



Advancing Regional Climate-Action Goals through Federal Funding

A Case Study of the Genesee–Finger Lakes Region

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Climate change is a part of everyday life in the US.¹ Many communities are experiencing increased frequency and severity of extreme weather including storms, flooding, heat, and drought. Hurricanes in the Gulf of Mexico have caused catastrophic damage and loss of life in coastal states and Puerto Rico.² Extreme heat and drought have driven wildfires in western states and Alaska, scorching millions of acres and displacing whole communities.³ Intense rain has overwhelmed drainage and sewer systems, leading to frequent flooding, damages to homes, and contamination of lakes and streams.⁴ And these impacts are not equitably felt (Smith et al. 2022). The most severe harms from climate change fall disproportionately on communities with low incomes and communities of color communities who are least able to prepare for, and recover from, heat waves, poor air quality, flooding, and other impacts (EPA 2021).

Infrastructure projects and economic policy decisions in the US have failed to fully account for related harms from pollution, natural disasters, and environmental displacement.⁵ The Infrastructure Investments and Jobs Act (IIJA) and the Inflation Reduction Act (IRA), if implemented intentionally, provide an opportunity to reverse this damage (box 1). A significant portion of the investments across the two laws can be leveraged for strategies that (1) address climate change, (2) promote economic health, and (3) advance local equity goals. The IIJA and IRA investments could be used to reduce greenhouse gas emissions by increasing investments in public transit, transitioning to renewable energy sources, and increasing energy efficiency of homes and businesses, among other strategies to mitigate climate change. New strategic investments can also be used to plan for resilience from the intensity of extreme weather. Combined with the federal government's Justice40 initiative, which intends to deliver

40 percent of the benefits from select climate-related federal investments to what the administration defines as “disadvantaged communities,”⁶ localities have a unique opportunity to leverage these funds to address disproportionate harms.^a

However, depending on the projects that localities prioritize, these investments could exacerbate rather than mitigate climate change. For instance, analysis shows that the IIJA has the potential to increase greenhouse gas emissions through investments in things like building additional highways, traffic lanes, and roads.⁷ To support climate action goals, local leaders must intentionally design, implement, and monitor infrastructure projects and other investments to ensure they align with the purposes of lowering transportation emissions, increasing clean energy production, and creating more energy efficient buildings, in addition to other local climate action goals.

In this brief, we provide a case study of how New York’s Genesee-Finger Lakes (FLX) region can use the IIJA and the IRA to advance their regional climate action goals. The region is poised to leverage these investments and mitigate climate change, having recently completed a comprehensive climate action strategy using a collective impact process led by the Genesee-FLX Climate Collective and Climate Solutions Accelerator (CSA), a nonpartisan 501(c)(3) nonprofit dedicated to inspiring and facilitating a large-scale climate mobilization in the nine-county Genesee-FLX Region (CSA 2022).⁸ We summarize how the collective of individuals and organizations that created the Genesee-FLX Climate Action Strategy, and other climate collectives, can best prepare for and use the IIJA and the IRA to mitigate and adapt to climate change impacts.

Based upon this research, recommendations for how the Genesee-FLX Climate Collective and other organizations like it can use the IIJA and the IRA to turn their climate action strategies into action include:

- **Decide which tactics the collective will use to influence the IIJA and IRA funding decisions.** For formula grants, climate collectives and other groups might advocate to their state and local governments for certain uses of the funds that align with the climate action strategy. For competitive grants, they might work with local governments and/or community partners to design applications that align with the goals. And for tax credits, they might undertake education campaigns for individuals, nonprofits, and businesses to help ensure that they are aware of the opportunities and how to access them.
- **Encourage the use of “flexing” to use funds for climate action activities rather than their traditional uses.** The biggest transportation programs (the National Highway Performance Program and the Surface Transportation Block Grant) can be used to fund nonhighway projects,

^a We use the terms “disadvantaged” and “underserved” in this brief because they are the terms used by the federal and state government and are included in the laws and programs they support. Though these terms are commonly used, they can be unclear, vague, and shorthand ways of referring to entire populations. These terms are not always accurate, relevant, or person-centered and take a deficit-oriented approach to characterizing certain groups. We acknowledge this language may not reflect how people describe themselves. We remain committed to employing respectful and inclusive language.

either directly or through “flexing.” This is a huge opportunity to fund public transit that can reduce emissions and is not often taken advantage of (Redeker et al. 2022).

- **Pay attention to state formula grant programs and how those funds are spent.** Most state formula grants have wide flexibility for use and can be used to advance climate action goals.
- **Take advantage of tax credits.** The IRA provides a bulk of tax credits to offset the cost of transitioning to renewable energy for households, businesses, and governments. The IRA is novel in that it allows nonprofit and governmental entities to receive direct payments for 12 clean energy tax credits.⁹ In fact, under the IRA, nearly any advanced or renewable energy asset constructed by a local government is eligible for some kind of federal cash subsidy.¹⁰
- **Incorporate workforce development efforts across all topic areas.** While green jobs represent a small percentage of all US jobs, they have experienced rapid growth over the past decade. These jobs also appear to offer a wage premium of about 21 percent above average (Curtis and Marinescu 2022). Since workers who are Black, Latino, women, and/or have disabilities are underrepresented in infrastructure jobs, especially high-paying positions, promoting workforce development in green jobs with a focus on equitable access to business and career opportunities could also reduce historical disparities.¹¹ Applying such a focus would entail intentional engagement with communities to establish pathways for training, business development, and hiring that enables greater representation from underrepresented groups. This may include changes to contracting procedures with business owners, recruitment and hiring workers, and establishing new education and training pathways. Preparing the region’s workforce for green jobs with an equity focus will not only advance climate action but may also help increase wages, reduce poverty, and promote the longevity of these efforts.

BOX 1

Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA)

Through the Infrastructure Investments and Jobs Act (IIJA) and the Inflation Reduction Act (IRA), the federal government is making historic investments in infrastructure and economic development. Across the two laws, over \$2 trillion dollars will be made available through grants, loans, and tax credits primarily for states and localities to advance local infrastructure priorities.

The IIJA is a five-year commitment of \$1.2 trillion by the federal government to repair, retool, and develop new infrastructure. A central tenant of the IIJA is to create a strong, sustainable, and innovative economy with a focus on transportation, clean energy, and broadband. The funding is to be distributed through over 350 programs across 16 federal departments through both competitive and formula processes (The White House 2022a). Throughout the IIJA, programs create opportunities to address climate change at the local level (Alexander, Argento-McCurdy and Barnes 2022). The law dedicates over \$150 billion for planning and projects to reduce emissions, increase energy efficiency, transition to clean energy, develop practice and tools for resilience, and environmental remediation.

The IRA aims to curb inflation by reducing the deficit, lowering prescription drug prices, and investing in domestic energy production while promoting clean energy. The IRA will raise \$738 billion in tax revenue and is estimated to distribute nearly \$400 billion for investments in energy and climate action through three main funding channels: (1) the clean energy tax credits that can be claimed by

individuals, homeowners, and business owners for shifts to clean energy sources and technologies, (2) competitive grants to support shifts to clean energy solutions – with a particular focus on “low-income and disadvantaged” communities, and (3) a loan authority granted to federal departments for clean energy projects (Bipartisan Policy Center 2022).

Sources: The White House, “Inflation Reduction Act (IRA) Guidebook,” 2022a, <https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/>; Bipartisan Policy Center, “Inflation Reduction Act (IRA) Summary: Energy and Climate Provisions,” 2022, https://bipartisanpolicy.org/blog/inflation-reduction-act-summary-energy-climate-provisions/?utm_medium=search&utm_source=google&utm_campaign=energy-ira&campaignid=18598281593&adgroupid=146210159230&keyword=ira%20climate&gad=1&gclid=Cj0KCQjwxYOiBhC9ARIsANiElfbzdi-iuHHBpVoFeOcklCjygH1Lk-3mqeTB5t4xuJDluriL8qM46FEaAjx-EALw_wcB.

Aligning the IIJA and the IRA to Regional Climate Action Goals: The Case of the Genesee–Finger Lakes Region

Regional organizations have many opportunities to use the IIJA and the IRA to advance their own regional climate action goals. In the case of the Genesee–FLX region, the Genesee-FLX Climate Action Strategy prioritizes climate action that addresses regional greenhouse gas emissions (CSA 2022). According to the report, the primary drivers of regional emissions include transportation (33 percent), residential and commercial buildings (25 percent), and the agricultural sector (22 percent) (CSA 2022). Emissions sources in these areas include fuel use in personal, commercial, and public commuter vehicles, natural gas used in heating and cooking in buildings, and exhaust and waste from agricultural production.

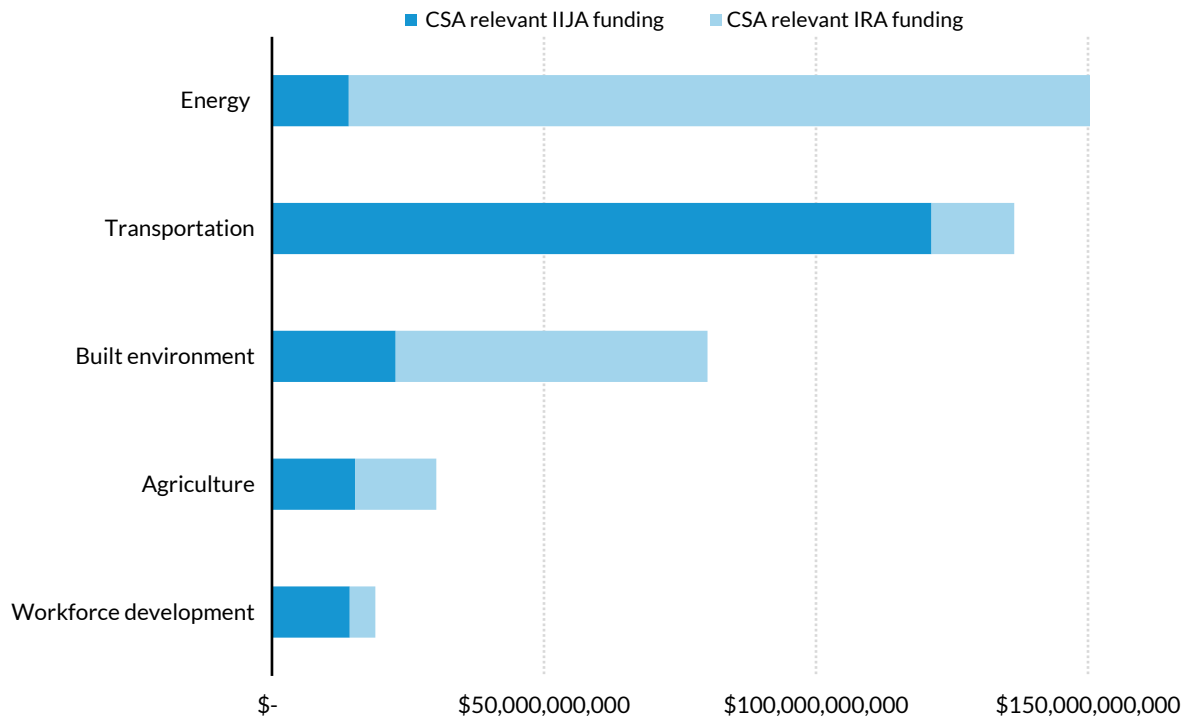
At the request of Climate Solutions Accelerator, we focus in this brief on the following areas:

1. transportation (reducing vehicle miles traveled),
2. built environment (increasing building electrification),
3. clean energy generation,
4. agriculture (improving soil health and agricultural waste management), and
5. workforce development (green jobs).

Figure 1 below displays the level of overlap between the climate action strategy priorities that they requested we review and funding opportunities in the IIJA and IRA. We find that while some priorities are well supported, such as green energy programs and transportation programs, others such as agriculture and workforce development, will not receive the same level of funding support through the IIJA and IRA. The rest of this document is dedicated to visiting each priority area and displaying examples of potential opportunities within each law.

FIGURE 1

Total Federal Funding from the IIJA and the IRA for Programs That Align with the Genesee-FLX Climate Action Strategy



Sources: “Cost Estimate,” Congressional Budget Office, August 2022, https://www.cbo.gov/system/files/2022-08/hr5376_IR_Act_8-3-22.pdf; The White House, “Inflation Reduction Act (IRA) Guidebook,” 2022b, <https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/>; The White House, “Building a Better America: A Guidebook to the Bipartisan Infrastructure Law for State, Local, Tribal, and Territorial Governments, and Other Partners,” 2022b, <https://www.whitehouse.gov/build/guidebook/>; CSA (Climate Solution Accelerator), “The Genesee-FLX Climate Action Strategy,” 2022, <https://static1.squarespace.com/static/5f69141a20665f4000eb34a2/t/63939e0ea589b67010513a22/1670618642923/Genesee-FLX+Climate+Action+Strategy+2022+%28No+Appendices%29.pdf>.

