

PARK CITY
bridgeport, ct

BGreen 2020

A Sustainability Plan for Bridgeport, Connecticut

2013 Progress Report



Letter from the Mayor



Dear Bridgeport residents

Three years ago, more than 100 organizations and individuals came together to produce a 10-year plan that would transform Bridgeport into a smart and enlightened community, leading the way in the new green economy.

A community advisory committee and five technical committees put together BGreen 2020, a plan that outlined 64 strategies that would improve Bridgeport's quality of life for residents, clean our soils and waterways, reduce our reliance on fossil fuels, and attract green jobs and businesses. Since then, Bridgeport's BGreen 2020 community has put the Plan into action. This progress report documents the immense effort that has taken place to advance nearly all of the BGreen 2020 plan's strategies. In 2013, volunteers have contributed nearly 10,000 hours working on BGreen-related projects, with a 60% increase in volunteering since 2011. Over 80 organizations and businesses have participated in BGreen projects, with many community groups supporting BGreen with projects that bring the concepts of sustainability, livability, and resiliency into Bridgeport's neighborhoods and homes. I thank the Bridgeport Regional Business Council and Fairfield County Community Foundation for their major ongoing support of BGreen 2020, and welcome the many other organizations who have over the past few years chosen to invest their time and energy in making our sustainability plans become reality.

BGreen2020 has made the City of Bridgeport

More Resilient. We've set up programs that help businesses and residents to invest in energy efficiency and produce renewable energy, and are taking steps to prevent future storm damage from flooding.

Healthier. We're cleaning up waters and soil contaminated by pollution; supporting walking, biking, and transit; and expanding access to healthy foods through farmers markets, community gardens, and urban agriculture.

A Better Place to Live. We've invested in our downtown and neighborhoods to improve access to parks, recreation, schools, and retail amenities. Our downtown is growing with new restaurants and retail and hundreds of new apartments for residents who are seeking a walkable, transit-friendly community. We've expanded our parks system and planted over 2,500 trees.

A City of Opportunity. BGreen 2020 partners have helped make Bridgeport a center for green employment and education. We've attracted over a dozen new green businesses to Bridgeport and are on track to grow hundreds of jobs in fields related to materials recycling, renewable energy and local agriculture.

Despite all of our progress, we still have much to do. The impacts of last year's Superstorm Sandy reinforced the need to help Bridgeport adapt to climate change's effects and reduce our emissions contributions. But I hope that our collective success in embracing and implementing the BGreen 2020 plan will inspire us all to make Bridgeport the best it can be.

Sincerely,

Bill Finch
Mayor

Let's make Bridgeport the cleanest, greenest city with schools and neighborhoods that get better every year!

From Plan to Action: BGreen 2020 in 2013

BGreen 2020 was developed to be a blueprint for the future of the City of Bridgeport and its businesses, institutions, and neighborhoods. The plan laid out strategies to improve the environmental quality and livability of Bridgeport's parks, waterways, and streets and to promote Bridgeport as a location for the development of green industries and green employment. The over 100 contributors to the BGreen 2020 plan charted a course that responded to the community's needs for greater economic opportunities while recognizing the outstanding assets that Bridgeport has in its parks, infrastructure, institutions and people. Five areas of opportunity were identified for focus:

1. green energy and buildings;
2. land use and transportation;
3. green spaces, water resources and recycling;
4. green businesses, jobs and purchasing; and
5. education and outreach.

Within these areas, 65 strategies were developed for implementation by BGreen partners, including the city administration, state and federal government agencies, philanthropic partners, the business community, institutions, neighborhood groups and individuals.

This progress report evaluates the success of the BGreen 2020 program three years in to its implementation. BGreen continues to function as a public/private partnership with strong leadership by City of Bridgeport elected officials and staff and the Bridgeport Regional Business Council. Major ongoing support by the Fairfield County Community Foundation has been supplemented by city, state, and federal funds, private investment, and funding or technical assistance by other foundations and non-profit organizations. There are now over 150 projects completed or underway in Bridgeport which support BGreen 2020's goals of improving environmental quality, livability, opportunity, and sustainability being carried out by over 80 organizations and businesses. Initial estimates of the environmental impact of some of these projects indicate that Bridgeport has been able to reduce its greenhouse gas emissions by at least 55,000 metric tons per year through projects that are implemented and operational, and is on track to save at least 162,000 metric tons each year through additional projects under development. This level of achievement would enable Bridgeport to meet the target of a 10% reduction in greenhouse gas emissions from 1990 levels by 2020, recently established in the Bridgeport Energy Efficiency and Conservation Plan developed as a supplement to the BGreen 2020 plan.¹

Implemented projects reduce carbon emissions by

55,290.5
metric tons CO₂e per year

Equivalent² to one year's worth of
Greenhouse gases absorbed by 45,320 acres of forest
Fuel burned by 11,519 passenger vehicles
Electricity used by 7,607 US homes

Existing & Underway projects reduce carbon emissions by

162,244
metric tons CO₂e per year

Equivalent to
377,312 barrels of oil
697 rail cars full of coal
Recycling 60,766 tons of waste sent to landfills instead of recycling

This reports documents the contributions of many of the 150+ projects to reducing carbon emissions as well as growing employment, developing energy-efficient housing, reducing utility costs, improving the parks system, promoting walking and biking, decreasing the cost and negative impacts of waste disposal, and including Bridgeport's young people as advocates and partners in BGreen 2020. For each of the five BGreen program areas, we provide a snapshot of impacts of projects, detailed descriptions of a handful of key initiatives, a list of participating organizations, and a comprehensive list of all projects related to BGreen within that program area. New to this report is the addition of a sixth program area, *Planning for Climate Change*, which develops Bridgeport's readiness to adapt to a changing climate. This report attempts to catalog all initiatives underway related to BGreen 2020, but it is inevitable that some projects have been left out. Please visit www.bgreenbridgeport.org to submit information on additional projects that support BGreen 2020 goals and for updates on BGreen 2020's initiatives.

¹ Regional Plan Association. BGreen Energy Efficiency and Conservation Plan, August 2010.

² EPA Clean Energy Greenhouse Gas Equivalents Calculator. <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>.

Green Energy & Buildings

The three years since the release of BGreen 2020 has seen enormous progress in implementing the plan's strategies and achieving its goals. New programs support renewable energy production and energy efficiency in Bridgeport. Progress is visible in the solar panels that have gone up across the city. Bridgeport is the first municipality in the state to adopt C-PACE, a program which helps finance energy efficiency improvements in commercial buildings through property tax payments. And the city and private partners are developing an Eco-Technology park in the West and South End which will be home to North America's largest fuel cell as well as advanced waste processors and a nearby green energy park producing solar and fuel cell energy. Bridgeport Biodiesel is a private company now processing waste greases into fuel products. Flexi-Pave and American Oil Solutions reuse tires in the products they produce. Individual homeowners have access to programs which support energy efficiency improvements and provide access to lower-cost energy sources.

Greenfields & Green Wheels (Land Use and Transportation)



USES **40%** LESS GAS

Greater Bridgeport Transit promotional material highlights fuel efficiency

(Source: Greater Bridgeport Transit)

Each new Hybrid Bus uses 10% less gas. We're adding two to our fleet on Earth Day 2012. Go Green, Go Public, Go GBT!

goingbt

BGreen initiatives embrace the city's physical assets and further develop its neighborhoods as walkable, transit-oriented environments for living and working. Brownfields are being cleaned up and reused. Downtown Bridgeport has added dozens of new housing units, restaurants, and shops in the last few years, with hundreds more apartments in the planning phase. A U.S. Department of Housing and Urban Development grant supported a study which assessed the feasibility of a new train station on the East Side. The station was originally identified in the BGreen 2020 plan as a potential anchor for the revitalization of a formerly-industrial neighborhood. Bridgeport's bus transit agency, Greater Bridgeport Transit, continues to embrace sustainability as a core mission, expanding ridership, improving quality of services to its riders, and improving the energy efficiency of its buses and physical plant.

Green Spaces

A major initiative of BGreen 2020 was to assess the city's parks and open space and develop a plan to promote the environmental quality of these resources and increase recreational opportunities for Bridgeport's residents. A Parks Master Plan was completed by Sasaki Associates in 2011 which lays out strategies to enhance existing parks, create new parks, and provide better connections between parks and residents by physically connecting the areas using public transit, pedestrian walkways, and complete streets with existing limited resources. Improving

waterfront access to residents is a continuing objective. Not only does it provide recreational areas, but in many places it also provides critical flood storage that protects homes in large storms like Superstorm Sandy. The new Knowlton Park will provide access to the Pequonnock River. Progress has been made on renovations and improvements at Seaside Park and on re-opening Pleasure Beach to the public. The city met its goal of planting 2,012 trees by 2012, and has set a new goal of planting 3,000 more trees by 2020. The non-profit Green Village Initiative has installed school gardens at 20 Bridgeport schools and recently opened the Reservoir Community Farm in North Bridgeport.

Bridgeport's new Parks Master Plan envisions a city which connects its neighborhoods to its waterfront and open spaces

(Source: Sasaki)



Water Resources

BGreen 2020 identified water resources protection as a key focus area due to the proximity of Bridgeport's waterways to homes, businesses, and physical infrastructure. Heavy rainfalls can overwhelm Bridgeport's combined rainwater/sewage treatment systems, resulting in the contamination of waterways and wasted energy and costs to treat mixed stormwater runoff and sewage. Many of BGreen 2020's strategies seek to reduce stormwater runoff to the sewer system through the installation of green infrastructure and porous pavement which allows rainwater to drain directly through the soil. Bridgeport's Conservation Corps has distributed over 5,000 rain barrels across the city to divert rain away from the municipal sewer system for reuse.

Municipal Solid Waste, Materials Use & Recycling

Initiatives related to materials recycling have paid off in Bridgeport. One of BGreen's first and most visible new businesses is Park City Green, a mattress recycling company which has diverted 375 tons from the waste stream and resells materials for reuse. The city has increased its residential recycling rate by 64% by converting to single-stream recycling, which makes recycling simpler for households to manage, by partnering with Recyclebank to create incentives for households that recycle, and by supporting Conservation Corps outreach to individual households. The higher recycling rates now net the city approximately \$200,000 per year in reduced waste expenses and payments for recycled material.

Green Businesses, Jobs & Purchasing

Bridgeport is now the center for green business development that it set out to be with BGreen 2020. A \$4 million grant from the Federal Department of Labor supports The Workplace, Inc.'s career ladder training programs in energy, water resources, transit operations and green buildings, which have placed more than 400 people in green jobs. Bridgeport Regional Business Council works to recruit new green industries to the city. Businesses that have opened new facilities in Bridgeport or expanded operations include Boot Camp Farms, Santa Energy, Flexi-Pave, Enviro Express, Bridgeport Biodiesel, American Oil Solutions, Sea Green Organics, and Dominion Energy. The Eco-Technology Park under development in the West and South End aims to incubate new businesses and achieve environmental synergies between clean energy producers and consumers.

