 2021,” press release, May 27, 2021, <https://www.warren.senate.gov/newsroom/press-releases/warren-levin-introduce-the-national-institutes-of-clean-energy-act-of-2021>.

across the United States.⁸⁷ This investment will foster a cleaner future for generations and create well-paying jobs in Massachusetts.

The investments Senator Warren supported in the BIL also helped establish the “Preventing Outages and Enhancing the Resilience of the Electric Grid” grant opportunity.⁸⁸ In August 2023, the Commonwealth was awarded over \$9 million in grant funding to be managed by the Massachusetts Department of Energy Resources (DOER) and the Massachusetts Clean Energy Center (MassCEC).⁸⁹ DOER and MassCEC’s program aims to improve energy reliability and resilience, reduce the cost and number of outages for communities and underserved populations, support clean energy and decarbonization solutions, advance environmental justice, and create good-paying jobs that offer workers the freedom and fairness to join a union with the free and fair choice to join a union.⁹⁰

Lou Antonellis of the International Brotherhood of Electrical Workers praised the Massachusetts Congressional delegation's work in securing federal funding at the field hearing, testifying, “thanks to the hard work of our federal delegation, billions of dollars in federal infrastructure and clean energy funding have poured into Massachusetts.”⁹¹ Antonellis added that “our members are already hard at work helping businesses, homeowners, and school districts in communities across the Commonwealth use that funding to develop and adapt the clean energy technology of the future.”⁹²

⁸⁷ Department of Energy, “Biden-Harris Administration Awards \$2.8 Billion to Supercharge U.S. Manufacturing of Batteries for Electric Vehicles and Electric Grid,” press release, October 19, 2022, <https://www.energy.gov/articles/biden-harris-administration-awards-28-billion-supercharge-us-manufacturing-batteries>; Department of Energy, “Bipartisan Infrastructure Law: Battery Materials Processing and Battery Manufacturing,” October 2022, <https://www.energy.gov/sites/default/files/2022-11/DOE%20BIL%20Battery%20FOA-2678%20Selectee%20Fact%20Sheets.pdf>.

⁸⁸ Massachusetts Clean Energy Center, “IIJA Section 40101(D): Preventing Outages and Enhancing the Resilience of the Electric Grid,” <https://www.masscec.com/iija-section-40101d-preventing-outages-and-enhancing-resilience-electric-grid>.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ On file with the Office of U.S. Senator Elizabeth Warren.

⁹² On file with the Office of U.S. Senator Elizabeth Warren.

Funding for Research and Innovation

Massachusetts has always been a beacon of research and discovery, cultivating generations of talent and expertise that have made groundbreaking contributions to science and medicine, and the small businesses, entrepreneurs, and universities in the Commonwealth know how to transform federal dollars into cutting-edge research, innovation, and discovery. Senator Warren has pushed hard – and successfully – to increase federal support for science and research to continue carrying out this critical work.⁹³

UMass Lowell Chancellor Julie Chen explained in her testimony in October that “for UMass Lowell and countless organizations in Massachusetts and across the country, it is federal funding that creates bold ideas and innovative theories and transforms them into tangible technology and societal impact... These investments bolster economic development, create good paying jobs and high-tech opportunities for the state’s workforce, provide professional and research experiences for students and also promote equity outcomes across healthcare, infrastructure and clean energy production.”⁹⁴

⁹³ Office of U.S. Senator Elizabeth Warren, “New Op-Ed: Elizabeth Warren: We’re making huge federal investments in science research — and must do more,” press release, September 8, 2022, <https://www.warren.senate.gov/newsroom/press-releases/new-op-ed-elizabeth-warren-were-making-huge-federal-investments-in-science-research-and-must-do-more>.

⁹⁴ On file with the Office of U.S. Senator Elizabeth Warren.

⁹⁵ CHIPS and Science Act, H.R.4346, <https://www.congress.gov/bill/117th-congress/house-bill/4346/text>; American Institute of Biological Sciences, “Biden Signs “CHIPS and Science” Legislation into Law,” August 15, 2022, <https://www.aibs.org/news/2022/220815-chips-science-enacted.html>.

