Cities Advancing Climate Action:

Leveraging Federal Funds for Local Impact

A Resource Guide

THE UNITED STATES CONFERENCE OF MAYORS

C2ES

Alliance for a Sustainable Future
A joint effort by
The U.S. Conference of Mayors
and the Center for Climate
and Energy Solutions (C2ES)
January 2022

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Introduction

American cities have been at the center of advancing climate and resilience priorities for communities for decades. With the increase in funding from the federal government for these types of initiatives, cities will soon find themselves in a position to make an even greater impact in their communities. This comes at a time when the need for swift and impactful action against climate change and structural inequality is necessary to support communities recovering from the impacts of the COVID-19 pandemic.

Recognizing this need for action, the federal government has recently passed a series of funding and recovery packages to support local governments. Following the March 2021 passage of the American Rescue Plan, on November 15, 2021, President Biden signed into law the Infrastructure Investment and Jobs Act (IIJA). This over $1 trillion package creates funding for new programs and reauthorizes and/or expands many existing programs to advance transportation, energy, broadband, and resilience initiatives. It creates critical grant funding for state and local governments, increases the cap on private activity bonds, opening the door for more public-private partnerships, and sets a framework for reducing carbon emissions, investing in clean energy, and building national climate resilience.

As a result of these legislative initiatives, and potential others, cities will soon have access to an influx of funding to support their climate, resilience, and equity priorities. By identifying proven ways federal and state funding has been leveraged in the past, cities can learn from each other how to identify funding opportunities, position themselves to receive funds, and replicate successful project strategies. With this in mind, the Alliance for a Sustainable Future, a collaboration between The U.S. Conference of Mayors (USCM) and the Center for Climate and Energy Solutions (C2ES), has developed a collection of case studies that highlight what cities can do now to pre-position for funding, plan for co-leveraging diverse funds, and develop projects to capture maximum community benefits.

This document is meant to serve as both inspiration and a practical guide for cities. Also included at the end of this document is an appendix that features many of the new and existing climate related programs in the new Infrastructure Investment and Jobs Act (IIJA). Mayors and local leaders may find the appendix useful in identifying potential funding programs that can help cities reach their climate goals.

The case studies include examples of how cities and municipal utilities have leveraged recovery funds in the past, secured funds by demonstrating community impact, used planning processes to guide decision making in resource-constrained environments, and tackled large challenges bit-by-bit. It features the following:

1. **Creative Utilization of Funding Sources for Comprehensive Flood Mitigation (Dubuque, IA)**
2. **Strategic Greening of Municipal Fleets with Federal Funding (Wichita, KS)**
3. **Effective Planning for Spending Sustainability Funds (Denver, CO)**
4. **Embedding Equity, Community Benefit, and Job Creation into Climate Initiatives (New Orleans, LA; Cambridge, MA; and Miami, FL)**
5. **Powerful Municipal Utility Planning for Widespread Vehicle Electrification (Sacramento and Roseville, CA)**

In developing this document, USCM, C2ES, and AECOM relied upon publicly available information and targeted interviews to better understand the project or initiative, the actual or anticipated impacts on climate and equity goals, how funding was secured, how funding decisions were made, and what lessons learned could be shared with other cities.

While each case study offers unique lessons, there were also several key strategies that cut across these success stories including:

- Develop a plan to meet community needs before chasing funding.
- Identify multiple and diverse community benefits that can be achieved through each project.
- Match funding opportunities with identified needs.
- Engage diverse stakeholders early and often.
- Build relationships and identify common goals with funders, community organizations, and stakeholders.

Creative Utilization of Funding Sources for Comprehensive Flood Mitigation

The Bee Branch Creek Flood Mitigation Project (Dubuque, IA)

In many regions of the United States, climate change is leading to an increased risk of flooding that damages homes, businesses, crops, and infrastructure. Studies have shown that since 1988, approximately one-third of the monetary costs of flooding were due to the intensification of precipitation.

Nearly $75 billion of the $199 billion flood damage costs incurred since that time are associated with more frequent and intense storms.[1] This case study illustrates Dubuque, Iowa's successful approach to flood mitigation.

Overview

Dubuque, Iowa's most affordable neighborhoods, located in the Bee Branch Watershed, have felt the effects of increased flooding. Between 1999 and 2011 the watershed, in which over half of the city's residents live or work, has experienced multiple flood events that resulted in six Presidential Disaster Declarations. Caused primarily by inadequate storm sewer capacity, these floods impacted property, health, and threatened lives. A 1999 storm produced tornado warnings and simultaneously flooded hundreds of basements in the watershed. Residents who had sought safety from the severe weather in their basements were forced to leave due to rising water. As one resident stated, "It was evacuate the tornado shelter or drown."[2] During this time, property values in the area declined while those in other areas of the city steadily rose; businesses experienced disruptions; emergency services were impaired; and homes were frequently subjected to flooding.

Despite generations of belief that the flooding in the area was too big an issue to solve, the 1999 storm convinced the city's leaders that it was time for action.

1 Davenport, F., Burke, M., and Diffenbaugh, N., 2021: *Contribution of historical precipitations changes to US flood damages. Proceedings of the National Academy of Sciences of the United States of America, January 26, 2021.* https://doi.org/10.1073/pnas.2017524118

2 The Telegraph Herald, May 20, 1999

They adopted a Drainage Basin Master Plan that identified areas of risk and infrastructure projects to address flooding. The project development process was eventually slowed to allow significant citizen input into design options. Based upon community input, the $250 million Bee Branch Watershed Flood Mitigation Project was designed to address flooding, while also providing water quality benefits, community green space, educational opportunities, walking and biking trails, and other recreational amenities for this community of approximately 59,600 residents.

These additional project impacts and benefits, as well as comprehensive community outreach during design and implementation, allowed the city to access funding sources not normally utilized for flood mitigation projects and address flooding in a comprehensive manner.

Funding

To implement the Bee Branch Watershed flood mitigation project, multiple funding sources were creatively utilized and leveraged. Federal funds totaling more than $81.5 million have been secured for the project and can be found in **Table 1**.

Federal Agency	Program/Opportunity	Amount	Project Components
Housing and Urban Development	Natural Disaster Resilience Competition	$ 31,500,000	▪ Storm sewer improvements ▪ Railroad culverts ▪ Drainage basin improvements ▪ Bee Branch Home Resiliency Program
Environmental Protection Agency	Clean Water State Revolving Fund	$ 64,851,908	▪ Upper Bee Branch Creek restoration ▪ Lower Bee Branch Creek restoration ▪ Detention basin ▪ Railroad culverts ▪ Green alleys
Environmental Protection Agency	Brownfield Remediation Grant	$ 400,000	▪ Remediation of Maintenance Facility site

Federal Agency	Program/Opportunity	Amount	Project Components
Department of Interior	Land and Water Conservation Grant	$ 175,000	▪ Bee Branch Creek Trail connector tunnel
Economic Development Administration	Disaster Relief Opportunity Program	$ 3,727,138	▪ Bee Branch Creek daylighting ▪ Water and wastewater infrastructure ▪ Roadway construction ▪ Landscaping ▪ Flood gate and pump station replacement
Department of Transportation	Scenic Byways Grant	$ 1,000,000	▪ Trail construction
Department of Transportation	Transportation Investment Generating Economic Recovery (TIGER) Grant	$ 5,600,000	▪ Historic Millwork District Street improvements
Department of Transportation	Dubuque Metropolitan Area Transportation Study (DMATS) Grant	$ 940,000	▪ Bee Branch Creek overlook parking

Table 1: Federal Funding Utilized for the Bee Branch Watershed Flood Mitigation Project

State funding has paid for approximately $105 million of the project costs as can be seen in Table 2. Remaining project costs have been paid through general obligation bonds of the city, stormwater utility revenues, green alley assessments, and donations.

As with federal funds, the city identified multiple state funding sources for various components of the Flood Mitigation Project as can be seen in **Table 2.** In the early stages of the project, the city recognized that it was not eligible for sales tax funding through the State's Flood Mitigation Fund. State law limited eligibility to projects that were approved for funding under certain federal programs for which Dubuque was not eligible. Only two cities in the state met the criteria, so Dubuque took action.

The city was successful in its efforts to change state law so that projects approved for Clean Water State Revolving Fund (CWSRF) funding were also eligible for sales tax funding under the Flood Mitigation Fund. This change allowed the city to leverage its CWSRF funding and capture an additional $98.5 million from the state which could be used to repay bonds financing the Bee Branch Watershed Flood Mitigation Project.

Early in the project, city officials applied to multiple federal agencies to fund various portions of the project plan. Although the main purpose of the project was flood mitigation, multiple other benefits and outcomes were part of the project design. By thinking creatively and identifying broader benefits and impacts, the city was able to locate additional funding sources not directly tied to flood mitigation.

For example, the Environmental Protection Agency (EPA) CWSRF is primarily used for wastewater treatment and conveyance; however, the agency ultimately agreed with city officials that project components had significant water quality benefits and thus qualified for funding. Similarly, Department of Transportation funding was utilized for trails, permeable streets, and other transportation-related project components.

With the exception of the CWSRF loan, all federal funds awarded were grants. Under the CWSRF, the project qualified for more than $55 million low interest financing, of which more than $5 million was forgivable under a program to incent green infrastructure.

Another incentive allowed the city to forgo repayment of $9.4 million in interest on a state CWSRF loan for the city's Water and Resource Recovery Center and utilize those funds to convert alleys to permeable pavement to decrease stormwater runoff in the watershed.

Federal funds not only paid for portions of the Bee Branch Watershed Flood Mitigation Project, they were also leveraged to capture a significant amount of state funds.

Agency	Program/ Opportunity	Amount	Project Components
Iowa Department of Transportation	State Recreational Trail Grant	$ 100,000	▪ Trail design and construction ▪ Parking
Iowa Finance Authority	I-Jobs II Grant	$ 3,965,500	▪ Lower Bee Branch creek restoration ▪ Drainage Basin construction
Iowa Economic Development Authority, Vision Iowa Board	River Enhancement Community Attraction and Tourism Grant (RECAT)	$ 2,250,000	▪ Bee Branch Creek overlook ▪ Bridges ▪ Trail construction ▪ Amphitheater ▪ Landscaping
Iowa Department of Homeland Security and Emergency Management	Flood Mitigation Fund, Sales Tax Funding	$ 98,500,000	▪ Bee Branch Creek restoration ▪ Drainage Basin improvements ▪ Storm Sewer improvements

Table 2: State Funding Utilized for the Bee Branch Watershed Flood Mitigation Project

Project Elements

The Bee Branch Watershed covers more than six square miles within Dubuque and drains into the Mississippi River via the Bee Branch Creek. The area contains the city's downtown and over half of Dubuque's residents live and/or work in the Watershed. The Watershed includes historic neighborhoods and much of the community's most affordable workforce housing. The Bee Branch Flood Mitigation Project is a twelve-phase, $250 million effort designed to reduce, slow, and convey stormwater safely, as well as protect the city's water treatment plant from flooding. As part of the project, the city developed the Bee Branch Creek Greenway and established a loan program allowing residents to borrow funds to address stormwater and resilience issues at their homes.

The city's investment in this ambitious, ongoing project includes the following:

UPSTREAM DETENTION BASINS

Detention basins allow the capture of stormwater upstream, holding it until the downstream area has had time to drain. One basin was constructed in 2003 to reduce the peak flow of runoff during a 100-year rain event by 98% from 1,490 cubic feet per second down to 30 cubic feet per second. The storage capacity of another basin was doubled in 2009. Native grasses, wetland vegetation and wildflowers were utilized at the second basin to maximize its ability to hold runoff and reduce the speed and amount of flows to downstream areas. The city spent approximately $5.2 million on drainage basin construction and expansion.

STORM SEWER IMPROVEMENTS

This $17.5 million effort includes replacement, and construction of multiple storm sewers and drains, street and sidewalk reconstruction and relocation of other utilities.

In addition to providing enhanced capacity to safely convey stormwater out of flood prone areas, the storm sewers discharging into Bee Creek were equipped with nutrient spreading baffle boxes to reduce trash and pollutants from entering the creek. The design will positively impact the water quality of the Creek by reducing the amounts of nutrients flowing downstream and lessening bacteria growth leading to fewer odors.

BEE BRANCH CREEK RESTORATION

The Bee Branch Creek Restoration is the crowning jewel of the project and consisted of daylighting a one-mile section of the Bee Branch Creek. The restored creek and floodplain convey stormwater through the area without flooding adjacent properties and also serves as a linear park. Restoration was completed in two phases. The downstream portion of the creek, known as the Lower Bee Branch, was restored in 2011 at a cost of just over $29 million. Construction of the upstream section of the restored creek, called the Upper Bee Branch, began in 2015. It cost approximately $64 million and was completed in 2017.

PERMEABLE PAVEMENT

Stormwater runoff is further decreased, and pollutants filtered, through the installation of permeable pavement. In 2012, the city completed the $8 million Millwork District Complete Street Project which included reconstructing the street with permeable pavement, installing of permeable parking and alleys, and other utility improvements. The Green Alley Reconstruction Project began in 2014 and has an anticipated cost of $57.4 million of which 15% will be assessed to landowners adjacent to the alleys. By replacing conventional pavement with permeable pavers, up to 80% of the stormwater runoff from alleys is expected to be eliminated.

RAILROAD CULVERTS AND FLOOD GATES

Culverts under the railroad tracks were completed and the ribbon-cutting was held in October of 2021. This portion of the project allows stormwater to drain under the Canadian Pacific Railway tracks to the downstream portion of the creek and represented a critical component of the flood mitigation project. Flood gates and pumps to help control water levels and the conversion of the old Bee Branch storm sewers into a pedestrian tunnel, connects the Upper and Lower Bee Branch Creek trails. Costing $32 million, the culverts and associated infrastructure increases the system's capacity to protect the area from a 75-year flood event to a 500-year event.

In addition, flood mitigation gates and the pump station controlling the flow of water between the 16th Street detention basin and the Mississippi River cut-off channel are being replaced. The system allows stormwater to gravity flow or be pumped out of the Bee Branch Creek Drainage System and prevents backflow from the River from flooding the watershed. The project is expected to cost $17.2 million and be completed in 2022.

THE BEE BRANCH HEALTHY HOMES RESILIENCY PROGRAM

In addition to infrastructure improvements, the City of Dubuque also established the Bee Branch Healthy Homes Resiliency Program to assist residents in the watershed making improvements to their homes. In 2018, the U.S. Department of Housing and Urban Development (HUD) awarded $8.4 million for forgivable loans to address structural issues, electrical hazards, implement drainage improvements, remediate mold and mildew and other issues. This program will be finished soon. Funds were available for single and small multi-family residential structures in which low- to moderate-income residents live. From 2017 to 2021, the program improved 275 housing units.

FUTURE BEE BRANCH WATERSHED FLOOD MITIGATION PROJECTS

Future Bee Branch Creek Flood Mitigation projects include protecting the city's drinking water plant and building a Flood Mitigation Maintenance Facility adjacent to the Bee Branch Greenway. The city's source of potable water will be protected from flooding events by a new flood wall, new stormwater pipe, conveyance, and backflow prevention installations. This $4.4 million project is expected to be completed in late 2025. The Maintenance Facility will be built on a brownfield site which was previously the location of a scrap and recycling yard. After remediation, the new facility will serve as an operations center for creek maintenance, provide public restrooms, and have additional recreational space. Remediation and construction at the site is expected to cost approximately $5.5 million and be completed in 2028.

Community Impact

With substantial portions of the project completed, the community has seen significant, positive impacts far beyond flood mitigation. Due to the leadership of Mayor Roy Buol and his staff, and their willingness to engage Dubuque residents, the Bee Branch Creek Greenway is a community gathering spot and a destination point in addition to providing flood protection. Increased recreation, educational, and development opportunities are now available in an area of town that is home to vulnerable and disadvantaged communities who had largely been ignored.

Property values have stabilized and when flooding occurs, damage is minimal. This is particularly significant as vulnerable communities are more likely to be at risk of flooding and their ability to recover from these events is lower than the general population. Health and economic impacts are felt most strongly by the elderly, children, those with low incomes, and communities of color. Outcomes in Dubuque are improved through the Bee Branch Healthy Homes Resiliency Program which has successfully completed improvements in over 275 residential units. These projects are creating more resilient housing and improving the quality of life in the Watershed.

To demonstrate their flood mitigation success, the city is proud to highlight two rain events, one in 2002 and one in 2017, with similar severity but vastly different outcomes. In each, just under five inches of rain fell in a 24-hour period. The 2002 storm resulted in extensive damage and a Presidential Disaster Declaration. The 2017 storm, occurring after the completion of detention basins, Bee Branch Creek restoration, and storm sewer improvements, resulted in limited property damage. Without the Bee Branch Creek Flood Mitigation Project, it is estimated that more than $11.5 million in property damage would have occurred in the 2017 storm.