Green Marketing, Education & Outreach

BGreen 2020 has improved Bridgeport's image, increasing public engagement, attracting new public and private investment into the city, and drawing new residents and businesses who want to be part of Bridgeport's resurgence. Success stories include the architectural firm Fletcher-Thompson's decision to relocate back to Bridgeport after a ten-year absence and to restore the vacant Farmers & Mechanics building on McLevy Green into offices and apartments, and the mega-retailer Bass Pro's selection of a site on Bridgeport's waterfront for a destination store anchoring the Steel Point redevelopment district. Environmental education has taken hold in multiple ways. Community groups have incorporated environmental goals into their work, including the Wakeman Boys & Girls Club, which built a new LEED-certified clubhouse, powered by solar energy, in Bridgeport's West End in 2011. Multiple educational institutions have chosen Bridgeport as a learning laboratory for their students interested in environmental management issues, including Fairfield University and Yale. Within Bridgeport's public schools, school gardens and a district-wide recycling program support a sustainability curriculum, and special curricula have been developed at the new LEED-certified Fairchild Wheeler Interdistrict Magnet and Discovery Magnet schools.

Planning for Climate Change

Although the original BGreen 2020 plan included an awareness of the future impacts expected from climate change- rising temperatures, more severe storms and sea level rise- the plan focused more on reducing Bridgeport carbon emissions contributing to climate change than it did on preparing for future impacts. Three years later, the city has weathered multiple severe storms that have stressed our city's residents, businesses, and infrastructure. Hurricanes Sandy and Irene, Winter Storm Nemo, and even a tornado have made landfall in Bridgeport. Each have caused disruptions to our utility and transportation systems and damage to homes and businesses, making it difficult for some of Bridgeport's most vulnerable populations to access basic needs such as food, water, heat, and medical care. In the last three years, multiple projects have focused on improving the city's emergency preparedness and reducing future damage from severe weather events, with key support and participation by the State of Connecticut, City of Bridgeport, Greater Bridgeport Regional Council, United Illuminating and Clean Air - Cool Planet.



Bridgeport Housing Authority's Marina Village after Hurricane Irene



Wind turbines and green roofs at the LEED Gold-certified Fairchild Wheeler Inter-District Magnet High School, which offer a 21st century STEM (Science, Technology, Engineering and Math) project-based curriculum focusing on three areas: Information Technology, Biotechnology/Zoological science and Physical Science, Math and Aerospace/Hydrospace Engineering.

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Strategy Progress

Estimating Greenhouse Gas Impacts of BGreen Projects

BGreen 2020 projects reduce greenhouse gas emissions in a number of ways. Green energy projects produce energy that displaces the need for dirtier energy sources such as oil and coal. Energy efficiency projects reduce energy use. Stormwater management projects divert rainwater from the septic system, reducing the volume of water that water treatment plants must process. Carbon is sequestered (stored) by trees and other plants, preventing it from contributing to atmospheric changes. Projects which influence behavior, such as the provision of transit or bicycle infrastructure, help individuals choose more energy-efficient options.

The following BGreen projects are just a sampling of the many projects discussed in this report and give an early indication of the great potential impacts of the initiative as a whole. **From these 35 projects alone, Bridgeport has already reduced its community-wide emissions by 55,300 metric tons, or about 5% of Bridgeport's total estimated emissions in 2007.** Additional projects underway would reduce emissions from 2007 by 13%, and help meet the 2015 interim reduction target of a 10% reduction in emissions since 2007 and the 2020 target of reducing emissions 20%. Projects being pursued for future implementation would bring the total estimated impact of the BGreen projects listed below to a 16% reduction from 2007 levels.

| Strategy | Strategy Impact | Project | Estimated Project Impacts (MT CO2equivalent) | | | GHG Impact Estimate Methodology |
|---|---|---------------------------------------|--|-------------|--------|--|
| | | | Implemented | In progress | Future | |
| Green Energy and Buildings | | | | | | |
| Establish an Energy Improvement District | Projected total GHG reduction: 25,079 MT CO2e | Energy Improvement District Board | | | 25,079 | In Bridgeport there are 5122 commercial accounts with an annual kWh use of 355,449,216. Saving (10%) of that through energy efficiency alone or 35544921 kWh savings would equal 25,079 MT GHG equivalent/year |
| | | Fuel Cell Energy/Dominion Fuel Cell | 44,084 | | | 115,705,000 kilowatt-hours per year produced by Fuel Cell. (81,636 MT GHG if produce by fossil fuel plant. (NREL) Fuel Cells produce 54% less emissions than American Fossil Fuel Plants. 81,636 MT GHG x .54 = 44,084 MT GHG Reduced |
| | | Green Energy Park on Seaside Landfill | | 16,798 | | Solar: 2.86 Mw = 2860 Kw x .13 conversion factor x 8 hours per day x 365 days in a year = 1085656 kWh = 766 MT GHG Fuel Cell (scaled from Dominion Fuel Cell K15): 5.66 Mw / 14.9 Mw = .38 Production of Dominion fuel cell. .38 Reduction of 42,188 MT GHG = 16,032 MT GHG |
| Create Green Energy Park at the city's closed landfill in Seaside Park | Reduction so far: 44,084 Projected total GHG reduction: 67,981 | Biomass Anaerobic Digester | | 7,099 | | (Scaled from C-31) 1.3 MW / 3 MW = .43 Production x 23,400,000 kWh = 10,062,000 kWh produced = 7,099 MT GHG |
| | | Green Point Anaerobic Digester | | 16,510 | | 23,400,000 kWh per per year. (8,760 hours (Green Point) * 3,000 kW * 90% capacity factor). = 16,510 MT GHG |
| | | Geo Thermal Energy Systems | | | 1,321 | 1,871,948 kWh production geothermal system = 1,321 MT GHG. |
| Implement energy efficiency, biomass retrofit, and resource sharing at waste water treatment facilities | Reduction so far: 940 Projected total GHG reduction: 36,945 | PSEG Peaker Plant Gasification | | 19,114 | | Kilowatts/Hours x Hours x Days/year = Annual kWh Existing: 602,000Kwx14daysx24hours= 202,272,000 kWh = 142,713 MT GHG Gasified: 145,431 Kw x 24 Hr x 14 Days = 48,864,816 kWh = 34,477 MT GHG Reductions: 142,713 MT GHG-34,477 MT GHG =108,236 MT GHG Adjusted reductions: 108,236 MT GHG x .1766 percentage of all energy used by Bridgeport residents = 19,114 MT GHG reduced |

| Strategy | Strategy Impact | Project | Estimated Project Impacts (MT CO2equivalent) | | | GHG Impact Estimate Methodology |
|---|---------------------------------------|--|--|-------------|--------|--|
| | | | Implemented | In progress | Future | |
| Benchmark, retrofit, and consolidate municipal facilities | Reduction so far: 940 MT CO2e | Consolidation | 940 | | | Energy reductions made by consolidating: McLevy Hall- 191,00 kWh, Health and Welfare Building- 488,800 kWh, M&F Building- 459,280, PW Building- 192,650. 1331730 kWh converted via EPA |
| | Projected total GHG reduction: 15,282 | Sale Leaseback City Hall and Annex | | 139 | | 196,400 kWh of energy efficiency improvements (UI reported) converted via EPA |
| | | NuPower Thermal Loop | | 12,900 | | 12,900 MT GHG reported by NuPower |
| | | Energy Performance Contracting | | | 1,303 | Contellation: Reductions of 63,883 therms of natural gas = 339 MT GHG. Reductions of 1,336,510 kWh = 964 MT GHG |
| Benchmark and retrofit educational facilities | Projected total GHG reduction: 536 | Solar Installations on City/School Buildings with Solar City | | 536 | | 2 Mw = 2000 Kw x .13 conversion factor x 8 hours per day x 365 days in a year = 759,200 kWh = 536 MT GHG 2,400,000 kWh reported by Solar city = 1,693 MT GHG |
| Promote energy audits and energy efficiency programs in commercial/ industrial sectors | Projected total GHG reduction: 1298 | Arena Fuel Cell | | 1,295 | | 400 MW fuel cell. 3,398,000 kWh produced by arena fuel cell- 2,397 MT GHG produced by fossil fuel plants. (NREL) Fuel Cells produce 54% less emissions per kWh than the average American fossil fuel plant. 2,397 MT GHG x .54= 1294.5 MT GHG |
| | | Arena Ball Park Greening | | 3 | | Arena Ball Park - Tunnel lighting- will save 876 kWh per year = .6 MT GHG Low flow fixtures- will save 486 therms of natural gas/year = 2.6 MT GHG reduced |
| Promote site development of solar and solar leasing programs | Reduction so far: 29 | Solarize Program | 29 | | | 15 installations x 7.1 Kw average installation = 106.5 Kw x .13 capacity factor x 8 hours per day x 365 days a year = 40427 kWh per year = 28.5 MT GHG |
| | Projected Impacts: 463 | Solar and Alternative Energy Leasing with MSP | | 259 | | 366,541 kWh converted via EPA (Main Street Power) |
| | | PSEG Solar Program | | 175 | | 247,741 kWh/year reported by PSEG = 175 MT GHG |
| Green Fields & Green Wheels | | | | | | |
| Create vision plans for remediation and redevelopment of underutilized districts | Projected GHG Reduction: 40 MT | NRZ work | | 40 | | 2500 square feet of permeable surface created = 12,500,000 gallons per year diverted x .00455 kWh per gal = 56875 kWh reduced = 40 GHG Reduced |
| Work with large employers to reduce the need to drive | Reduction so far: 2,414 | CNG Vehicles | 35 | | | Diesel: 34.78 MT GHG x 4 Trucks = 139 MT GHG CNG: 26 MT GHG x 4 Trucks = 104 MT GHG 139 - 104 = 35 MT GHG reduced |
| | Projected total GHG reduction: 2,546 | Transit First | 2,379 | | | 2 gallons per week x 2675 passes x 50 weeks = 267,500 gallons or 2379 MT GHG per year. Eco pass program (GBT) distributed 2675 ecopasses. Assuming the average person travels approx. 50 miles per week in a single occupancy vehicle, and 20% of passes were unused or not used to full potential, and each person took 2 weeks not using the pass, then 267,500 gallons of gas will be reduced or 2379 MT GHG. |
| | | Zip Car/Enterprise Fleet Outsourcing | | | 132 | |
| Make Bridgeport's roadways "Complete Streets" | Projected total GHG reduction: 8 | Complete Streets Policy | | 2 | | 400 trees x .0039 MT GHG reduced per year = |
| | | Lincoln Boulevard Complete Street | | 6 | | 1872000 gal reduced x .00455 kWh per gal = 8518 kWh reduced = 6 MT GHG |
| Promote walking and develop pedestrian infrastructure | Projected total GHG reduction: 49 | Downtown Wayfinding | | 49 | | (Energy Plan 2008) Assuming 105 people walk and 80 will bike instead of driving during 1-2 mile trips, 49 MT GHG will be reduced. |