⁹⁶ The White House, “FACT SHEET: CHIPS and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China,” press release, August 9, 2022,

On August 9, 2022, President Biden signed the bipartisan *CHIPS and Science Act* into law, authorizing an additional \$81 billion in National Science Foundation (NSF) funding over the next five years, nearly doubling its budget.⁹⁵ This funding will be used to support basic research activities across the country, build the STEM workforce, expand rural STEM education, and to invest in the development of national and economic security-critical technologies such as artificial intelligence (AI).⁹⁶

The *CHIPS and Science Act* is already providing major investments for Massachusetts and for American innovation. In September 2023, Governor Healey announced that Massachusetts was awarded \$19.7 million in funding for fiscal year 2023 through the federal *CHIPS and Science Act* to establish the Northeast Microelectronics Coalition Hub, a regional hub that will advance the microelectronics needs of the Department of Defense (DoD) while spurring new jobs, workforce training opportunities, and investment in the region’s advanced manufacturing and technology sectors.⁹⁷

Since taking office, Senator Warren has advocated for increases in federal research funding.⁹⁸ And since 2013, nearly 8,000 science and technology projects in Massachusetts have received NSF

<https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/09/fact-sheet-chips-and-science-act-will-lower-costs-create-jobs-strengthen-supply-chains-and-counter-china/>.

⁹⁷ Mass.Gov, “Governor Healey Files Legislation Unlocking \$800 Million to Compete for Federal Funding,” press release, October 19, 2023, <https://www.mass.gov/news/governor-healey-files-legislation-unlocking-800-million-to-compete-for-federal-funding>.

⁹⁸ Office of U.S. Senator Elizabeth Warren, “New Op-Ed: Elizabeth Warren: We’re making huge federal investments in science research — and must do more,” press release, September 8, 2022, <https://www.warren.senate.gov/newsroom/press-releases/new-op-ed-elizabeth-warren-were-making-huge-federal-investments-in-science-research-and-must-do-more>.

funding.⁹⁹ In 2021 alone, researchers in the Commonwealth were awarded nearly \$565 million in competitive NSF grants, surpassing every other state except California.¹⁰⁰ This federal funding goes to researchers and scientists at Massachusetts

colleges and universities, laboratories, and hospitals to support cutting-edge research on everything from building stronger robotic technology to stopping new viruses in their tracks.¹⁰¹

Figure 2: Top Massachusetts NSF-Funded Academic Institutions in FY 2023¹⁰²	
Woods Hole Oceanographic Institution	\$137,825,000
Massachusetts Institute of Technology	\$78,522,000
Harvard University	\$58,056,000
Northeastern University	\$ 52,495,00
University of Massachusetts-Amherst	\$43,934,000
Boston University	\$35,740,000
Worcester Polytechnic Institute	\$10,216,000
University of Massachusetts-Boston	\$9,592,000
Boston College	\$9,159,000
Tufts University	\$8,733,000
Brandeis University	\$7,598,000
University of Massachusetts-Lowell	\$7,425,000

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² National Science Foundation, “Award Summary Information: Top 200 Institutions,” <https://dellweb.bfa.nsf.gov/Top50Inst2/default.asp>.

Meanwhile, the National Institutes of Health (NIH), which supports basic research in the biomedical field, has granted funding for another roughly 50,000 projects in Massachusetts.¹⁰³ Overall increases in the NIH budget have created more opportunities in Massachusetts. In 2017, Senator Warren led a successful effort to secure an additional \$100 million in NIH funding in a bipartisan spending deal.¹⁰⁴ Today, NIH funding is nearly \$17 billion higher than when Senator Warren took office.¹⁰⁵

Massachusetts Institute of Technology (MIT) researchers used their federal research dollars last year to develop stamp-sized ultrasound stickers that produce clear images of internal organs.¹⁰⁶ MIT researchers also discovered “the best semiconductor material ever found.”¹⁰⁷ And MIT researchers developed a technique to mitigate disparities adversely affecting minorities in machine learning AI models.¹⁰⁸ These recent accomplishments offer a glimpse of the power of federal investments in Massachusetts research, which echo throughout the

economy. Experts estimate that every dollar of NIH funding invested in scientific research generates more than twice as much in economic returns.¹⁰⁹

In an important breakthrough for the Commonwealth, the federal Advanced Research Projects Agency for Health (ARPA-H), an agency within the NIH, announced earlier this year that Massachusetts has been chosen to host its Investor Catalyst Hub to support ARPA-H’s mission by “fostering collaboration among researchers, entrepreneurs, and investors to accelerate innovative ideas that transform health care.”¹¹⁰ This year NSF announced research and education awards made through the NSF Future of Semiconductors (FuSe) program to enable progress in new semiconductor technologies and manufacturing as well as workforce development.¹¹¹ According to NSF, the FuSe initiative aims to address the growing demand for semiconductors in the U.S. by informing research needs, supporting breakthroughs, expediting technology transfer to the market, and preparing the workforce through practical

¹⁰³ Office of U.S. Senator Elizabeth Warren, “New Op-Ed: Elizabeth Warren: We’re making huge federal investments in science research — and must do more,” press release, September 8, 2022, <https://www.warren.senate.gov/newsroom/press-releases/new-op-ed-elizabeth-warren-were-making-huge-federal-investments-in-science-research-and-must-do-more>.