Lessons Learned and Strategies for Replication

- **Actively Manage Complications:** Dubuque learned that utilizing multiple funding agencies complicates project administration. Each agency has their own requirements relating to eligibility, implementation, and reporting. Additionally, agencies do not use the same definitions for key terms that impact funding eligibility. To work through these issues, city staff built relationships and worked closely with agencies to understand the nuances of each program and overcome inconsistencies when possible. Construction bids were let in phases to accommodate differing program bidding or construction requirements, and ultimately, the city added staff to manage the complications brought by multiple funding and reporting requirements.

- **Engage the Community:** City officials have stated that they wish the project could have proceeded more quickly; however, they feel that slowing the design process to allow input from citizen committees and the public at large added significant community value to the project. City leaders were committed to the project, but the community's strong desire to implement comprehensive solutions and incorporate features to address a broader array of community needs provided leaders with both the support and push to implement a much more impactful flood mitigation program than would have occurred without public input. Additionally, allowing the community to provide input on design influenced the amenities incorporated and how the project looked and fit into the neighborhood. City leaders believe that the delays were worthwhile as the city's citizens will have to live with the project for the long term and, as put by one city official, "Everyone deserves to live in a beautiful place."

- **Create a Plan:** Communities considering flood mitigation or other resilience projects should first identify risks and solutions, then design a plan for implementation. Having a plan in place allows the community to think creatively and identify a wide array of benefits or impacts for which funding can be sought.

With that information, project descriptions and names can be easily adjusted to fit the specific funding sources. Existing plans also increase the likelihood of receiving federal and state funds as plans provide assurance that the awards will be spent wisely and spent in a timely manner.

- **Understand Funding Programs:** Understanding the purpose, goals and eligibility definitions of funding programs allows communities to identify creative opportunities to access funding. As Dubuque has shown, understanding the eligibility requirements of Iowa's Flood Mitigation Sales Tax Funding allowed the city to seek eligibility changes allowing additional communities to access the program. This program became the largest single source of funding for the Bee Branch Watershed Flood Mitigation Project.
- **Think Creatively & Holistically About Benefits:** Thinking creatively about all of the benefits and impacts of a project, not just those related to the project's primary purpose, can help identify additional funding opportunities to support the project.
- **Build Relationships with Funding Agencies:** Building relationships with funding agencies can increase the likelihood that applications, particularly those seeking non-traditional use of funds, are considered and not rejected out of hand. Furthermore, by establishing relationships and building trust with funders, meaningful discussion about funding needs, obstacles, and project benefits may lead to the identification of additional funding opportunities.

Resources for Further Reading

To learn more about the Bee Branch Creek Watershed Flood Mitigation Project, visit: www.cityofdubuque.org/beebranch

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Potential IIJA Funding Opportunities for Similar Projects

U.S. Department of Agriculture	**Watershed and Flood Prevention Operations:** For cooperative projects to prevent erosion, floodwater, and sediment damage, and projects to further conservation and proper use of land in authorized watersheds.
Federal Emergency Management Agency	**Flood Mitigation Assistance Program:** Financial and technical assistance to reduce the risk of flood damage to homes and businesses through buyouts, elevation, and other activities. **Building Resilient Infrastructure and Communities (BRIC) Program:** Pre-disaster mitigation program supporting hazard mitigation projects to reduce disaster and natural hazard risks.
U.S. Environmental Protection Agency	**State and Tribal Assistance Brownfield Grants:** To assess, safely clean up, and sustainably reuse contaminated properties. **Sewer Overflow and Stormwater Reuse Municipal Grants:** For the planning, construction and design of treatment works for municipal combined sewer overflows, sanitary sewer overflows, or stormwater, and measures to manage, reduce, or recapture stormwater or subsurface drainage. **Clean Water State Revolving Funds:** To restore and maintain clean water including wastewater and green infrastructure projects. **Stormwater Control Infrastructure Project Grants:** To carry out stormwater control infrastructure projects that incorporate new and emerging, but proven, stormwater control technologies. **Clean Water Infrastructure Resiliency and Sustainability Program:** To establish clean water infrastructure resilience and sustainability programs for natural hazard or cybersecurity vulnerabilities of public treatment works.
U.S. Department of Transportation	**Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants:** To support surface transportation projects of local and/or regional significance, including projects that improve environmental sustainability. **Healthy Streets Program:** to deploy cool pavements and porous pavements and to expand tree cover with priority for low-income and disadvantaged communities. **Active Transportation Infrastructure Investment Program:** For eligible projects to provide safe and connected active transportation facilities in an active transportation network or active transportation spine.
Army Corps of Engineers	**New Construction Projects**

Please refer to the Appendix for additional information on IIJA funding opportunities.

Strategic Greening of Municipal Fleets through Federal Funding

Utilizing Federal Funds for Transit Bus Electrification (Wichita, KS)

Municipal and transit fleet electrification projects can help cities reach their climate change goals, improve quality of life for communities, and save on transportation infrastructure costs in the long term. Transit buses are a great option for fleet electrification as they often travel through the denser parts of cities where poor air quality is already a higher risk. If all transit buses in the United States were replaced with zero-emission vehicles it would eliminate more than two million tons of greenhouse gas emissions each year. The benefits of fleet electrification are numerous:

- Electric vehicles provide a safer, cleaner, and quieter experience for riders of public transportation.
- The transition to electric buses will help reduce harmful emissions from diesel engines which significantly reduce regional air quality and affect the health and well-being of all city residents.
- Those who ride buses, and are most impacted by their emissions, will benefit from transit electrification. Populations that are particularly vulnerable to the health impacts of poor air quality, including children, the elderly, and those with pre-existing conditions, are also those most likely to be public transportation dependent.
- Electric buses have overall much lower operating, maintenance, and fuel costs than diesel buses.
- Electric buses are also more likely to be equipped with cutting edge technologies like those that allow for easier access for wheelchair riders and features like Wi-Fi access than conventional transit options.

The Infrastructure Investment and Jobs Act heavily features programs to promote vehicle electrification, including greening of municipal fleets. This case study highlights the City of Wichita's Transportation Department and how they successfully adopted electric buses and novel sustainability infrastructure using federal funding.

Overview

The City of Wichita's Transit Department has made a commitment to replace all their diesel vehicles with green alternatives by 2032. So far, with the help of federal funding, they have successfully integrated eleven electric buses into their fleet, built substantial charging infrastructure, and are in the process of building a new transit hub that will transform the downtown transportation system.

The Transit Department's focus on setting long term priorities, using funds strategically, and building strong partnerships has taken them far and can offer valuable insight to other cities.

Funding

The City of Wichita's Transit Department has utilized almost $16.5 million to date in its efforts to meet its vehicle electrification goals.

While the majority of these funds, $16.3 million, were received through federal grant awards, their progress would not have been possible without the strategic use of other funding sources.

Agency	Program/Opportunity	Amount	Project Components
Federal Transit Administration	Fiscal Year 2018 Low or No-Emission (Low-No) Bus Program Grant (a subprogram within the FTA Grants for Buses and Bus Facilities Program)	$ 2,300,000	▪ Purchase of four Proterra electric transit buses
Federal Transit Administration	Grants for Buses and Bus Facilities Formula Grant Program – 5339(a)	$ 2,700,000	▪ Purchase of seven Complete Coach Works ZEPS
Federal Transit Administration	Fiscal Year 2019 Grants for Buses and Bus Facilities Program	$ 14,000,000	▪ Transit Center

Table 3: Federal Funds Utilized by Wichita Transit

Entity	Notes	Amount	Project Components
City of Wichita	Required city matching funds for the Low or No-Emission (Low-No) Bus Program Grant	$ 400,000	▪ Purchase of four Proterra electric transit buses
Evergy (Wichita's electric service provider)	Private Partner Financial Contribution	$ 55,000	▪ Charging infrastructure

Table 4: Other Funds Utilized by Wichita Transit

Project Elements

PROTERRA TRANSIT BUSES AND BUS BARN

The City of Wichita Transit Department's first electric buses hit the streets in early 2020 and were funded primarily by the Federal Transit Administration (FTA) Fiscal Year 2018 Low or No-Emission (Low-No) Bus Program Grant (a subprogram within the FTA Grants for Buses and Bus Facilities Program). With this grant they replaced four diesel transit buses that were at the end of their useful life with Proterra electric buses. With the financial and technical support from the local electric utility, Evergy, this project also included a new bus barn with the capacity to charge fifteen electric buses. The bus barn was built to support the charging of more buses than were purchased to ensure that future electric bus purchases would be supported by existing infrastructure.

Q-LINE TROLLEY BUSES

In 2019 seven electric buses were purchased to replace the downtown Q-line trolley cars. The purchase was made using funds from the Federal Transit Administration Grants for Buses and Bus Facilities Formula Grant Program – 5339(a). This program provides funding for states and transit agencies through a statutory formula to replace, rehabilitate, and purchase buses and related equipment. The funding is not specifically allocated for electrification projects and was originally awarded to buy new diesel trolley cars. The budget was not large enough to purchase Proterra electric buses, so the Wichita Transit Department instead purchased smaller electric buses from Complete Coach Works. These buses were built from refurbished Gillig buses, which maintained some of the vintage appeal of the original trolley cars as well as the smaller size.

Not only did these buses fit with the image of the trolley, they also fit with the budget that did not originally contemplate electrification of the Q-line. By strategically purchasing less expensive electric buses and overbuilding the bus barn, Wichita's Transit Department was able to afford not only the electric buses, but also the infrastructure to charge them.

TRANSPORTATION HUB

In 2019 Wichita's Transit Department received funding from the FTA Grants for Buses and Bus Facilities Program to construct a new downtown transit hub to make the downtown more accessible and sustainable. The solar-powered building will provide bus and private vehicle charging and parking, bike and scooter storage and ride-share programs, and connections to the free electric trolley service.

Partners

In addition to the strategic use of funds, this transit bus electrification initiative highlights the important role of partnerships in designing a project with widespread benefits and in putting forth a strong application for funding.

UTILITY AND MANUFACTURER PARTNERS

Both Evergy and Proterra have significant expertise and offered their time, data, and knowledge of best practices to help Wichita construct an informed plan, position for grants, and write applications. The Wichita Transit Department team is small and the support of the staff at Evergy and Proterra were vital to getting applications written.

Shortly before Wichita Transit Department's first FTA grant application, Evergy (then Westar) launched an initiative with the state of Kansas to offer reduced electricity rates for electric vehicles charging during off-peak hours.

Wichita was eager to work with Evergy as the first participant in this state-wide program. In addition to offering Wichita a favorable electricity rate structure, Evergy provided technical assistance, a transformer to support vehicle charging, and a portion of the matching funds required to secure the FTA grant.

GOVERNMENT PARTNERS

Collaborating with local, city, and state officials helped demonstrate to funders that Wichita's Transit Department was proposing a project the community would support. This partnership helped prove feasibility to funders and decreased the likelihood of bureaucratic roadblocks along the way. Funders want to support projects that they believe will be completed and will make an impact; the vocal support of government officials provide that assurance. Knowing that the project has the support of the city also helps emphasize the longevity of the project, that it will receive the necessary attention to last.

COMMUNITY ORGANIZATIONS

The local Sierra Club hosted outreach events educating the public about electric vehicles and their support helped Wichita's Transit Department petition for grants by demonstrating a tangible community interest in this initiative. Staff pointed out that outreach events help familiarize people with what the city transit department is doing and could influence them to vote in favor of increasing transit budgets. One event hosted in the mall let customers walk around inside a Proterra vehicle and learn about the free trolley service.

Getting local groups excited about the work can translate to broader community support.

For the Transit Hub and trolley service, Wichita's Transit Department elicited the support of Visit Wichita, a tourism group dedicated to bringing people to Wichita and enhancing their experience in the downtown. Their involvement helped guide Wichita's Transit Department to create a service that would have practical benefits to the usage of downtown Wichita and visitors alike. As a result, the electric trolley service connects the Transit Hub to a downtown conference hall frequented by visitors to the city. In addition to providing valuable design input, partners that can advocate for the diverse benefits of proposed projects help grant applications stand out. In this case, Visit Wichita offered a letter of support to funders, demonstrating the economic benefits of bringing this technology to the city.

Community Impacts

This program has significant positive impacts on carbon reduction goals. Each diesel bus replaced with an electric bus will avoid 1.8 million pounds of carbon emissions in its lifetime, and with eleven electric buses operating in the Wichita Transit fleet, the department will avoid 19.8 million tons of future carbon emissions. Proterra leases the battery packs of the buses to The City of Wichita's Transit Department so at the half-life of each battery it is replaced with the most current model. This approach allows for the buses to become more efficient as technology evolves, and the old batteries can be repurposed into emergency generators for the city.

Furthermore, both the Proterra and Complete Coach Work buses offer a quieter, safer, and more enjoyable ride for users of public transportation, and reduce noise and air pollution for riders and non-riders alike. Wichita's Transit Department staff noted that the use of diesel buses throughout neighborhoods resulted in complaints from homeowners to the department regarding air quality and noise pollution. The use of electric buses has resolved this problem.

An initiative like this gives a company like Proterra an opportunity to gather data about usage of their product in a small city. This also gives them a platform to familiarize people with electric vehicles and hopefully encourage private adoption of electric cars. This exposure to electric vehicles can also promote green job creation in the city and at local universities to train engineers to maintain and advance electric vehicles and related infrastructure.

What's Next

With eleven electric buses in service, 25% of Wichita's Transit Department buses are electric and by 2032 they are aiming for 100%. In November 2021, Wichita's Transit Department applied for federal funding to replace more buses in their fleet at the end of their useful life with Proterra buses. The city's transit department is a member of the American Public Transportation Association, Kansas Public Transportation Association, and South West Transit Association. The department is using these partners to stay up to date with upcoming federal funding sources that may suit their needs.

Lessons Learned and Strategies for Replication

The takeaways from the City of Wichita's successful fleet electrifiction project can be summarized as setting clear priorities, strategic utilization of funds, and partner engagement. Their work is an excellent example of the unique role that transit departments can play in initiating sustainability projects.

Municipal electrification initiatives can include a wide range of projects and that is reflected in the anticipated grant funding. Funding is available for developing new ways of reusing batteries, innovative connectivity solutions to integrate transportation into cities, and finding ways to make transportation more resilient. This variety allows each city and transit department to consider their unique needs and present novel ideas to serve their community. Municipal electrification is the first step in many widespread electrification projects, increasing familiarity with electric vehicles can help promote private adoption leading to additional community benefits.

- **The Importance of Long-Term Planning and Priorities:** The City of Wichita's Transit Department's staff emphasized the importance of developing priorities first and constructing a long-term plan that considers a city's needs and capabilities. They noted, "We were most successful writing grants not for what it's going to do today but what it is going to do in 20 years," highlighting how the individual grant would fit into a much larger mission.

  Wichita's Transit Department has set the ambitious goal of replacing all diesel vehicles by 2032, and this long-term priority is clear in all their grant applications.

Staff recommends that cities and transit agencies consider what they see for their organization in five, ten, and twenty years and write their grants to that narrative. Wichita's Transit Department built partnerships, set priorities, and developed plans first, then as funding became available applied for grants that would allow them to reach their goals.

- **Connect Project with Broader Goals:** Staff also encourages city transit departments to connect their projects to each other, to larger city and state initiatives, and to local organizations' goals, emphasizing that "linking makes sense to people," and funders want to fund projects that are supported, thought out, and likely to succeed. The new Wichita Transit Center is an excellent example of connectivity, as it combines parking, private and public vehicle charging, bike storage, and public transportation. The center contributes to the transit department's goal of electrification but also the city and tourist organizations' goals to improve the experience of downtown Wichita. The center will be powered by solar panels on the roof, incorporating another city sustainability initiative into the project. By emphasizing shared goals, Wichita's Transit Department was able to prove to funders that their projects would be supported and maintained by their city. Projects connected to broader goals are more likely to have community support, assuring funders that the projects will not only be completed, but provide benefits for years to come.

- **Develop Forward Thinking Projects:** Staff noted that unique applications are successful applications because, "nobody wants to spend money on the same old."

  At the time of their first application Wichita's Transit Department was the only agency in Kansas with electric vehicles. As electric vehicle adoption has become more widespread, the City of Wichita's Transit Department has still found ways to present unique ideas. Staff emphasized, "to write a grant for forward thinking technology you need to have forward thinking plans." Staff encourages city transit departments to meet innovative technology with innovative service delivery. Consider new ways to store, charge, use, and integrate electric vehicles into your city. Something like the electric trolley buses takes the existing technology of electric buses and applies it to a unique service. Successful applications demonstrate, in detail, how new technology can allow a city transit department to provide new services to their patrons.

- **City Specific Scope:** Staff attribute their grant success to applications that show an understanding of the City of Wichita's size and capacities. With Proterra as a partner, Wichita's Transit Department had access to their knowledgebase on available vehicles and the complex and widespread benefits of the technology. With the help of Proterra staff, the Transit Department took this information and tailored it to a plan and scope that fit Wichita specifically. The applications submitted by the City of Wichita considered the size and layout of the city, the existing and needed infrastructure of the city, the demographic using and not using their public buses, and the unique needs of the citizens. The applications detailed the intended use of grant funding as well as the funding their city and partners had already committed to provide. The transit department was conscious of long-term resources, budget, and needs and what scope of development it was realistically ready for.