| Strategy | Strategy Impact | Project | Estimated Project Impacts (MT CO2equivalent) | | | GHG Impact Estimate Methodology |
|---|---|--|--|---------------|---------------|--|
| | | | Implemented | In progress | Future | |
| Promote bicycling and develop bicycle infrastructure | Projected total GHG reduction: 3139 MT CO2e | Bike Share and Bike Trail Programs | | 3,139 | | (Bridgeport Carbon Inventory 2008) Road transportation accounts for 92.5% of all transportation emissions in Bridgeport. All transportation emissions in Bridgeport are 339,386 MT GTG x .925 = 313932.05 MT GHG road emissions. If we can lower this by 1%, than we can reduce 3139 MT GHG |
| Green Spaces | | | | | | |
| Expand street tree and urban forest programs | Reduction so far: 10 | Mayor's tree planting program | 10 | | | 0.039 metric ton CO2 per urban tree planted for ten years / 10 = .0039 MT GHG per tree per year x 2500 |
| Water Resources | | | | | | |
| Limit stormwater flow into the waste treatment system | Projected total GHG reduction: 728 | WPCA Management | | | 719 | WPCA Plants used 16984600 kWh in 2012. 60% of this water is unmetered stormwater = 10,190,760 kWh. Reducing this by 10% with green infrastructure will result in a reduction of 1,019,076 kWh. Equals 719 MT GHG |
| | | Arena Green Infrastructure Parking | | | 6 | 1,912,500 gallons sheet flow/year x .00455 kWh per per gal = 8702 kWh reduced = 6 MT GHG reduced |
| | | Sikorsky Streetscape | | | 3 | 900,000 gal x .00455 kWh per gal treated = 4095 kWh reduced = 3 MT GHG reduced |
| Maintain the stormwater system to prevent flooding | Projected total GHG reduction: 32 | Green Infrastructure and Save the Sound | | | 32 | 9855000 gal x .00455 kWh per gal = 44,840 kWh reduced = 32 MT GHG reduced |
| Municipal Solid Waste, Materials Use and Recycling | | | | | | |
| Identify the best recycling program to enable increased utilization | Reduction so far: 6449 | Recycle Bank/ Single Stream | 5,448 | | | 170 tons more being recycled each month x 2.67 MT GHG per ton waste diverted = an additional 454 MT GHG CO2 emissions reduced per month x 12= 5448 MT/year |
| | | Mattress Recycling | 1,001 | | | 375 tons of solid waste. 2.67 MT GHG is contained within 1 ton of solid waste (EPA). 375 x 2.67 = 1001 MT GHG |
| Promote recycled and recyclable materials purchased by the city and commercial sector | Reduction so far:1375 | Green Procurement | 1,375 | | | The City spends approximately \$4, 672, 000.00 for office supply paper each year which equals 2,224 MT. This results in ageneration of 1,891 MT GHG emissions per year. By shifting to as little as a 35% post consumer content (515.73 MT) reduces total GHG emissions by 1375 MT CO2. |
| Adapt to and Prepare for the Impacts of Climate Change | | | | | | |
| Adapt to and Prepare for the Impacts of Climate Change | Pojected total GHG reduction: 285 | Seaside Buffer Climate Mitigation Reconstruction | | | 285 | 88,886,294 gallons buffered / per year x .00455 kWh per gallon = 404432 kWh reduced = 285 MT GHG Reduced |
| | | Seaside Grove | | | 0.3 | 15,550 sq ft of permeable surface created x 5 gallons / sq ft = 77500 gallons x .00455 kWh per gallon = 353 kWh reduced = .25 MT GHG |
| Total Project Impacts | | | 55,300 | 78,389 | 28,554 | |

Green Energy and Buildings

SUMMARY

In Bridgeport, energy use by buildings contributes about half of the city's total emissions. Reducing building energy use is challenged by the age of the city's building stock and by limited resources by homeowners to invest in energy efficiency. Reliable and affordable energy improvements must be secured in order to attract and retain commercial investment and provide security for the city's residents. Sustainable energy practices, including the development of renewable sources and using existing systems more efficiently, are essential to the economic development of Bridgeport and a priority of the BGreen 2020 Sustainability Plan. Progress has included the establishment of an Energy Improvement District, an entity critical to coordinating energy policies, developing renewable energy resources, and creating policies to provide reliable, affordable energy to homes and businesses, as well as the development of Bridgeport's Eco-Technology Park, a hub for green businesses and renewable energy production. The Eco-Technology Park showcases renewable and cogenerative energy production, including the Dominion Fuel Cell, the largest in North America, which will power 15,000 Bridgeport homes by the end of 2013. The city and the BRBC are also pursuing anaerobic digesters at the wastewater treatment facility to convert sewage waste to energy and at the Eco-technology Park to compost commercial food waste. Other facilities planned for the Eco-Technology Park include a hot water pipeline to use waste heat for our solid waste mass burn facility. Energy generated in the Park will be used to power adjacent industrial facilities and heat offices and apartment buildings downtown. Energy efficiency and consolidation measures have also been taken at municipal and educational facilities, and programs are available for residential and commercial buildings to reduce their energy costs and environmental impact.

IMPACTS

| | |
|---|-------------|
| Renewable energy production under development (MW) | 410 |
| Municipal energy savings from efficiency (kwh per year) | 1,529,006 |
| Energy Efficiency Audits Performed (#Homes per year) | 800 |
| Households energy savings through efficiency (\$/year) | \$4,342,551 |

STRATEGIES & PROGRESS

1. Establish an Energy Improvement District

GHG Reduction: 25,079 MT CO₂e (Projected)

Partners

City of Bridgeport EID
Titan Energy
Direct Energy

Establish EID Board

Progress: The City has partnered with organizations to establish the EID Board, which is up and running and received ARRA funding from the Energy Improvement Competitive Block Grant for its program management. The City has enacted four programs so far: C-PACE, Solarize, an energy aggregation program, and energy efficiency programs.

Impacts: Because 96% of the carbon generated is from the private sector, these programs offer the greatest chance of lowering the municipal carbon footprint. C-PACE (has approved 3 applications, 17 apps are being reviewed), Solarize, an energy aggregation program, and energy efficiency programs that add up to \$133,440 in private savings.

Aggregation Program

Progress: The City hired Titan Energy to offer programs that allow residents to purchase electrical generation through Titan Energy and Direct Energy at approximately 16% lower costs than that charged by the utility company. By July of 2012 Titan had signed up 475 residents, which completes phase one 100%. As Titan expands into phase two, 556 residents have now signed up.

Impacts: Titan's program saves city residents up to \$20/month on their monthly electric utility bill as well as a \$.01 per Kw contribution to the EID for energy assistance to low income residents.

2. Create Green Energy Park at the city's closed landfill in Seaside Park

GHG reduction: 44,084 MT CO₂e (so far); 67,981 (Projected)

Partners

City of Bridgeport EID
United Illuminating (UI)
Bridgeport Regional Business Council
State of Connecticut

Green Energy Park in Seaside Park

Progress: An agreement with United Illuminating Company works to establish a Green Energy Park at the city's closed municipal landfill. This renewable energy facility will include 3 - 5 megawatts of solar and fuel cell energy, and serve as a cornerstone project in the city's Eco-Technology Park. It is awaiting final approval at the State's Public Utility Regulatory Authority (PURA). Once approval is given by PURA and the UI Board of Directors, final design and permitting will commence.

Impacts: Solar array and fuel cells on the 50-acre Seaside Park Landfill will generate 5.66Mw of clean energy. The city would receive \$7,083,000 in property tax and lease payments over 20 years.

Establishment of Eco-Technology Park

Progress: The City and the BRBC have received state support to expand the West End Municipal Development Plan to include a new Eco-Technology Park that includes North America's largest fuel cell energy facility; two anaerobic digesters, one for food waste and a second for sludge; a district heating loop utilizing waste heat from other industrial facilities; a mattress recycling company; a biofuels production facility; a permeable paving company; a green building supply company; natural gas fueling stations; a clean fuels retrofit facility; a construction debris recycling project; and the above mentioned Green Energy Park.

Impacts: The project supports the State of Connecticut's renewable power generation goals, creates approximately 160 direct jobs and can power 15,000 US homes per year. This network of combined renewable energy and green businesses will be the center for Bridgeport's sustainable future.

3. Implement energy efficiency, biomass retrofit, and resource sharing at waste water treatment facilities

GHG reduction: 940 MT CO₂e (Current); 36,945 (Projected)

Partners

City of Bridgeport
Wheelabrator Bridgeport
Bridgeport Regional Business Council
Bridgeport Economic Resource Center
Green Point Energy Partners

Grey Water Pipeline at the Wheelabrator Bridgeport Waste to Energy Plant

Progress: A proposed grey water pipeline project that would use treated water from the city's sewage plant to cool down combustion turbines at the Wheelabrator waste-to-energy facility (instead of using clean drinking water) has been put on hold for financial and environmental considerations. Greater priority will be given to establishing the NuPower Thermal Loop referenced in other parts of this document. This project will be revisited at a future date.

Impacts: Grey water will cool its combustion boilers instead of using 1,000,000 potable water every day, potentially saving Wheelabrator nearly \$1M each year in operating costs and generating \$100,000 in annual revenue for the WPCA.

Eco-Technology Park



The city of Bridgeport and the Bridgeport Regional Business Council (BRBC) are committed to expanding business opportunities and creating new jobs for community residents. The BGreen 2020 public / private partnership is a great example of that commitment and will hopefully create a national model for others to follow. Nowhere is that partnership more evident than in the newly created Eco-Technology Park in the city's west and south ends. This innovative approach to renewable energy generation, recycling and reuse, and green business entrepreneurship is an impressive example of industrial ecology at its best, putting environmentally impaired properties back into productive use while establishing Bridgeport as a leader in smart, sustainable technology applications. Additionally, the Park will employ hundreds of local residents and provide much-needed tax revenue for the city each year.

The Eco-Technology Park currently consists of the largest fuel cell facility in North America, a mattress recycling facility, a grease recycling and biofuel production facility, a natural gas vehicle fueling station, a permeable paving company, a regional vocational Aquaculture school, a biofuels home heating oil company, a tire recycling facility, a waste-to-energy facility, one of the nation's most prestigious defense contractors, and one of the city's two sewage treatment plants. Planned projects include a renewable energy facility with the capacity for solar arrays, wind turbines, and fuel cells on the city's closed landfill at Seaside Park; anaerobic digesters for food waste and sewage sludge; a district heating loop using waste heat from a neighboring power plant; a grey water pipeline; a clean fuels retrofit facility; and a green building supply company. When all planned projects are in place, businesses in the Eco-Technology Park have the potential to reduce their operating costs as well as helping the city reduce its carbon footprint by using recycled materials, waste heat, and clean energy generated from renewable sources. And the city itself is a potential customer for many Eco-Technology Park businesses as a result of its existing green energy and green purchasing policy.

Other businesses that have shown interest in joining the park include a seaweed manufacturing facility, electronic and white goods recycling operation, an indoor fish farm, a recycled clothing accessory company, an urban agriculture collaborative, and an algae grow facility. Together, all of these green companies and advanced technology applications will create a replicable model for sustainable business growth and practices for many other communities to use.