¹⁰⁴ Office of U.S. Senator Elizabeth Warren, “Senator Warren Helps Secure New Funding for Opioid Epidemic, Medical Research in Bipartisan Government Spending Deal,” press release, May 1, 2017, <https://www.warren.senate.gov/newsroom/press-releases/senator-warren-helps-secure-new-funding-for-opioid-epidemic-medical-research-in-bipartisan-government-spending-deal>.

¹⁰⁵ Office of U.S. Senator Elizabeth Warren, “New Op-Ed: Elizabeth Warren: We’re making huge federal investments in science research — and must do more,” press release, September 8, 2022, <https://www.warren.senate.gov/newsroom/press-releases/new-op-ed-elizabeth-warren-were-making-huge-federal-investments-in-science-research-and-must-do-more>.

¹⁰⁶ Massachusetts Institute of Technology, “MIT engineers develop stickers that can see inside the body,” Jennifer Chu, July 28, 2022, <https://news.mit.edu/2022/ultrasound-stickers-0728>.

¹⁰⁷ Massachusetts Institute of Technology, “The best semiconductor of them all?,” David L. Chandler, July 21, 2022, <https://news.mit.edu/2022/best-semiconductor-them-all-0721>.

¹⁰⁸ Massachusetts Institute of Technology, “How machine-learning models can amplify inequities in medical diagnosis and treatment,” Steve Nadis, August 17, 2023, <https://news.mit.edu/2023/how-machine-learning-models-can-amplify-inequities-medical-diagnosis-treatment-0817>.

¹⁰⁹ Commonwealth Beacon, “We’re making huge investments in science research – and must do more,” Elizabeth Warren, September 7, 2022, <https://commonwealthbeacon.org/opinion/were-making-huge-federal-investments-in-science-research-and-must-do-more/>.

¹¹⁰ Mass.gov, “Massachusetts Selected to Host ARPA-H Hub as Part of Nationwide Health Innovation Network,” press release, September 26, 2023, <https://www.mass.gov/news/massachusetts-selected-to-host-arpa-h-hub-as-part-of-nationwide-health-innovation-network>.

¹¹¹ U.S. National Science Foundation, “NSF announces nearly \$50 million partnership with Ericsson, IBM, Intel, and Samsung to support the future of semiconductor design and manufacturing,” January 26, 2023, <https://new.nsf.gov/tip/updates/nsf-announces-nearly-50-million-partnership>.

experiences.¹¹² Of the 24 awards announced, six were awarded to Massachusetts-based institutions, including three to MIT,¹¹³ two to Northeastern University,¹¹⁴ and one to Boston University.¹¹⁵

¹¹² U.S. National Science Foundation, “NSF announces nearly \$50 million partnership with Ericsson, IBM, Intel, and Samsung to support the future of semiconductor design and manufacturing,” January 26, 2023,

<https://new.nsf.gov/tip/updates/nsf-announces-nearly-50-million-partnership>.

¹¹³ U.S. National Science Foundation, “Award Abstract # 2329190,”

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2329190&HistoricalAwards=false; U.S. National Science

Foundation, “Award Abstract # 2328839,”

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2328839&HistoricalAwards=false; U.S. National Science

Foundation, “Award Abstract # 2329088,”

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2329088&HistoricalAwards=false.

¹¹⁴ U.S. National Science Foundation, “Award Abstract # 2329062,”

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2329062&HistoricalAwards=false; U.S. National Science

Foundation, “Award Abstract # 2329013,”

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2329013&HistoricalAwards=false.

¹¹⁵ U.S. National Science Foundation, “Award Abstract # 2328946,”

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2328946&HistoricalAwards=false.