  For example, the City of Wichita's Transit Department is not applying to replace all their electric buses at once, they are instead applying for grants as their buses reach the end of their useful life.

In considering what buses would work for their transit needs, the administration considered that their bus service is not 24 hours and they would be able to charge vehicles overnight. Therefore, charging infrastructure solely in the bus barn is sufficient. Similarly, as the new Transit Center was designed, it was with Wichita's size in mind.

- **Strategic Partnerships:** Building a coalition of likely and unlikely partnerships helps prove feasibility and support to funders. Wichita's Transit Department staff encourage all city transit departments to reach out to their local FTA representatives and bring them on to their team. With upcoming federal funding, it is important that transit departments build their priorities, plan, and partnerships now then keep an eye out for the grants that will help accomplish those goals.

  The City of Wichita's Transit Department positioned for grants by collaborating with numerous organizations that would have a stake in their work. By including medical professionals, local organizations, tourist groups, universities and many other community representatives in the applications Wichita's Transit Department was able to position their project as a popular initiative that would greatly impact the community. Collaborating with the local FTA representatives and government officials at all levels helped ensure that the proposed project was practical and reflected the priorities of the agencies whose support it required. Lastly, bringing on technical collaborators early on resulted in a plan that was as advanced and innovative as the technology it would require.

Resources for Further Reading

To learn more about FTA Low or no Emission Bus Program, visit: https://www.transit.dot.gov/lowno

To learn more about the City of Wichita's Transportation Department, visit: https://www.wichitatransit.org/AboutUs/Pages/Electric-Buses.aspx

To learn more about Wichita's upcoming transportation hub, visit: https://www.ksn.com/news/local/wichita-will-receive-14-2-million-grant-to-replace-transit-center/

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CITY OF WICHITA

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Potential IIJA Funding Opportunities for Similar Projects

Department of Energy	**Battery Material Processing Grant Program:** For battery recycling research, to assist state battery collection, recycling, and reprocessing programs, for the implementation or establishment of a system to collect used batteries.
Environmental Protection Agency	**Clean School Bus Program:** For replacement of existing school buses with zero emission and clean school buses.
U.S. Department of Transportation	**Congestion Mitigation and Air Quality Improvement Program:** For programs to reduce pollution and relieve congestion to meet air quality standards. **Transit Infrastructure Grants:** For the purchase or lease of zero-emission and low-emission transit buses, including acquisition, construction, and leasing of required supporting facilities. **Carbon Reduction Program:** For transportation electrification including public transportation and Bus Rapid Transit intelligent transportation system improvements. **Promoting Resilient Operations for Transformative, Efficient, and Cost Saving Transportation (PROTECT) Program:** For state projects to improve resiliency of transportation infrastructure. **Active Transportation Infrastructure Investment Program:** For construction of active transportation that connects people to public transportation, businesses, workplaces, schools, residences, recreation areas, and other community activity centers. **Strengthening Mobility and Revolutionizing Transportation Grant Program:** Projects that incorporate innovative transportation technologies: uses of data, coordinated automation, connected vehicles, and intelligent sensor-based infrastructure. **Surface Transportation Private Activity Bonds:** The cap on bonds will increase from 15 to 30 billion, this allows counties to enter additional public-private partnerships to supplement further public transportation projects with private investment. **Surface Transportation Block Grant Program:** For electric vehicle charging infrastructure, vehicle-to-grid infrastructure, installation, and deployment of intelligent transportation technologies.

Please refer to the Appendix for additional information on IIJA funding opportunities.

Effective Planning for Spending Sustainability Funds

Climate Protection Fund and Community-Driven Sustainability Planning (Denver, CO)

Effective planning and decision-making processes are foundational to implementing widespread and impactful change. As federal funding from the Infrastructure Investment and Jobs Act (IIJA) becomes available to states and localities, it will be vital for cities to demonstrate existing plans to access specific project-based or competitive funding streams or utilize other funding streams that provide support for initiating a plan. Some grants also require a local match to leverage funding. To meet these requirements, cities must have a plan for allocating local funds toward sustainability and climate change projects. The following case study highlights the City and County of Denver and its approach to strategic planning, goal setting, stakeholder engagement, and innovative creation and use of local funding to meet its climate change and sustainability goals.

Overview

The City and County of Denver has been a leader in the fight against climate change for over a decade. Its first comprehensive Climate Action Plan (CAP) was released in 2007 with subsequent updates in 2015, and 2018, and the city recently updated its climate goal to achieve a 100% emissions reduction by 2040.

Development of the first CAP and its updates involved diverse stakeholder engagement, a thorough review of science-based targets, and identification of numerous strategies to help Denver establish long-term goals and pave a pathway towards achieving them. To strengthen the city's position and guide impactful policy changes, Mayor Michael Hancock and the City Council created the Office of Climate Action, Sustainability, and Resiliency (CASR) in 2020. Though Denver previously had a small Office of Sustainability, the newly established CASR office has increased authority and budget to develop policy changes and implement strategies to meet Denver's climate action and sustainability goals. CASR is charged with ensuring equity, resiliency, and economic vitality are promoted and strengthened through each of the city's sustainability and climate endeavors. Recent initiatives have included identification of priority municipal facilities for electric vehicle charging station installation and adoption of a building performance requirement that will reduce emissions from existing buildings by at least 80% by 2040. Additionally, CASR is responsible for overseeing development of the foundational investment strategy and resulting Five-Year Plan for Denver's new Climate Protection Fund (CPF).

Funding & Project Elements

The CPF is a taxpayer-supported fund dedicated solely to climate action, and it has no sunset. Creating the CPF resulted from community advocacy, decisive leadership, diverse stakeholder engagement, and voter support. The CPF's origins trace back to a 2019 ballot initiative led by Resilient Denver, a local grassroots organization, which would have levied a tax on electricity and natural gas use to fund climate change initiatives and was projected to raise $30 million to $40 million per year. The Mayor and City Council believed a tax on utilities would be too regressive on low-income residents and small business, and instead proposed establishing the CASR office to consolidate and manage the city's climate action policies and programs, and Resilient Denver withdrew its ballot initiative. They also proposed forming a Climate Action Task Force, a group of 25 community representatives, to evaluate less regressive measures to raise funding for climate and resiliency initiatives and provide other recommendations for strengthening Denver's climate change work with a focus on equity.

The task force began meeting in January 2020 and provided its recommendations to the Mayor in July, one of which was the .25% sales tax. The Mayor and City Council agreed, noting that a sales tax in Denver is less regressive on lower-income residents because nearly 65% of all sales tax revenue is generated by visitors to the city. The sales tax ballot measure was overwhelmingly passed by voters during the November 2020 election, and is the financial basis of the CPF, which is expected to raise up to $40 million each year.

The ordinance that created the CPF required CASR to develop a foundational investment strategy and Five-Year Plan for how to utilize the funds within one year, and the plan was delivered to City Council in November.

Formulating the Five-Year Plan and broader investment strategy for the CPF involved extensive collaboration between CASR and the city's Sustainability Advisory Council (SAC). The SAC is a diverse group of 120 community representatives organized into six sub-committees and provides advice and recommendations to CASR. While the Climate Action Task Force was temporary, the SAC is permanent. The SAC sub-committees are: Buildings & Homes; Community Adaptation, Resiliency, and Environmental Justice; Energy; Resource Management; Science & Research; and Sustainable Transportation. Members of each sub-committee are representative of Denver's diverse population and include people of color, individuals who identify as LBGTQ+, renters, homeowners, people of all income levels, and people with various industry and community interests. These SAC committees convened over 40 times during 2021 to provide invaluable input to CASR for development of the CPF Five-Year Plan.

Community Impacts

The CPF will fund high impact projects rooted in sustainability and resilience and aims to spend at least 50% of funds to directly benefit under-resourced and vulnerable communities, as required by the ordinance. The following project types are qualified for CPF funds by the governing ordinance:[3]

3 Office of Climate Action, Sustainability, and Resiliency (2021). *Climate Protection Fund Five-Year Plan*. https://denvergov.org/files/assets/public/climate-action/cpf_fiveyearplan_final.pdf.

- Job creation through local workforce training and new careers for under-resourced individuals in renewable and clean energy technology and management of natural resources
- Increased investments in solar power, battery storage and other renewable energy technologies
- Neighborhood-based environmental and climate justice programs
- Adaptation and resiliency programs that help vulnerable communities prepare for a changing climate
- Programs and services that provide affordable, clean, safe, and reliable transportation choices, like walking, biking, transit, electric vehicles, and neighborhood-scale transit
- Upgrade the energy efficiency of homes, offices, and industry to reduce their carbon footprint, utility bills, and indoor air pollution

What's Next

Denver's commitment to planning for and allocating local funding to implement sustainable and equitable projects strongly position the city for approved and anticipated federal funding opportunities. Some federal funding streams require a local match to leverage funding; others incentivize applicants who are making significant progress towards goals such as meeting greenhouse gas emission reduction targets or net-zero emissions. The City of Denver's history of strategic planning, project prioritization, and allocating of local funds to sustainable and equitable projects will allow it to act quickly to leverage federal funding streams unlocked by the Infrastructure Investment and Jobs Act (IIJA).

For example, CASR assembled an Electric Vehicle (EV) Working Group because EVs and EV charging infrastructure are a major focus of the Infrastructure Investment and Jobs Act (IIJA) and vital to reaching municipal decarbonization goals. Similar to work conducted in Roseville and Sacramento, CA (discussed in the case study on Municipal Utility Planning for Widespread Vehicle Electrification), the Working Group conducted a targeted analysis to provide the data and information necessary to enable the city to make smart and quick investments related to EVs. Specifically, the Working Group developed screening criteria to review municipal facility parking and electrical infrastructure and identify areas with the lowest barriers to construction of EV charging stations. The EV working group also identified six locations for equitable EV charging station projects in the Right of Way.

Other areas of focus for the CASR team are zoning and building codes, and transportation policies. These areas can advance climate change and equity goals by influencing equitable development, access to resources such as green space and walkable mixed-use developments, and modernizing codes and policies to align with local and federal equity and climate change goals. Based on the priorities established by recent federal policy, it's likely most new and future federal funding programs will require applicants to demonstrate positive and equitable community impact. Therefore, modernizing development codes and policies to advance equity and climate change goals can help pre-position a city for new and future federal funding programs.

Another stakeholder engagement process, the Energize Denver Task Force, was originally established in 2016 and recommended a benchmarking and building performance policy, and the city proceeded to create the benchmarking requirement.

This task force was re-established in early 2021 to recommend a new building performance policy for existing buildings that promotes equity while guiding Denver to its climate action goal of net zero energy by 2040. As with each of Denver's task forces and councils, the Energize Denver Task Force represented diverse stakeholders from various industries including real estate, energy, labor, workforce development, affordable housing, small business, resident advocacy, solar, energy efficiency, and environmental advocacy. After eight months of deliberation and community outreach, the Task Force recommended a new ordinance for Building Electrification and Efficiency, which was approved by City Council in November 2021. The new ordinance requires buildings larger than 25,000 square feet to achieve a 30% reduction in energy use by 2030, with interim goals for 2024 and 2027. It also requires gradual electrification within the built environment and phasing out natural gas space and water heating equipment as it becomes cost effective. CASR will provide extensive support and CPF-funded incentives for building owners to comply with the new ordinance, especially in under-resourced communities.

Incentives will be available to all buildings through early 2024 to encourage early adopters, then will shift to only those serving under-resourced communities. This is a major step for Denver to reach its net zero energy goals, while advancing equity throughout the city.

Lessons Learned and Strategies for Replication

A key theme that drives Denver's climate action and sustainability work is diverse stakeholder and community engagement.

The CASR team recommends time-limited and scope-focused task forces to provide targeted recommendations to city leadership, who can then evaluate and prioritize recommendations for policy changes and implementation. Task forces should represent the diversity of residents and business interests, especially those which will be directly impacted by new policies.

This process of stakeholder engagement is beneficial in many ways, such as allowing any potential controversy or concerns to surface early in the evaluation process. Early stakeholder involvement also allows the city to align with the community and ensure equity is considered throughout the entirety of planning, goal setting, and implementation. Denver's deliberate and focused stakeholder and community engagement strategy is foundational to creating and allocating local funding to initiatives that align with both the city and broader community's goals.

Funding climate change and sustainability projects through a local tax requires a significant amount of political willpower. However, as demonstrated by Denver and Portland, which established the nation's first taxpayer-supported fund dedicated to climate action,[4] it is possible and can accelerate the path to reach long-term goals. Pre-allocated local funds and planned projects bode well for grant applications that require a local funding match, especially for grants that are competitive.

4 City of Portland (2021). *Portland Clean Energy Community Benefits Fund (PCEF)* https://www.portland.gov/bps/cleanenergy.

If gaining voter approval for a new local tax to fund sustainability projects is not politically feasible, municipalities might consider other policy mechanisms to enable thoughtful, sustainable development. Such policy measures signal to federal funding agencies that they share the same investment priorities and may increase the likelihood of receiving federal funding. For example, the Building Electrification and Efficiency ordinance amends the Denver building code to require energy efficiency and carbon reduction in building systems, and the financial incentives through the CPF will assist building owners in meeting the requirements. In 2022, Denver's energy code update will consider adding net zero requirements for new construction. Similar amendments could be made to city zoning codes and transportation policies and further enable sustainable and equitable development.

- **Develop a Diverse Stakeholder and Community Engagement Process:** Comprehensive city planning should not happen in a vacuum. To develop a holistic and equitable plan, a city should develop a diverse stakeholder and community engagement process for early and frequent engagement. This may include establishing groups of community representatives, either through time-limited and scope-focused task forces or more permanent community member councils. Encouraging diverse representation of backgrounds and viewpoints in community engagement activities is essential to guide planning and strategies toward equitable goals.

- **Leverage Local Codes and Policies to Advance Equity and Sustainability:** Cities wanting to generate large impact using less political capital can look toward local codes and policies. City staff can evaluate local codes and policies to identify opportunities to advance equity and sustainability goals. Areas such as building and zoning codes have tremendous potential to advance goals toward climate adaptation or carbon neutrality, while demonstrating a positive impact on under-resourced communities.

- **Develop City Working Groups to Plan for Anticipated Federal Funding:** With an onslaught of federal dollars directed towards a variety of programs, cities can prepare by developing focused working groups of city staff members to plan for anticipated federal funding.

  Once a working group is established, a set of criteria can be developed to select and prioritize projects for anticipated funding programs. This will provide a competitive edge to act quickly once funding becomes available, especially for competitive grants.

Resources for Further Reading

To learn about Denver's 80 x 50 Climate Action Plan, visit: https://www.denvergov.org/content/dam/denvergov/Portals/771/documents/EQ/80x50/80x50_ClimatePlan_FINAL_7.16.18.pdf

To read the five-year plan for Denver's Climate Protection Fund, visit: https://denvergov.org/files/assets/public/climate-action/cpf_fiveyearplan_final.pdf

Potential IIJA Funding Opportunities for Similar Climate and Sustainability Goals

U.S. Department of Energy	**Cost-Effective Code Implementation for Efficiency and Resilience:** To enable sustained cost-effective implementation of updated building energy codes. **Energy Efficiency and Conservation Block Grant Program:** Financing energy efficiency, renewable energy, and zero-emission transportation, capital investments, projects, and programs. **Energy Efficiency Revolving Loan Fund Capitalization Grant Program:** For commercial energy audits, residential energy audits, or energy upgrades or retrofits, as established by state programs.
U.S. Department of Transportation	**Grants for Charging and Fueling Infrastructure (Clean Corridors Program):** For accessible electric vehicle charging infrastructure, hydrogen fueling infrastructure, propane fueling infrastructure, and natural gas fueling infrastructure along designated alternative fuel corridors or in certain other locations that will be accessible to all drivers. **Carbon Reduction Program:** For transportation electrification including public transportation and Bus Rapid Transit intelligent transportation system improvements. **Surface Transportation Block Grant Program:** For electric vehicle charging infrastructure, vehicle-to-grid infrastructure, installation, and deployment of intelligent transportation technologies.

Please refer to the Appendix for additional information on IIJA funding opportunities

Embedding Equity, Community Benefit, and Job Creation into Climate Initiatives

(New Orleans, LA; Cambridge, MA; and Miami, FL)

The effects of climate change are and will continue to be felt disproportionally by some regions and communities within the United States. Research shows that low-income, disabled, elderly, and communities of color are more vulnerable to devastating climate-related risks, which will exacerbate existing or create new inequities. Climate-related risks range from extreme weather events (e.g., storms, flooding, heat waves, drought, wildfires) and climate-related health issues (e.g., infectious diseases, respiratory illnesses, worsened mental health), to rising utility, food, or water costs. However, cities are increasingly taking actionable steps to center equity in initiatives to mitigate climate change impacts and improve resilience, such as through bolstering their local economy and improving the health and well-being of their most vulnerable communities. While planning and implementation costs of new climate initiatives can be daunting, a central theme to many of the anticipated new funding programs will be a focus on demonstrating community impact and intentionality around creating equitable outcomes.