Transportation

Transportation is the largest source of regional emissions in the Genesee-FLX region at 33 percent, with passenger cars and trucks producing most transportation emissions (CSA 2022). The Genesee-FLX Climate Action Strategy prioritizes a set of changes to reduce emissions from transportation while promoting more equitable and sustainable connections between people and resources. The changes include a regional transition to zero-emission vehicles, shifts in land use and development practices that reduce car reliance, and improving multimodal transportation options. Such changes will require developing regional infrastructure for electric vehicles and promoting community development and land-use decisions that make amenities like grocery stores, health care, and jobs more accessible across different modes of transportation—particularly for low-income communities of color.

This section highlights a sample of transportation opportunities within the IIJA (\$121 billion in funding) and the IRA (\$15 billion in funding) that align with the goals outlined in the Genesee-FLX Climate Action Strategy (for a full list of the IIJA and IRA relevant opportunities, see Appendix A). The funding for making transportation shifts is primarily in the form of competitive grant programs focused on the transition of public and commercial vehicle fleets to electric vehicles, investments to expand electric vehicle infrastructure, and development practices that center public transit access and multimodal transportation. Over \$18 billion in the IIJA is dedicated to electric vehicle infrastructure and vehicle transition. Over \$80 billion in the IIJA is dedicated to increasing mobility through public transit improvements and transit-oriented community development. The investments overall can support priorities to reduce car dependency and emissions while increasing connectivity to services and resources to support the holistic needs of communities.

In addition to the programs presented below, the biggest transportation programs, the National Highway Performance Program and the Surface Transportation Block Grant, can be used to fund nonhighway projects, either directly (via the Surface Transportation Block Grant) or through "flexing" (via the National Highway Performance Program). This is a huge opportunity for states and localities because the funding is enormous, but most states do very little "flexing" (Redeker et al. 2022). Climate collaboratives and other similar groups could advocate for this flexing of funds to redirect highway dollars to public transit.

The IRA contains dollars, primarily through tax credits, that can be used to offset the cost of transitions to electric vehicles by individuals, businesses, and governments. It also includes some grant dollars to support more sustainable development practices, emissions monitoring, and mitigation strategies. The law offers billions through tax credits and grants to promote the transition to clean energy technologies and renewable energy sources with an explicit focus on transportation, although whether or not these dollars are realized depends upon whether people take advantage of the tax credits offered through the act. Climate Solution Accelerator and other similar groups could work to educate people about tax credit opportunities to increase their take-up.

ELECTRIC VEHICLES AND INFRASTRUCTURE

The Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Low or No Emission (Bus) Grants:** capital funding to replace, rehabilitate, purchase, or lease buses and bus-related equipment and to rehabilitate, purchase, construct, or lease bus-related facilities. Provides capital funding for low or no emissions bus projects.
- **National Electric Vehicle Infrastructure Formula Program:** competitive grants to state and local governments that require additional assistance to strategically deploy electric vehicle charging infrastructure and establish an interconnected network to facilitate data collection, access, and reliability.
- **Charging and Fueling Infrastructure Grants (Community Charging):** funding to install electric vehicle charging and alternative fuel in locations on public roads, schools, parks, and in publicly accessible parking facilities.

- **Charging and Fueling Infrastructure Grants (Corridor Charging):** funding to deploy electric vehicle charging and hydrogen/propane/natural gas fueling infrastructure along designated alternative fuel corridors and in communities.
- **Carbon Reduction Program:** funds for projects designed to reduce transportation emissions, defined as carbon dioxide (CO₂) emissions from on-road highway sources.

The Inflation Reduction Act (IRA) opportunities:

- **Clean Vehicle Credit:** tax credit for purchasers of clean vehicles. The tax credit is available for consumers who have adjusted gross incomes for the current or preceding year below \$300,000 (couples), \$225,000 (heads of household), \$150,000 (singles).
- **Credit for Previously Owned Clean Vehicles:** tax credit for purchasers of preowned clean vehicles. Tax credit is available for consumers who have adjusted gross incomes for the current or preceding year below \$150,000 (couples), \$112,500 (heads of household), \$75,000 (singles).
- **Commercial Clean Vehicles Credit:** tax credit for purchasers of qualified commercial clean vehicles. Businesses that acquire motor vehicles or mobile machinery for use or lease.
- **Alternative Fuel Vehicle Refueling Property Credit:** tax credit for alternative fuel vehicle refueling and charging property in low-income and rural areas. Alternative fuels include electricity, ethanol, natural gas, hydrogen, biodiesel, and others. Six percent of the cost for businesses, limited to a \$100,000 credit per item of property for businesses. Thirty percent for individuals, limited to \$1,000.
- **Clean Heavy-Duty Vehicle Program:** funding to offset the costs of replacing heavy-duty Class 6 and 7 commercial vehicles—garbage trucks, buses, delivery trucks—with zero-emission vehicles; deploying infrastructure needed to charge, fuel, or maintain these zero-emission vehicles; and developing and training the necessary workforce. Program covers up to 100 percent of costs for (1) incremental cost of replacing an existing heavy-duty vehicle with a zero-emission vehicle; (2) purchasing and operating associated infrastructure; (3) workforce development and training; (4) planning and technical activities.
- **Funding to Address Air Pollution—Mobile Source Grants:** funding to states to adopt and implement California’s greenhouse gas and zero-emission standards for on-road mobile sources.

REGIONAL MULTIMODAL TRANSPORTATION

The Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Bus and Bus Facilities Formula/Competitive Grants:** funding to states and transit agencies through a statutory formula to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.
- **Strengthening Mobility and Revolutionizing Transportation (SMART) Grants:** supplemental funding grants to rural, midsized, and large communities to conduct demonstration projects

focused on advanced smart city or community technologies and systems in a variety of communities to improve transportation efficiency and safety.

- **Congestion Mitigation and Air Quality Improvement Program:** funding to states and metropolitan planning organizations for transportation projects designed to reduce traffic congestion and improve air quality, particularly in areas of the country that do not attain national air quality standards.
- **Pilot Program for Enhanced Mobility:** competitive grants to improve coordinated access and mobility.

EQUITABLE, TRANSIT-ORIENTED DEVELOPMENT

The Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Pilot Program for Transit Oriented Development:** competitive grants that fund projects in local communities to integrate land use and transportation planning aligned with the Federal Transit Administration's mission of improving public transportation for America's communities.
- **Rebuilding American Infrastructure with Sustainability and Equity (RAISE):** grants that will distribute more than \$7.5 billion through a competitive grant program (formerly named BUILD and TIGER) for projects focused on road, rail, transit, and other surface transportation of local and/or regional significance. Selection criteria includes safety, sustainability, equity, economic competitiveness, mobility, and community connectivity. This amount, as is the case for most IIJA programs, is a base funding level that Congress could increase, as was the case in 2022 when Congress provided additional money for RAISE.
- **Bus and Bus Facilities Formula/Competitive Grants:** funding to states and transit agencies through a statutory formula to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.

The Inflation Reduction Act (IRA) opportunities:

- **Neighborhood Access and Equity Grant Program:** competitive grants for context-sensitive projects that improve walkability and safety and provide affordable transportation; mitigate or remediate negative impacts on the human or natural environment in disadvantaged communities from a surface transportation facility; and planning and capacity-building activities in these communities.

COMPLETE STREET POLICIES AND SAFE ROUTES TO SCHOOLS

The Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Safe Streets and Roads for All:** competitive grants to support planning, infrastructure, behavioral, and operational initiatives to prevent death and serious injury on roads and streets involving all roadway users, including pedestrians; bicyclists; public transportation, personal conveyance, and micro-mobility users; motorists; and commercial vehicle operators.

Built Environment

Buildings, both residential and commercial, emit 25 percent of regional emissions in the Genesee- FLX region, largely from the use of natural gas to heat buildings and power stoves, water heaters, and dryers. To reduce these emissions, thousands of homes and commercial buildings will need to be retrofitted for energy efficiency and electrification and will need to act as a central tenet for future building design and construction standards. To achieve this, the Genesee-FLX Climate Action Strategy calls for planning and implementation that focuses on community outreach and education, identifying and deploying strategies to update the aging housing stock, supporting and growing local workforce capacity on sustainable building and upgrades, and technical assistance support for navigating local, state, and federal programs and incentives.

This section highlights selected built environment opportunities within the IIJA (\$23 billion in funding) and the IRA (\$57 billion in funding) that align with the goals in the Genesee-FLX Climate Action Strategy. Both the IIJA and the IRA focus heavily on programs that support reducing overall emissions from homes and commercial and public buildings. Specific investments from the laws intend to reduce energy use of heating and cooling systems and appliances and promote sustainable materials and designs for greater energy efficiency. The IIJA offers over \$6 billion primarily in competitive and formula grants to support delivering clean power. The bulk of this investment is to support states and local agencies in deploying local strategies such as changes in building practices, use of materials, and reducing energy consumption in buildings. The IRA provides a mix of opportunities: tax credits/rebates, grants, and technical assistance to promote sustainable building practices, electrifying and making buildings and more energy efficient, with support for community education and awareness. Only a few IIJA/IRA programs address community engagement and education; none support Genesee-FLX climate action strategies goals of equitable pay rate design for power use or specifically for piloting renewable and sustainable energy sources for heating and cooling.

COMMUNITY ENGAGEMENT AND EDUCATION—IMPACTS OF CLIMATE CHANGE AND ENERGY USE IN BUILDINGS

The Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Environmental and Climate Justice Block Grants:** grants and technical assistance to community-based organizations, alone or in partnerships, to reduce indoor and outdoor air pollution, including greenhouse gases; monitor for pollution; improve community resilience to the impacts of climate change, including extreme heat and wildfire; and build the capacity of these organizations to engage with state and federal decisionmaking processes.
- **Funding to Address Air Pollution at Schools:** grants and other activities to monitor and reduce pollution and greenhouse gas emissions at schools in low-income and disadvantaged communities, and provide technical assistance to schools in low-income and disadvantaged communities to develop school air and environmental quality plans and to identify and mitigate ongoing air pollution hazards.

- **Climate Pollution Reduction Grants:** grants to Tribes, states, air pollution control agencies, and local governments to develop and implement plans for reducing greenhouse gas emissions.

BUILDING ELECTRIFICATION AND EFFICIENCY—HOMEOWNERS, RENTAL, COMMERCIAL

The Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Energy Efficiency Revolving Loan Fund Capitalization Grant Program:** grants for states to create a fund supporting nonprofits with energy efficiency materials including a roof or lighting system or component of the system; a window; a door, including a security door; and a heating, ventilation, or air conditioning system or component of the system.
- **Low-Income Home Energy Assistance Program:** assistance for eligible low-income households with their heating and cooling energy costs, bill payment assistance, energy crisis assistance, weatherization and energy-related home repairs.
- **Weatherization Assistance Program:** funding to increase the energy efficiency of dwellings owned or occupied by low-income persons, reduce their total residential energy expenditures, and improve their health and safety, especially low-income persons who are particularly vulnerable such as the elderly, the disabled, and children.
- **Grants for Energy Efficiency and Renewable Energy Improvements at Public School Facilities:** competitive grants to make energy efficiency and renewable energy, as well as alternative fueled vehicle upgrades and improvements at public schools.
- **Cost-effective Codes Implementation for Efficiency and Resilience:** competitive grants to enable sustained, cost-effective implementation of updated building energy codes to save customers money on their energy bills.
- **Energy Efficiency Materials Pilot Program:** program for nonprofits with energy efficiency materials including (i) a roof or lighting system or component of the system; (ii) a window; (iii) a door, including a security door; and (iv) a heating, ventilation, or air conditioning system or component of the system (including insulation and wiring and plumbing improvements needed to serve a more efficient system).

The Inflation Reduction Act (IRA) opportunities:

- **Energy Efficiency Home Improvement Credit:** tax credit for energy-efficiency improvements of residential homes.
- **Home Energy Performance-Based, Whole-House Rebates:** grants to state energy offices to develop a whole-house energy saving retrofits program that will provide rebates to homeowners and aggregators for whole house energy saving retrofits.
- **New Energy Efficient Homes Credit:** tax credit for construction of new energy efficient homes. \$2,500 for new homes meeting Energy Star standards; \$5,000 for certified zero-energy ready homes. For multifamily, base amounts are \$500 per unit for Energy Star and \$1000 per unit for zero-energy ready.