Supporting Massachusetts Firefighters

Firefighters play a vital role in protecting the safety and property of Massachusetts residents, responding to fires, natural disasters, and emergencies of all kinds. To do their job effectively, firefighters need funding for equipment, training, and operating costs. Unfortunately, fire departments in Massachusetts are facing funding challenges that make it difficult to purchase up-to-date equipment, train and recruit new firefighters, and cover operating costs. And many fire stations are aging and in need of repair. Senator Warren has been a strong advocate for firefighters in the Senate, ensuring that firefighters have the resources they need to do their jobs safely and effectively.¹¹⁶

Since 2013, Massachusetts fire departments have received over \$270 million through the Assistance to Firefighters Grant (AFG) and the Staffing for Adequate Fire and Emergency Response (SAFER) grant programs, with support from Senator Warren.¹¹⁷ The AFG program provides financial and technical assistance to fire departments, state fire training academies and emergency medical service organizations, to support their efforts to enhance their ability to operate safely and effectively, to provide adequate protection against fire and other hazards, and to meet the needs of the

¹¹⁶ Office of U.S. Senator Elizabeth Warren, “Warren Urges Senate Leadership to Pass Fire Grants and Safety Act, Ensure Massachusetts Fire Departments Receive Critical Federal Support,” press release, March 29, 2023, <https://www.warren.senate.gov/newsroom/press-releases/warren-urges-senate-leadership-to-pass-fire-grants-and-safety-act-ensure-massachusetts-fire-departments-receive-critical-federal-support>.

¹¹⁷ *Id.*; Office of U.S. Senator Elizabeth Warren, “Congressional Delegation Announces \$2.95M in Grants To Massachusetts Fire Departments,” July 31, 2020, <https://www.warren.senate.gov/newsroom/press-releases/congressional-delegation-announces-295m-in-grants-to-massachusetts-fire-departments>.

¹¹⁸ FEMA, “Assistance to Firefighters Grants,” <https://www.fema.gov/grants/preparedness/firefighters/assistance-grants>.

public they serve.¹¹⁸ The SAFER grant program provides funding directly to fire departments to help them hire or retain firefighters. SAFER grants can be used to fund a variety of activities, including (1) hiring new firefighters, (2) retaining current firefighters, (3) providing training and education for firefighters, and (3) purchasing equipment and supplies for fire departments.¹¹⁹ Both the AFG and SAFER grant programs are administered by the Federal Emergency Management Agency (FEMA).

Across the Commonwealth, fire departments have used the funding to purchase life-saving emergency response medical equipment and protective gear, and to recruit, train, and retain personnel. In February 2023, the Hingham Fire Department received an AFG of over \$100,000 to purchase life-saving emergency response medical equipment.¹²⁰ Belchertown announced late last year that it would receive over \$1 million from the SAFER grant program to hire new firefighters.¹²¹ In 2023, Worcester also received \$14 million in SAFER grants to pay the salaries of dozens of firefighters.¹²² Federal funding from these grants has been critical to keeping Massachusetts towns and cities safe.¹²³

¹¹⁹ FEMA, “Staffing For Adequate Fire and Emergency Response (SAFER),”

<https://www.fema.gov/grants/preparedness/firefighters/safer>.

¹²⁰ Office of U.S. Senator Elizabeth Warren, “Warren Urges Senate Leadership to Pass Fire Grants and Safety Act, Ensure Massachusetts Fire Departments Receive Critical Federal Support,” press release, March 29, 2023,

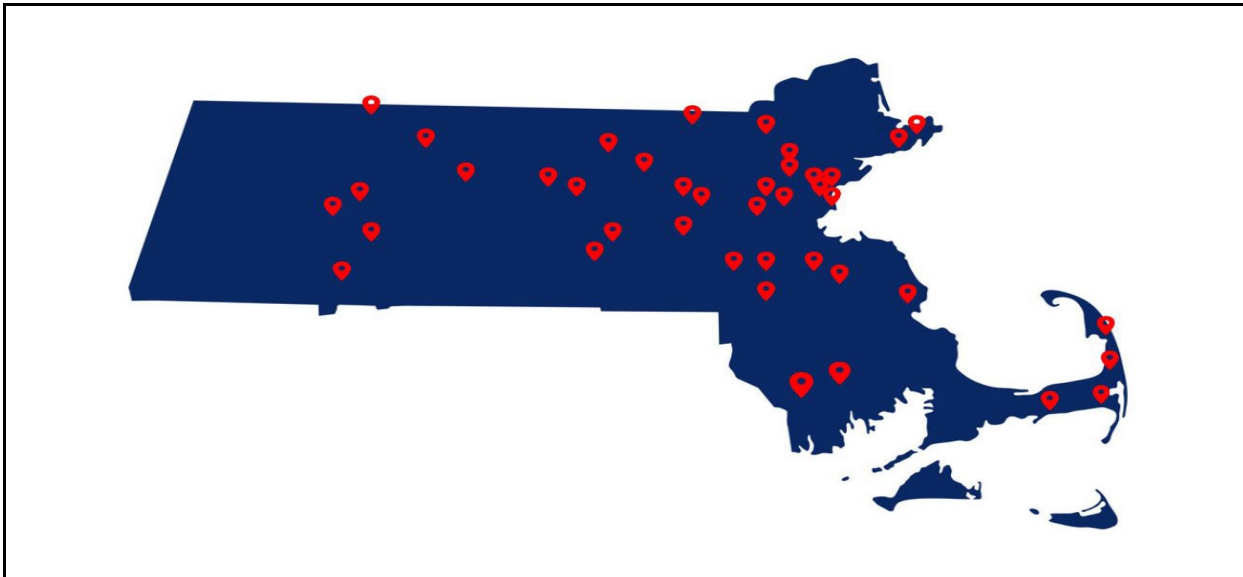
<https://www.warren.senate.gov/newsroom/press-releases/warren-urges-senate-leadership-to-pass-fire-grants-and-safety-act-ensure-massachusetts-fire-departments-receive-critical-federal-support>.