Improving Residential Energy Efficiency- Cozy Home Loan



Solar panels being installed on a Bridgeport home

The Cozy Home Loan is a program launched by the Housing Development Fund, Inc., an EnergizeCT lending partner, in partnership with the Clean Energy Finance and Investment Authority and the Opportunity Finance Network. The program enables low- to moderate-income homeowners to invest in energy upgrades through an affordable loan whose cost can be offset by energy bill savings. Up to 80% of the loan can be used for energy upgrades like insulation, high efficiency furnaces and solar panels, while up to 20% can be used for healthy indoor environment improvements such as lead paint, mold and asbestos remediation, and roof repair. This strategy is in line with BGreen's strategy to improve the health and safety of indoor environments by removing toxic materials at home. Homeowners are encouraged to take advantage of free or reduced-rate Home Energy Solution (HES) energy assessments, in which an authorized contractor performs an energy assessment and provides services including air sealing, duct sealing, water saving measures, and efficient light bulbs.

The Housing Development Fund has worked with the Neighbor to Neighbor Energy Challenge, the Mayor's Conservation Corps, and other community groups to spread the word of the availability of funding for these upgrades. Workshops in Bridgeport and five other cities also drew 59 eligible families and led to 36 households participating in HES energy assessments.

Green Point Energy Partners Anaerobic Digester

Progress: An anaerobic digester to process the regions' food waste into renewable green energy and compost is being developed under an MOU between the city and Green Point Energy Partners. In addition to the digester, it is hoped that a compost manufacturing facility and a local greenhouse can be included in the scope of this project. The green energy will be sold to local manufacturers and the city, and the food grown in the greenhouse will be sold to local retail outlets, some of who provided the food waste for the digester.

Impacts: Diverting 57,000 tons of organic waste per year from landfills would reduce the city's GHG emissions, create jobs and generate energy to support green businesses.

PSEG Peaker Plant Gasification

Progress: A study was conducted to convert the existing peaker plant from coal to natural gas. The conversions are feasible for three electric generating units, a coal oil fired unit and a combustion turbine unit to produce all potential energy.

Impacts: Converting to natural gas would preserve the significant tax base that the plant offers the city in addition to reducing a significant amount of GHG emissions.

Bridgeport BioDiesel

Progress: Bridgeport BioDiesel has now received all its permits to convert brown and yellow grease collected from restaurants, food stores, hospitals, universities, and other facilities to a biofuel used in home heating oil and for transportation fuels. This facility will process up to 1M gal/year and expand to other product sources (algae) and volumes as the market grows.

Impacts: It will be both cost- and energy-efficient to sell biofuel to the home heating oil and transportation fuel markets and help home heating oil dealers and fuel retailers meet the Connecticut 2020 biofuels requirements.

4. Benchmark, retrofit, and consolidate municipal facilities

GHG reduction: 940 MT CO₂e (Current); 15,282 (Projected)

Partners

City of Bridgeport
Bridgeport Public Library
NUPower

Energy Performance Contracting and Consolidation

Progress: City office facilities have been fully consolidated into Annex and the Constellation Energy Performance Contracting Schematic Design is 100% complete. The City is in the process of eliminating its use of the old "Health and Welfare Building" at 752 East Main Street and the sale of the M & F Building on Main Street. The City is also in the process of consolidating all of its Public Works functions to 880 Housatonic Avenue from Asylum Street.

Impacts: Electricity consumption reductions and lock-in of favorable rates has saved the city over \$4M over the last five years (Public Facilities Budget Book). Consolidation of City Administrative offices and various other buildings saves space and energy, allowing more opportunity for growth in downtown.

Library Energy Upgrades

Progress: The City received ARRA funding to do a series of energy efficiency upgrades, which are 100% complete.

Impacts: Upgrades could reduce electrical use by 30%.

Margaret E. Morton Escalators

Progress: The city has discontinued use of the main escalators as an energy-saving and awareness-raising action.

Impacts: 12,000 kwh of electricity would be used to run the escalators for one year, equivalent to burning 928 gallons of gasoline or powering a typical American home for one year.

NuPower Thermal Loop

Progress: The NUPower development team has completed a feasibility study that would use waste heat from industrial power generation facilities to create a clean, renewable source of heating for millions of square feet of commercial, office, school and residential properties in the west end, south end, and downtown. A low temperature, underground hot water pipeline would be used to transport that heat many miles to its destinations, and heat exchangers would be used at each building to convert the hot water to a clean, low cost heating source. This technology and these district heating systems are commonplace in Europe and in many U.S. settings.

Impacts: Recycling waste heat from industrial processes will reduce energy bills for public and private sector facilities, and provide a clean, renewable source of heat rather than using fossil fuels like oil and natural gas.

Geo Thermal Energy System

Progress: This system involves geo thermal well drilling to capture and satisfy building energy heating needs to regulate use of electricity. This is being considered for City Hall at Lyon Terrace.

Impacts: Savings could reach up to \$6M in addition to the energy savings that reduce the city's carbon footprint.

5. Benchmark and retrofit educational facilities

GHG reduction: 536 MT CO₂e (Projected)

Partners

Solar City
Main Street Power
Board of Education
City of Bridgeport

Solar and Alternative Energy Leasing with MSP

Progress: Solar City is offering good rates for solar panel installations on buildings and the Program Procurement and Assessment are both 100% complete and full implementation is 75% complete. Next steps include two schools to add solar panels as a part of the Solarize program.

Impacts: Solar installment and 20-year power purchase agreement will save Blackham School and Cesar Battalia School 10% on electricity, generating 264,000 Kwh of clean energy per school each year.

6. Create a residential weatherization program and promote large residential building energy efficiency retrofits

Partners

Housing Development Fund (HDF)
EnergizeCT
CT Energy Efficiency Fund (CEEF)
Conservation Corps

Cozy Home Loan

Progress: HDF is working with the Conservation Corps to canvass low-income neighborhoods to disseminate information about this loan for the energy efficiency program. Workshops were held to raise awareness, and information has been spreading. At least 36 homes are pursuing this loan and 9 homes have signed up so far.

Impacts: 20% of the Cozy Home Loan can be used for repairs and other measures that promote efficiency and healthy indoor environments.

C-PACE Program

Progress: C-PACE finances energy efficiency improvements through property tax payments for commercial properties. The program has been approved and 100% implemented. Three applications have been approved for \$3.2M, and 17 applications pending for \$12.8M

Impacts: This will increase the energy efficiency of buildings taking advantage of this program, which in turn will be a step toward reducing GHG emissions.

CDBG funding for BGreen 2020 efficiency projects

Progress: CDBG funding went to Wilmot Apartments, the Homeowner Rehab Program, Cedar Park, The Kennedy Center, Hall Neighborhood House, Cardinal Shehan Center, and IDEA for Autism for upgrades including new roofs, energy efficient windows and doors, electrical systems, security systems, fire doors, energy efficient boilers, swimming pool upgrades, and energy efficient HVAC systems.

Impacts: CDBG grant applications including BGreen principles were given bonus points in the allocation process. In the last fiscal year, \$600,344 of CDBG went to energy efficiency upgrades for projects containing BGreen strategies, which helped 58 low-income households and an additional 6,502 low-income individuals. CDBG has provided \$878,565 this upcoming fiscal year to organizations including BGreen 2020 strategies.

Residential Energy Audits

Progress: Audits provided through CT Energy Efficiency Fund. Information about audits is distributed by Conservation Corps. During Summer 2013, 800 households signed up for energy audits.

Impacts: According to United Illuminating, auditors provided \$973,000 in goods and services to Bridgeport residents in 2013. Energy savings were valued at more than \$4 million: \$2.2 m in natural gas savings, \$876,000 in electricity savings, and \$1.2 m in heating oil savings

7. Promote energy audits and energy efficiency programs in commercial/industrial sectors

GHG reduction: **1298 MT CO₂e (Projected)**

Partners

Solar City
United Illuminating (UI)
Conservation Corps

Solar Installations on City/School Buildings with Solar City

Progress: (Refer to Green Energy & Buildings 5) Solar City is working to install solar panels on 10 schools, 5 private sites, and 5 city building sites.

Impacts: If solar provides 20% of the required energy for these buildings, approximately \$687,397 could be saved per year.

Fuel Cell and Ball Park Greening at Webster Arena

Progress: Originally, a fuel cell at Webster Arena was under consideration in hopes to supply all of the power needs of the facility with 400Kw in case of a grid power interruption. Although this project is no longer being pursued, energy management assessments were done in an effort to “green” Webster Arena with tunnel lighting and low flow fixtures.

Impacts: Greening projects include savings of 876 KWH/year saved with tunnel lighting and 486 therms of natural gas/year.

8. Develop green building standards and promote healthy indoor environments

Partners

City of Bridgeport Department of Health & Social Services
City of Bridgeport Board of Education
Conservation Corps
CT Department of Energy and Environmental Protection (DEEP)
Housing Development Fund (HDF)
Energize CT
Clean Energy Efficiency Fund (CEEF)
HUD

Availability of the Cozy Home Loan

Progress: (Refer to Green Energy & Buildings 6)

Impacts: 20% of the Cozy Home Loan can be used for repairs and other measures that promote healthy indoor environments, such as installing new roofs that provide better insulation and prevent leakage, making homes more energy efficient while deterring mold growth.

School Indoor Air Quality

Progress: The Department of Health and Board of Education are working together to improve indoor quality using the EPA school air quality improvement program Tools for Schools. Six schools have completed the first training, with more trainings and implementation slated for the 2013-2014 school year.

Impacts: Tools for Schools helps schools to develop effective and comprehensive air quality management programs.

Lead Poisoning Prevention Program

Progress: Through a HUD grant, the Health Department provides lead remediation to households with children identified with elevated lead levels. Remediation processes involve leaden materials being incinerated for disposal.

Impacts: Improves public health conditions for Bridgeport children.

9. Promote site development of solar and solar leasing programs

GHG reduction: **28.5 MT CO₂e (Current); 462.5 (Projected)**

Partners

PSEG
CT Energy Efficiency Fund (CEEF)
Solar City
Blackham School

Downtown Rooftops Solar Lease Program

Progress: For the Downtown Rooftops Solar Lease Program, which is 50% complete, PSEG donated thin film solar panels to the city. Progress so far includes the city looking for alternate locations for solar panel placement and Main Street power being retained.

Impacts: Through a donation of thin film panels from PSEG, the city could potentially save 247,741 kWh/year.

Solarize program

Progress: This program is a joint venture between the CEFIA, the city, Smart Power, and Astrum Solar to provide residential solar photo voltaic at an aggregated rate. 15 installations have been done so far. Currently, future installation of PV on school and city building sites with Clean Energy Funding, starting at Central and Blackham schools, is underway. PV will possibly be extended as an offer to private properties as well. Since the program began, there has been an 86% increase in Solarize homes. In addition, the Conservation Corps continues to provide information to low and middle-income neighborhoods, and a growing number of local facilities have been taking advantage of the solarize program.

Impacts: The average payback for the system is 7 years for a net price after tax rebates etc of \$11K approximately.

Greenfields and Green Wheels

SUMMARY

The BGreen 2020 plan identified the city's compact, walkable neighborhoods and existing transit services as strengths that future policies and investments can build upon. Bridgeport's walkable street grid of small blocks is mostly served by sidewalks and transit. The redevelopment of vacant and underutilized land provides an opportunity to expand employment opportunities, housing options, and the city's tax base while also justifying continued expansion of the city's transit network. Complete Streets strategies such as pedestrian improvements and bike lanes make the city easier and more comfortable to navigate for walkers and cyclists.