- **High-Efficiency Electric Home Rebate Program:** formula grants to state energy offices and Tribal entities to develop and implement a high-efficiency electric home rebate program. When implemented by state energy offices, rebates show up as automatic discounts at the point of sale for electrification projects. Homeowners will only have to pay the discounted price for the eligible services and equipment. Low-income households (<80 percent AMI) have costs covered at 100 percent. Middle-income households (80–150 percent AMI) have costs covered at 50 percent.
- **Energy Efficient Commercial Buildings Deduction:** tax deduction for energy efficiency improvements to commercial buildings, such as improvements to interior lighting; heating, cooling, ventilation, hot water, and the building envelope.
- **Green and Resilient Retrofit Program:** grants and loans to HUD-assisted multifamily properties to improve energy or water efficiency; enhance indoor air quality or sustainability; implement the use of zero-emission electricity generation, low-emission building materials or processes, energy storage, or building electrification strategies; or make the properties more resilient to climate impacts. The law provides up to \$4 billion in loan authority.
- **Residential Clean Energy Credit:** tax credit for the purchase of residential clean energy equipment, including battery storage with capacity of at least 3 kWh. Thirty percent of cost of equipment through 2032; 26 percent in 2033; 22 percent in 2034.

TRANSITION AWAY FROM NATURAL GAS USE IN BUILDINGS

The Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Grants for Energy Efficiency and Renewable Energy Improvements at Public School Facilities:** competitive grants to make energy efficiency and renewable energy, as well as alternative fueled vehicle upgrades and improvements at public schools.

The Inflation Reduction Act (IRA) opportunities:

- **Methane Emissions Reduction Program:** financial and technical assistance to accelerate the reduction of methane and other greenhouse gas emissions from petroleum and natural gas systems. The statute also establishes a waste emissions charge for applicable facilities that report more than 25,000 metric tons of CO₂ equivalent per year (to the petroleum and natural gas systems source category of the Greenhouse Gas Reporting Program) and that exceed statutorily specified waste emissions thresholds.
- **Technical Assistance for the Adoption of Building Energy Codes:** funding to support states and local jurisdictions in adopting, implementing, and enforcing the latest model, zero energy codes, or equivalent codes and standards, improving residential and commercial new construction and retrofits, and transitioning the building stock to more efficient, decarbonized buildings for all.
- **Environmental and Climate Justice Block Grants:** grants and technical assistance to community-based organizations, alone or in partnerships, to reduce indoor and outdoor air pollution, including greenhouse gases; monitor for pollution; improve community resilience to

the impacts of climate change, including extreme heat and wildfire; and build the capacity of these organizations to engage with state and federal decisionmaking processes.

- **Energy Efficiency Home Improvement Credit:** tax credit for energy-efficiency improvements of residential homes.
- **Home Energy Performance-Based, Whole-House Rebates:** grants to state energy offices to develop a whole-house energy saving retrofits program that will provide rebates to homeowners and aggregators for whole house energy saving retrofits.
- **New Energy Efficient Homes Credit:** tax credit for construction of new energy efficient homes. \$2,500 for new homes meeting Energy Star standards; \$5,000 for certified zero-energy ready homes. For multifamily, base amounts are \$500 per unit for Energy Star and \$1000 per unit for zero-energy ready.
- **High-Efficiency Electric Home Rebate Program:** grants to state energy offices and Tribal entities to develop and implement a high-efficiency electric home rebate program.
- **Energy Efficient Commercial Buildings Deduction:** tax deduction for energy efficiency improvements to commercial buildings, such as improvements to interior lighting; heating, cooling, ventilation, hot water, and the building envelope.
- **Green and Resilient Retrofit Program:** grants and loans to HUD-assisted multifamily properties to improve energy or water efficiency; enhance indoor air quality or sustainability; implement the use of zero-emission electricity generation, low-emission building materials or processes, energy storage, or building electrification strategies; or make the properties more resilient to climate impacts. The law provides up to \$4 billion in loan authority.

Clean Energy Generation

NY state law offers another driver behind Genesee-FLX's efforts that could be leveraged in applications for federal funding. The Climate Leadership and Community Protection Act (CLCPA), which establishes aggressive, legally binding targets to completely transition New York's economy off fossil fuels, requires 70 percent of the state's electricity to come from renewable sources by 2030 and that all electricity be generated from carbon-free sources by 2040. To meet these goals, the CLCPA also requires 6,000 MW of distributed solar by 2025 and 3,000 MW of energy storage by 2030 statewide. According to the strategy, the state estimates an increase of 65 to 80 percent in electricity demand by 2050. Reaching these goals include focusing on community engagement and education on clean energy transitions, transitioning current and building new energy production facilities with technology to generate energy from renewable sources, improving the electrical grid to meet the anticipated increases in demand, and setting guardrails in monitoring and pay rate scales to ensure affordability for residents.

This section shows the broad alignment between strategy priorities and select opportunities for clean energy generation in the IJJA (\$14 billion in funding) and the IRA (\$136 billion in funding). The IJJA primarily provides grants for governments and local energy producers to support renewable energy projects and upgrades to the electrical grid. The IRA provides primarily tax credits and loans for

governments and local energy producers that can help offset costs and provide initial capital to support transitions to clean energy sources and technologies. Such investments will be critical with the push to rely more centrally on electrification and to transition to renewable sources for electricity.

Most of the funding for clean energy generation comes from the IRA, which is novel in that it allows nonprofit and governmental entities to receive direct payments for 12 clean energy tax credits, including the major investment and production tax credits. In fact, under the IRA, nearly any advanced or renewable energy asset constructed by a local government is eligible for some kind of federal cash subsidy.¹² These tax credits helped with the successful passage of New York State's Build Public Renewables Act which was passed in May and authorizes the New York Power Authority—the largest state public power authority in the US—to build renewable energy projects.¹³ The Law directs the New York Power Authority to plan, construct, and operate renewable energy projects in service of the state's renewable energy goals.

COMMUNITY ENGAGEMENT AND EDUCATION ON IMPACTS OF CLIMATE CHANGE, ENERGY GENERATION, RENEWABLE SOLUTIONS

The Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Energy Efficiency and Conservation Block Grant (EECBG) Program:** grants to states, local governments, and Tribes to support strategies to reduce energy use, reduce fossil fuel emissions, and improve energy efficiency.

The Inflation Reduction Act (IRA) opportunities:

- **Low Emissions Electricity Program:** funding for a wide range of activities to encourage low emissions electricity generation and use through education, technical assistance, and partnerships with consumers, low income and disadvantaged communities, industry, and state, local, and Tribal governments; and funds an assessment of anticipated greenhouse gas reductions from changes in domestic electricity generation and use and to ensure that reductions in greenhouse gases are achieved through the existing authorities of the Clean Air Act.

RENEWABLE ENERGY PILOT PROJECTS

Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Wind Energy Technology Program:** funding for research organizations for research, development, demonstration, and commercialization activities to improve wind energy technologies.
- **Solar Energy Research and Development:** funding for research organizations for research, development, demonstration, and commercialization activities to improve solar energy technologies.

Inflation Reduction Act (IRA) opportunities:

- **Production Tax Credit for Electricity from Renewables:** tax credit for production of electricity from renewable sources. It provides a corporate tax credit of up to 1.3 cents/kWh for electricity generated from landfill gas (LFG), open-loop biomass, municipal solid waste resources, and small irrigation power facilities, or up to 2.6 cents/kWh for electricity generated from wind, closed-loop biomass and geothermal resources.
- **Investment Tax Credit for Energy Property:** tax credit for investment in renewable energy projects that reduces the federal income tax liability for a percentage of the cost of a solar system that is installed during the tax year.
- **Clean Electricity Production Tax Credit:** technology-neutral tax credit for production of clean electricity. Replaces the production tax credit for electricity generated from renewable sources (extended in Section 13201 through 2024).
- **Clean Electricity Investment Tax Credit:** technology-neutral tax credit for investment in facilities that generate clean electricity.
- **Advanced Energy Project Credit** tax credit for investments in advanced energy projects, as defined in 26 USC § 48C(1).
- **Energy Infrastructure Reinvestment Financing:** loans to projects that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or that enable operating energy infrastructure to avoid, reduce, use, or sequester air pollutants or anthropogenic emissions of greenhouse gases. The IRA places a total cap on loan guarantees of up to \$250 billion and appropriates \$5 billion in credit subsidy to support these loans under section 1706 of the Energy Policy Act of 2005.
- **Rural Energy for America Program (REAP):** loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or to make energy efficiency improvements. Agricultural producers may also apply for new energy efficient equipment and new system loans for agricultural production and processing.
- **Electric Loans for Renewable Energy:** loans to finance the construction of electric distribution, transmission, and generation facilities, including system improvements and replacements required to furnish and improve electric service in rural areas and demand side management, energy conservation programs, and on-grid and off-grid renewable energy systems.

UPGRADES TO THE ELECTRICAL GRID

Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Energy Efficient Transformer Rebates:** rebates to industrial or manufacturing facility owners, commercial building owners, multifamily building owners, utilities, or energy service companies for the replacement of a qualified energy inefficient transformer with a qualified energy efficient transformer.

- **Upgrading Our Electric Grid and Ensuring Reliability and Resiliency:** grants to governmental entities to coordinate and collaborate with electric sector owners and operators to demonstrate innovative approaches to transmission, storage, and distribution infrastructure to harden and enhance resilience and reliability; and to demonstrate new approaches to enhance regional grid resilience, implemented through states by public and rural electric cooperative entities on a cost-shared basis.
- **Preventing Outages and Enhancing the Resilience of the Electric Grid / Hazard Hardening:** grants to eligible entities, States, and Tribes to prevent outages and enhance the resilience of the electric grid.
- **Smart Grid Investment Matching Grant Program:** grants to eligible participants to increase the flexibility, efficiency, and reliability of the electric power system. The program focuses on increasing capacity of the transmission system, preventing faults that may lead to wildfires or other system disturbances, integrating renewable energy at the transmission and distribution levels, and facilitating the integration of increasing electrified vehicles, buildings, and other grid-edge devices.
- **Grid Resilience State/Tribal Formula Grant Program:** formula funding to states, territories, and federally recognized Indian Tribes for projects that generate the greatest community benefit providing clean, affordable, and reliable energy. The focus of the program is to strengthen and modernize America’s power grid against wildfires, extreme weather, and other natural disasters that are exacerbated by the climate crisis.

Inflation Reduction Act (IRA) opportunities:

- **Transmission Facility Financing:** direct loan program for transmission facility financing for the construction or modification of electric transmission facilities designated by the Secretary to be in the national interest under section 216(a) of the Federal Power Act.

EQUITABLE AND AFFORDABLE ACCESS TO CLEAN ENERGY

The Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Energy Improvements in Rural or Remote Areas:** grants and other funding streams to eligible recipients to improve the resilience, reliability, safety, availability, and environmental performance of energy systems serving our nation’s rural or remote areas with populations of no more than 10,000 people.
- **Energizing Rural Communities Prize:** challenges individuals and organizations to develop partnership plans or innovative financing strategies to help rural or remote communities improve their energy systems and advance clean energy demonstration projects.

Agriculture

The agricultural sector makes up 22 percent of the Genesee–FLX region’s greenhouse gas emissions, with the manure from dairy cows and the enteric fermentation of dairy production being key sources

(CSA 2022). The dairy industry—a major economic driver for New York State—is a prominent contributor. Wyoming County, within the Genesee-FLX region, is the largest producer of milk in the state of New York. While some improvements have been made to reduce emissions, more measures can be taken to promote sustainable practices and ensure the agricultural sector is aligned with regional and state climate action goals. Priorities established in the Genesee-FLX Climate Collective and Climate Solutions Accelerator include research and measurement for reliable data on emissions from agricultural practices in the region, resources and ongoing support for farmers to transition to climate-friendly practices, redesign processes and introduce new models in the local food system to increase access to local markets and address food desserts in the region.

This section outlines opportunities in agriculture from the IIJA (\$14 billion in funding) and the IRA (\$4 billion in funding) that primarily align with supporting climate friendly farming practices—including a focus on soil health, fertilizer use, and water management. Some opportunities—particularly through the IRA—focus on land use and natural resource restoration. While reducing emissions can be supported with projects through these funding streams, it is not a strong component overall for the programs. Agriculture had the smallest footprint of opportunities within these bills that aligned with the Climate Action Strategy. While there are a few major opportunities to consider, seeking a more comprehensive set of opportunities for funding, technical assistance, and knowledge development on sustainable farming practices from other sources is encouraged.