While recently emphasized in federal priorities, clear demonstration of community benefit is not new to municipal government-led projects to mitigate or adapt to climate impacts.

Example initiatives from, New Orleans, LA; Cambridge, MA; and Miami, FL demonstrate how cities can either proactively position themselves for new and expanded federal programs or leverage federal funds to positively impact their communities:

- **The New Orleans Gentilly Resilience District (GRD)** was established through the Department of Housing and Urban Development's (HUD) National Disaster Resilience Competition (NDRC) and incorporates creative land and water management strategies to mitigate flood risks and create jobs in an extremely vulnerable and low-lying district.
- **The Cambridge Housing Authority (CHA)** leveraged American Recovery and Reinvestment Act (ARRA) grant funds to transform a large, aging public housing building serving low-income elderly and disabled residents into a healthy and efficient building, setting a standard for future modernization of the remaining buildings in their portfolio.
- **The City of Miami's** comprehensive strategic planning process and focus on green job creation helped forge a more resilient and equitable city and strongly positioned the city for forthcoming federal programs. The basis for these efforts is set forth in the analysis and actions contained in Miami Forever Carbon Neutral Plan: Growing the New Green Economy.

The overarching goal of this case study is to provide insights into initiatives cities can launch now to better articulate the positive impacts of climate-minded investments on their communities or to inspire communities to design projects with multiple community benefits in mind.

Gentilly Resilience District

(New Orleans, LA)

Overview

New Orleans is a city on the front lines of the climate crisis. With much of the city below sea level, it's extremely vulnerable to flooding from extreme storms and sea level rise. Over 25% of the population is under the poverty line and faces aggravated climate risk due to their financial status. Due to this high level of vulnerability and inequity, the city has committed to aggressive mitigation and adaptation efforts to create a more resilient and equitable city.

A shining example of the city's resilience efforts is the Gentilly Resilience District (GRD). The GRD is the nation's first-ever resilience district and was established to address damage from Hurricane Isaac in 2012 and increase resiliency against future natural hazards. The GRD is low-lying, has extreme flooding risk, and half its residents are low or moderate income.

Design of the GRD was based on the 2015 Greater New Orleans Urban Water Plan and the city's resilience strategy, Resilient New Orleans, which identified the city's climate risks and vulnerabilities, as well as strategies to increase the community's ability to adapt and thrive during changing conditions.

Physical design elements of the GRD include innovative stormwater management installations and recreational/gathering spaces; the GRD also established new social programming, such as workforce development programs and other educational opportunities for the community. It is expected to be a model for how other areas of the city can address land and water management in a way that provides multiple co-benefits for the community.

The design process was driven by extensive community engagement. Each element of the GRD incorporated community feedback from media events, visioning sessions, round tables, design workshops, and other activities. All engagement activities were designed to heighten project awareness, solicit feedback, and build ownership in the community. The community was given a strong, authoritative voice in making decisions about the project's final design to ensure it would maximize community benefit and ultimately allow people, culture, and infrastructure to thrive.

Funding

The city pursued funding for the GRD through HUD's National Disaster Resilience Competition (NDRC) in 2015. The competition had a two-part application process. In the first phase, applicants were asked to describe its community's risks, vulnerabilities, and opportunities to increase resilience. Top scoring applicants were invited to submit a description of projects to address the matters discussed in their initial submittal. Utilizing the information found in the Greater New Orleans Urban Water Plan and Resilient New Orleans, particularly that relating to stormwater management solutions and resiliency opportunities, the city successfully crafted an application to fund the design and development of the GRD, including pre-award costs.

The city is supplementing its NDRC award with funds from the Federal Emergency Management Agency's (FEMA's) Public Assistance Program to repair GRD roads and the Hazard Mitigation Grant Program to construct a retention basin system. In total, the city secured $166 million in federal funding for the GRD, as shown in **Table 5**.

Agency	Program/ Opportunity	Amount	Project Components
Housing and Urban Development	Natural Disaster Resilience Competition	$ 141,300,000	▪ Green & blue stormwater infrastructure ▪ Canal improvements ▪ Workforce Training programs ▪ Recreational facilities ▪ Educational programming ▪ Energy resilience efforts ▪ Monitoring
Federal Emergency Management Agency	Public Assistance	$ 11,670,000	▪ Street repair and improvement
Federal Emergency Management Agency	Hazard Mitigation Grant Program	$ 13,000,000	▪ Retention basin system

Table 5: Federal Funds Utilized for the Gentilly Resilience District

The city's initial NDRC application was strengthened by its comprehensive project financing plan. The city was able to show more than $238 million in direct leverage from FEMA grants, city funds, Sewerage and Water Board capital funds, and program income from the New Orleans Redevelopment Authority. Additionally, nine indirect leverage sources, including partner assistance and city resources, accounted for another $126 million in leverage dollars.

At the time of application, the city estimated that federally funded construction would be completed by 2022, however, due to COVID-19 and other impacts, several components of the projects are taking longer to complete than anticipated.

To comply with HUD's funding requirements, the city was required to submit a quarterly performance report throughout the grant period. These performance reports documented project progress, budget spent, leverage spending, and key performance metrics such as gallons of stormwater stored, amount of new and improved greenspace, number of beneficiaries, and trees planted. These performance reports are used to track the project's overall performance toward its environmental, social, and governance goals.

Project Elements

Projects and programs within the GRD are designed to adhere to the following strategies: community adaptation, workforce development, reliable and smart systems, and urban water infrastructure. A sample of GRD projects is provided below.

COMMUNITY ADAPTATION PROGRAM

Homeowners earning less than 80% of the area median household income may be eligible to receive up to $25,000 for design and construction of green stormwater infrastructure improvements to their homes. This program is administered by the New Orleans Redevelopment Authority and is expected to benefit up to 200 households.

WORKFORCE DEVELOPMENT

The first workforce training cohort of GRD residents launched in December 2021. The $3 million program provides training on design, construction, and maintenance of green infrastructure and water management and will create jobs for program participants to build and maintain GRD projects.

RELIABLE ENERGY & SMART SYSTEMS

The city is developing a microgrid project to increase energy resilience and redundancy at critical water infrastructure sites. This project has an estimated construction budget of $5.7 million.

BLUE & GREEN CORRIDORS

New Orleans is famous for its neutral grounds, or strips of land between traffic lanes of major boulevards. In portions of the GRD, neutral grounds will include waterways to channel stormwater, walking and biking trails, and public gathering spaces to enhance stormwater management and provide recreational activities. These streetscapes utilized approximately $28 million in federal funding and are expected to be complete in 2022.

MIRABEAU WATER GARDEN

The 25-acre greenspace will store up to 10 million gallons of stormwater through a detention basin, bioswales, native plantings, and other features. The greenspace will also provide educational and recreational opportunities. It is estimated the project utilized $23 million in federal funding.

ST. ANTHONY GREEN STREETS

This project will redesign six streets and two playgrounds within a 15-block area to include stormwater management features that can be replicated across the city. The project received almost $35.75 million in FEMA and NDRC funding.

LONDON AVENUE CANAL - PUBLIC ART / PLACEMAKING

In partnership with the Arts Council of New Orleans, the city held a competition for art installations along the London Canal and other GRD water features. Five winning installations, designed to enhance the public's understanding of Living with Water, were selected for placement in 2020.

Community Impacts

The GRD project is designed to reduce neighborhood flooding, address hurricane damage, and build community resilience to withstand future disasters and ongoing stressors. Residents are expected to experience public health co-benefits including a reduction in allergen- and insect-borne illnesses resulting from flood events, improvements to air and water quality due to additional green spaces, native plants, and trees, urban heat mitigation through additional tree canopy, and increased fitness from access to trails and other outdoor recreational opportunities. These benefits to physical health also tend to contribute to improved mental health.

Furthermore, investing in community amenities and mitigating stormwater flooding and resulting damage are likely to lead to increased property values and spur additional revitalization efforts and economic development. A skilled workforce will also attract economic development and contribute to the prosperity of residents.

Finally, the GRD will improve the district's sense of community, an element of resilience that is often overlooked. Improvements and amenities will build a sense of pride in the community, and access to property for recreation and education will further foster that sense of community, connection, and cohesiveness.

WHAT'S NEXT

The city plans to ask for a grant extension from HUD due to construction delays primarily caused by COVID-19. With an extension, project partners can complete ongoing projects and the community can begin to capture the projects' associated benefits.

Although the projects have been capitalized upon proven pilots and existing city efforts, realizing the benefits over an area the size of the GRD will give community leaders and residents additional confidence to replicate similar projects across the city. As such, the city plans to monitor upcoming federal funding opportunities to expand upon the success of the GRD.

Resources for Further Reading

To learn about the Gentilly Resilience District, visit: https://www.nola.gov/resilience-sustainability/gentilly-resilience-district/

To view the New Orleans Climate Change & Health Report, visit: https://www.nola.gov/getattachment/Health/Climate-Change-(1)/Planning-Tools-and-Data/Climate-Change-and-Health-Report-2018-Final.pdf/

To read Climate Action for a Resilient New Orleans, visit: https://nola.gov/nola/media/Climate-Action/Climate-Action-for-a-Resilient-New-Orleans.pdf

To learn about the GRD's Engagement and Communications Plan, visit: https://nola.gov/getattachment/Resilient-New-Orleans/GRD_EngageCommsStrategy_UpdatedAug2020-08242020.pdf/?lang=en-US

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Potential IIJA Funding Opportunities for Similar Projects

Department of Energy	**Energy Efficiency and Conservation Block Grant Program:** Financing energy efficiency, renewable energy, and zero-emission transportation, capital investments, projects, and programs. **Energy Auditor Training Grant Program:** To train individuals to conduct energy audits or surveys of commercial and residential buildings. **Energy Efficiency Revolving Loan Fund Capitalization Grant Program:** For commercial energy audits, residential energy audits, or energy upgrades or retrofits, as established by state programs.
U.S. Environmental Protection Agency	**Stormwater Control Infrastructure Project Grants:** To carry out stormwater control infrastructure projects that incorporate new and emerging, but proven, stormwater control technologies.
U.S. Department of Transportation	**Congestion Mitigation and Air Quality Improvement Program:** For programs to reduce pollution and relieve congestion to meet air quality standards. **Carbon Reduction Program:** Encompasses many programs including transportation electrification programs that promote EV adoption. **Promoting Resilient Operations for Transformative, Efficient, and Cost Saving Transportation (PROTECT) Program:** For state projects to improve resiliency of transportation infrastructure.

Please refer to the Appendix for additional information on IIJA funding opportunities.

Lyndon B. Johnson Apartments Energy Retrofit and Modernization

(Cambridge, MA)

Overview

The Cambridge Housing Authority (CHA) was established in 1935 to support low-income families, elders, and disabled individuals through the development, management, and administration of public housing. It currently supports more than 8,000 households (approximately 10% of the city's population) living in over 3,000 housing units.[5]

In the early 2000s, CHA developed a comprehensive energy tracking program and established an energy baseline for each building in their portfolio—in the years since, this has enabled CHA to identify low-hanging fruit for efficiency improvements as its infrastructure has begun to age, and plan for more costly renovations and equipment retrofits to address deferred maintenance and bring buildings up to modern building codes and energy standards. CHA has since leveraged multiple local, state, federal, and private funding streams to fund renovation and retrofit projects and provide higher quality and more energy efficient housing for its residents. The agency's first major project was the Lyndon B. Johnson (LBJ) Apartments Energy Retrofit and Modernization.

Funding

In 2009, the ARRA allocated $13.6 billion to HUD, including $4 billion toward the Public Housing Capital Fund (PHCF) and $250 million to the Green Retrofit Program.[6] To access these funds, CHA was required to show the LBJ project would result in transformative change and adhere to the Enterprise Green Communities Standard, which is a green building standard developed to provide energy efficient and healthy affordable housing.[7] CHA's energy tracking program allowed it to clearly demonstrate the project upheld funding requirements, and the agency was awarded $10 million from the HUD PHCF Substantial Rehabilitation competitive grant. The grant covered approximately a third of the total project construction cost, and approximately 20 percent of the total cost of $47.2 million; the remaining $37.2 million was funded with a combination of $21.4 million in Low-Income Housing Tax Credits and $15.8 million in CHA funds (combination of capital funds and HUD Moving To Work funds), as shown in **Table 6**.

Project Elements

The LBJ building is a 177-unit high-rise apartment complex for low-income elderly and disabled residents. The original building was constructed in the 1970s and did not have central air-conditioning and had very expensive electric heat. Through CHA's energy tracking and benchmarking program, it was identified as a top priority for an energy retrofit and modernization.

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5 Cambridge Housing Authority (n.d.). *About the Cambridge Housing Authority*. https://cambridge-housing.org/about/

6 U.S. Department of Housing and Urban Development (2017). *HUD's Green and Energy Retrofit Assessment: Key Findings and Policy Implications*. https://www.huduser.gov/portal/pdredge/pdr-edge-research-061917.html

7 Enterprise Green Communities (n.d.). *2020 Enterprises Green Communities Criteria: The Standard for Sustainable Futures*. https://www.greencommunitiesonline.org/

Agency	Program/ Opportunity	Amount	Project Components
Housing and Urban Development	Public Housing Capital Fund (PHCF) Substantial Rehabilitation Competitive Grant	$ 10,000,000	▪ Construction
Housing and Urban Development	Low-Income Housing Tax Credits	$ 21,400,000	▪ Construction
Housing and Urban Development & CHA	Moving to Work Demonstration Program & CHA Capital Fund	$ 15,800,000	▪ Soft costs

Table 6: Funding Utilized for the LBJ Apartments Energy Retrofit and Modernization

Construction began in August 2010 and was completed in October 2013. The revitalization effort showcases on-site renewable generation and an innovative solar heating system that covers a 12-floor area on the south-side of the building. This solar heating system filters and pre-heats ventilation air, resulting in better indoor air quality and drastically reducing winter energy use.[8]

In addition to the solar heating system, the renovation installed a high-efficiency gas central heating system, central cooling, and improved ventilation with energy recovery units. Residents also received drastically improved common spaces such as community rooms, courtyards, parking, and walkways.

Community Impacts

Since its official re-opening in 2013, LBJ exceeded the original 50% energy savings target, maintaining a substantial energy savings of 64% while achieving 44% onsite renewable energy production, 40% reduction in emissions, and 60% reduction in cost—in excess of $250,000 per year. LBJ originally scored 1 out of 100 for EnergySTAR[9] and improved to a 95 immediately following the retrofit. LBJ's most recent EnergySTAR is an 87, which is an indication of peer building's performance improving, since LBJ's energy performance continues to exceed original expectations.

Outside of energy-related benefits, the project significantly improved living conditions for residents and building redevelopment and construction injected $57,719,390 into the local economy through job creation.

8 Matrix Energy, Inc. (2015). *Case Study: Lyndon B. Johnson Public Housing Complex in Cambridge.* AltEnergyMag. https://www.altenergymag.com/article/2015/04/case-study-lyndon-b-johnson-public-housing-complex-in-cambridge/19781/

9 EnergySTAR scores are indicative of a building's energy performance in comparison to peer buildings. A score of 75 or better indicates a building is in the top 25th percentile.

What's Next

The initial success of the LBJ retrofit and continued energy savings was a catalyst for CHA's ongoing initiative to retrofit and modernize the remaining buildings in its portfolio. Since 2013, CHA has retrofitted 1,177 units across 11 buildings through a combination of HUD's Rental Assistance Demonstration (RAD), funding for Section 8 conversion, debt, and equity. Like the LBJ project, each project adhered to the Green Communities Standard.

CHA continues to track energy use across its entire portfolio and has developed shovel-ready projects plans for targeted funding streams when they become available. Ongoing planning, tracking, and maintaining a track-record of success will allow CHA to continue to leverage diverse funding streams to provide more sustainable and higher-quality housing for its low-income, elderly, and disabled residents. In addition to continuing its work to modernize and decrease the carbon footprint of its portfolio, CHA's staff is supporting and sharing best practices with other local housing authorities.

Resources for Further Reading

To learn about completed construction by the Cambridge Housing Authority, visit: https://cambridge-housing.org/departments/planning/completed-construction/

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Potential IIJA Funding Opportunities for Similar Projects

U.S. Department of Energy	**Energy Efficiency and Conservation Block Grant Program:** Financing energy efficiency, renewable energy, and zero-emission transportation, capital investments, projects, and programs. **Energy Efficiency Revolving Loan Fund Capitalization Grant Program:** For commercial energy audits, residential energy audits, or energy upgrades or retrofits, as established by state programs.

Please refer to the Appendix for additional information on IIJA funding opportunities.

Miami Forever Carbon Neutral: Growing the New Green Economy

(Miami, FL)

Overview

As a city extremely susceptible to climate change risks like sea-level rise (and resulting flooding), extreme storms, and high heat, Miami has taken bold steps to plan and implement impactful initiatives by transforming climate risk into opportunities to create a more sustainable, resilient, and equitable city. Amongst those steps, the City of Miami committed to a goal of reaching net zero emissions by 2050, with an interim target of 60% emissions reduction from a 2018 baseline by 2035.