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Id.*

Figure 3: Firefighters across the Commonwealth Have Received over \$270 Million in Federal Assistance Supported by Senator Warren



Funding for Massachusetts fire departments has also been used to purchase essential protective gear, acquire power stretchers and ambulance stretcher lift systems, replace aging fire pumper engines, and fund volunteer firefighter recruitment and retention programs that continue to make our towns and cities safe.¹²⁴

In March 2023, as the Senate moved to pass the *Fire Grants and Safety Act*, which supports the AFG and SAFER grant programs, Senator Warren reiterated her support: “Massachusetts fire

departments have a strong history of securing AFG and SAFER grants to support their local firefighting and emergency response duties ... I strongly support the work of these fire departments in protecting our communities and hope to see the robust funding necessary to keep these programs going.”¹²⁵

¹²⁴ Office of U.S. Senator Elizabeth Warren, “Mass. Congressional Delegation Announces Nearly \$4 Million in Federal Funding to Massachusetts Fire Departments,” press release, August 31, 2018, <https://www.warren.senate.gov/newsroom/press-releases/mass-congressional-delegation-announces-nearly-4-million-in-federal-funding-to-massachusetts-fire-departments>; Office of U.S. Senator Elizabeth Warren, “Massachusetts Lawmakers Announce Approximately \$5.4 Million in Federal Assistance to Massachusetts Fire Departments,” press release, September 13, 2019, <https://www.warren.senate.gov/newsroom/press-releases/massachusetts-lawmakers-announce-approximately-54-million-in-federal-assistance-to-massachusetts-fire-departments>; Office of U.S. Senator Elizabeth Warren,

“Massachusetts Congressional Delegation Announces \$5.5 Million in FEMA Grants to Massachusetts Fire Departments,” press release, August 3, 2018, <https://www.warren.senate.gov/newsroom/press-releases/massachusetts-congressional-delegation-announces-55-million-in-fema-grants-to-massachusetts-fire-departments>.¹²⁵ Office of U.S. Senator Elizabeth Warren, “Warren Urges Senate Leadership to Pass Fire Grants and Safety Act, Ensure Massachusetts Fire Departments Receive Critical Federal Support,” press release, March 29, 2023, <https://www.warren.senate.gov/newsroom/press-releases/warren-urges-senate-leadership-to-pass-fire-grants-and-safety-act-ensure-massachusetts-fire-departments-receive-critical-federal-support>.

Advocating for Important Community Projects in Massachusetts

In 2021, after a decade-long moratorium, Congress brought back Congressionally Directed Spending (CDS), also known as legislative earmarks.¹²⁶ CDS projects can fund a wide range of initiatives, including infrastructure projects, education programs, non-profit missions, and healthcare services. CDS funds can also be used to fund projects that would not otherwise be funded by the federal government. Senator Warren has used this tool to address the specific needs of communities in Massachusetts.