COMMUNITY ENGAGEMENT AND EDUCATION – LINK BETWEEN CLIMATE CHANGE, AGRICULTURE, AND FOOD SYSTEMS

Inflation Reduction Act (IRA) opportunities:

- **From Learning to Leading: Cultivating the Next Generation of Diverse Food and Agriculture Professionals:** grants to build and sustain the next generation of the food, agriculture, natural resources, and human sciences workforce including the future USDA workforce primarily by (a) providing student scholarship support, meaningful paid internships, fellowships, and job opportunity matching, and (b) facilitating opportunities to learn the processes and pathways leading to training and employment in the federal sector.

EMISSIONS RESEARCH, DATA, AND MONITORING

Inflation Reduction Act (IRA) opportunities:

- **Conservation Technical Assistance – Greenhouse Gas Emission Quantification Program:** funding for conservation technical assistance through partnerships that will leverage the expertise, experience, and capacity of other organizations to address climate change and to broaden the footprint of climate-smart agriculture. These monitoring and evaluation efforts will support the quantification of carbon sequestration and greenhouse gas emissions reductions, directly tied to the conservation program investments.

CLIMATE FRIENDLY FARMING PRACTICES—SOIL HEALTH AND MANURE MANAGEMENT

Infrastructure Investment and Jobs Act (IIJA) opportunities:

Bioproduct Pilot Program: funding to support the scale-up of sustainable bioproduct manufacturing, with the goal of providing a low-cost alternative to conventional products, including a focus on greenhouse gas emission reductions and other environmental benefits relative to their commonly used alternative materials.

- **WaterSMART Grants:** competitive funds through WaterSMART under the authority of Sec. 9504(a) of the SECURE Water Act for water management improvements that contribute to water supply sustainability, increase drought resilience, and that have environmental benefits.
- **Water Recycling:** funding for projects that reclaim and/or reuse municipal, industrial, and agricultural wastewater; and for projects that improve impaired ground and surface waters.
- **Water and Groundwater Storage, and Conveyance:** formula funds and competitive grants for projects with existing feasibility study or construction authorization are eligible for funding. The project must be found feasible and with benefits proportionate to federal investment. Small Water Storage and Groundwater Storage Projects are defined in the Bipartisan Infrastructure Law as projects that have storage capacity between 2,000 acre-feet and 30,000 acre-feet and increase surface water or groundwater storage or convey water, directly or indirectly, to or from surface water or groundwater storage.
- **Clean Water State Revolving Fund:** funding to states to then provide funds to water utilities and/or Municipal and Other Eligible Entities with low-cost financing for water quality infrastructure projects, including municipal wastewater facilities, nonpoint source pollution control, decentralized wastewater treatment systems, stormwater runoff mitigation, green infrastructure, estuary protection, and water reuse.
- **Rural Water Projects:** financing and technical assistance for the construction of drinking water and wastewater facilities in rural communities.

Inflation Reduction Act (IRA) opportunities:

- **Environmental Quality Incentives Program:** funding for technical and financial assistance to eligible agricultural producers to help implement conservation practices that address resource concerns related to organic production; soil, water, and air quality; wildlife habitat; nutrient management associated with crops and livestock; pest management; ground and surface water conservation; irrigation management; drought resiliency measures; adapting to and mitigating against increasing weather volatility; energy conservation; and related resource concerns. This funding will support practices that directly improve soil carbon, reduce nitrogen losses, or reduce, capture, avoid, or sequester carbon dioxide, methane, or nitrous oxide emissions associated with agricultural production.
- **Regional Conservation Partnership Program (RCPP):** support for the Regional Conservation Partnership Program (RCPP), a partner-driven approach to conservation that funds solutions to

natural resource challenges on agricultural land by leveraging collective resources and collaborating to implement natural resource conservation activities.

- **Conservation Technical Assistance:** funding for conservation technical assistance, which offers our nation’s farmers, ranchers, and forestland owners the knowledge and tools they need to conserve, maintain, and restore the natural resources on their lands and improve the health of their operations for the future.

CLIMATE AND ENVIRONMENTAL JUSTICE

The harms of climate change fall more heavily on communities of color and communities with low incomes, reflecting our nation’s history and ongoing struggle with environmental racism.¹⁴ For instance, one year after the devastation of Hurricane Harvey in Texas (Hamel et al. 2018), 75 percent of Black households and 64 percent of Latino households affected by the disaster reported severe financial challenges, as compared to 51 percent of affected white households (Hamel et al. 2018). Additionally, studies show that census tracts with majority Black, Hispanic, or Native American residents experience 50 percent higher vulnerability to wildfires in comparison to other census tracts.¹⁵ For communities of color and those earning low-incomes, highways and industry pollute the air at higher rates than in white, wealthier communities.¹⁶ And, the lead in pipes and on the walls of older homes harm children of color at higher rates than white children.¹⁷ Black communities also receive the brunt of flood damages from storms due to overwhelmed sewer systems and lack of flood protections.¹⁸ These and other such conditions drive distressing racial disparities in physical health, mental health, and economic outcomes (Berberian, Gonzalez, and Cushing 2022).¹⁹

Equity and environmental justice are central tenets of the Genesee-FLX Climate Action Strategy. The IJJA and the IRA (and Justice40, a related executive order) provide an opportunity to ensure that the investments made into climate action in the Genesee-FLX region also address climate justice and environmental racism.

Justice40

Justice40 is the Biden Administration’s attempt to redress the harms of environmental racism and prevent additional harm from climate change.²⁰ The initiative intends for 40 percent of the benefits from select climate-related federal pilot programs to go towards communities classified as “disadvantaged.” Many of the census tracts in the Genesee FLX region qualify as disadvantaged under the EPA’s Climate and Economic Justice Screening Tool, including the majority of census tracts in its largest city, Rochester, NY. According to the criteria of the screening tool, these census tracts meet more than 1 burden threshold as well as an associated socioeconomic threshold and are thus underserved and overburdened by the effects of climate change.²¹ The commitment seeks to “address the disproportionately high and adverse human health, environmental, climate-related, and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges.”²²

To achieve the 40 percent goal, the initiative currently sets directives for federal departments to integrate goals of racial equity and environmental justice into their programs.²³ The ongoing Justice40

initiative covers over 400 federal programs specifically with anticipated changes seen across federal departments more broadly.²⁴ The IJA and the IRA create two opportunities to operationalize the commitment to equity and justice through the design and implementation of these programs and the distribution of over \$1.6 trillion.

While the overall commitment creates potential opportunities to advance justice, critical limitations exist (Fu, Williams, and Shipp 2022). First, the “benefits” as part of the commitment remain undefined without specific goals, milestones, and metrics to understand intended impact. Second, guidance on how best to design and implement programs to meet the goals also remain unclear. And third, mechanisms for accountability have not been established introducing risk of missing the opportunity to direct investments and actions in support of the 40 percent benefit goal. To actualize the benefits promised with Justice40, agencies need additional clarification and directives for implementation and accountability and local leaders need support in planning, design, and implementation of projects. After the announcement of Justice40, the US Council on Environmental Quality (CEQ) released a Climate and Economic Justice Screening Tool that helps identify communities eligible for Justice40. This screening tool serves as a guide for place-based prioritization of infrastructure and climate action investments that would advance environmental justice.

PRIORITY COMMUNITIES FOR THE ROCHESTER REGION

One of the ways the Rochester region can operationalize their commitment to equity is to identify the communities most affected by historical injustices and to direct planning and investments to align with their needs. Similar to the Climate and Economic Justice Screening Tool at the federal level, the State of New York’s Climate Action Council’s Climate Justice Working Group (CJWG)²⁵ also developed evaluation criteria to identify “disadvantaged communities.”²⁶ The purpose of the criteria is to help guide planning and investments to ensure that “frontline and otherwise underserved communities benefit from the state’s historic transition to cleaner, greener sources of energy, reduced pollution and cleaner air, and economic opportunities.” These criteria include the following:

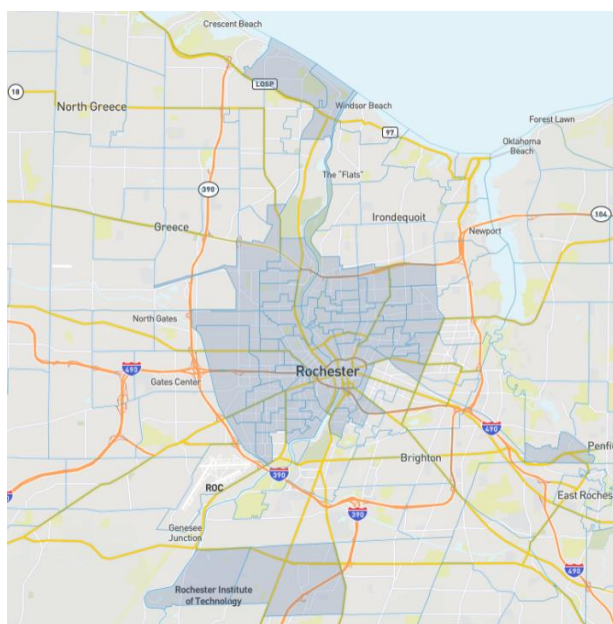
- areas burdened by cumulative environmental pollution and other hazards that can lead to negative public health effects;
- areas with concentrations of people with low incomes, high unemployment, high rent burden, low levels of home ownership, low levels of educational attainment, or members of groups that have historically experienced discrimination based on race or ethnicity; and
- areas vulnerable to the impacts of climate change such as flooding, storm surges, and urban heat island effect.

In the Genesee-FLX region, 35 percent of the census tracts are identified as “disadvantaged” communities. This term means those residing in more than a third of tracts face the risk of experiencing an outsized burden from the impacts of climate change. These communities should be prioritized in planning and implementation of strategies for climate mitigation and adaptation.

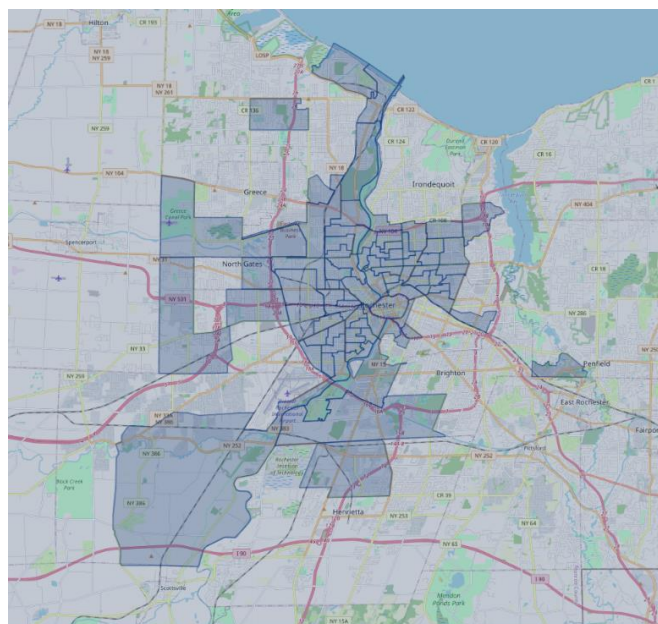
In support of identifying points of alignment, tools exist to inform strategies for prioritization for more equitable outcomes. The Climate and Economic Justice Screening Tool was created by the Council on Environmental Quality (CEQ) for the federal government. The tool defines the criteria for identifying “disadvantaged communities” to focus the interventions and investment to advance environmental justice through the Justice40 initiative.²⁷ For the Rochester region, the designations for disadvantaged communities through the New York State CJWG closely align with the federal designations for disadvantaged communities through Climate and Economic Justice Screening Tool. Displayed below, figure 1 shows the spatial overlap which can help inform where to focus efforts and take initial steps to understand what strategies may best align with the needs of these communities. Demonstrating alignment with the administration’s Justice40 priorities in federal grant applications will strengthen these bids for funding while supporting local equity goals.

FIGURE 1

Disadvantaged Communities in the Genesee-Finger Lakes Region according to New York State Designations and Federal Designations



New York Climate Justice Working Group
Climate Disadvantaged Communities Criteria Designations



Federal Climate and Economic Justice Designations

URBAN INSTITUTE

Sources: Disadvantaged Communities Criteria,” Climate Act, New York State, accessed May 7, 2023, <https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria>; “Climate and Economic Justice Screening Tool,” Council on Environmental Quality, accessed May 5, 2023, <https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>.