The city has undertaken several overarching planning efforts relating to its climate goals, including:

- **Resilient305:** A resilience strategy plan created in 2019 in partnership with Miami-Dade County and the City of Miami Beach. Resilient305 contains actions and opportunities for collaboration designed to address community resilience in the area.
- **Miami Forever Climate Ready:** An adaption strategy for preparation, adaptation, and mitigation of climate risk published in 2020.
- **Miami Forever Carbon Neutral: City of Miami Greenhouse Gas Reduction Plan and Pathway to Carbon Neutrality by 2050:** The Miami Forever Carbon Neutral Plan provides a roadmap for reaching the city's carbon goals and was adopted by the City Commission in November 2021. It builds off, and complements, the planning efforts described above.

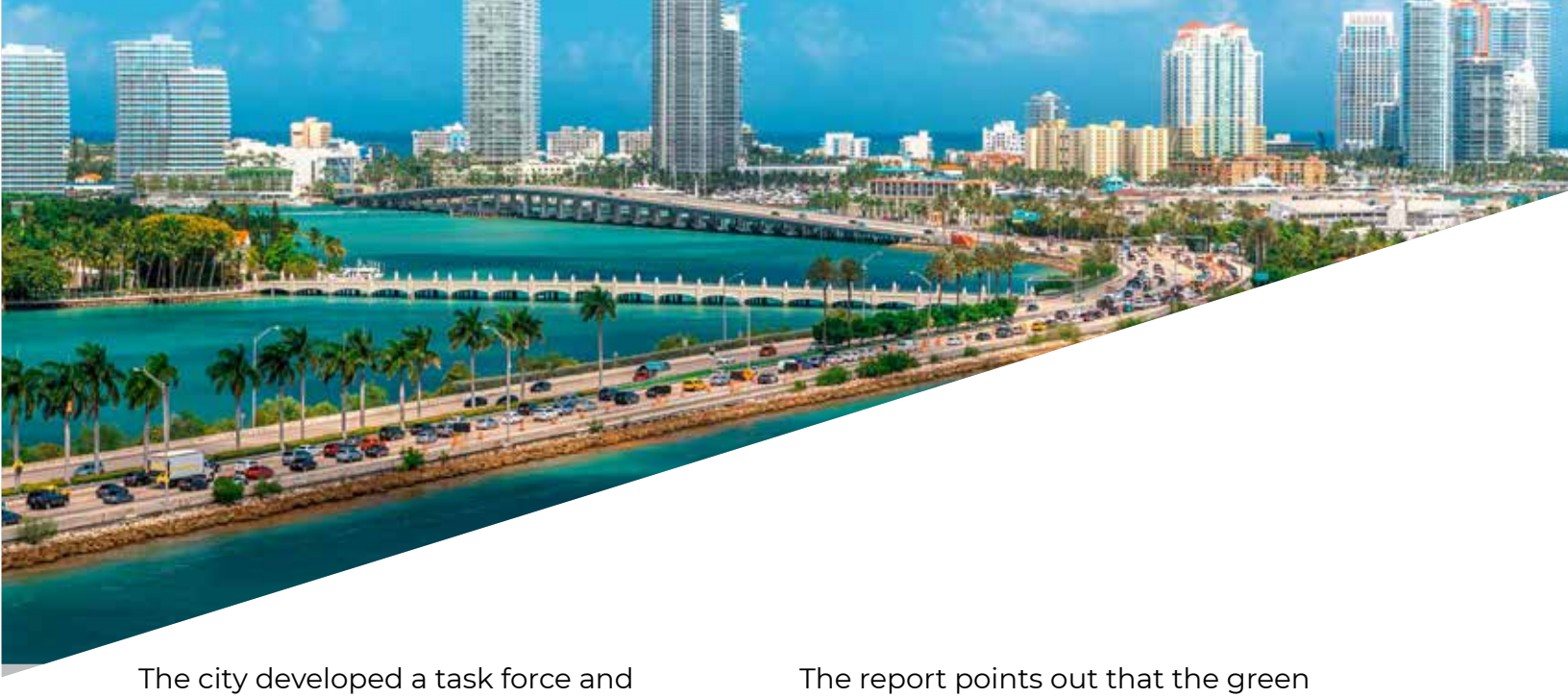
The City of Miami developed the Miami Forever Carbon Neutral Plan with support and shared resources from C40 Cities, a global network of mayors committed to tackling the climate crisis. The Miami Forever Carbon Neutral Plan has five primary goals:

1. G – Getting Around Miami
2. R – Renewable Energy
3. E – Electric Vehicles
4. E – Energy Efficiency
5. N – New Green Economy

Central to each of the five goals is a focus on equity, job creation, and economic growth, which stems from a supporting analysis and action plan developed in 2021 entitled "Miami Forever Carbon Neutral Plan: Growing the New Green Economy." Known as the Growing the Green Economy Plan, this supporting report analyzes the city's current green economy and how it can expand and introduce new benefits through strategic capital investment and job creation. Core to the report is recognition that climate justice inequities and opportunities to combat climate change are inextricably linked to economic growth and expansion of green job opportunities to vulnerable communities.

Funding

The City of Miami is exploring all possible avenues to fund ongoing climate resilience and adaptation projects, including those identified in all their climate resilience plans. In 2017, voters approved the $400 million Miami Forever Bond, which entrusts the city to fund a series of infrastructure projects within five key areas: roadway improvements, parks and cultural facilities, public safety, sea-level rise mitigation and flood prevention, and affordable housing.



The city developed a task force and oversight committee to oversee project evaluation and ensure funded projects are aligned with the guiding themes of safety, wellness and quality of life, equity, economic return, and modernization. This general obligation bond funding is intended to be used to leverage funding from other sources, like state and federal grants and appropriations, to multiply impact.

Project Elements

The Growing the New Green Economy Plan built upon 20 years of research across South Florida and key actions identified in the joint Resilient305 Strategy, such as building a resilient and inclusive economy through workforce development. The report had a dual focus: economic growth through job creation within industries that have a positive impact on the environment, and the types of jobs available within the spectrum of green industries.

The analysis began with an evaluation of local climate justice issues and workforce inequities and a definition of the green economy and green industries. Miami defined the green economy broadly "as any group of businesses and organizations that use practices that reduce the negative impact of human activity on the environment, including those that mitigate or adapt to the impacts of climate change."

The report points out that the green economy can be broken into different subsectors (e.g., energy, buildings, or transportation), each with its own set of industries, labeled as pure green, partially green, or potentially green. Pure green industries were defined as those with 100% environmentally friendly output (e.g., renewable energy and green infrastructure), partially green as those where a portion of the output is environmentally friendly (e.g., automobiles and building construction), and potentially green as those where new technology and market forces can drive their industries to become green (e.g., traditional energy generation).

GROWING THE NEW GREEN ECONOMY PLAN FINDINGS

Evaluation of Miami's economy revealed jobs in its green sectors are resilient and grew 20% between 2014 and 2019 and only dropped by 1% during the COVID-19 pandemic, while jobs in traditional sectors grew by 7% during 2014 and 2019 and dropped by 5% during the COVID-19 pandemic. However, traditional sectors, such as healthcare, education, and tourism, have the potential to become greener through purchasing green goods and services such as energy efficiency services, EVs, and investing in renewables, which will also contribute to further growth in these green industries. Furthermore, growth within these industries will create new jobs and support growth in workforce development programs to align worker skills with new and higher-paying green jobs.

Additional key findings from the Growing the New Green Economy Plan include:

- Municipal procurement policies play a key role in catalyzing the new green economy.
- Green industries have a higher share of jobs that pay living wages than traditional industries in Miami.
- Several occupations are employed across multiple green industries and demand for these occupations is already expected to grow over the next 10 years – even without the support of Miami's forthcoming climate actions.

To spur further growth in Miami's green economy, the Plan recognized a need to identify a local green economy champion and designate city staff to support economic development.

Additionally, the Plan recommended that the city prioritize equity and climate action in economic development, especially with COVID-19 recovery dollars.

Community Impacts

Miami's planning efforts and integrated focus on green job creation for its most vulnerable climate justice communities has numerous benefits. Growth in green job sectors (e.g., solar photovoltaic installers, environmental regulators, EV automotive technicians, climate mitigation services, mass transit) reduce regional greenhouse gas emissions, address growing socio-economic inequities through expanding workforce development opportunities and access to higher-wage green jobs and position the city to leverage future federal funding streams by demonstrating positive community impact.

What's Next

Although Miami's Growing the New Green Economy Plan is in its infancy, it has already influenced and impacted the broader Miami community. Miami-Dade County plans to replicate the approach across the broader Miami region and has applied for an Economic Development Administration (EDA) Build Back Better grant to develop and organize a regional green economy collaborative. Funds will be dispersed to the City of Miami and other collaborating municipalities within the County.

The secured funding will help to identify a local green economy champion, enacting one of the key recommendations from the Growing the New Green Economy Plan.

The city is also pursuing funding for several major shovel-ready infrastructure projects from its stormwater master plan, capital plan, and parks master plan.

These projects may be funded through the Miami Forever Bond or a combination of other funding mechanisms. As details on new federal grant programs and eligibility criteria become available, projects can be prioritized and matched to grant programs originating from the Infrastructure Investment and Jobs Act (IIJA) or other future federal actions.

Resources for Further Reading

To read Miami Forever Carbon Neutral: Growing the New Green Economy, visit: https://www.miamigov.com/files/6121bda9-8f03-4f98-a04d-99c1dc58a761/Appendix-A-Miami-New-Green-Economy-Report.pdf

To learn about Miami Forever Carbon Neutral: City of Miami Greenhouse Gas Reduction Plan and Pathway to Carbon Neutrality by 2050, visit: https://www.miamigov.com/files/4e5f26f7-2622-4c90-834a-eaaa6aa3321e/Miami-Forever-Carbon-Neutral-FULL.pdf

To read Miami Forever Climate Ready, visit: https://www.miamigov.com/My-Government/ClimateChange/Climate-Change-Action/MiamiForeverClimateReady

To learn about Resilient305, visit: https://www.mbrisingabove.com/your-city-at-work/resilience-strategy/resilient-305/

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Potential IIJA Funding Opportunities for Similar Climate and Sustainability Goals

Federal Emergency Management Agency	**Flood Mitigation Assistance Program:** Financial and technical assistance to reduce the risk of flood damage to homes and businesses through buyouts, elevation, and other activities. **Building Resilient Infrastructure and Communities (BRIC) Program:** Pre-disaster mitigation program supporting hazard mitigation projects to reduce disaster and natural hazard risks. **Safeguarding Tomorrow through Ongoing Risk Mitigation (STORM) Act:** Loans and grants for hazard mitigation assistance to reduce risks to disasters and natural hazards.
U.S. Environmental Protection Agency	**Sewer Overflow and Stormwater Reuse Municipal Grants:** For the planning, construction and design of treatment works for municipal combined sewer overflows, sanitary sewer overflows, or stormwater, and measures to manage, reduce, or recapture stormwater or subsurface drainage. **Stormwater Control Infrastructure Project Grants:** To carry out stormwater control infrastructure projects that incorporate new and emerging, but proven, stormwater control technologies. **Clean Water Infrastructure Resiliency and Sustainability Program:** To establish clean water infrastructure resilience and sustainability programs for natural hazard or cybersecurity vulnerabilities of public treatment works.
U.S. Department of Energy	**Cost-Effective Code Implementation for Efficiency and Resilience:** To enable sustained cost-effective implementation of updated building energy codes. **Energy Efficiency and Conservation Block Grant Program:** Financing energy efficiency, renewable energy, and zero-emission transportation, capital investments, projects, and programs. **Energy Efficiency Revolving Loan Fund Capitalization Grant Program:** For commercial energy audits, residential energy audits, or energy upgrades or retrofits, as established by state programs.

U.S. Department of Transportation	**Grants for Charging and Fueling Infrastructure (Clean Corridors Program):** For accessible electric vehicle charging infrastructure, hydrogen fueling infrastructure, propane fueling infrastructure, and natural gas fueling infrastructure along designated alternative fuel corridors or in certain other locations that will be accessible to all drivers. **Carbon Reduction Program:** For transportation electrification including public transportation and Bus Rapid Transit intelligent transportation system improvements. **Surface Transportation Block Grant Program:** For electric vehicle charging infrastructure, vehicle-to-grid infrastructure, installation, and deployment of intelligent transportation technologies. **Carbon Reduction Program:** Encompasses many programs including transportation electrification programs that promote EV adoption.
Army Corps of Engineers	**New Construction Projects:** Projects relating to coastal storm risk management.

Please refer to the Appendix for additional information on IIJA funding opportunities.

Lessons Learned and Strategies for Replication

(NEW ORLEANS, LA, CAMBRIDGE, MA, AND MIAMI, FL)

Though the communities of New Orleans, Cambridge, and Miami take a diverse approach to job creation, equity, and community benefit, they share several common themes. The most prevalent is transforming climate risks into opportunities to combat climate change while also expanding access to higher-wage green jobs, healthy living conditions, and other co-benefits to under-resourced and vulnerable communities. Early identification of climate risks and subsequent opportunities that maximize benefit to the community can be supported through development of data tracking systems, joining support networks to share resources and best practices, and developing a diverse stakeholder engagement process. These best practices can also support bids to competitive funding programs.

- **Develop a Data Tracking System:** It's increasingly important to have a data tracking system to measure baseline performance and track progress—knowing is not the same as tracking. Many federal grant programs require performance metric reporting and maintaining eligibility for recurrent funding streams may be contingent upon providing proof of meeting targets. Tracking progress towards goals also provides value by demonstrating a track record of success, which may qualify for additional funding streams.
- **Join a Support Network to Share Resources and Best Practices:** Cities looking to begin or continue their journey toward planning and creating a more sustainable, equitable, and resilient city do not need to start from scratch.

As mentioned in the examples provided in this case study, peer networks may be available to share resources and learn from others' experiences, such as lessons learned from pursuing federal funding or developing community engagement strategies. Peers may be your neighboring cities or communities, or global networks like C40.

- **Develop a Diverse Stakeholder and Community Engagement Process:** Projects that impact the community should not be designed in a vacuum. Community and stakeholder engagement is essential to understanding community concerns and ensuring projects are designed and implemented to achieve an equitable outcome. Therefore, it's essential to engage the community and stakeholders early and often, and design by engagement. Engagement can come in many forms but may include workshops, community meetings, community committees, and open-ended questions for community residents.

Powerful Municipal Utility Planning for Widespread Vehicle Electrification

(Roseville and Sacramento, CA)

Vehicle electrification contributes to the reduction of harmful emissions that contribute to poor air quality. In most of the United States, vehicles are among the highest sources of pollution and their electrification can help cities and states significantly reduce carbon emissions, improve local health conditions, and meet local, state, or federal air quality and greenhouse gas reduction requirements. Electric vehicles typically have lower operation and maintenance costs and can be integrated as part of localized advanced energy systems, such as microgrids, to create resilient emergency systems. The shift to electric vehicles is also driving green job creation as local workers are called upon to build and maintain infrastructure and vehicles. Cities play a key role in the vehicle electrification movement as the Infrastructure Investment and Jobs Act and other state and federal initiatives drive widespread vehicle electrification.

Cities can get involved in vehicle electrification by electrifying public transportation or other municipal fleet vehicles as discussed in the Wichita case study. Government funding in the form of subsidies or tax credits can play a role in kick-starting EV adoption amongst individuals and companies by incentivizing purchases of EVs.

However, research shows that a huge barrier to EV adoption for individuals is inadequate access to charging infrastructure. Long term EV adoption will depend on rebuilding cities to anticipate and support the needs of EV users.

With the increase in federal funding for electric vehicles, municipal and other utilities need to prepare for the increased electricity demand from charging vehicles. Grid modeling and charging infrastructure planning allows utilities to take advantage of a new opportunity to serve their customers and stay ahead of potential issues with increased demand on the grid. Understanding existing grid usage, anticipated grid usage with increased vehicle adoption, and potential management systems for grid charging times, can all help utilities avoid overuse and underuse of the grid and plan for cost effective services.

This chapter highlights initiatives in which municipal utilities are preparing for the influx of electric vehicles:

- **Roseville Electric, Roseville, CA,** is undertaking efforts to assess the impact of additional EV adoption on its operations, practices, and distribution grid.
- **Sacramento Municipal Utility District, Sacramento, CA,** is providing innovative services to its customers to support the needs of EV users in its territory.

There are three models that utilities traditionally fit into in their involvement with electric vehicle charging infrastructure: The Make-Ready Model, Utility Owner-Operator Model, and Utility Incentives Model. Regulatory frameworks often determine which model utilities adopt.

The Make-Ready Model	The utility invests in the infrastructure necessary to connect charging equipment to the grid, including upgrading service capacity and installing behind-the-meter electric infrastructure that would usually be the customer's responsibility. The utility does not own or invest in any charging equipment; it leaves it up to the customer to research and purchase.
Utility Owner-Operator Model	The utility owns all components of the EV charging infrastructure, streamlining and increasing the scale of EV charging infrastructure development. The utility has access to capital thereby lowering costs and increasing deployment. This involvement also results in installations at locations that developers may ignore such as multi-unit properties and disadvantaged communities.
Utility Incentives Model	The utility administers programs to provide rebates for EV charging infrastructure installation and make-ready investment costs at both public and private locations, reducing upfront charging equipment costs for all developers and customers.