Senator Warren and the Massachusetts Congressional delegation helped secure nearly \$225 million in CDS for projects across the Bay State in fiscal year 2023, and nearly \$138 million in CDS from fiscal year 2022.¹²⁷ The federal funding will support 280 community projects across Massachusetts, including \$52 million for programs advancing health, education, and other supportive services, such as \$1 million to add more inpatient beds at UMass Memorial Medical Center, \$1 million for the Massachusetts General Hospital to continue supporting the Home Base program in its mission of serving the families of fallen veterans, and \$1 million to support the City of Boston in its continued efforts to bridge the gap in child care services for homeless families.¹²⁸ The Congressional delegation also helped secured \$112 million for transportation, housing, and urban development projects, including \$2 million to support DOVE, Inc.'s efforts to establish an

emergency shelter for family members and partners surviving domestic violence, and \$2.3 million to fund the City of Salem's North Shore Workforce and Career Mobility Program.¹²⁹

Other projects funded in the Commonwealth through the CDS in fiscal year 2023 include:

- \$3,000,000 to the Boys and Girls Club of Stoneham & Wakefield Child Care Facility Project in Stoneham, MA, to build a new child care facility and training center which will increase the amount of preschool children in full-day programs they can serve and expand their after-school care capacity;
- \$3,000,000 to African Community Education 51 Gage St. Renovations in Worcester, MA, to renovate the recently-acquired 56,000-square-foot property to better serve African refugee and immigrant communities. Renovations will include creating STEM and innovation labs, updating 16 classrooms, rehabilitating the gymnasium, and much more;
- \$2,400,000 to the Clarendon Hill Housing and Transportation Equity Project in Somerville, MA, to improve residents' physical access to the surrounding community by creating an equitable neighborhood out of an isolated housing development that allows safe access to the large, green, open space at the Mystic River Reservation;
- \$1,925,000 to the Massachusetts Military Support Foundation's Food Bank Distribution Center and Headquarters, in Norton, MA, to acquire and rehabilitate the Tweave Mill property, which will allow it to

¹²⁶ The Bipartisan Policy Center, "Power Restored," February 2023, https://bipartisanpolicy.org/download/?file=/wp-content/uploads/2023/02/Direct-Spending-Earmark_RV4.pdf.

¹²⁷ Office of U.S. Senator Elizabeth Warren, "Warren, Massachusetts Congressional Delegation Announce \$225 Million in Federal Funding to Support Critical Projects Across Commonwealth," press release, December 23, 2022, [https://www.warren.senate.gov/newsroom/press-releases/warren-massachusetts-congressional-delegation-](https://www.warren.senate.gov/newsroom/press-releases/warren-massachusetts-congressional-delegation-announces-225-million-in-federal-funding-to-support-critical-projects-across-commonwealth)

[announces-225-million-in-federal-funding-to-support-critical-projects-across-commonwealth](https://www.warren.senate.gov/newsroom/press-releases/warren-massachusetts-congressional-delegation-announces-225-million-in-federal-funding-to-support-critical-projects-across-commonwealth); Office of Senator Ed Markey, "Massachusetts Delegation Announces \$138 Million in Federal Funding for Key Projects Throughout Massachusetts," press release, March 12, 2022, <https://www.markey.senate.gov/news/press-releases/massachusetts-delegation-announces-138>.

¹²⁸ *Id.*

¹²⁹ *Id.*

continue to meet the needs of veterans, active-duty military, and their families, as well as local Norton and Bristol County senior citizens and other at-risk populations, by providing them with access to increased volumes of non-perishable food, fresh produce, pre-made meals, and other goods;

- \$1,000,000 for Adult Literacy Initiative Digital Literacy Project in Boston, MA, to strengthen workforce development programs and invest in infrastructure and the necessary educational tools to enhance digital literacy and other skills for adults so that they can thrive in a highly competitive job market amid the COVID-19 pandemic.¹³⁰

¹³⁰ Office of U.S. Senator Ed Markey, “A Summary of Congressionally Directed Spending (CDS) in the Fiscal Year 2023 Spending Bill For Massachusetts,” https://www.markey.senate.gov/imo/media/doc/massachusetts_cds_projects_fy23_-_december_2022.pdf; Office of U.S.

Senator Elizabeth Warren, “Congressionally Directed Spending Federal Funding Requests FY2023,” <https://www.warren.senate.gov/congressionally-directed-spending-federal-funding-requests-fy2023>.

Conclusion

Senator Warren has fought for billions of dollars in federal support to Massachusetts during her nearly eleven years in Congress, funding projects in every corner of the Commonwealth. This analysis, while not comprehensive, shows that over \$50 billion in federal funding has supported communities in Massachusetts since 2013. These funds have helped make our neighborhoods safer and more secure. They have helped increase access to affordable childcare for our residents. They have been used to build and repair our roads, bridges, and other infrastructure. They have helped protect our environment and address climate change. And they have helped support basic research, create new jobs, and boost the Commonwealth's economy.