Workforce Development

A transition to a clean energy economy also requires investment in the skills workers need to create and maintain it. The Genesee-FLX Climate Action Strategy outlines the need to align climate action plans

with strategies and long-term planning for regional workforce and economic development. The strategy notes a need to conduct research to understand the needs of the local workforce and potential impact on local industries while transitioning to a clean energy economy. A critical component in the transition is to create new resources for training and skill development and local business support. Upskilling and reskilling will help to enable businesses to meet the increased demand from public and private contracting opportunities. It is equally essential to promote the ownership of businesses in the “green economy” to be more representative of local demographics. This helps ensure that local residents can benefit from job creation activities and not be harmed by changes to the local economy as a result of climate investments.

While a few explicit programs are focused on workforce development, a number of standalone opportunities exist across all programs to support workforce development planning and implementation. Additionally, improving job quality is a central tenet of both the IIJA (\$15 billion in funding) and the IRA (\$15 billion in funding) with specific incentives integrated into certain programs; various programs require or incentivizes the prevailing wage and integration of apprenticeship programs. And, states can choose to dedicate all of their transportation dollars to workforce development activities that either increase participation amongst women and minorities, address workforce gaps, build skills that support emerging transportation technologies, or attract new job-creating investments, with no local matching funds required.²⁸ With approximately \$50 billion available per year, even a small proportion could have significant impacts on the transportation workforce.²⁹ However, these jobs may not support clean transportation or climate action if the jobs are for highway or road repairs or expansions.

Across programs, funding exists to support on-the-job and educational institution-based training programs, research and development, and capacity building for the manufacture, installation, and ongoing maintenance of new clean energy technologies. Amongst the available funding opportunities to support state and local workforce development, the Climate Action Plan’s priorities for the built environment and energy generation align most closely. Additional details on each opportunity are in the subsequent sections.

CLEAN ENERGY WORKFORCE DEVELOPMENT TRAINING CENTER WITH ADDITIONAL WORKFORCE TRAINING SUPPORTS

Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Career Skills Training:** grants to pay the federal share of career skills training programs under which students concurrently receive classroom instruction and on-the-job training for the purpose of obtaining an industry-related certification to install energy efficient building technologies.
- **Energy Auditor Training Grant Program:** grants to eligible States to train individuals to conduct energy audits or surveys of commercial and residential buildings to build the clean energy workforce, save customers money on their energy bills, and reduce pollution from building energy use.

- **Building, Training, And Assessment Centers:** grants to institutions of higher education to establish building training and assessment centers to educate and train building technicians and engineers on implementing modern building technologies.

Inflation Reduction Act (IRA) opportunities:

- **From Learning to Leading: Cultivating the Next Generation of Diverse Food and Agriculture Professionals:** grants to build and sustain the next generation of the food, agriculture, natural resources, and human sciences workforce including the future USDA workforce primarily by (a) providing student scholarship support, meaningful paid internships, fellowships, and job opportunity matching, and (b) facilitating opportunities to learn the processes and pathways leading to training and employment in the federal sector.

ALIGNMENT OF REGIONAL ECONOMIC DEVELOPMENT PLANNING WITH CLIMATE ACTION GOALS

Infrastructure Investment and Jobs Act (IIJA) opportunities:

- **Building Resilient Infrastructure and Communities (Robert T Stafford Act Section 203(i)):** grants to identify mitigation actions and implement projects that reduce risks posed by natural hazards, promote partnership to enable high-impact investments, support adoption and enforcement of codes and standards to facilitate community-wide risk reduction impacts, and reduce disaster losses and protect life and property from future disasters. This includes capability and capacity-building activities to enhance the knowledge, skills, expertise of the current workforce in the administration of mitigation assistance (e.g., building codes, partnerships, project scoping, mitigation planning and planning-related, and so on).
- **Industrial Assessment Centers (IAC) - Centers of Excellence:** funding to expand the IAC Program to community colleges, trade schools, and union training programs for the next-generation of energy savvy engineers; more than 60 percent pursue energy-related careers upon graduation.

Inflation Reduction Act (IRA) opportunities:

- **State-Based Home Efficiency Contractor Training Grants:** financial assistance to states to develop and implement a program to provide training and education to contractors involved in the installation of home energy efficiency and electrification improvements, including improvements eligible for rebates under sections 50121(d) and 50122(d) of the Inflation Reduction Act.
- **Clean Heavy-Duty Vehicles:** funding to offset the costs of replacing heavy-duty Class 6 and 7 commercial vehicles with zero-emission vehicles; deploying infrastructure needed to charge, fuel, or maintain these zero-emission vehicles; and training the necessary workforce.
- **Environmental and Climate Justice Block Grants:** grants and technical assistance to community-based organizations, alone or in partnerships, to reduce indoor and outdoor air

pollution, including greenhouse gases; monitor for pollution; improve community resilience to the impacts of climate change, including extreme heat and wildfire; and build the capacity of these organizations to engage with state and federal decisionmaking processes.

- **Enhanced Use of Defense Production Act of 1950:** appropriates \$500 million to carry out the Defense Production Act (DPA). President Biden issued presidential determinations providing the Department of Energy (DOE) with the authority to use \$250 million of the DPA funding to accelerate domestic production of key energy technologies. In November 2022, DOE announced a notice of intent and request for information on a proposed \$250 million DPA investment to accelerate domestic electric heat pump manufacturing.

Recommendations for Moving Toward Climate Action

Based upon this research, below are our recommendations for how the Genesee-FLX Climate Collective can use the IJJA and the IRA to turn their Climate Action Strategy into action:

- **Decide which tactics the Genesee-FLX Climate Collective will use to influence the IJJA and IRA funding decisions.** There are a variety of ways in which the Collective might attempt to access IJJA and the IRA opportunities. For formula grants, the Collective might advocate to their state and local governments for certain uses of the funds that align with the climate action goals. For competitive grants, they might work with local governments and/or community partners to design applications that align with the goals. And for tax credits, they might undertake education campaigns for individuals, nonprofits, and businesses to help ensure that they are aware of the opportunities and how to access them. Deciding which of these tactics they would like to use will help determine the strategy for pursuing relevant sources of funding and which local priorities will guide those decisions.
- **Encourage the use of flexing to use funds for climate action activities rather than their traditional uses.** The biggest transportation programs (the National Highway Performance Program and the Surface Transportation Block Grant) can be used to fund nonhighway projects, either directly or through “flexing.” This is a huge opportunity to fund public transit that can reduce emissions and is not often taken advantage of (Redeker et al. 2022).
- **Analyze the current long-term plans for the Rochester region.** The Genesee Transportation Council is supposed to determine what projects get federally funded. If the projects in the region’s plan do not align with the goals of the climate action plan, then it will be difficult to get them funded. Working with groups such as the Regional Transportation Authority to ensure that their long-range plans align with the goals of the collective will be key to ensuring the group’s progress.
- **Pay attention to state formula grant programs and how those funds are being spent.** Some grant programs are much larger than the competitive opportunities. Most of these state grants have wide flexibility for use and as such can be used to advance climate action goals. Working

with the state to ensure that the dollars are used to advance climate action is another key way in which the collective can advance their climate goals.

- **Take advantage of tax credits.** The IRA provides a bulk of tax credits to offset the cost of transitioning to renewable, clean energy for households, businesses, and governments. The IRA is novel in that it allows nonprofit and governmental³⁰ entities to receive direct payments for 12 clean energy tax credits. In fact, under the IRA, nearly any advanced or renewable energy asset constructed by a local government is eligible for some kind of federal cash subsidy.³¹
- **Use broadband for access to all online resources.** Equitable access to broadband is necessary to advance all of the goals listed here, and it is well funded in the IIJA. For instance, to educate individuals and organizations about tax credits, those individuals will likely need access to broadband since much of this type of education is online. And, broadband access will be key to monitoring and measuring impacts, as well as implementing installation and use of new technologies. Broadband is also necessary for energy efficient technologies that reduce carbon emissions and save customers money by operating through the internet, such as smart thermostats, heat pumps, electric water heaters.³² It's critical that these technologies are accessible to communities with low incomes. Therefore, investments in broadband in the region can be another strategy to help the collective advance climate action.
- **Continue to work towards climate action related to agriculture, even though it is not highly funded through the IIJA and the IRA.** Even though agriculture is one of the lesser supported goals in the IIJA and the IRA, the agricultural sector accounts for roughly 24 percent of current global greenhouse gas emissions and should be part of a comprehensive climate action strategy.³³ Some strategies that have proven successful at reducing emissions from agriculture include (1) increasing consumer demand for plant-rich diets while decreasing demand for meat, eggs, and dairy, which reduces land clearing, energy and water use, and greenhouse gas emissions (2) advancing regenerative agricultural practices, which reduces emissions, increases soil organic matter, and sequesters carbon; (3) reducing wasted food concurrently prevents wasted energy, water, and other resources that go into growing, processing, packaging, and transporting food³⁴; and (4) localizing food systems as much as possible also helps reduce energy, water, and other resources that go into growing, processing, packaging, and transporting food.
- **Incorporate workforce development efforts across all topic areas.** While workforce development is not a core priority in either bill, it will be a necessary component of addressing the previous goals, even if the funding does not come from either of the two bills explored here. Equitable and green workforce development does not always require training people for completely new jobs, but rather often requires training for new skills within currently existing jobs. Recent research suggests that many green jobs do not require a postsecondary credential but may require extensive job training (Curtis and Marinescu 2022). While green jobs represent a small percentage of all US jobs, they have experienced rapid growth over the past decade. These jobs also appear to offer a wage premium of about 21 percent above average. Preparing the region's workforce for these jobs will not only help advance climate action but may also help

increase wages and reduce poverty. Strategies for preparing the workforce for these jobs includes curricular reforms, strong partnerships between employers and training providers, strengthening of career paths, financial assistance to help low-wage workers afford school, and recruitment efforts and support services for nontraditional workers.³⁵ And, job quality should be a core consideration in this strategy development, including understanding the quality of the jobs being created (or altered) by climate activities. Public investments in training should go supporting good jobs, or those that offer living wages, benefits, and ensure worker safety. For low-quality jobs, it should be the responsibility of the employers to pay for training or there needs to be an intentional career pathway and opportunity for advancement. Other federal funding opportunities for just workforce development are available and do not have an explicit climate focus such as Pell and the Workforce Innovations and Opportunity Act (WIOA).³⁶

No matter what direction the collective chooses, these bills represent an enormous opportunity to advance equity and climate action goals in the Rochester region. Aligning the region's strategy with these bills while supplementing these funding sources with other sources in the lesser aligned areas will increase the likelihood that the collective is able to advance climate action in the region.

Appendix A

TABLE A1

All CSA Relevant IIJA and IRA Programs

Program	Amount	Description
Transportation		
<i>IIJA</i>		
Congestion Mitigation and Air Quality Improvement Program	\$13,200,000,000	Provides funds to States for transportation projects designed to reduce traffic congestion and improve air quality, particularly in areas of the country that do not attain national air quality standards.
Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	\$7,500,000,000	Provides a unique opportunity for the DOT to invest in road, rail, transit and port projects that promise to achieve national objectives.
Carbon Reduction Program	\$6,419,999,998	Provides funds for projects designed to reduce transportation emissions, defined as carbon dioxide (CO2) emissions from on-road highway sources.
Metropolitan Planning	\$2,280,000,000	The Bipartisan Infrastructure Law continues the Metropolitan Planning Program, which establishes a cooperative, continuous, and comprehensive framework for making transportation investment decisions in metropolitan areas.
Congestion Relief Program	\$250,000,000	Advance innovative, integrated, and multimodal solutions to reduce congestion and the related economic and environmental costs in the most congested metropolitan areas with an urbanized area population of 1 million+.
Federal-State Partnership for Intercity Passenger Rail Grants	\$36,000,000,000	Provides funding for capital projects that reduce the state of good repair backlog, improve performance, or expand or establish new intercity passenger rail service, including privately operated intercity passenger rail service, if an eligible applicant is involved.
Restoration and Enhancement Grant Program	\$250,000,000	Funds operating assistance grants for initiating, restoring, or enhancing intercity passenger rail transportation.
Safe Streets and Roads for All	\$5,000,000,000	Grant program is to be awarded on a competitive basis to support planning, infrastructure, behavioral, and operational initiatives to prevent death and serious injury on roads and streets involving all roadway users, including pedestrians; bicyclists; public transportation, personal conveyance, and micro mobility users; motorists; and commercial vehicle operators.