Anticipating Grid Impacts of Electric Vehicles

(Roseville, CA)

Overview

The City of Roseville, California is in the process of integrating electric vehicles into their public transportation and municipal fleets. As public and private electric vehicle adoption increases in Roseville, the municipal utility, Roseville Electric, has developed innovative ways to anticipate plug in electric vehicle (PEV) adoption impacts on the energy grid. In 2018 Roseville Electric, with the support of consulting partners, developed the "Assessment of Growing Plug in Electric Vehicle Demand and Charging Services on Roseville Electric Utility." To increase EV adoption, Roseville established several programs to support residential and commercial customers in their decision to transition to EVs. In 2022 an update to this assessment is planned to begin. The goal of the assessment was to direct utility operations, business practices, and customer program development to support customer expectations and preferences for plug in electric vehicle charging services. Modeling was performed to understand the impact of PEV on the distribution grid and what the utility can do to enable that integration without disturbing electricity services for their customers. This assessment also considered the role the utility could play in expanding PEV adoption into wider communities by increasing charging access.

Funding

Both the 2018 analysis and the upcoming planned update are funded by the utility using revenues generated from the sale credits received through the California Air resources Board's Low Carbon Fuel Standards (LCFS)[10] program.

The Roseville Electric forecasting will allow the municipal utility to prepare the grid for the increased demand that could come from the electrification of their local transit agency or school bus fleets through federal or other funding.

Project Elements

2018 ASSESSMENT OF GROWING PLUG IN ELECTRIC VEHICLE DEMAND AND CHARGING SERVICES ON ROSEVILLE ELECTRIC UTILITY

In 2018, Roseville Electric began an assessment to forecast anticipated impacts on the electric grid of increased PEV adoption. This assessment was designed to inform business strategies, distribution plans, and operational plans for Roseville Electric to support the energy needs of their customers.

EV ADOPTION FORECASTING

Scenario planning of various possible adoption forecasts was performed to make operational and business planning recommendations. An EV modeling exercise was performed that accounted for existing charging technology as well as anticipated developments in technology, market drivers, and vehicle availability. This modeling also factored in existing government policies, EV adoption targets, and anticipated policy changes.

GRID IMPACT MODELING

Grid usage modeling was conducted at a transformer level to fully understand potential impacts on the electric grid. This included potential service developments for the grid. The various models output current and anticipated PEV system peak demand impacts, as well as how charging management plans could reduce that impact. Projections were also developed for system consumption impacts, carbon reduction impacts, and feeder peak demand impacts.

10 https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/lcfs-credit-generation-opportunities

Armed with this data the utility can plan for system developments and necessary charging infrastructure to support anticipated demand.

RESILIENCE

Anticipating customer demands and grid impacts allows Roseville Electric to better inform strategies to avoid emergency outages. Understanding increasing renewable energy resources and localized microgrid charging technology can also inform developing more resilient charging systems. Developing a resilient grid in the face of changing demands guarantees better critical infrastructure for all communities in Roseville. Working to address infrastructure needs and considering special community needs helps ensure that vulnerable segments of the population benefit from the technological advancements.

2022 UPDATED ASSESSMENT

An update to the assessment is planned to begin in 2022. The 2018 assessment accurately forecasted grid impacts of increased EVs and anticipated potential weak spots in the system. With the success of the first assessment, and the upcoming federal funds for electric vehicle adoption, Roseville Electric has opted to update the assessment to identify any other potential areas of concern and necessary improvements.

Community Impacts

Roseville Electric, through the 2018 assessment and the planned 2022 update, is actively assessing the needs of electric vehicle adopters within its service territory and how to effectively plan for future energy demand. They are ensuring that they can provide electricity to prepare for the influx of electric vehicles seamlessly and without blackouts or restrictions on charging times. Roseville Electric is supporting the success of the electrification transition from an energy delivery and customer perspective.

They are currently providing education, residential charging and vehicles rebates, commercial fleet and charging rebates, planning support and increased incentives for non-profits and income qualified customers. The update will allow Roseville to evaluate their current programs and that data will be used to improve their programs in the future. When federal funding allows for the purchase of many more electric vehicles Roseville Electric will be positioned to meet demand.

By supporting successful electrification, Roseville Electric is contributing to a sustainable transition that will improve air quality and reduce carbon emissions. Developing an EV ready grid will also create green jobs at the utility and with their partners.

What's Next

The utility plans to update the assessment in 2022. Once complete, Roseville Electric will have the necessary insight to prepare their grid for the influx of electric vehicles that may be the result of funding in the Infrastructure Investment and Jobs Act (IIJA).

Roseville Electric plans to remain proactive in their forecasting efforts to continue to anticipate the convergence of energy and transportation systems.

RESOURCES FOR FURTHER READING

To learn more about Roseville Electric, visit: https://roseville.ca.us/government/departments/electric_utility

Sacramento Municipal Utility District eFuel℠ Charging as a Service Program

(Sacramento, CA & Sacramento Municipal Utility District)

Overview

The municipal utility serving Sacramento County, the Sacramento Municipal Utility District (SMUD), has adopted a 2030 Zero Carbon Plan featuring many sustainability initiatives to improve air quality in the region. The Plan includes significant support for electrifying vehicles. This includes incentivizing electric vehicle purchases, supporting the electrification of emergency vehicles, and efforts to expand private and public electric vehicle charging infrastructure.

In this section we are identifying and highlighting creative EV planning efforts from municipal utilities. An excellent example is the SMUD eFuel℠ Charging as a Service program. This cutting-edge program will provide no-cost technical and financial analysis to businesses and multi-family dwellings on fleet electrification and electric vehicle charging infrastructure options. SMUD eFuel will also be a charging installation service that provides SMUD's technical expertise, project management experience, and bulk pricing resources to customers seeking to electrify their fleet or workplace charging. Customers will have no or low upfront cost for the infrastructure and instead pay a monthly fee on their utility bill to lease the assets for a prescribed amount of time. Ownership can be transferred to the customer at the end of the lease period.

SMUD chose to focus on the three segments with high carbon reduction potential yet little transportation electrification progress to date: Fleets, workplaces, and multi-unit dwellings.

SMUD began project development by conducting market research and interviews with fleet managers to understand existing barriers to commercial EV adoption in the area. The two greatest barriers to EV adoption for individuals were the high initial capital cost and complexity of the installation process, including the staff time required. SMUD concluded that it was in a unique position to move the market given their infrastructure and construction expertise, ability to leverage an established utility delivery model, ability to leverage LCFS funds, and existing customer relationships. From this analysis of existing barriers and resources, SMUD developed the SMUD eFuel program.

This innovative approach of providing no cost consulting to answer many of the questions fleet managers and operators have when looking to electrify, combined with an innovative lease model is intended to remove the existing burdens of electrification for customers. SMUD eFuel demonstrates how utilities can think creatively about how their existing resources could be used to develop creative solutions to EV adoption barriers in their service area.

Funding

The program and the services are funded by SMUD through the sale of LCFS credits. Customers that take advantage of the SMUD eFuel Solutions service will receive installation of their electric vehicle chargers with zero up-front cost for average project types. Their monthly utility bill will include a fixed fee to lease the charging technology. A barrier to EV infrastructure installation for larger fleets is the inability to afford the upfront costs of charging technology in addition to the high costs of vehicles. By offering to cover the charging cost in a monthly fee, SMUD is making electrification more accessible and flexible for how public and private companies budget their capital and operating expenses.

The electricity used by the customer's chargers will also be included in the customer's utility bill and no price increase will be seen by customers not participating in the service. The monthly lease fees from customers will be re-invested into more SMUD eFuel projects and services.

Project Elements

The SMUD eFuel Program is structured with two services provided that include: SMUD eFuel Advisor and SMUD eFuel Solutions.

SMUD eFUEL ADVISOR

This service provides no cost fleet and workplace electrification plans for businesses based on an evaluation from experienced SMUD professionals. SMUD professionals will offer guidance on vehicle and charging equipment selection, projected costs of installation and maintenance, recommended energy management and optimization tools, and answer any questions customers have on charging infrastructure installation. This service is projected to produce up to forty advisory reports annually depending on fleet size.

SMUD eFUEL SOLUTIONS

With this service, SMUD will handle the entire installation of charging infrastructure for customers. SMUD will provide network services and operate and maintain the chargers during an agreed upon contract term. During this period, the customer is going to lease this equipment from SMUD and at the end of the lease period, ownership can be transferred to the customer.

Larger projects are also eligible for SMUD's LCFS credit sharing service whereby SMUD brokers the credits and shares the revenue with the customer. The goal of this project is to construct up to 150 EV charging ports annually.

Community Impact

For widespread EV adoption to succeed, infrastructure will need to be reconfigured around EVs, making long term usage easy and practical. SMUD eFuel identifies the unique role a municipal utility can play in tackling inadequate EV charging infrastructure. By offering consulting and no upfront cost installation services, SMUD eFuel aims to eliminate significant barriers to widespread EV infrastructure development. Providing businesses and multi-family dwellings with high level consulting services at no-cost aims to make EV infrastructure and therefore EV usage more widely accessible. Individual businesses and dwellings applying for chargers will allow the customers to decide where infrastructure should be built to serve their own specific community needs. California and various regional and local agencies offer incentives to customers to assist in the purchasing of electric vehicles, but without infrastructure to make using these vehicles practical, many customers do not take advantage of this funding. Projects like SMUD eFuel can help maximize the impact of EV incentives, and other initiatives, by making EV purchases easier and more affordable.

What's Next

By supporting charging infrastructure installation and maintenance, the SMUD eFuel Solutions program will help customers take advantage of the increased federal funding for electric vehicles.

By eliminating the initial financial burden of installation this program will make building charging infrastructure more accessible and make electrification a more practical option for fleet managers.

RESOURCES FOR FURTHER READING

To learn more about SMUD EV Programs, visit: https://www.smud.org/en/Going-Green/Electric-Vehicles/Business

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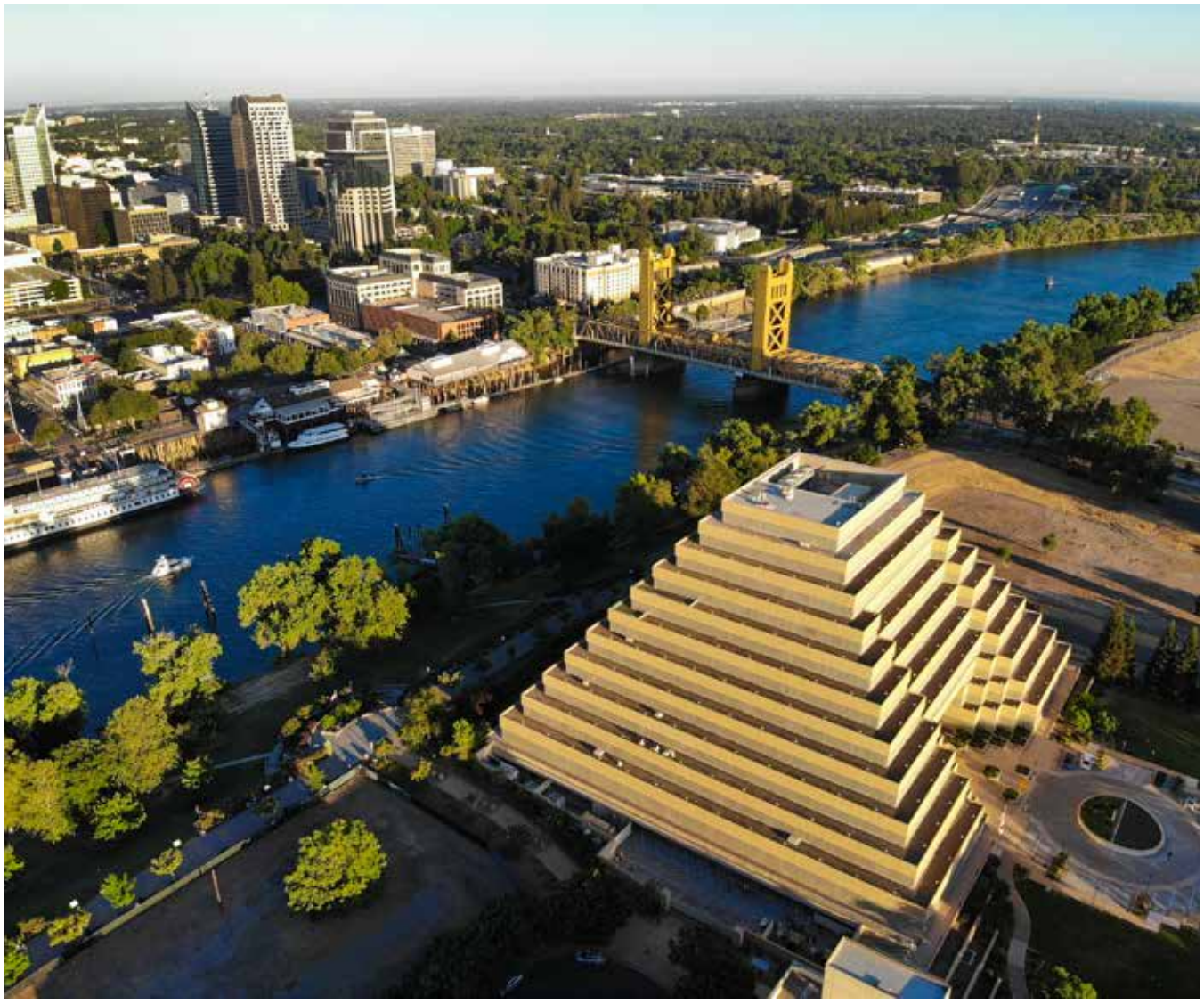

Lessons Learned and Strategies for Replication

(ROSEVILLE AND SACREMENTO, CA)

- **Position Utilities for the Electric Vehicle Transition:** With the Infrastructure Investment and Jobs Act (IIJA) significant funding is available for electrification of municipal and private fleets. With this influx of vehicles demand for charging infrastructure and electricity for charging will increase. Roseville Electric exemplifies how municipal utilities can get ahead of this change and contribute to the electrification movement from an energy supply side. SMUD has developed a program that takes the initial financial burden off fleet managers electrifying and instead offers to guide them through the process. These are creative ways a municipal utility can ensure the energy transition is smooth and efficient for their customers. Both projects exemplify how municipal utilities can position for the convergence of energy and transportation systems that is happening and will be accelerated with upcoming federal funding.

- **Importance of Strategic Planning in Positioning for Funding:** Planning is a vital first step in positioning for funding. With a concrete plan, funders are more likely to trust a project and award grants for its development. Planning allows for funding needs to be identified before funding is secured so decisions on how to spend funds have already been made. Both SMUD and Roseville Electric use technical analysis, in depth market research, and creative problem solving to develop unique plans. Having detailed research as a baseline for projects on the customer level and the utility level allows for the construction of detailed and feasible project plans.

- **Complement Existing Programs:** The state of California offers incentives to assist customers in purchasing electric vehicles. However, research shows that prices are not the only barrier to electric vehicle adoption and inadequate access to charging infrastructure prevents individuals and companies from adopting electric vehicles. Adoption of electric vehicles is dependent on having the infrastructure to support them. This includes an electric grid that will anticipate increased adoption and charging infrastructure that will make use of electric vehicles easy and accessible. These projects support California's EV purchase incentive program by making adopting an EV more practical for many customers.

- **Identify Needs and Resources:** Both projects identified existing barriers to EV adoption, existing resources for EV adoption, and the ways in which a municipal utility can best contribute.

  SMUD found that for business owners and fleet managers high up-front costs, complexity of installation, and staff time were key concerns in purchasing and installing charging infrastructure. SMUD identified their own resources to be infrastructure and construction expertise, an established utility delivery model, ability to leverage LCFS funds, and existing customer relationships. Understanding their own resources, and the existing needs of their customers, SMUD was able to identify a unique way to fit into the electrification movement with the SMUD eFuel program.

Potential IIJA Funding Opportunities for Similar Electric Vehicle Projects

Department of Energy	**Preventing Outages and Enhancing the Resilience of the Electric Grid:** Grant program to support activities by electric utilities that improve the electric grid as to reduce the risk of consequences from natural disruptive events. **Electric Grid Reliability and Resilience Research, Development, and Demonstration:** Provides financial assistance to projects that demonstrate innovative approaches to transmission, storage, and distribution infrastructure. **Energy Efficiency and Conservation Block Grant Program:** Financing energy efficiency, renewable energy, and zero-emission transportation, capital investments, projects, and programs.
U.S. Department of Transportation	**Congestion Mitigation and Air Quality Improvement Program:** For programs to reduce pollution and relieve congestion to meet air quality standards. **Carbon Reduction Program:** Encompasses many programs including transportation electrification programs that promote EV adoption. **Promoting Resilient Operations for Transformative, Efficient, and Cost Saving Transportation (PROTECT) Program:** For state projects to improve resiliency of transportation infrastructure. **Surface Transportation Block Grant Program:** For electric vehicle charging infrastructure, vehicle-to-grid infrastructure, installation, and deployment of intelligent transportation technologies.