Major achievements in land use and transportation include the completion of a feasibility study for a second train station on Bridgeport's East Side, the redevelopment and opening of downtown mixed-use housing and commercial properties, and the groundbreaking of Steelpointe Harbor, a long-awaited redevelopment project near downtown. Small steps toward efficiency can have big gains: installation of GPS units in Bridgeport city vehicles has reduced fuel use by 10-12%.

IMPACTS

| | |
|------------------------------------|------|
| New housing in progress (# units) | 2000 |
| School gardens completed | 20 |
| Bike trails in development (miles) | 14 |



Bridgeport cyclists meet on Bike to Work Day, sponsored by Bike Walk Connecticut

STRATEGIES & PROGRESS

1. Rezone for livable, transit-oriented neighborhoods and redevelopment

Partners

Regional Plan Association (RPA)
Greater Bridgeport Regional Council (GBRC)
Groundwork Bridgeport

Rezoning for sustainability

Progress: Zoning was changed in downtown to increase use of public transit and to reduce dependence on vehicles for excess driving. Ordinances need to be passed that enable certain zoning regulations and to develop a master plan.

Impacts: Zoning changes make underutilized acres of land available for construction, supporting development accessible by public transit.

2. Develop Geographic Information Systems technology (GIS) into a more comprehensive planning tool

Partners

Greater Bridgeport Regional Council (GBRC)
Sacred Heart University

Grant Supporting a Regional GIS

Progress: GBRC received a state grant of \$1.4M which is being allocated to specific areas of Bridgeport. The mapping software can be upgraded from Arc 3 to Arc 10 and training will be purchased for town staff with the grant.

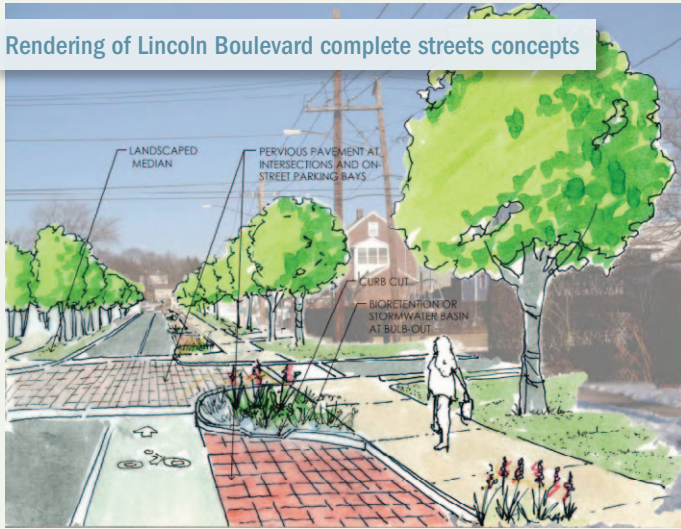
Impacts: Better information about capital planning, land use, environmental conditions, and ownership can help the city and its partners to leverage funding and plan more strategically about future development.

Sacred Heart University working on an Executive Summary for an Operations Plan and GIS of Sustainability Projects

Progress: A City of Bridgeport Intern has been geolocating sustainability projects in order to produce maps by neighborhood that convey the extent of green activity in Bridgeport.

Complete Streets Policy

Rendering of Lincoln Boulevard complete streets concepts



Complete Streets are streets that create a safer environment for pedestrians and bicyclists, while improving the overall user experience of a given street. The city is working to adopt a complete streets policy that will revamp how the city allocates its roadway and paving budgets. The policy will ensure that Bridgeport streets are not only repaved, but upgraded to meet sustainable standards of the twenty-first century.

These renovations will improve Bridgeport's network of streets to provide space for all forms of transportation. Future Bridgeport streets will build on early retrofits already made to Park Avenue, Railroad Avenue, and Water Street to better allow for bicyclists, pedestrians, and buses to share the road with cars. Efforts are in the works to finalize an official bike route from Beardsley Park through the downtown area to Seaside Park. This trail will be separated from the roadway at parts and travel along complete streets at other sections. Projects such as this will make it easier for residents to bike and improve quality of life and public health citywide by making exercise via bicycle more accessible.

Future Bridgeport streets will also be looked at in a more comprehensive way. Instead of simply being asphalt paths that shuttle cars from one location to the next, the Complete Streets Policy will help look at streets as a way to capture and treat stormwater runoff with green infrastructure, or roadside plants that absorb rainwater. The Policy will better coordinate street renovations with economic development activity that will make the streetscape a more inviting place for businesses to take root.

3. Conduct municipal property planning to identify opportunities for consolidation and real estate sale

Partners

City of Bridgeport Purchasing Board
Board of Education

Consolidation of City Offices into previously underutilized facilities

Progress: City departments consolidated in Annex, and the reconstruction of Annex park is 100% complete for public access. (Refer to Green Energy & Buildings 4)

Impacts: (Refer to Green Energy and Buildings 4)

Sale Leaseback approval for City Hall Annex

Progress: Sale leaseback has been finalized by the city purchasing board and the former department store has been converted for city offices.

Impacts: \$30M in building value has been monetized to perform energy efficiency features, amounting to \$600K in utility incentives while reducing annual energy usage by 10% of 1,916,400 kWh, resulting in CO2 emissions reduction.

4. Create vision plans for remediation and redevelopment of underutilized districts

GHG reduction: 40 MT CO2e (Projected)

Partners

General Electric (GE)
DuPont
Greater Bridgeport Regional Council (GBRC)
Bridgeport Office of Planning & Economic Development (OPED)
CT Department of Economic and Community Development (DECD)
Kuchma Corporation
Boot Camp Farms
University of Connecticut
Urban Land Institute

South Avenue Green Streetscape

Progress: As a part of the Green Infrastructure Program, the South Avenue Green Streetscape is 85% complete. Progress includes current construction of a 540 linear ft area of green infrastructure, such as permeable pavement, and about 20 trees have been planted. Burr Creek access is being explored as well with public private partnerships with Santa Fuel.

Impacts: Current construction would divert 27,000 gallons, and construction of an additional 600 lin. ft. in Phase II would divert an additional 30,000 gallons. Another 90,000 gallons would be diverted in Phase III, further increasing GHG savings.

Steelpointe Harbor

Progress: Ground breaking occurred on May 13, 2013 with a project scope of widening Stratford Avenue, building new sidewalks, and burying utilities. Infrastructure work is underway, with Bass Pro Shop to open in late 2014/early 2015. In summer 2015, the marina, a hotel, and a few restaurants will open.

Impacts: Steelpointe Harbor occupies 58 acres of space, with 2.8 million square feet of development planned: 2.1 million square feet of retail, 350,000 sqft of hotel, and 1500 housing units.

Bijou Square Redevelopment

Progress: Due to new zoning changes that encourage transit-oriented development, development of new, mixed-use options and renovation of existing buildings around the historic Bijou Theater to improve downtown livability is underway. Kuchma Corp. and other developers have plans to build 300-500 residential units in the next 2-3 years and continue to rehabilitate and develop property in downtown. The Kuchma Corporation is developing 205,249 sq. ft. of property for multi-use purposes such as residential units, retail space, office space, and entertainment facilities. An additional 149,418 sq. feet of property downtown is planned for multi-use development.

Impacts: Increasing housing, retail, and service options in Bijou Square will bring more people to the area, facilitating further development of the neighborhood that will begin to expand to the surrounding area. Downtown residential/commercial activity solidifies Bridgeport as a regional center, attracting further amenities and supporting improved transit service.

The Boot Camp Farms Urban Agriculture Center Greenhouse Project

Progress: On top of a 3.8 acre brownfield, Boot Camp Farms will consist of three 40,000 square ft hydroponic greenhouses with plans to open the first greenhouse in the late fall of 2013. Vendors are already lined up for the fresh produce that will be grown here and the founders are currently building relationships with large supermarket chains. Boot Camp Farms will also open a community center to help feed residents healthy meals, and accept SNAP payments in the not-for-profit store within the community center. Additionally, it will house an extension program of UConn's agriculture school, which will train unemployed veterans to farm in an urban setting and to operate and manage a retail food and produce distribution center

Impacts: Boot Camp Farms will offer about 50 permanent jobs. Construction of hydroponic greenhouse, retail space, and community center on Central Ave will create about 150 jobs for veterans and will cultivate 800,000 pounds of high quality produce per year. Produce subsidized to \$1 per pound, plus jobs finances equals \$2.2M economic gain per year. Boot Camp Farms will increase job opportunities for veterans and Bridgeport residents while making fresh foods available to under served neighborhoods to increase public health.

Neighborhood Revitalization Zone Work

Progress: An Urban Land Institute study established individual neighborhood plans with funds for neighborhood improvement projects. These projects are carried out to improve areas with sustainable solutions with green infrastructure development.

Impacts: Green infrastructure improvements in eight NRZ plans include 2500 square feet of permeable surfaces, which would mean 12,500,000 gallons of stormwater diverted per year.

Expansion of Restaurants and Retail Downtown

Kuchma Corporation's Bijou Square mixes office, entertainment, and retail



Creating a vibrant and growing downtown Bridgeport is essential to several sustainability and economic development goals outlined in the original BGreen 2020 Plan. The carbon footprint of development in an urban center is lighter than in suburban communities due to the decreased reliance on automobiles; homes, jobs, and services located closer together; and more efficient and smaller offices and homes. Downtown development in Bridgeport supports local shops and services that can be accessed by foot or bike, bus or rail transit, or by a short drive. New businesses also provide much-needed jobs for residents and tax revenue for the city.

With the recent expansion of dining, art, entertainment, and retail options, the downtown area is on its way to becoming a neighborhood of choice and a destination for people in and around Bridgeport. The U.S. Census Bureau reported a 3.4% increase in Bridgeport's population between 2000 and 2010, the first increase since 1950. The city and the Downtown Special Services District are working to make the area attractive to both residents and incoming businesses, with street-level beautification projects and wayfinding signage to draw visitors from the train station into the downtown area with a welcoming aesthetic. Free events like Downtown Thursdays, the McLevy Green farmers market, and the Bridgeport Arts Fest draw crowds to downtown in the summer, publicizing downtown's businesses year-round and expanding their customer base. At the Arts Fest, local artists and craftsmen showcase their work throughout an afternoon of entertainment, demonstrations, and food, organized by the City of Bridgeport with support from DSSD and other community organizations.

Businesses are taking note of the buzz surrounding Downtown Bridgeport's recent revitalization efforts. The architecture, engineering, and interior design firm Fletcher Thompson is a symbol of the city's renaissance. Fletcher Thompson has made the decision to return to downtown Bridgeport after moving to a Shelton office park ten years ago, and is converting the vacant, historic downtown Mechanics and Farmers building into a high-efficiency LEED-certified office space that also includes retail space and residential apartments. Fletcher Thompson's repurposing of the Mechanics and Farmers building, targeted to open in 2014, sets the standard for how Bridgeport's existing buildings can be retrofitted to support BGreen's sustainability goals and how private investments play a role in BGreen 2020.