Program	Amount	Description
Intelligent Transportation Systems (ITS) Program	\$250,000,000	Fosters innovation in transportation through the deployment of technology to enhance safety and efficiency while reducing environmental impacts of surface transportation, resulting in improved access and convenience, saved lives and time, and increased productivity.
Urbanized Area Formula Grants	\$33,390,947,107	Program (49 U.S.C. 5307) makes federal resources available to urbanized areas and to governors for transit capital and operating assistance in urbanized areas and for transportation-related planning. An urbanized area is an incorporated area with a population of 50,000 or more that is designated as such by the U.S. Department of Commerce, Bureau of the Census.
Bus and Bus Facilities Formula/Competitive Grants	\$3,161,294,400	Provides funding to states and transit agencies through a statutory formula to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.
Enhanced Mobility of Seniors and Individuals with Disabilities	\$2,193,105,343	Program (49 U.S.C. 5310) provides formula funding to states for the purpose of assisting private nonprofit groups in meeting the transportation needs of older adults and people with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. Funds are apportioned based on each state's share of the population for these two groups.
All Stations Accessibility Program	\$1,750,000,000	Provides capital funding to upgrade the accessibility of legacy rail fixed guideway public transportation systems for people with disabilities, including those who use wheelchairs.
Strengthening Mobility and Revolutionizing Transportation (SMART) Grants	\$500,000,000	Provides supplemental funding grants to rural, mid-sized, and large communities to conduct demonstration projects focused on advanced smart city or community technologies and systems in a variety of communities to improve transportation efficiency and safety.
Pilot Program for Transit Oriented Development	\$68,864,631	Discretionary grant program that helps support the Federal Transit Administration's mission of improving public transportation for America's communities by providing funding to local communities to integrate land use and transportation planning with a new fixed guideway or core capacity transit capital investment.
Pilot Program for Enhanced Mobility	\$24,102,620	Competitive program to improve coordinated access and mobility.
National Electric Vehicle Infrastructure Formula Program	\$5,000,000,000	Strategically deploy electric vehicle charging infrastructure and establish an interconnected network to facilitate data collection, access, and reliability. Sets aside 10 percent of funding for discretionary grants to State and local governments that require additional assistance to strategically deploy electric vehicle charging infrastructure.
Charging and Fueling Infrastructure Grants (Community Charging)	\$1,250,000,000	Funds will be made available each fiscal year for Community Grants, to install electric vehicle charging and alternative fuel in locations on public roads, schools, parks, and in publicly accessible parking facilities.

Program	Amount	Description
Charging and Fueling Infrastructure Grants (Corridor Charging)	\$1,250,000,000	Deploy electric vehicle charging and hydrogen/propane/natural gas fueling infrastructure along designated alternative fuel corridors and in communities.
Electric Drive Vehicle Battery Recycling And 2nd Life Apps	\$200,000,000	Expands an existing program at the Department of Energy for research, development, and demonstration of electric vehicle battery recycling and second-life applications for vehicle batteries.
Commercial Motor Vehicle Operators Grant Program	\$16,500,000	Awards grants to a variety of educational institutions that provide commercial truck and bus driving training, including accredited public or private colleges, universities, vocational-technical schools, post-secondary educational institutions, truck driver training schools, associations, and State and local governments, including federally recognized Tribal governments.
Low or No Emission (Bus) Grants	\$5,624,550,890	Provides capital funding to replace, rehabilitate, purchase, or lease buses and bus-related equipment and to rehabilitate, purchase, construct, or lease bus-related facilities. Provides capital funding for low or no emissions bus projects.
Building Resilient Infrastructure and Communities (Robert T Stafford Act Section 203(i))	\$1,000,000,000	Federal Emergency Management Agency will provide financial assistance to eligible Building Resilient Infrastructure and Communities applicants for the following activities: Capability and Capacity-Building - Activities, which enhance the knowledge, skills, expertise, etc., of the current workforce to expand or improve the administration of mitigation assistance. This includes activities in the following subcategories: building codes activities, partnerships, project scoping, mitigation planning and planning-related activities, and other activities; Mitigation Projects - Cost-effective projects designed to increase resilience and public safety; reduce injuries and loss of life; and reduce damage and destruction to property, critical services, facilities, and infrastructure from natural hazards and the effects of climate change; and Management Costs - Financial assistance to reimburse the recipient and subrecipient for eligible and reasonable indirect costs, direct administrative costs, and other administrative expenses associated with a specific mitigation measure or project in an amount up to 15 percent of the total amount of the grant award, of which not more than 10 percent of the total award amount may be used by the recipient and 5 percent by the subrecipient for such costs generally.
<i>IRA</i>		
Clean Vehicle Credit	\$7,541,000,000	Provides a tax credit for purchasers of clean vehicles. The tax credit is not available for consumers who have adjusted gross incomes for the current or preceding year above \$300,000 (couples), \$225,000 (heads of household), \$150,000 (singles). Not inflation adjusted.
Commercial Clean Vehicles Credit	\$3,583,000,000	Provides a tax credit for purchasers of qualified commercial clean vehicles. Businesses that acquire motor vehicles or mobile machinery for use or lease; tax-exempt entities that acquire them for use

Program	Amount	Description
Alternative Fuel Vehicle Refueling Property Credit	\$1,738,000,000	Provides a tax credit for alternative fuel vehicle refueling and charging property in low-income and rural areas. Alternative fuels include electricity, ethanol, natural gas, hydrogen, biodiesel, and others. 6% of the cost for businesses, limited to a \$100,000 credit per item of property for businesses. 30% for individuals, limited to \$1,000.
Credit for Previously Owned Clean Vehicles	\$1,347,000,000	Provides a tax credit for purchasers of preowned clean vehicles. Tax credit is not available for consumers who have adjusted gross incomes for the current or preceding year above \$150,000 (couples), \$112,500 (heads of household), \$75,000 (singles). Individuals can claim only once per three years. Vehicles must be sold by a dealer; the sale price must be \$25,000 or less; and it can only be claimed once per vehicle.
Clean Heavy-Duty Vehicle Program	\$1,000,000,000	Provides funds to offset the costs of replacing heavy-duty Class 6 and 7 commercial vehicles with zero-emission vehicles; deploying infrastructure needed to charge, fuel, or maintain these zero-emission vehicles; and developing and training the necessary workforce. Program covers up to 100 percent of costs for (1) incremental cost of replacing an existing heavy-duty vehicle with a zero-emission vehicle; (2) purchasing and operating associated infrastructure; (3) workforce development and training; (4) planning and technical activities.
Funding to Address Air Pollution: Mobile Source Grants	\$5,000,000	Provides grants to states to adopt and implement California's greenhouse gas and zero-emission standards for on-road mobile sources.
Neighborhood Access and Equity Grant Program	\$3,205,000,000	Awards competitive grants for context-sensitive projects that improve walkability and safety and provide affordable transportation access; to mitigate or remediate negative impacts on the human or natural environment in disadvantaged communities from a surface transportation facility; and for planning and capacity building activities in disadvantaged or underserved communities.
Built Environment		
<i>IIJA</i>		
Low Income Home Energy Assistance Program	\$500,000,000	Assists eligible low-income households with their heating and cooling energy costs, bill payment assistance, energy crisis assistance, weatherization and energy-related home repairs.
Weatherization Assistance Program	\$3,500,000,000	Increases the energy efficiency of dwellings owned or occupied by low-income persons, reduce their total residential energy expenditures, and improve their health and safety, especially low-income persons who are particularly vulnerable such as the elderly, the handicapped, and children.
Grants for Energy Efficiency and Renewable Energy Improvements at Public School Facilities	\$500,000,000	Provides competitive grants to make energy efficiency, renewable energy, and alternative fueled vehicle upgrades and improvements at public schools.

Program	Amount	Description
Cost-effective Codes Implementation for Efficiency and Resilience	\$225,000,000	Competitive grant program to enable sustained, cost-effective implementation of updated building energy codes to save customers money on their energy bills.
Energy Efficiency Materials Pilot Program	\$50,000,000	Provides nonprofits with energy efficiency materials including (i) a roof or lighting system or component of the system; (ii) a window; (iii) a door, including a security door; and (iv) a heating, ventilation, or air conditioning system or component of the system (including insulation and wiring and plumbing improvements needed to serve a more efficient system).
Career Skills Training	\$10,000,000	Provides grants to pay the federal share of career skills training programs under which students concurrently receive classroom instruction and on-the job training for the purpose of obtaining an industry-related certification to install energy efficient building technologies
Building, Training, And Assessment Centers	\$10,000,000	Provides grants to institutions of higher education to establish building training and assessment centers to educate and train building technicians and engineers on implementing modern building technologies.
Energy Auditor Training Grant Program	\$40,000,000	Provides grants to eligible States to train individuals to conduct energy audits or surveys of commercial and residential buildings to build the clean energy workforce, save customers money on their energy bills, and reduce pollution from building energy use.
Brownfields Projects	\$1,200,000,000	The Environmental Protection Agency's program provides funds to empower States, communities, Tribes, and nonprofit organizations to prevent, inventory, assess, clean up, and reuse brownfield sites.
Drinking Water State Revolving Fund	\$11,713,000,000	States initially receive funding, then provide funds to Water Utilities and/or Municipal and Other Eligible Entities. Tribes and Territories are also eligible to receive a portion of State Revolving Fund funds.
Water Infrastructure Improvements for the Nation, Small and Underserved Communities Emerging Contaminants Grant Program	\$5,000,000,000	States initially receive funding, then provide funds through grants to water utilities and other eligible entities in small and/or underserved/disadvantaged communities. Tribes and territories are also eligible to receive funds under this program.
IRA		
Methane Emissions Reduction Program	\$1,550,000,000	Provides financial and technical assistance to accelerate the reduction of methane and other greenhouse gas emissions from petroleum and natural gas systems. The statute also establishes a waste emissions charge for applicable facilities that report more than 25,000 metric tons of CO2 equivalent per year (to the petroleum and natural gas systems source category of the Greenhouse Gas Reporting Program) and that exceed statutorily specified waste emissions thresholds.

Program	Amount	Description
Environmental and Climate Justice Block Grants	\$3,000,000,000	Provides grants and technical assistance to community-based organizations, alone or in partnerships, to reduce indoor and outdoor air pollution, including greenhouse gases; monitor for pollution; improve community resilience to the impacts of climate change, including extreme heat and wildfire; and build the capacity of these organizations to engage with state and federal decisionmaking processes.
Climate Pollution Reduction Grants	\$5,000,000,000	Provides grants to Tribes, states, air pollution control agencies, and local governments to develop and implement plans for reducing greenhouse gas emissions.
Funding to Address Air Pollution at Schools	\$50,000,000	Provides funds for grants and other activities to monitor and reduce pollution and greenhouse gas emissions at schools in low-income and disadvantaged communities. To provide technical assistance to schools in low-income and disadvantaged communities to develop school air and environmental quality plans and to identify and mitigate ongoing air pollution hazards.
Energy Efficiency Home Improvement Credit	\$12,451,000,000	Provides a tax credit for energy-efficiency improvements of residential homes.
Residential Clean Energy Credit	\$22,022,000,000	Provides a tax credit for the purchase of residential clean energy equipment, including battery storage with capacity of at least 3 kWh. 30% of cost of equipment through 2032; 26% in 2033; 22% in 2034.
New Energy Efficient Homes Credit	\$2,043,000,000	Provides a tax credit for construction of new energy efficient homes. \$2,500 for new homes meeting Energy Star standards; \$5,000 for certified zero-energy ready homes. For multifamily, base amounts are \$500 per unit for Energy Star and \$1000 per unit for zero-energy ready.
High-Efficiency Electric Home Rebate Program	\$4,500,000,000	Awards grants to state energy offices and Tribal entities to develop and implement a high-efficiency electric home rebate program.
Home Energy Performance-Based, Whole-House Rebates	\$4,300,000,000	Awards grants to state energy offices to develop a whole-house energy saving retrofits program that will provide rebates to homeowners and aggregators for whole house energy saving retrofits.
Green and Resilient Retrofit Program	\$837,500,000	Provides grants and loans to HUD-assisted properties to improve energy or water efficiency; enhance indoor air quality or sustainability; implement the use of zero-emission electricity generation, low-emission building materials or processes, energy storage, or building electrification strategies; or make the properties more resilient to climate impacts. The law provides up to \$4,000,000,000 in loan authority.
Energy Efficient Commercial Buildings Deduction	\$362,000,000	Provides a tax deduction for energy efficiency improvements to commercial buildings, such as improvements to interior lighting; heating, cooling, ventilation, and hot water; and building envelope. \$0.50-\$1 per square foot, depending on increase in efficiency, with deduction over four-year periods capped at \$1 per square foot. Inflation adjusted. Alternatively, taxpayers can deduct adjusted basis in “qualified retrofit plans” that reduce a building’s energy use intensity by at least 25%.