Please refer to the Appendix for additional information on IIJA funding opportunities.

Appendix: Infrastructure Investment and Jobs Act Resource Guide

HIGHLIGHTS

Passage of the bipartisan Infrastructure Investment and Jobs Act (IIJA) on November 15, 2021, will provide a massive influx of federal funding for states and local governments. The IIJA includes $550 billion in federal funding, much of which is passed directly to states and local governments through new and expanded programs, in the areas of transportation, broadband, energy, resiliency, and water.

Many portions of the IIJA will be useful to cities to address resilience and climate mitigation efforts. Highlights of those portions include:

Funds for Emission Reductions and Clean Energy: A national funding framework to address carbon emissions is established including: $7.5 billion for electric vehicle charging infrastructure, $5 billion for zero/low emission school buses, $5 billion for zero/low emissions public transit buses, and $2.5 billion for electric ferries.

Investment in Climate Change Resilience: Investments to increase resilience are found throughout the IIJA. Funding opportunities include $47 billion to prepare the nation for worsening effects of climate change, such as floods, fires, storms, and other extreme weather events; $55 billion for clean drinking water infrastructure (including $15 billion for lead service pipe removal); $3.5 billion to FEMA for flood mitigation and assistance; $21 billion clean up Superfund and brownfield sites, reclaim abandoned mine land and cap orphaned oil and gas wells; and $500 million for the STORM Act to provide support through loans and grants to local communities facing rising water levels, coastal erosion and flooding.

Critical Grant Funding for Transportation: The bill includes both new and existing grant programs for state and local governments in the areas of transportation. Over $100 billion in competitive grant programs through the Department of Transportation were authorized, many of which are climate related.

Increased Cap on Private Activity Bonds: The cap is increased from $15 billion to $30 billion, which will allow state and local governments to enter additional public-private partnerships to supplement future surface transportation project, water, wastewater, and other projects with private investments.

CLIMATE, ENVIRONMENT, AND ENERGY PROGRAMS BY AGENCY

A significant number of federal programs were authorized and funded by the IIJA that have been identified to be potentially useful to communities to implement climate mitigation and resiliency efforts. The list consists of multiple federal agencies and includes the following information: level of funding, type of funding, purpose, programs limitations, and a link to the program website (if applicable).

While the appendix is organized alphabetically by department agency, a majority of the programs can be found listed under the Department of Energy, Department of Transportation, and the Environmental Protection Agency. Please note this may not be an exact or exhaustive list given at guidelines are still being developed by the various agencies.

ARMY CORPS OF ENGINEERS
Army Corps of Engineer New Construction Projects
$2.55 billion for coastal storm risk management, hurricane and storm damage reduction projects, and related activities targeting States that have been impacted by federally declared disasters over the last six years.
$2.5 billion for inland flood risk management projects, of which not less than $750 million shall be for multi-purpose projects or multi-purpose programs that include flood risk management as a purpose
$1.9 billion for aquatic ecosystem restoration
$1.5 billion for major rehabilitation, construction, and related activities for rivers and harbors
$200 million for shore protection projects
$200 million for water- related environmental infrastructure assistance

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) PROGRAMS	
Building Resilient Infrastructure and Communities (BRIC) Program (Existing Program)	
Level of Funding	$1 billion
Type of Funding	Grants
Purpose	Pre-disaster mitigation program supporting hazard mitigation projects to reduce the risks they face from disasters and natural hazards.
Eligibility	States, local communities, tribes, and territories
Website	https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities
Flood Mitigation Assistance Program (Existing Program)	
Level of Funding	$3.5 billion over five years
Type of Funding	Grants
Purpose	To provide financial and technical assistance to reduce the risk of flood damage to homes and businesses through buyouts, elevation, and other activities.
Eligibility	States, local communities, tribes, and territories
Website	https://www.fema.gov/grants/mitigation/floods

Safeguarding Tomorrow Through Ongoing Risk Mitigation (STORM) Act	
Level of Funding	$500 million
Type of Funding	Grants and loans
Purpose	To provide support through loans and grants to local communities to provide hazard mitigation assistance to local governments to reduce risks to disasters and natural hazards. The new grant program under this act may finance water, wastewater, infrastructure, disaster recovery, community and small business development projects.
Eligibility	Local governmental entities
Website	https://www.congress.gov/bill/116th-congress/senate-bill/3418/all-info
U.S. DEPARTMENT OF AGRICULTURE (USDA) PROGRAMS	
Watershed and Flood Prevention Operations (Existing Program)	
Level of Funding	$500 million over five years
Type of Funding	Formula based
Purpose	Provides for cooperation between the Federal government, states, and political subdivisions to prevent erosion, floodwater, and sediment damage; the conservation development, use, and disposal of water; and to further conservation and proper use of land in authorized watersheds.
Eligibility	States, local governments, and tribes
Website	https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/landscape/wfpo/?cid=nrcs143_008271
Watershed Rehabilitation Program (Existing Program)	
Level of Funding	$118 million over five years
Type of Funding	Grants and loans
Purpose	The program provides assistance to project sponsors for rehabilitating aging dams that are reaching the end of their design lives.
Eligibility	States, local governments, tribes
Website	https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/landscape/wr/?cid=nrcs143_008448
Emergency Watershed Protection Program (Existing Program)	
Level of Funding	$300 million over five years
Type of Funding	Grants
Purpose	To repair damages to the waterways and watersheds resulting from natural disaster.
Eligibility	State political subdivisions, conservation districts, tribes, and tribal organizations
Website	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/

U.S. DEPARTMENT OF ENERGY (DOE) PROGRAMS	
Carbon Dioxide Transportation Infrastructure Finance and Innovation (CIFIA) Program (New Program)	
Level of Funding	$2.1 billion over five years
Type of Funding	Low-interest loans and grants
Purpose	To provide flexible, low-interest loans for CO2 transport infrastructure projects and grants for initial excess capacity on new infrastructure to facilitate future growth. A project under the CIFIA program shall have eligible project costs that are reasonably anticipated to equal or exceed $100 million.
Eligibility	A State, local government, agency, or instrumentality of a State or local government, or a public authority, may submit to the Secretary an application under which a private party to a public-private partnership, selected by a subsequent procurement process, will be the developer and responsible for loan repayment.
Carbon Utilization Program (Existing Program)	
Level of Funding	$310 million over five years
Type of Funding	Grants
Purpose	Creates a new grant program under the existing program to procure and use products derived from captured carbon oxides. Expansion of existing program.
Eligibility	States, local government, public utilities, and public agencies
Website	https://netl.doe.gov/coal/carbon-utilization#:~:text=DOE's%20Carbon%20Utilization%20Program%20aspires,%2C%20and%20environmentally%2Dfriendly%20manner.&text=An%20ongoing%20program%20objective%20is,applicable%20for%20near%2Dterm%20implementation
Cost-Effective Codes Implementation for Efficiency and Resilience (New Program)	
Level of Funding	$225 million over five years
Type of Funding	Grants
Purpose	Competitive grant program to enable sustained cost-effective implementation of updated building energy codes.
Eligibility	States, tribes, and partnerships between local building code agencies, associations of builders and design and construction professionals, local and utility energy efficiency programs, and consumer, energy efficiency, and environmental advocates.
Energy Efficiency and Conservation Block Grant Program (EECBG) (Existing Program – not funded since 2008)	
Level of Funding	$550 million for FY 2022

Type of Funding	Formula based
Purpose	To provide funding for programs for financing energy efficiency, renewable energy, and zero-emission transportation, capital investments, projects, and programs, which may include loan programs and performance contracting programs, for leveraging of additional public and private sector funds.
Eligibility	States, cities, communities, territories, and tribes
Website	https://www.energy.gov/eere/wipo/energy-efficiency-and-conservation-block-grant-program
Program Upgrading Our Electric Grid Reliability and Resiliency (New Program)	
Level of Funding	$6 billion over five years
Type of Funding	Grants
Purpose	To demonstrate innovative approaches to transmission, storage, and distribution infrastructure to harden resilience and reliability and to demonstrate new approaches to enhance regional grid resilience. $1 billion is set aside to improve resilience, safety, reliability, and availability of energy in rural and remote areas.
Eligibility	States, combinations of two or more states, tribes, local governments, and public utility commissions
Advanced Energy Manufacturing and Recycling Grant Program (New Program)	
Level of Funding	$750 million over five years
Type of Funding	Grants
Purpose	To encourage manufacturing firms to produce or recycle advanced energy products in communities where coal mines or coal power plants have closed.
Eligibility	Manufacturing firms with gross annual sales less than $100 million, fewer than 500 employees at the manufacturing site, and annual energy bills between $100,000 and $2.5 million.
Battery Material Processing Grant Program (New Program)	
Level of Funding	$3 billion over five years
Type of Funding	Grants
Purpose	Demonstration projects for the processing of battery materials and to retool, retrofit, or expand existing battery material processing facilities.
Eligibility	States and local governments
Battery Manufacturing and Recycling Grants (New Program)	
Level of Funding	$3 billion over five years
Type of Funding	Grants

Purpose	Demonstration projects for advanced battery component manufacturing, advanced battery manufacturing, and recycling.
Eligibility	States and local governments
Energy Auditor Training Grant Program (New Program)	
Level of Funding	$40 million over five years
Type of Funding	Grants
Purpose	To train individuals to conduct energy audits or surveys of commercial and residential buildings. Grants shall not exceed $2 million.
Eligibility	States
Energy Efficiency Materials Pilot Program (New Program)	
Level of Funding	$50 million over five years
Type of Funding	Grants
Purpose	To award grants for the purpose of providing nonprofit buildings with energy-efficiency materials. Each grant awarded under this section shall not exceed $200,000.
Eligibility	Non-profit organizations
Energy Efficiency Revolving Loan Fund Capitalization Grant Program (New Program)	
Level of Funding	$250 million for FY 2022
Type of Funding	Formula based
Purpose	Establishes a revolving loan fund capitalization grant program within State Energy Programs to fund recipient commercial energy audits, residential energy audits, or energy upgrades or retrofits.
Eligibility	States
Grants for Energy Efficiency Improvements and Renewable Energy Improvements at Public School Facilities (New Program)	
Level of Funding	$500 million over five years
Type of Funding	Grants
Purpose	Grants to make energy efficiency, renewable energy, and alternative fueled vehicle upgrades and improvements at public schools.
Eligibility	Local educational agencies, schools, nonprofit organizations, for-profit organizations, and community partners.

Preventing Outages and Enhancing the Resilience of The Electric Grid (New Program)	
Level of Funding	$5 billion over five years
Type of Funding	Formula based
Purpose	Establishes a grant program to support activities by electric utilities that improve the electric grid as to reduce the risk of consequences from natural disruptive events.
Eligibility	States, tribes, electric grid operators, electricity storage operators, electricity generators, transmission owners or operators, distribution providers, fuel suppliers, and other relevant entities, as determined by the Secretary of Energy.
State Energy Program (Existing Program)	
Level of Funding	$500 million over five years
Type of Funding	Formula based
Purpose	To provide funding and technical assistance to enhance energy security, advance state-led energy initiatives, and maximize the benefits of decreasing energy waste.
Eligibility	States, territories, and the District of Columbia
Website	https://www.energy.gov/eere/wipo/state-energy-program
Transmission Facilitation Program (New Program)	
Level of Funding	$2.5 billion
Type of Funding	Revolving loan fund
Purpose	Loans or public-private partnerships to carry out replacement or enhancement projects on eligible transmission lines.
Eligible Projects	Transmission lines capable of transmitting not less than 1,000 megawatts; or in the case of existing transmission line upgrades, new transmission line construction in existing transmission, transportation, or telecommunications infrastructure corridors, 500 megawatts.
Low-Income Weatherization Assistance Program (LIWAP) (Existing Program)	
Level of Funding	$3.5 billion for FY 2022
Type of Funding	Formula based
Purpose	To reduce energy costs for low-income households by increasing the energy efficiency of their homes.
Eligibility	States and tribes
Website	https://www.energy.gov/eere/wap/weatherization-assistance-program

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) PROGRAMS	
Low Income Home Energy Assistance Program (LIHEAP) (Existing Program)	
Level of Funding	$500 million over five years
Type of Funding	Formula based
Purpose	To provide low-income families financial assistance with rising energy prices due to extreme weather.
Eligibility	States, tribes, and territories
Website	https://www.acf.hhs.gov/ocs/low-income-home-energy-assistance-program-liheap
U.S. DEPARTMENT OF THE INTERIOR (DOI) PROGRAMS	
Large-scale Water Recycling and Reuse Projects (New Program)	
Level of Funding	$450 million over five years
Type of Funding	Grants
Purpose	Establishes a grant program for large-scale water recycling and reuse projects.
Eligibility	States, tribes, municipalities, irrigation districts, water districts, and water and power authorities.
Tribal Climate Resilience (Existing Program)	
Level of Funding	$216 million over five years
Type of Funding	Grants
Purpose	For tribal climate resilience, adaptation, and community relocation planning, design, and implementation of projects that address varying climate challenges.
	$86M of the total is for climate resilience and adaptation projects.
Eligibility	Tribes and tribal organizations
Website	https://www.bia.gov/bia/ots/tribal-climate-resilience-program
U.S. DEPARTMENT OF TRANSPORTATION (DOT) PROGRAMS	
Active Transportation Infrastructure Investment Program (New Program)	
Level of Funding	$1 billion over five years
Type of Funding	Grants
Purpose	To construct eligible projects to provide safe and connected active transportation facilities in an active transportation network or active transportation spine.

Eligible Projects	Construction of active transportation networks that connect people to public transportation, businesses, workplaces, schools, residences, recreation areas, and other community activity centers. It also includes adding sidewalks, bikeways, and pedestrian trails.
Eligibility	States, Indian tribes, multi-county special districts, and local or regional government organizations
Congestion Relief Program (New Program)	
Level of Funding	$250 million over five years
Type of Funding	Grants
Purpose	To advance innovative, integrated, and multimodal solutions to congestion relief in the most congested metropolitan areas of the United States (areas with a population of more than one million). Priority to eligible projects located in urbanized areas that are experiencing high degrees of recurrent congestion. Grant awards will not be less than $10 million.
Eligibility	States, metropolitan planning organizations, cities, and municipalities
Grants for Charging and Fueling Infrastructure (Clean Corridors Program) (New Program)	
Level of Funding	$2.5 billion over five years
Type of Funding	Grants
Purpose	To establish accessible electric vehicle charging infrastructure, hydrogen fueling infrastructure, propane fueling infrastructure, and natural gas fueling infrastructure along designated alternative fuel corridors or in certain other locations that will be accessible to all drivers. 50% of the total program funds will be made available each fiscal year for community grants, to install EV charging and alternative fuel in locations on public roads, schools, parks, and in publicly accessible parking facilities. These grants will be prioritized for rural areas, low-and moderate-income neighborhoods, and communities with low ratios of private parking, or high ratios of multi-unit dwellings.
Eligibility	States, local governments, transit agencies, port authorities, and territories
Healthy Streets Program (New Program)	
Level of Funding	$500 million over five years
Type of Funding	Grants
Purpose	To provide competitive grants to eligible entities to deploy cool pavements and porous pavements and to expand tree cover. Priority to low-income and disadvantaged communities. An individual grant under this section shall not exceed $15 million.
Eligibility	States, local governments, tribes, and non-profit organizations

Low-or-No Emission Buses (Existing Program)	
Level of Funding	$5.6 billion over five years
Type of Funding	Grants
Purpose	To provide funding to state and local governments for the purchase or lease of zero-emission and low-emission transit buses, including acquisition, construction, and leasing of required supporting facilities.
Eligibility	States, local governmental authorities, and tribes
Website	https://www.transit.dot.gov/lowno
National Infrastructure Project Assistance (New Program)	
Level of Funding	$5 billion over five years
Type of Funding	Grants
Purpose	To support multi-modal, multi-jurisdictional projects of national or regional significance. Federal assistance provided for a project for which a grant is awarded under the program shall not exceed 80% of the total cost of the project.
Eligibility	States, groups of States, metropolitan planning organizations, local governments, political subdivisions, special purpose districts or public authorities with a transportation function, including port authorities, tribes, and consortiums of tribes.
Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants (Existing Program)	
Level of Funding	$7.5 billion over five years
Type of Funding	Grants
Purpose	To support surface transportation projects of local and/or regional significance, including projects that improve environmental sustainability. Maximum amount per grant is $25 million (minimum is $5 million) and provides an equal split between rural and urban areas.
Eligibility	States, the District of Columbia, U.S. territories, local governments, public agencies publicly chartered authorities established by one or more States, special purpose districts or public authorities with a transportation function including port authorities, tribes, consortiums of tribes, and transit agencies.
Website	https://www.transportation.gov/RAISEgrants
Reconnecting Communities Pilot Program (New Program)	
Level of Funding	$1 billion over five years
Type of Funding	Grants