P.T. Barnum Station

The proposed new Barnum Station would be accessible to both the East Side and East End neighborhoods.



Greater Bridgeport Regional Council and the City of Bridgeport partnered to study the feasibility of building a second train station in Bridgeport along Barnum Avenue on the East Side. The feasibility study was funded by the U.S. Department of Housing and Urban Development as a component of the New York - Connecticut Sustainable Communities Consortium. The study found that the new “Barnum Station” would be feasible from a physical and operational standpoint, and that it would connect the East Side and East End neighborhoods to Metro-North commuter rail service and Amtrak regional rail lines. The site, a former Remington Arms Corporation factory, is currently served by two existing Greater Bridgeport Transit bus routes. Enhanced bus services will be implemented along Seaview Avenue as part of the new station project. Bridgeport Hospital, the city’s largest employer, is located a short walk to the site. Access to the hospital, Waltersville and Barnum Elementary Schools, the new Harding Medical Magnet High School, Lacey Manufacturing, and the proposed open space along Yellow Mill Channel would make Barnum Station a destination for many, spurring development of vacant and underutilized land in a new Seaview Health and Technology corridor.

Construction of P.T. Barnum Station and adoption of transit-oriented development (TOD) that encourage mixed-income housing opportunities, employment opportunities, and access to services near key transit nodes will jumpstart economic development in the surrounding neighborhoods. These strategies aim to reduce reliance on automobiles and increase access to regional employment. The station will also spur reinvestment that can improve social and economic stability in the neighborhood, where nearly two-thirds of the land within a quarter mile radius of the proposed station is vacant, blighted, or underutilized.

Projected environmental benefits include a reduction of transportation-related greenhouse gas emissions from increased use of transit instead of driving and the remediation of existing brownfields in the corridor as part of the station project and related development.

5. Encourage the development of a life-cycle housing ladder to enable residents to remain in the city as housing needs evolve

Partners

Regional Plan Association (RPA)
Bridgeport Office of Planning and Economic Development (OPED)
State of Connecticut Office of Policy and Management

Build-Out Analysis

Progress: Regional Plan Association developed an analysis of Bridgeport’s development potential in Spring 2012 in order to understand the city’s capacity for additional housing and commercial development. The report assessed related employment and population growth and how it would impact housing affordability and the provision of transit and educational services. The work was supported by a grant from the State of Connecticut.

Impacts: The analysis found that development of vacant or under-utilized sites could accommodate the development of more than 14,000 new housing units and commercial development to accommodate nearly 24,000 new jobs. Downtown Bridgeport can accommodate nearly 5,000 additional housing units. 80% of new jobs and nearly 3/4 of new housing units would be within walking distance of Metro-North train stations in Bridgeport or Fairfield. Full build-out would increase demand for transit and help justify improvements to bus frequencies, especially in southern Bridgeport.

Establish a community land trust to sponsor affordable housing development

Progress: A Community Land Trust has been established.

Impacts: Community land trust work will help improve the supply and preserve availability of affordable housing.

6. Encourage Class A office opportunities

Partners

Downtown Special Services District (DSSD)
Fletcher-Thompson Architects

Fletcher-Thompson redevelopment construction

Progress: Construction is 20% complete for the Mechanics & Farmers Building being converted into a corporate headquarters location for architecture firm, Fletcher/Thomson, and also for residential and retail use. The limestone and granite on the corner annex building is being removed for PCB contamination. The building is located in the downtown core opposite McLevy Green and within a short walk to the train station.

Impacts: Re-purposing existing vacant buildings increases neighborhood activity, encouraging additional business growth in the surrounding area. New employment opportunities with good transit services nearby help reduce dependence on private vehicles, reducing vehicle miles travelled and carbon emissions from transportation.

Downtown Special Services District

Progress: DSSD revitalization efforts to encourage business development downtown.

Impacts: More businesses have shown interest in relocating or opening in Downtown Bridgeport.

7. Create neighborhoods of choice with historic, cultural and educational amenities

Partners

Fairfield County Community Foundation
Kuchma Corporation
Urban Roots Bridgeport
Reservoir Community Farm/Green Village Initiative
Downtown Special Services District (DSSD)
Little Asia Merchants Association (LAMA)
Wholesome Wave
Bridgeport Board of Education
Park City Schools & Community Alliance

Expand retail and restaurant presence downtown

Progress: The DSSD is working on a beautification program for Downtown Bridgeport that includes redevelopment of many properties. Ripka's Bridgeport Market recently opened in the Arcade building; Bijou Theatre opened; and the Mechanics & Farmers building is being renovated for offices and residential buildings. The Police Memorial, which is 75% complete, and refurbished memorials, such as the Gustave Whitehead memorial, which is 50% complete, are almost finished with construction. Additionally, a West End Fountain is in the works for construction. A memorial for Kim and Tim Donnelly has been 100% completed as well and dedicated at Goosetown Park.

Impacts: Increasing activity downtown makes the city more appealing to new development. The DSSD develops programs to make Downtown Bridgeport more attractive to residents and businesses by hosting events like Downtown Thursdays. Embracing transit-oriented development and progressive urban designs serves to revitalize the area surrounding the train station. So far, 149,418 sq. ft. of property downtown has been planned for multi-use redevelopment.

Community Gardens

Progress: Currently 75% complete, two gardens have been completed in the Fall that will be open to city residents located at Reservoir Community Farm operated by Green Village Initiative, which works to build 6 gardens a year for Bridgeport schools. So far, 20 gardens have been put in place with a goal of implementing 34 in total.

Impacts: Community gardens beautify and increase sustainability in Bridgeport while offering education and internship opportunities to students. Reservoir Community Farm has 20 community garden beds available for residents. The Community Land Trust also continues to rehabilitate underused community gardens to draw membership.

Little Asia

Progress: Little Asia Neighborhood Improvement Project aims to increase safety as well as beautify the area by improving Curiale Field, businesses and storefronts. Reseeding work on Curiale Field will begin in June and the placement of rain barrels is under consideration.

Developing a More Sustainable Transportation Network- Greater Bridgeport Transit



Greater Bridgeport Transit is a partner in achieving Bridgeport's transit-oriented development goals.

Greater Bridgeport Transit (GBT) has embraced the principles of BGreen2020 and is working to increase bus ridership as well as make the transit system operate using less energy and with fewer pollutants. In an effort to increase bus ridership, GBT's Eco-pass Program has been adopted by the University of Bridgeport, Bridgeport Public Library and the Bridgeport Adult Education Program to allow students, public library staff, and adult education night attendees unlimited access to the bus system. More than 300,000 trips are taken each year under the Eco-Pass Program. Bus ridership grew 9% between 2011 and 2013 and reached 5.7 million boardings in 2013, with 20 consecutive months of ridership gains. GBT is also considering the use of articulated buses to accommodate more riders and avoid overcrowding.

By 2016, GBT plans to replace its entire bus fleet with more sustainable buses to increase fuel efficiency. GBT's fleet currently includes two hybrid diesel buses, which are 40% more fuel efficient than traditional fuel buses. GBT is also considering purchasing clean diesel buses and buses with cleaner, more efficient propulsion systems.

GBT recently replaced the 80,000 square foot roof on its maintenance facility and is preparing for the addition of photovoltaic power generation panels and a green roof component, for which GBT is now seeking funding. GBT also plans to expand their facility to increase their inventory of energy-efficient buses and satisfy increasing ridership.

Implementation of the Asian Garden for educational and sustainable purposes has been completed, and LAMA has been continuously promoting cleanliness and considering placement of additional trash cans.

Impacts: Highlighting a neighborhood's cultural and historic amenities in sustainability efforts provides an opportunity for education.

Food Policy Council

Progress: This emerging council will focus on health issues in Bridgeport, especially in the school kitchens. Wholesome Wave is currently working with the State to nominate members and Bridgeport city officials to hold positions.

Impacts: A Food Policy Council will advocate for improved public health and provide access to fresh produce for all Bridgeport residents.

8. Enact a Transit First Policy

Partners

City of Bridgeport
Greater Bridgeport Regional Council (GBRC)

Enact a Transit First Policy

Progress: Draft in the works, under review by city departments.

Impacts: A Transit First Policy would maximize transportation options of its residents and visitors while minimizing the environmental impact by actively encouraging the use of public transportation, walking and bicycling. The city is developing an accounting system that would enable tax-free deductions for transit use by employees. The cost of the system for up to 10 people was \$3,500.

9. Assess transportation demand to prioritize infrastructure investment

Partners

One Region Funders' Group, including The Emily Hall Tremaine Foundation and Fairfield County Community Foundation
Greater Bridgeport Regional Council
AARP
Tri-State Transportation Campaign
Greater Bridgeport Transit (GBT)

Develop a comprehensive Alternate Transit Strategy

Progress: This strategy increases efficiency, frequency and availability for all forms of transit. In addition, Lafayette Square has been re-aligned for bus route access and new signage for ferry access. Currently 50% complete.

Impacts: Increased access to bike trails and sidewalk improvements support the use of alternative modes of transit.

Incorporate transit in and around East Side/East End

Progress: An access study has been done to incorporate more frequent bus transit in these areas of the city. Walkability audits were performed on East Main Street with a goal to see how we can make areas more pedestrian-friendly. Furthermore, a design to plan and construct Barnum Train Station is in place.

Impacts: Increased transit opportunities allow for better access to amenities in other neighborhoods.

Increased bus ridership

Progress: GBT to expand maintenance facility, considering LEED silver certification, including solar PV system and green roof in plans. No funding available at present, but is making sustainability a priority in the expansion of the maintenance facility, in their fleet, and the development of the transportation system.

Impacts: Preventing overcrowding on buses during peak hours and providing a higher quality bus system makes public transit more appealing to increase use. GBT bus ridership has increased for 20 consecutive months.

10. Construct a train station in the East Side

Partners

Greater Bridgeport Regional Council
Regional Plan Association (RPA)
U.S. Department of Housing & Urban Development (HUD)
Greater Bridgeport Transit

P.T. Barnum Station

Progress: A HUD Sustainable Communities grant supported a feasibility study of a train station on the East Side. The study found a station to be feasible at this location and that a station could anchor redevelopment along the Seaview Avenue Corridor (Refer to Green Fields & Green Wheels 4).

Impacts: The station site is accessible by pedestrians and is well-served by existing bus routes, encouraging train ridership. Redevelopment of vacant property reduces neighborhood blight. The Barnum Station Feasibility Study found that 2/3 of land within 1/4 mile radius of the proposed site is vacant or underutilized, offering many opportunities for housing, retail and office development.

11. Work with large employers to reduce the need to drive

GHG reduction: 2,414 MT CO2e (Current); 2,546 (Projected)

Partners

Greater Bridgeport Transit (GBT)
Bridgeport Department of Public Facilities

Identify workable commute policies and adopt programs

Progress: Eco-Pass in place at University of Bridgeport, Bridgeport Public Library and the Adult Education Program. The City is also pursuing transitcheq. In addition, GBT has begun a beta bus tracking system as of Summer 2011 and is looking into replacement buses for the entire fleet (Refer to Green Fields & Green Wheels 16).