Program	Amount	Description
Improving Energy Efficiency or Water Efficiency or Climate Resilience of Affordable Housing	\$1,000,000,000	Provides grants and direct loans to fund projects that improve energy or water efficiency, enhance indoor air quality or sustainability, implement the use of zero-emission electricity generation, low-emission building materials or processes, energy storage, or building electrification strategies, or address climate resilience of an eligible property.
State-Based Home Efficiency Contractor Training Grants	\$200,000,000	Provides financial assistance to states to develop and implement a program to provide training and education to contractors involved in the installation of home energy efficiency and electrification improvements, including improvements eligible for rebates under sections 50121(d) and 50122(d) of the Inflation Reduction Act.
Clean Energy Generation		
<i>IJA</i>		
Energy Efficiency Revolving Loan Fund Capitalization Grant Program	\$250,000,000	Provides capitalization grants to States to establish a revolving loan fund under which the State shall provide loans and grants for energy efficiency audits, upgrades, and retrofits to increase energy efficiency and improve the comfort of buildings.
Energy Efficient Transformer Rebates	\$10,000,000	Provides rebates to industrial or manufacturing facility owners, commercial building owners, multifamily building owners, utilities, or energy service companies for the replacement of a qualified energy inefficient transformer with a qualified energy efficient transformer.
Energy Efficiency and Conservation Block Grant (EECBG) Program	\$550,000,000	Assists states, local governments, and Tribes in implementing strategies to reduce energy use, reduce fossil fuel emissions, and improve energy efficiency
Upgrading Our Electric Grid and Ensuring Reliability and Resiliency	\$5,000,000,000	The Grid Innovation Program, also known as the Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency, is designed to provide federal financial assistance to governmental entities to coordinate and collaborate with electric sector owners and operators to demonstrate innovative approaches to transmission, storage, and distribution infrastructure to harden and enhance resilience and reliability; and to demonstrate new approaches to enhance regional grid resilience, implemented through states by public and rural electric cooperative entities on a cost-shared basis.
Preventing Outages and Enhancing the Resilience of the Electric Grid / Hazard Hardening	\$5,000,000,000	Provides grants to eligible entities, States, and Tribes to prevent outages and enhance the resilience of the electric grid.
Smart Grid Investment Matching Grant Program	\$3,000,000,000	Designed to increase the flexibility, efficiency, and reliability of the electric power system
Wind Energy Technology Program	\$60,000,000	Designed to fund research, development, demonstration, and commercialization activities to improve wind energy technologies.
Solar Energy Research and Development	\$40,000,000	Designed to fund research, development, demonstration, and commercialization activities to improve solar energy technologies.

Program	Amount	Description
Cost-effective Codes Implementation for Efficiency and Resilience	\$225,000,000	Competitive grant program to enable sustained, cost-effective implementation of updated building energy codes to save customers money on their energy bills.
<i>IRA</i>		
Production Tax Credit for Electricity from Renewables	\$30,622,000,000	Provides a tax credit for production of electricity from renewable sources.
Investment Tax Credit for Energy Property	\$12,451,000,000	Provides a tax credit for investment in renewable energy projects.
Clean Electricity Production Tax Credit	\$11,204,000,000	Provides a technology-neutral tax credit for production of clean electricity. Replaces the production tax credit for electricity generated from renewable sources (extended in Section 13201 through 2024).
Clean Electricity Investment Tax Credit	\$62,062,000,000	Provides a technology-neutral tax credit for investment in facilities that generate clean electricity. Replaces the investment tax credit for energy property (§48) for property placed in service in 2025 and later.
Advanced Energy Project Credit	\$10,000,000,000	Provides a tax credit for investments in advanced energy projects, as defined in 26 USC § 48C(c)(1).
Energy Infrastructure Reinvestment Financing	\$5,000,000,000	Guarantees loans to projects that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or that enable operating energy infrastructure to avoid, reduce, use, or sequester air pollutants or anthropogenic emissions of greenhouse gases. IRA places a total cap on loan guarantees of up to \$250 billion and appropriates \$5 billion in credit subsidy to support these loans under section 1706 of the Energy Policy Act of 2005.
Transmission Facility Financing	\$2,000,000,000	Carries out a direct loan program for transmission facility financing for the construction or modification of electric transmission facilities designated by the Secretary to be in the national interest under section 216(a) of the Federal Power Act.
Rural Energy for America Program (REAP)	\$1,721,632,500	Provides guaranteed loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or to make energy efficiency improvements. Agricultural producers may also apply for new energy efficient equipment and new system loans for agricultural production and processing.
Electric Loans for Renewable Energy	\$1,000,000,000	Finances the construction of electric distribution, transmission, and generation facilities, including system improvements and replacements 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.
Low Emissions Electricity Program	\$87,000,000	Funds a wide range of activities to encourage low emissions electricity generation and use through education, technical assistance, and partnerships with consumers, low-income and disadvantaged communities, industry, and state, local, and Tribal governments. To do an

Program	Amount	Description
		assessment of anticipated greenhouse gas reductions from changes in domestic electricity generation and use and to ensure that reductions in greenhouse gases are achieved through the existing authorities of the Clean Air Act.
Enhanced Use of Defense Production Act of 1950	\$250,000,000	Section 30001 appropriates \$500 million to carry out the Defense Production Act (DPA). President Biden issued presidential determinations providing the Department of Energy (DOE) with the authority to use \$250,000,000 of the DPA funding to accelerate domestic production of key energy technologies. In November 2022, DOE announced a notice of intent and request for information on a proposed \$250 million DPA investment to accelerate domestic electric heat pump manufacturing.
Agriculture		
<i>IIJA</i>		
Bioproduct Pilot Program	\$10,000,000	Bioproduct research facilities that: a) is funded in part by a State; b) is located within 3 miles from residence halls of an institution of higher education; c) provides opportunities for student involvement in research; d) collaborates with an institution of higher education.
WaterSMART Grants	\$400,000,000	Funding will be used for competitive grants through WaterSMART under the authority of Sec. 9504(a) of the SECURE Water Act for water management improvements that contribute to water supply sustainability, increase drought resilience, and that have environmental benefits.
Water Recycling	\$1,000,000,000	Projects that reclaim and/or reuse municipal, industrial, and agricultural wastewater; or impaired ground and surface waters. Large Scale Water Recycling Program is defined in the Bipartisan Infrastructure Law as projects that reclaim and reuse municipal, industrial, domestic, or agricultural wastewater; or impaired groundwater or surface water with a total project cost of \$500 million or more and located in a Reclamation State.
Water and Groundwater Storage, And Conveyance	\$1,150,000,000	Water Storage, Groundwater Storage, and Conveyance projects with existing feasibility study or construction authorization are eligible for funding. The project must be found feasible and with benefits proportionate to federal investment. Small Water Storage and Groundwater Storage Projects are defined in the Bipartisan Infrastructure Law as projects that have storage capacity between 2,000 acre-feet and 30,000 acre-feet and increase surface water or groundwater storage or convey water, directly or indirectly, to or from surface water or groundwater storage. Funding will be provided through a combination of internal formulation and competitive grant processes, and nonfederal project sponsors in Reclamation States, including Alaska and Hawaii are eligible.
Clean Water State Revolving Fund	\$11,713,000,000	States initially receive funding, then provide funds to Water Utilities and/or Municipal and Other Eligible Entities. Tribes and Territories are also eligible to receive a portion of State Revolving Fund funds.

Program	Amount	Description
Rural Water Projects	\$1,000,000,000	Funds for Rural Water will support the seven rural water projects that have been authorized by an Act of Congress before July 1, 2021, in accordance with the Reclamation Rural Water Supply Act of 2006 (43 U.S.C. 2401 et seq.).
<i>IRA</i>		
Environmental Quality Incentives Program	\$8,450,000,000	Technical and financial assistance to eligible agricultural producers to help implement conservation practices that address resource concerns related to organic production; soil, water, and air quality; wildlife habitat; nutrient management associated with crops and livestock; pest management; ground and surface water conservation; irrigation management; drought resiliency measures; adapting to and mitigating against increasing weather volatility; energy conservation; and related resource concerns. This funding will support practices that directly improve soil carbon, reduce nitrogen losses, or reduce, capture, avoid, or sequester carbon dioxide, methane, or nitrous oxide emissions associated with agricultural production.
Regional Conservation Partnership Program (RCP)	\$4,950,000,000	Supports the Regional Conservation Partnership Program (RCP), a partner-driven approach to conservation that funds solutions to natural resource challenges on agricultural land by leveraging collective resources and collaborating to implement natural resource conservation activities.
Conservation Technical Assistance	\$1,000,000,000	Provides conservation technical assistance, which offers our nation's farmers, ranchers, and forestland owners the knowledge and tools they need to conserve, maintain, and restore the natural resources on their lands and improve the health of their operations for the future.
Conservation Technical Assistance - Greenhouse Gas Emission Quantification Program	\$300,000,000	Provides conservation technical assistance through partnerships that will leverage the expertise, experience, and capacity of other organizations to address climate change and to broaden the footprint of climate-smart agriculture. These monitoring and evaluation efforts will support the quantification of carbon sequestration and greenhouse gas emissions reductions, directly tied to the conservation program investments.
From Learning to Leading: Cultivating the Next Generation of Diverse Food and Agriculture Professionals	\$250,000,000	Enables 1890 institutions, 1994 institutions, Alaska Native-serving institutions and Native Hawaiian-serving institutions, Hispanic-serving institutions, and insular area institutions of higher education located in the U.S. territories to build and sustain the next generation of the food, agriculture, natural resources, and human sciences workforce including the future USDA workforce primarily by (a) providing student scholarship support, meaningful paid internships, fellowships, and job opportunity matching, and (b) facilitating opportunities to learn the processes and pathways leading to training and employment in the federal sector.
Workforce Development		
<i>IJA</i>		
Career Skills Training	\$10,000,000	Provides grants to pay the federal share of career skills training programs under which students concurrently receive classroom instruction and on-the job training for the purpose of obtaining an industry-related certification to install energy efficient building technologies.

Program	Amount	Description
Energy Auditor Training Grant Program	\$40,000,000	Provides grants to eligible States to train individuals to conduct energy audits or surveys of commercial and residential buildings to build the clean energy workforce, save customers money on their energy bills, and reduce pollution from building energy use.
Building, Training, And Assessment Centers	\$10,000,000	Provides grants to institutions of higher education to establish building training and assessment centers to educate and train building technicians and engineers on implementing modern building technologies.
Manufacturing Leadership	\$50,000,000	Provides funding to States to provide assistance to small and medium manufacturers to invest in smart manufacturing technologies or access high performance computing resources for manufacturing analysis.
Building Resilient Infrastructure and Communities (Robert T Stafford Act Section 203(i))	\$1,000,000,000	<i>Capability and Capacity-Building – Activities</i> , enhances the knowledge, skills, expertise, etc., of the current workforce to expand or improve the administration of mitigation assistance. This includes activities in the following subcategories: building codes activities, partnerships, project scoping, mitigation planning and planning-related activities, and other activities; <i>Mitigation Projects – Cost-effective projects</i> designed to increase resilience and public safety; reduce injuries and loss of life; and reduce damage and destruction to property, critical services, facilities, and infrastructure from natural hazards and the effects of climate change; and <i>Management; Costs – Financial assistance</i> to reimburse the recipient and subrecipient for eligible and reasonable indirect costs, direct administrative costs, and other administrative expenses associated with a specific mitigation measure or project in an amount up to 15 percent of the total amount of the grant award, of which not more than 10 percent of the total award amount may be used by the recipient and 5 percent by the subrecipient for such costs generally.
IRA		
State-Based Home Efficiency Contractor Training Grants	\$200,000,000	Provides financial assistance to states to develop and implement a program to provide training and education to contractors involved in the installation of home energy efficiency and electrification improvements, including improvements eligible for rebates under sections 50121(d) and 50122(d) of the Inflation Reduction Act.
Clean Heavy-Duty Vehicles	\$1,000,000,000	Provides funds to offset the costs of replacing heavy-duty Class 6 and 7 commercial vehicles with zero-emission vehicles; deploying infrastructure needed to charge, fuel, or maintain these zero-emission vehicles; and developing and training the necessary workforce.
Environmental and Climate Justice Block Grants	\$3,000,000,000	Provides grants and technical assistance to community-based organizations, alone or in partnerships, to reduce indoor and outdoor air pollution, including greenhouse gases; monitor for pollution; improve community resilience to the impacts of climate change, including extreme heat and wildfire; and build the capacity of these organizations to engage with state and federal decisionmaking processes.
From Learning to Leading: Cultivating the Next Generation of	\$250,000,000	Enables 1890 institutions, 1994 institutions, Alaska Native-serving institutions and Native Hawaiian-serving institutions, Hispanic-serving institutions, and insular area institutions of

Program	Amount	Description
Diverse Food and Agriculture Professionals		higher education located in the U.S. territories to build and sustain the next generation of the food, agriculture, natural resources, and human sciences workforce including the future USDA workforce primarily by (a) providing student scholarship support, meaningful paid internships, fellowships, and job opportunity matching, and (b) facilitating opportunities to learn the processes and pathways leading to training and employment in the federal sector.
Enhanced Use of Defense Production Act of 1950	\$250,000,000	Section 30001 appropriates \$500 million to carry out the Defense Production Act (DPA). President Biden issued presidential determinations providing the Department of Energy (DOE) with the authority to use \$250,000,000 of the DPA funding to accelerate domestic production of key energy technologies. In November 2022, DOE announced a notice of intent and request for information on a proposed \$250 million DPA investment to accelerate domestic electric heat pump manufacturing.