Purpose	To provide funds for projects that restore community connectivity. The program will provide dedicated funding for barriers to mobility, access, or economic development. A planning grant may not exceed $2 million per recipient. A capital construction grant may not be less than $5 million per recipient.
Eligibility	States, local governments, tribes, metropolitan planning organizations, and nonprofit organizations
Safe Routes to School (Existing Program)	
Level of Funding	Unclear of any new funding provided but the program was recodified into current law and was expanded to cover high schools
Type of Funding	Grants
Purpose	To enable and encourage children, including those with disabilities, to walk and bicycle to school; to make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and to facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. No State shall receive an apportionment under this section for a fiscal year of less than $1 million.
Eligibility	States, local governments, tribes, and non-profit organizations
Website	https://www.transportation.gov/mission/health/Safe-Routes-to-School-Programs
Safe Streets and Roads for All Grant Program (New Program)	
Level of Funding	$5 billion over five years
Type of Funding	Grants
Purpose	To conduct planning, design, and development activities for projects and strategies identified in a comprehensive safety action plan. Of the total amount made available to carry out the program for each fiscal year, not less than 40% shall be awarded to projects to develop comprehensive safety action plans.
Eligibility	Political subdivisions metropolitan planning organizations, and tribes
Strengthening Mobility and Revolutionizing Transportation Grant Program (New Program)	
Level of Funding	$500 million over five years
Type of Funding	Grants
Purpose	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.
Eligibility	States, political subdivisions, tribes, public transit agencies or authorities, and public toll authorities

Surface Transportation Block Grants (Existing Program)	
Level of Funding	$7.2 billion for the Transportation Alternatives Program (TAP) over five years
Type of Funding	Formula based
Eligible Projects	Electric vehicle charging infrastructure and vehicle-to-grid infrastructure, installation and deployment of intelligent transportation technologies, projects that facilitate intermodal connections between emerging transportation technologies, resilience features, cybersecurity protections, waterfront infrastructure projects, and projects to enhance travel and tourism. Increased share of funding to local areas (59% versus 50%). Creates a new population band for communities between 50,000 and 200,000 people.
Eligibility	States and local governments
Website	https://www.fhwa.dot.gov/environment/transportation_alternatives/
Carbon Reduction Program (New Program)	
Level of Funding	$6.4 billion over five years
Type of Funding	Formula based
Purpose	Carbon reduction program to reduce transportation emissions.
Eligible Projects	Transportation electrification and EV charging; public transportation, including Bus Rapid Transit; infrastructure for bicycling and walking; intelligent transportation systems (ITS) improvements; infrastructure to support congestion pricing; diesel engine retrofits; and port electrification. 65% of funding would be allocated by population to support eligible projects in local communities.
Eligibility	States
Congestion Mitigation and Air Quality Improvement Program (Existing Program)	
Level of Funding	$13.2 billion over five years
Type of Funding	Formula based
Purpose	To fund projects to reduce pollution and relieve congestion geared towards helping metropolitan regions and states meet federal air quality standards.
Eligibility	States
Website	https://www.transportation.gov/sustainability/climate/federal-programs-directory-congestion-mitigation-and-air-quality-cmaq

Electric or Low-Emitting Ferry Pilot Program (New Program)	
Level of Funding	$250 million over five years
Type of Funding	Grants
Purpose	Pilot program to provide grants for the purchase of electric or low-emitting ferries and the electrification of or other reduction of emissions from existing ferries. Requires that at least one grant be awarded to the state with the largest Marine Highway System and a bi-ferry service with an aging fleet.
Eligibility	States
Ferry Service for Rural Communities (New Program)	
Level of Funding	$1 billion over five years
Type of Funding	Grants
Purpose	Establishes a program to ensure that basic essential ferry service is provided to rural areas by providing funds to States to provide such basic essential ferry service.
Eligibility	Ferry services that operated a regular schedule at any time during the 5-year period ending on March 1, 2020, and served at least two rural areas located more than 50 sailing miles apart.
National Electric Vehicle Formula Program (New Program)	
Level of Funding	$5 billion over five years
Type of Funding	Formula based
Purpose	To provide funding to States to strategically deploy electric vehicle charging infrastructure and to establish an interconnected network to facilitate data collection, access, and reliability.
Eligibility	States
National Highway Performance Program (NHPP) (Existing Program)	
Level of Funding	No new funding was provided in the law but the program was amended to now include resiliency efforts.
Type of Funding	Formula based
Purpose	To provide support for states to conduct activities to increase the resiliency of the National Highway System to mitigate the cost of damages from sea level rise, extreme weather events, flooding, wildfires, or other natural disasters. Expands eligibility for States to use funds for resiliency, cybersecurity, and undergrounding utility infrastructure.
Eligibility	States
Website	https://www.fhwa.dot.gov/fastact/factsheets/nhppfs.cfm

Promoting Resilient Operations for Transformative, Efficient, And Cost Saving Transportation (PROTECT) Program (New Program)	
Level of Funding	$7.3 billion formula and $1.4 billion grants. Total: $8.7 billion over five years
Type of Funding	Formula based and grants
Purpose	To provide grants through formula funding ($7.3 billion to States), competitive planning grants, and competitive resilience improvement grants to make resiliency improvements to protect against the effects of extreme weather and natural disasters. Contains a set-aside in the competitive grant funding for at-risk coastal infrastructure and evacuation routes.
Eligibility	States
Reduction of Truck Emissions at Port Facilities (New Program)	
Level of Funding	$250 million over five years
Type of Funding	Grants
Purpose	Establishes a program to reduce truck idling at port facilities, including to study port electrification, study emerging technologies, and funds projects that reduce port-related emission.
Eligibility	Not defined
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) PROGRAMS	
Clean School Bus Program (New Program)	
Level of Funding	$5 billion over five years
Type of Funding	Grants and rebates
Purpose	For the replacement of existing school buses with zero emission and clean school buses with a priority on low income, rural and tribal schools. 50% of funds to replace existing school buses with zero-emission school buses; and 50% of funds to replace existing school buses with clean school buses.
Eligibility	Local or state governmental entities responsible for providing school bus service to public school systems or the purchase of school buses, eligible contractors, nonprofit school transportation association, and tribes.
Clean Water Infrastructure Resiliency and Sustainability Program (New Program)	
Level of Funding	$125 million over five years
Type of Funding	Grants

Purpose	To establish clean water infrastructure resilience and sustainability programs for natural hazard or cyber security vulnerabilities of public treatment works.
Eligibility	Municipalities or intermunicipal, interstate, or state agencies
Operational Sustainability of Small Public Water Systems (New Program)	
Level of Funding	$250 million over five years
Type of Funding	Grants
Purpose	To establish a program to award grants for the purpose of improving the operational sustainability of small systems.
Eligibility	States; local governments; public corporation established to provide water service; nonprofit corporations, public trusts, and cooperative associations that own or operate a public water system; tribes that own or operate a public water system; and nonprofit organization that provide technical assistance to public water systems.
RECYCLE Act (Consumer Recycling Education and Outreach Grant Program) (New Program)	
Level of Funding	$75 million over five years
Type of Funding	Grants
Purpose	Authorizes a new grant program at the EPA to award competitive grants to eligible entities to improve the effectiveness of residential and community recycling programs through public education and outreach.
Eligibility	States, local governments, tribes, nonprofit organizations, and public-private partnerships.
Rural and Low-Income Water Assistance Pilot Program (New Program)	
Level of Funding	No money for this program was included in the IIJA, only authorization.
Type of Funding	Grants
Purpose	To establish a pilot program to develop and implement programs to assist qualifying households with need in maintaining access to drinking water and wastewater treatment.
Eligibility	Municipalities; tribes; or other entity that owns or operates a community water system, treatment works, or municipal separate storm sewer system, has taken on an unsustainable level of debt due to customer nonpayment for the services provided by a community water system, treatment works, or municipal separate storm sewer system; and states exercising primary enforcement responsibility over rural water service providers.
Save Our Seas 2.0 Act Grants (New Program)	
Level of Funding	$275 million over five years
Type of Funding	Grants
Purpose	Establishes a program to support improvements to local post-consumer materials management, including municipal recycling programs.

Eligibility	States, local governments, tribes, and public water systems
Stormwater Control Infrastructure Project Grants (New Program)	
Level of Funding	$50 million over five years
Type of Funding	Grants
Purpose	To carry out stormwater control infrastructure projects that incorporate new and emerging, but proven, stormwater control technologies. The amount of a single planning and development grant provided shall not be more than $200,000.
Eligibility	States, tribes, local governments, and local, regional, or other public entities that manage stormwater or wastewater resources or related water infrastructure.
Water Infrastructure Financing Reauthorization/Water Infrastructure Finance and Innovation Program (WIFIA) (Existing Program)	
Level of Funding	$250 million over five years
Type of Funding	Loan guarantees Additional amount of $75 million, of which $64 million is for direct loans and for the cost of guaranteed loans for safety projects to maintain, upgrade, and repair dams identified in the National Inventory of Dams.
Eligibility	State, local, tribal, and federal government entities
Website	https://www.epa.gov/wifia
Assistance for Small and Disadvantaged Communities (Existing Program)	
Level of Funding	$510 million over five years
Type of Funding	Grants
Purpose	To provide grants to disadvantaged communities or communities with a population of under 10,000 that lack household drinking water or wastewater services or that are served by a public water system that violates or exceeds a requirement of the national primary drinking water regulations.
Eligibility	States, tribes, and territories
Website	https://www.epa.gov/dwcapacity/wiin-grant-small-underserved-and-disadvantaged-communities-grant-program
Clean Water State Revolving Funds (CWSRF) (Existing Program)	
Level of Funding	$11.713 billion over five years
Type of Funding	Formula based

Purpose	To restore and maintain clean water through low-cost financing for a variety of water quality infrastructure projects. An additional $1 billion in capitalization grants over five years to address contaminants such as (PFAS). 49% of funds will be available for grants or principal forgiveness loans. 51% of funds will be available for low-interest loans.
Eligibility	States are given the money who, in turn, provide loans to local governments.
Website	https://www.epa.gov/cwsrf
Connection to Publicly Owned Treatment Works Program (New Program)	
Level of Funding	$200 million over five years
Type of Funding	Grants
Purpose	Provides grants to cover the costs incurred from connecting a household to a municipal or private wastewater system.
Eligibility	Owners or operators of a publicly owned treatment works and non-profit entities that assist low-income or moderate-income individuals with connecting the household of the individual to the publicly owned treatment works.
Drinking Water State Revolving Funds (DWSRF) (Existing Program)	
Level of Funding	$11.713 billion over five years
Type of Funding	Formula based
Purpose	To provide low-cost financing for public drinking water infrastructure projects and source water protection. 49% of funds will be provided to communities as grants or principal forgiveness loans. 51% of funds will be available to communities for low-interest loans. $4 billion in capitalization grants to address contaminants such as PFAS ($800 million per fiscal year).
Eligibility	States are given the money who, in turn, provide loans to local governments
Website	https://www.epa.gov/dwsrf
EPA Pollution Prevention (P2) Program (Existing Program)	
Level of Funding	$100 million over five years
Type of Funding	Grants
Purpose	To provide grants and technical assistance to help businesses develop and adopt pollution prevention practices.
Eligibility	States, colleges and universities, and tribes
Website	https://www.epa.gov/p2

Lead Contamination in School Drinking Water (Existing Program)	
Level of Funding	$200 million over five years
Type of Funding	Formula based
Purpose	To assist with testing for lead in drinking water at schools and child care programs. Expands the program to allow funds to be used for compliance monitoring and lead reduction projects.
Eligibility	States
Website	https://www.epa.gov/dwcapacity/wiin-grant-lead-testing-school-and-child-care-program-drinking-water
Lead Pipe Removal	
Level of Funding	$15 billion over five years
Type of Funding	Loans and grants
Purpose	To address lead in drinking water and remove pipes. 49% of the funds made available to each State for Drinking Water State Revolving Fund capitalization grants shall be used to provide grants or loan forgiveness to eligible recipients. 51% of funds will be available to communities for low-interest loans.
Eligibility	States
Website	https://www.epa.gov/dwsrf
Midsize and Large Drinking Water System Infrastructure Resilience and Sustainability Program (New Program)	
Level of Funding	$250 million over five years
Type of Funding	Grants
Purpose	To award grants to increase resilience to natural hazards and extreme weather events and reduce cybersecurity vulnerabilities.
Eligibility	Public water systems serving communities with a population of at least 10,000
PFAS (DWSRF, CWSRF, EPA's Small and Disadvantaged Communities Program) (Existing Program)	
Level of Funding	$10 billion over five years
Type of Funding	Formula based
Purpose	To provide funding for the treatment perfluoroalkyl or polyfluoroalkyl substances (PFAS) or pollutants identified by the Administrator as a contaminant of emerging concern.
Eligibility	States

Website	https://www.epa.gov/dwsrf https://www.epa.gov/cwsrf https://www.epa.gov/dwcapacity/wiin-grant-small-underserved-and-disadvantaged-communities-grant-program
Sewer Overflow and Stormwater Reuse Municipal Grants (Existing Program)	
Level of Funding	$1.4 billion over five years
Type of Funding	Formula based
Purpose	Funding for the planning, construction and design of treatment works for municipal combined sewer overflows, sanitary sewer overflows, or stormwater, and measures to manage, reduce, or recapture stormwater or subsurface drainage. 25% percent set-aside for projects in rural or financially distressed communities.
Eligibility	States
Website	https://www.epa.gov/cwsrf/sewer-overflow-and-stormwater-reuse-municipal-grants-program
State Competitive Grants for Underserved Communities (New Program)	
Level of Funding	$250 million over five years
Type of Funding	Grants
Purpose	Establishes a new competitive safe drinking water grant program, with terms to be determined by the EPA Administrator, for States that have demonstrated high numbers of underserved communities.
Eligibility	States
Brownfields	
Level of Funding	$1.5 billion over five years
Type of Funding	Grants
Purpose	To assess, safely clean up, and sustainably reuse contaminated properties by funding assessment, revolving loan fund capitalization, cleanup, multipurpose, and job training grants.
Eligibility	States, local governments and agencies, and non-profit entities
Website	https://www.epa.gov/brownfields/brownfields-cleanup-grants
Superfund Cleanup (Existing Program)	
Level of Funding	$3.5 billion for the EPA Superfund remedial account
Type of Funding	Grants
Purpose	To provide funds for clean-ups and on remedial activities for Superfund sites.
Eligibility	Superfund sites on the National Priorities List
Website	https://www.epa.gov/superfund

Underground Injection Control Program (Existing Program)	
Level of Funding	$50 million over five years
Type of Funding	Grants
Purpose	To defray the expenses of the State related to the establishment and operation of a State underground injection control program.
Eligibility	States
Website	https://www.epa.gov/uic
Wastewater Efficiency Grant Pilot Program (New Program)	
Level of Funding	$100 million over five years
Type of Funding	Grants
Purpose	Establishes a grant pilot program to carry out projects that create or improve waste-to-energy systems.
Eligibility	Owners or operators of publicly owned treatment works

Additional Resources Relating to the IIJA

The final IIFA text, legislative history and other information can be found here: https://www.congress.gov/bill/117th-congress/house-bill/3684/text

A detailed summary of the IIJA may be viewed at: https://www.manchin.senate.gov/imo/media/doc/bipartisan_infrastructure_bill_section_by_section.pdf?cb

The Infrastructure Investment and Jobs Act of 2021: Overview and Key Points for Mayors, developed by the United States Conference of Mayors: https://mcusercontent.com/e687bec86211c5944ffd74f55/files/ad2e8d6a-5ed9-6c78-3604-2bfe4ad0f339/USCM_Overview_of_Infrastructure_Act_112421.01.pdf

Legislative Analysis for Counties: The Infrastructure & Jobs Act, developed by the National Association of Counties: https://www.naco.org/resources/legislative-analysis-counties-infrastructure-investment-jobs-act

What the Senate Infrastructure Investment and Jobs Act (IIJA) Means for Local Governments, developed by the National League of Cities: https://www.nlc.org/article/2021/08/10/what-the-senate-infrastructure-bill-means-for-local-governments/

White House Statement: Fact Sheet: The Bipartisan Infrastructure Deal: https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/06/fact-sheet-the-bipartisan-infrastructure-deal/

White House Statement: The Bipartisan Infrastructure Law Advances Environmental Justice: https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/16/the-bipartisan-infrastructure-law-advances-environmental-justice/

FACT SHEET: EPA & the Bipartisan Infrastructure Law: https://www.epa.gov/infrastructure/fact-sheet-epa-bipartisan-infrastructure-law

DOE Fact Sheet: The Bipartisan Infrastructure Deal: https://www.energy.gov/articles/doe-fact-sheet-bipartisan-infrastructure-deal-will-deliver-american-workers-families-and-0

U.S. Department of Transportation Announcement: https://www.transit.dot.gov/about/news/us-department-transportation-announces-key-priorities-funding-public-transportation

FEMA Release: Infrastructure Deal Provides FEMA Billions for Community Mitigation Investments: https://www.fema.gov/press-release/20211115/infrastructure-deal-provides-fema-billions-community-mitigation-investments

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