Impacts: GBT distributed 2,675 Eco-Passes to University of Bridgeport students, public library staff and adult education night students. Bridgeport was ranked #10 in transit ridership in cities above 50,000 people for gains in ridership between 2006-2010 with a 4.3% increase, according to the U.S. Census.

Re-evaluate city vehicle fleet

Progress: The city is evaluating daily car rentals in lieu of the city fleet. After looking into Zip Car/Enterprise Fleet, this has been determined economically unfeasible.

Impacts: Some city vehicles can be converted to compressed natural gas (CNG), which burns 99.099% efficiently. So far, three solid waste trucks have been converted to CNG.

12. Make Bridgeport's roadways "Complete Streets"

GHG reduction: 7.5 MT CO₂e (Projected)

Partners

One Region Funders' Group, including The Emily Hall Tremaine Foundation and Fairfield County Community Foundation
Greater Bridgeport Regional Council (GBRC)
Tri-State Transportation Campaign
AARP

Implement "complete streets" policy

Progress: Finalized for pedestrian improvements and green infrastructure for biking, transit access and sidewalks. The policy is 50% complete with full implementation. AARP and Tri-State Transportation Campaign conducted a walkability audit on East Main Street to assess how to make the area more pedestrian-friendly.

Impacts: The Complete Streets Policy will create pedestrian-safe environments and streets to lower the number of fatalities and increase alternate transit opportunities such as walking and biking. Bridgeport has approximately 290 miles of roads.

Incorporate bicycle access into both low-traffic and high-traffic streets

Progress: GBRC designing a construction plan to build an on- and off-road bike trail extending to Seaside Park and along Main Street, which should be finished in two years. Retrofits done on Park Ave, Railroad Ave, Water Street, and a design is underway and 25% complete for Lincoln Blvd. All is being done with community input.

Impacts: Traffic efficiency has increased. Green infrastructure has been incorporated on bike trails and sidewalks.

Lincoln Boulevard Complete Street: Implement permeable pavement

Progress: Permeable pavement has been placed in some areas, and the city is considering additional placements on Lincoln Boulevard, a 240' wide x 1/3 mile long area of asphalt that is in one of the densest neighborhoods in the city. Its impermeability epitomizes challenges of non point source sheet flow in an urban area.

Impacts: The use of green infrastructure along Lincoln Boulevard prevents flooding and excess stormwater flow, ultimately diverting up to 1,872,000 gallons of sheet flow.

13. Promote walking and develop pedestrian infrastructure

GHG reduction: 49 MT CO₂e (Projected)

Partners

One Region Funders' Group, including The Emily Hall Tremaine Foundation and Fairfield County Community Foundation
Greater Bridgeport Regional Council
Downtown Special Services District (DSSD)
Bridgeport Department of Health and Social Services
AARP
Tri-State Transportation Campaign
Bridgeport Office of Planning & Economic Development
Federal Transit Administration (FTA)

Downtown Wayfinding

Progress: This project will provide a network of connections between all areas and places in Bridgeport to benefit transit efficiency and overall quality of the Bridgeport community.

Impacts: Improving signage will make navigation easier, reducing unnecessary driving and encouraging short trips by bike and foot.

Pedestrian Infrastructure Improvement

Progress: DSSD working on better signage directing to the Ferry while also focusing on sidewalk work. In addition, AARP and Tri-State Transportation Campaign working to make East Main Street more pedestrian-friendly by addressing the current state of walkability and giving community leaders technical assistance they need to make improvements.

Impacts: Completing recommendations in the walk-ability audit would make the downtown area more pedestrian-and bike-friendly. GHG emission reduction calculations were made assuming 105 people walk and 80 bike instead of drive during 1-2 mile trips.

Ash Creek Pedestrian Bridge

Progress: A feasibility study has been slated for completion in September in order to make the Black Rock neighborhood more walkable.

Impacts: Fairfield Metro station would be more accessible to Black Rock residents.

Congress Street Overlook

Progress: Approaches from existing bridge have been greened to create pier-style pocket parks.

Impacts: Improves waterfront access and green space for outdoor activity.

Let's Move Walks

Progress: The Department of Health has led walks to highlight walkability in Bridgeport in neighborhoods with high rates of obesity. The Department is planning future walks of this type.

Impacts: Visible walking events promote physical fitness and encourage residents to make use of the city's pedestrian amenities and parks system.

Downtown Inter-modal Enhancement

Progress: Already 50% complete, progress includes the use of FTA and city funding to create a new "front door" for the city from the inter-modal, mass transit train side. A collaboration between BL and Sasaki, the

design seeks to express the importance of water elements to the history of the city and as an organizing feature for movement. Examples of enhancement done so far includes the painted murals in the train station.

Impacts: Strategic placement of bioswales to channelize water will address stormwater flow while also serving as an educational feature.

14. Promote bicycling and develop bicycle infrastructure

GHG reduction: 3139 MT CO₂e (Projected)

Partners

Greater Bridgeport Regional Council

Incorporate bike routes in “complete streets” plan

Progress: Incorporating bike routes on high and low traffic streets is being funded by CMAQ funds and is 10% complete so far.

Impacts: (Refer to Greenfields and Green Wheels Strategy 5). Making biking more accessible by providing infrastructure can decrease dependence on driving and promote active transportation as part of a healthy lifestyle. Bike Share funding will provide a link between the city’s ferry service and/or train system for multi-modal access between neighboring cities.

Build bike trails in different areas of the city

Progress: In an effort to make Bridgeport more bike-friendly, construction plans for new bike trails is underway. The Black Rock Bike Way design is being modified to connect Seaside Park with West Side/West End and downtown, and is currently 25% complete. With the Bike Share program funding, the city plans to connect the regional Pequonnock River Bike Trail with the Black Rock Bike Way and the South End Bike Way to increase the alternate transit opportunities throughout the entire City. In addition, this funding will incorporate a bike leasing opportunity to reduce the cost of ridership. The EPA hosted a workshop with Bike Share to discuss building a culture of the city being more bike-friendly.

Impacts: Bike trails will provide alternate forms of transportation, allow for outdoor activity and a healthier lifestyle for residents. From Seaside Park to Beardsley Zoo, the Pequonnock River Bike Trail extends about 4 miles. When construction is complete, there will be 14 miles of bike trail in Bridgeport.

15. Establish Mobility Authority

Partners

Downtown Special Services District

Fund pedestrian and safety projects to balance out the transportation system

Progress: In an effort to increase safety in the city on and off transportation systems, one effort the downtown task force has taken was to determine the possibility of using money from parking garage revenue to fund a project to cover or lighten the top levels of parking garages. This will not only increase safety but also incentive to make use of all aspects of the transportation system.

Impacts: In addition to an increase in transit offering providing access to more neighborhoods and downtown amenities, safety among residents and travelers has improved as well.

Traffic Calming Plan

Progress: The City’s traffic calming plan is to decrease incidents of hit-and-runs by increasing number of marked cruisers around schools, installation of speed bumps in highly traveled areas, and adding more signs alerting drivers about the speed they’re traveling. City police are also involved in encouraging residents to follow this plan as well.

Impacts: This will increase the safety of pedestrians.

16. Reduce emissions through anti-idling and fuel standards regulations and education

Partners

United Illuminating (UI)

Connecticut Department of Energy and Environmental Protection

Greater Bridgeport Transit (GBT)

Implement electric charging stations

Progress: Installed by UI as a two year pilot program for testing. The system is currently out of order.

Impacts: Providing the infrastructure to support electric vehicle use encourages use of hybrids.

Install GPS in municipal vehicle fleet to reduce fuel use

Progress: GPS has been installed and working to maintain bus routes and efficient fuel use.

Impacts: With GPS installation, fuel use has been reduced by 10-12% by municipal vehicles

GBT Clean Diesel Program

Progress: As part of ongoing work to adopt cleaner propulsion systems, GBT has two hybrid buses that are quieter and more efficient. GBT is looking into clean diesel buses as well, and assessing the financial and energy costs for replacing the entire fleet.

Impacts: GBT is deciding the ideal propulsion system for 40 replacement buses in 2016 and is considering clean diesel buses and hybrids. 15 clean diesel buses, which are just as efficient as hybrids cost less, have been ordered. GBT is also considering articulated buses to accommodate increased ridership, but does not currently have the facilities to house/maintain larger vehicles.

Green Spaces

SUMMARY



The city has made progress on one of BGreen’s original goals to ensure residents have access to abundant, high quality, interconnected open spaces that foster community cohesion and stewardship. Several initiatives have been put into action that make it possible for residents to take advantage of Bridgeport’s open space and recreational amenities. Projects include the Parks Master Plan, the Pleasure Beach Master Plan, the grand opening of the Reservoir Community Farm and other community gardens, the construction of Virginia Avenue Park, and construction of bike paths and redevelopment of green space linkages for neighborhood improvement. The effort put into these projects comes from members of the community volunteering to help keep our public spaces clean and beautiful, as well as the efforts of the city’s parks and recreation department and grant funding in support of our sustainability improvements.

IMPACTS

| | |
|---|-------|
| Trees planted | 2,500 |
| Carbon sequestered by new trees (Metric Tons per Year) | 9.75 |

STRATEGIES & PROGRESS

1. Support and expand organizational capacity to manage, develop, and enhance green spaces for natural habitat, recreation, gardening and outdoor education opportunities

Partners

- Connecticut Department of Energy and Environmental Protection
- Groundwork Bridgeport
- Bridgeport Department of Public Facilities
- Bridgeport Parks and Recreation Department
- Bridgeport Board of Education
- Trust for Public Land
- Fairfield County Community Foundation
- Park City Schools and Community Alliance

Implement Parks Master Plan

Progress: For the city’s park and recreation areas, this master plan is in the process of implementation for improvements made to incorporate safer and healthier environments for public access, and also involves building more green facilities. In addition, the Trust for Public Land is in their final stages of completing a feasibility study with additional focus on the East Side, East End and all waterfront access areas.

Impacts: Bridgeport has a total of 1,346 acres of park land. The park system provides an outlet environment for activity. The City and its partners have made recommendations in all of the city’s parks. One project involves the construction of an adult playground with exercise equipment being placed in parks. Construction to increase efficiency of park land is underway in several areas: Annex park (100% complete), Washington Park (75% complete), Knowlton Park (50% complete), Ash Creek Dune restoration (25% complete) and Virginia Avenue Park (planned).

Parks Master Plan



One of the original recommendations of the BGreen 2020 plan was to develop a Parks Master Plan for the city which would focus on improving accessibility to parkland, maintaining the park system's diverse ecology, and better connecting Bridgeport neighborhoods with parks, local amenities, and each other. The Master Plan was completed in 2011 by the landscape architecture and planning firm Sasaki Associates emphasizing projects that will enhance and expand the park system of Bridgeport to serve neighborhoods with recreational opportunities, engage citizens and new partners in the parks, harness the city parks system as an anchor for revitalization of the city and the region, and reconnect the city's waterfront. So far, action on these projects has begun to enhance existing parks, expand the park system by creating new parks, and provide better connections to parks for people to enjoy a family-friendly, safe and healthy environment.