Sources: “Cost Estimate,” Congressional Budget Office, August 2022, https://www.cbo.gov/system/files/2022-08/hr5376_IR_Act_8-3-22.pdf; The White House, “Inflation Reduction Act (IRA) Guidebook,” 2022b, <https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/>; The White House, “Building a Better America: A Guidebook to the Bipartisan Infrastructure Law for State, Local, Tribal, and Territorial Governments, and Other Partners,” 2022b, <https://www.whitehouse.gov/build/guidebook/>; CSA (Climate Solution Accelerator), “The Genesee-FLX Climate Action Strategy,” 2022, <https://static1.squarespace.com/static/5f69141a20665f4000eb34a2/t/63939e0ea589b67010513a22/1670618642923/Genesee-FLX+Climate+Action+Strategy+2022+%28No+Appendices%29.pdf>

Notes

- ¹ “AR6 Synthesis Report Climate Change 2023,” Intergovernmental Panel on Climate Change, accessed May 1, 2023, <https://www.ipcc.ch/report/ar6/syr/>.
- ² “Hot Gulf of Mexico temperatures raise concerns about catastrophic hurricanes,” KVUE, July 26, 2023, <https://www.kvue.com/article/weather/hurricane/gulf-of-mexico-temperatures-hurricanes/269-4e0bce2e-d77c-4de9-804b-e71be2ded9a4>.
- ³ “How wildfires have worsened in recent years,” WRAL News, June 12, 2023, <https://www.wral.com/story/how-wildfires-have-worsened-in-recent-years/20906394/>.
- ⁴ “Flooding and Climate Change: Everything You Need to Know,” NRDC, April 10, 2019, <https://www.nrdc.org/stories/flooding-and-climate-change-everything-you-need-know>.
- ⁵ “The Historic Opportunities for Racial Equity in the Infrastructure Investment and Jobs Act,” Center for Economic and Policy Research, February 2, 2022, <https://cepr.net/the-historic-opportunities-for-racial-equity-in-the-infrastructure-investment-and-jobs-act/>.
- ⁶ “AR6 Synthesis Report Climate Change 2023,” Intergovernmental Panel on Climate Change, accessed May 1, 2023, <https://www.ipcc.ch/report/ar6/syr/>.
- ⁷ “Issue Brief: Estimating the Greenhouse Gas Impact of Federal Infrastructure Investments in the IJJA,” Georgetown Climate Center, December 16, 2021, <https://www.georgetownclimate.org/articles/federal-infrastructure-investment-analysis.html>.
- ⁸ “Climate Solutions Accelerator of the Genesee-Finger Lakes Region,” accessed May 1, 2023, <https://www.climategfl.org/>.
- ⁹ “Remarks by Assistant Secretary for Tax Policy Lily Batchelder on Implementation of the Inflation Reduction Act’s Clean Energy Provisions,” US Department of the Treasury, March 22, 2023, <https://home.treasury.gov/news/press-releases/jy1362>.
- ¹⁰ John Caleb Bell, Rebecca Princehorn, Christopher McCloskey, Justin Cook, John Flis, “Local government incentives available under Inflation Reduction Act,” March 1, 2023, <https://www.bricker.com/people/rebecca-princehorn/insights-resources/publications/local-government-incentives-available-under-inflation-reduction-act>.
- ¹¹ “Reversing America’s poor track record on inclusivity in infrastructure jobs,” Brookings Institute, May 17, 2021, <https://www.brookings.edu/articles/reversing-americas-poor-track-record-on-inclusivity-in-infrastructure-jobs/>.
- ¹² John Caleb Bell, Rebecca Princehorn, Christopher McCloskey, Justin Cook, John Flis, “Local government incentives available under Inflation Reduction Act.”
- ¹³ Akielly Hu, “New York state just approved publicly owned renewables,” Canary Media, May 11, 2023, <https://www.canarymedia.com/articles/utilities/new-york-state-just-approved-publicly-owned-renewables>.
- ¹⁴ “EPA Report Shows Disproportionate Impacts of Climate Change on Socially Vulnerable Populations in the United States,” EPA Press Office, September 2, 2021, <https://www.epa.gov/newsreleases/epa-report-shows-disproportionate-impacts-climate-change-socially-vulnerable>.
- ¹⁵ Ian Davies, “The unequal vulnerability of communities of color to wildfire,” National Library of Medicine, November 2, 2018, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6214520/>.
- ¹⁶ Sarah Steimer, “Higher air pollution in low-income areas affects early childhood development,” *UChicago News*, December 16, 2022, <https://news.uchicago.edu/story/higher-air-pollution-low-income-areas-affects-early-childhood-development>.

- 17 Fadumo Abdi and Kristine Andrews, “Redlining has left many communities of color exposed to lead,” *Child Trends*, February 13, 2018, <https://www.childtrends.org/blog/redlining-left-many-communities-color-exposed-lead>.
- 18 Victoria Masterson, “Black communities in the US will be hardest hit by floods caused by climate change, say scientists,” *World Economic Forum*, July 4, 2022, <https://www.weforum.org/agenda/2022/07/black-communities-us-flood-risk-climate/>.
- 19 Alique G. Berberian, David J. X. Gonzalez, and Laura J. Cushing, “Racial Disparities in Climate Change-Related Health Effects in the United States,” *Curr Environ Health Rep* 9 no. 3, (2022): 451–464, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9363288/>.
- 20 “Justice40 A Whole of Government Initiative,” The White House, <https://www.whitehouse.gov/environmentaljustice/justice40/>.
- 21 “Climate and Economic Justice Screening Tool,” Council on Environmental Quality, accessed May 5, 2023, <https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>.
- 22 “Executive Order on Tackling the Climate Crisis at Home and Abroad,” The White House, January 27, 2021, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>.
- 23 “Executive Order on Further Advancing Racial Equity and Support for Underserved Communities Through The Federal Government,” The White House, February 16, 2023, <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/02/16/executive-order-on-further-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/>.
- 24 “Justice40 Initiative Covered Programs List,” The White House, August 18, 2022, https://www.whitehouse.gov/wp-content/uploads/2022/07/Justice40-Covered-Programs-List_v1.1_07-15-2022.pdf.
- 25 “Disadvantaged Communities Criteria,” Climate Act, New York State, accessed May 7, 2023, <https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria>.
- 26 “Climate and Economic Justice Screening Tool.”
- 27 “Climate and Economic Justice Screening Tool.”
- 28 “Highway Funding for Workforce Development,” US DOT, accessed May 5, 2023, https://www.fhwa.dot.gov/innovativeprograms/centers/workforce_dev/OST_Workforce_Development_Fact_Sheet.aspx.
- 29 “Highway Funding for Workforce Development.”
- 30 “Remarks by Assistant Secretary for Tax Policy Lily Batchelder on Implementation of the Inflation Reduction Act’s Clean Energy Provisions,” US Department of Treasury, March 23, 2023, <https://home.treasury.gov/news/press-releases/jy1362>.
- 31 John Caleb Bell. “Local Government Incentives Available under Inflation Reduction Act.”
- 32 Rachel Snead and Jaxon Tolbert, “Improving Access to Broadband Would Open Doors for Climate Solutions,” Environmental and Energy Study Institute, July 16, 2021, <https://www.eesi.org/articles/view/improving-access-to-broadband-would-open-doors-for-climate-solutions>.
- 33 “Global Greenhouse Gas Emissions Data,” EPA, accessed May 5, 2023, <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>.
- 34 “Reduced Food Waste,” Project Drawdown, accessed May 5, 2023, <https://www.drawdown.org/solutions/reduced-food-waste>.
- 35 Karin Martinson, Alexandra Stanczyk, and Lauren Eyster, “Low-Skill Workers’ Access to Quality Green Jobs,” The Urban Institute, May 2010, <https://www.urban.org/sites/default/files/publication/32921/412096-Low-Skill-Workers-Access-to-Quality-Green-Jobs.PDF>.
- 36 “Workforce Innovation and Opportunity Act,” Employment and Training Administration, accessed May 5, 2023, <https://www.dol.gov/agencies/eta/wioa>.

References

- Alexander, Meredith, Hannah Argento-McCurdy, and Aimee Barnes. 2022. *How States Can Use the Bipartisan Infrastructure Law To Enhance Their Climate Action Efforts*. Washington, DC: Center for American Progress, <https://www.americanprogress.org/article/how-states-can-use-the-bipartisan-infrastructure-law-to-enhance-their-climate-action-efforts/>.
- Berberian, Alique, David Gonzalez, and Lara Cushing. 2022. "Racial Disparities in Climate Change-Related Health Effects in the United States." *Current Environmental Health Reports* 9(3): 451–464. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9363288/>.
- Bipartisan Policy Center. 2022. "Inflation Reduction Act (IRA) Summary: Energy and Climate Provisions." Washington, DC: Bipartisan Policy Center. https://bipartisanpolicy.org/blog/inflation-reduction-act-summary-energy-climate-provisions/?utm_medium=search&utm_source=google&utm_campaign=energy-ira&campaignid=18598281593&adgroupid=146210159230&keyword=ira%20climate&gad=1&gclid=Cj0KCQjwxYOiBhC9ARIsANiElfbzdi-iuHHBpVoFeOckICjyGh1Lk-3mqeTB5t4xuJDluriL8qM46FEaAjx-EALw_wcB.
- CSA (Climate Solution Accelerator). 2022. "The Genesee-FLX Climate Action Strategy." <https://static1.squarespace.com/static/5f69141a20665f4000eb34a2/t/63939e0ea589b67010513a22/1670618642923/Genesee-FLX+Climate+Action+Strategy+2022+%28No+Appendices%29.pdf>.
- Curtis, Mark and Ioana Marinescu. 2022. "Green Energy Jobs are Growing and Could Unlock Opportunity for Workers." WorkRise. https://www.workrisenetwork.org/working-knowledge/green-energy-jobs-are-growing-and-could-unlock-opportunity-workers?&utm_medium=urban_newsletters&utm_id=jobs_and_workforce&utm_campaign=WorkRise.
- EPA (Environmental Protection Agency). 2021. *Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts*. Report EPA 430-R-21-003. Washington, DC: US Environmental Protection Agency. www.epa.gov/cira/social-vulnerability-report.
- Hamel, Liz, Bryan Wu, Mollyann Brodie, Shao-Chee Sim, and Elena Marks. 2018. *One Year After the Storm: Texas Gulf Coast Residents' Views and Experiences with Hurricane Harvey Recovery*. San Francisco, CA: Kaiser Family Foundation. <https://www.kff.org/report-section/one-year-after-the-storm-texas-gulf-coast-residents-views-and-experiences-with-hurricane-harvey-recovery-section-1-recovery-experiences-among-residents-affected-by-harvey/>.
- Redeker, Jim, Scott Baker, Viktor Zhong, Susan Binder, Sherri LeBas, Eric Peterson, and Sarah Siwek. 2022. *Federal Funding Flexibility: Use of Federal-Aid Highway Fund Transfers by State DOTs*. Washington, DC: National Academies. <https://nap.nationalacademies.org/catalog/26696/federal-funding-flexibility-use-of-federal-aid-highway-fund-transfers-by-state-dots>.
- Smith, Genee S., E. Anjum, C. Francis, L. Deanes, C. Acey. 2022. "Climate Change, Environmental Disasters, and Health Inequities: The Underlying Role of Structural Inequalities." *Current Environmental Health Reports* 9: 80–89.
- The White House. 2022a. "Building a Better America: A Guidebook to the Bipartisan Infrastructure Law for State, Local, Tribal, and Territorial Governments, and Other Partners." Washington, DC: The White House. <https://www.whitehouse.gov/build/guidebook/>.
- The White House. 2022b. "Inflation Reduction Act (IRA) Guidebook." Washington, DC: The White House. <https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/>.

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