Progress implementing the Parks Master Plan includes development of open space around the Margaret E. Morton Government Center, where construction is 100% complete and open to the public featuring water-permeable flexi-pave surfaces; renovation of Washington Park, which is 75% complete and has newly implemented splash pads; creation of Knowlton Park, now 50% complete, that will connect to the bike trail along the Pequonnock River; the Newfield Park splash pad, the park at 115 Virginia Avenue; Beardsley Park's All-Inclusive Playground; and design and planning to re-open Pleasure Beach. The city is partnering with the Trust for Public Land, with funding from the Fairfield County Community Foundation, to analyze the cost of and develop strategies for further implementation of the Master Plan.

2. Develop volunteer initiatives to promote clean-up in parks and other public areas

Partners

Fairfield County Community Foundation
Groundwork Bridgeport
Fairfield University
Sacred Heart University
University of Bridgeport
Park City Schools & Community Alliance
Bridgeport Board of Education

Park Clean-Up and "sweep"

Progress: With Groundwork Bridgeport, the city promotes and hosts volunteer park clean-ups for members of the community to participate in twice a year. Normally occurring in April and October, these community events are the largest clean-up days in the city. Volunteers are recruited from local schools such as Sacred Heart University, Fairfield University, and University of Bridgeport as well as local high schools and residents.

Impacts: Active community members take care of Bridgeport's neighborhoods by picking up trash, weeding flower beds, planting flowers, raking leaves, and sweeping sidewalks. Six volunteer clean-ups occur every summer.

"Friends of" parks organization

Progress: The Trust for Public Land is working with different neighborhoods to assess the priorities and wants when designing park restoration projects, with the hope of community members remain invested and support the parks by taking care of the open spaces. This group of community members would form the "Friends of Bridgeport Parks" conservancy.

Impacts: Caring for public spaces will create cleaner neighborhoods and will allow residents to take advantage of open spaces.

3. Develop a green spaces master plan

Partners

Trust for Public Land
Fairfield County Community Foundation
CT Department of Energy and Environmental Protection
University of Connecticut
Community Alliance
Reservoir Community Farm/Green Village Initiative
Curiale Elementary
Wholesome Wave
Boot Camp Farms

Parks Master Plan and Implementation

Progress: The Master Plan has been prepared and is being implemented in pieces throughout Bridgeport's parks and open space. Fairfield County Community Foundation is supporting work by the Trust for Public Land to analyze the cost and funding for future projects by reaching out to city corporations and looking into grants. The study is 75% complete.

Impacts: The Parks Master Plan identifies strategies and opportunities for managing the parks system in order to make it more efficient to operate and increase its environmental and recreational value.

Neighborhood Improvement Project

Progress: Park City Schools and Community Alliance is working to create safe zones around schools and around the neighborhood, and starting with “Little Asia” around Curiale Elementary (Refer to Green Fields & Green Wheels 7). In addition, Wholesome Wave is working to create a community area for gathering that could function as a place for healthy activities near the East Side Farmers Market. Another improvement is the establishment of the 3.8-acre Boot Camp Farms on top of an old brownfield (Refer to Green Fields & Green Wheels 4), which will include greenhouses and a community center that will both grow and sell fresh produce.

Impacts: The Alliance will promote and maintain neighborhood safety. Creating areas in the community for physical activity promote public health. Boot Camp Farms will also increase job opportunities for residents and veterans (Refer to Green Fields & Green Wheels 4 and Green Spaces 1).

4. Increase waterfront access opportunities

Partners

Fairfield University
Save the Sound
CT Department of Energy and Environmental Protection
Trust for Public Land
City of Bridgeport Department of Public Facilities
Reservoir Community Farm/Green Village Initiative
Fairfield County Community Foundation

Construct Knowlton Park

Progress: A brand new park along Pequonnock River is under construction and is currently 50% complete. Phase two of this park is currently under design.

Impacts: Increased access to the waterfront and open green space provides an outlet for outdoor activity.

Pleasure Beach Master Plan

Progress: The former bridge to Pleasure Beach has been constructed into a fishing pier and opened in December 2011. The City is 50% complete in progress to design and reconstruct buildings, improve infrastructure, and to bring in new water taxis. While construction on Phase 1 is in progress, later phases of construction include additional parking for visitors and establishment of electric service.

Impacts: Revitalization of Pleasure Beach encourages the reuse of historic landmarks, provides an outlet for outdoor recreation and encourages visitors to come to Bridgeport. Enhancing natural habitat in the area also supports wildlife biodiversity.

Make improvements to Seaside Park

Progress: Renovations are in progress and incorporate additional food services in the reconstruction of Seaside Park Casino Bathhouse. In addition, students at Fairfield University examining structural resiliency in and around Seaside Park, and developing an executive summary for future release.

Impacts: The city over the last 15 years has been keen to redevelop an existing historic building the casino bathhouse in lieu of development of a new catering facility on LI Sound. This will save on average 20% of GHG compared to building a new facility.

5. Expand street tree and urban forest programs

GHG reduction: 9.75 MT CO2e (Current)

Partners

Community Development Block Grant Program (CDBG)
University of Vermont
Groundwork Bridgeport
Connecticut Department of Energy and Environmental Protection
City of Bridgeport Parks & Recreation Department
Regional Plan Association
Bridgeport Conservation Corps

Urban tree Inventory and Tree Cover Assessment

Progress: Urban Tree Canopy Study analysis conducted and completed by the University of Vermont, and a strategic urban forestry management plan is being developed. **Impacts:** Data from the analysis was to determine current state of urban forest and to plan future urban forest expansion projects. \$119,000 of CDBG funding was used by the Parks Department to plant 861 trees.

Increase tree planting

Progress: Between 2008 and December of 2012, 2,500 trees have been planted, reaching the city's goal of 2,012 trees by 2012. Now, there are 5,000 trees in Bridgeport and the city has made a new goal to plant 3,000 more trees by 2020 and plant 600 trees in the fall of 2013. Groundwork helps in tree plantings and assists in residents' Adopt-a-Tree program that is also promoted by the Conservation Corps. All tree planting programs are provided CDBG funding.

Impacts: Trees provide oxygen, shade, absorb carbon dioxide and are a necessity to helping us make Bridgeport the cleanest and greenest city in the region. Trees reduce the urban heat island effect, sequester carbon, and filter pollutants common in cities. The 2,500 trees planted help to reduce the city's carbon footprint.

Adopt a Tree Program

Progress: The Conservation Corps has been publicizing this program throughout various neighborhoods to get residents involved in sustainable efforts since Mayor Finch set the goal in 2008 to plant 2,012 trees by 2012. When residents adopt a tree, a tree gets planted. So far, 75 residents have participated in Adopt-a-Tree.

Impacts: The city has reached its goal to plant 2,012 trees planted by 2012 through tree adoptions and greening efforts, reducing GHG emissions and beautifying Bridgeport.

Little Asia



Recognizing that Bridgeport neighborhoods possess historical, cultural, and educational value, the city launched a city-wide “neighborhood identification” campaign to promote sustainability, cultural education, and economic development, starting with the “Little Asia Neighborhood Improvement Project.” Located in the city’s historic West Side and centered around Curiale Elementary School, “Little Asia” is the cultural and economic hub of Asian-Americans in the city, attracting regional visitors who frequent the area’s restaurants, shops and services. Little Asia is not only an example of the city’s diversity but also a way to recognize diversity as an economic advantage. Little Asia is a microcosm of the city’s BGreen 2020 efforts—by combining sustainability with cultural diversity and economic development, the city has transformed a dilapidated neighborhood area into a thriving community that is good for residents and business owners. The success of Little Asia provides a blueprint for other ethnically diverse communities to replicate.

The city continues to work extensively with Park City Schools & Community Alliance, Green Village Initiative, Groundwork Bridgeport, and ScottsMiracle-Gro to renovate Curiale Field, build an Asian Garden, and install a fence, giving the area a new façade. One mission Little Asia works to accomplish is facilitating educational opportunities for Curiale School students. Students have the opportunity to volunteer during the school year to help build a positive future of the Bridgeport community. In addition, the city provides crucial technical support for the Little Asia Merchants Association which helps to enhance business storefronts in the area. The city is also taking steps toward increasing safety by installing brighter and more efficient street lighting along with roadway improvements including street paving, lining and marking parking slots to increase pedestrian access. Little Asia Merchants Association members have been enthusiastically participating in beautification program by adopting street corners and trash bins to combat littering in the area.

6. Provide access for all neighborhoods to community gardens and urban farms

Partners

Groundwork Bridgeport
Reservoir Community Farm/Green Village Initiative
EPA
Boot Camp Farms
Wholesome Wave
Fairfield County Community Foundation
Trust For Public Land
Greater Bridgeport Community Enterprises
Bridgeport Department of Health and Social Services
Bridgeport Downtown Special Services District
St. Vincent’s Hospital
Park City Schools & Community Alliance

Urban Agriculture Program

Progress: The Urban Agriculture Program includes all community garden, farmers markets and sustainable food growth initiatives throughout Bridgeport. Green Village Initiative, Boot Camp Farms, and the Community Land Trust are all examples of organizations involved in this program.

Impacts: This program helps to relieve the food desert issues in under served neighborhoods, improve public health and encourage job growth for residents. These new gardens and farms also make use of previously underutilized land.

Community Gardens

Progress: Groundwork started and finished two gardens by Fall 2011 and it continues to hold meetings for new garden placement. In the past five years, 20 community gardens have been built out of the original goal of building a total of 34 gardens (Refer to Green Fields & Green Wheels 7). Two gardens were completed in fall 2012 and the grand opening of the Green Village Initiative’s Reservoir Community Farm was June 29, 2013 for all residents of Bridgeport. Community Land Trust manages 14 gardens in under served areas and is working to rebuild and increase their membership. Future progress of this initiative will focus on increasing education in gardens.

Impacts: Membership at community gardens has increased. The number of volunteers working with Groundwork Bridgeport more than doubled by 2013, increasing from 1,500 volunteer-hours in 2011 to nearly 3,500 volunteer-hours in 2013.

Reservoir Community Farm, operated by Green Village Initiative

Progress: This community farm built by the Green Village Initiative involves the community in sustainable growth and food access, while providing educational opportunities as well as beautifying the neighborhood.

Impacts: This urban farm provides over 20 beds for community members to grow food. In addition, the farm has created jobs and volunteer opportunities while providing fresh produce to an area of Bridgeport considered to be a food desert. Volunteer participation at Reservoir Community Farm has doubled in its second project year, with nearly 600 volunteers contributing over 2000 volunteer hours in 2013. Crime rates significantly decreased in the neighborhood after the construction of Green Village Initiative’s Reservoir Community Farm.

Improve Food Access

Progress: In addition to the community farms, the Public Health Department is working to improve the quality of food in areas of the city such as the East End, East Side, Downtown, and at St. Vincent's Medical Center, where corner stores can provide fresh produce. In addition, four farmers markets have been opened in these areas to decrease the food desert problem where residents are unable to buy healthy foods. The East End Farmer's Market will be open every Sunday from July through October, where a Cooking Matters representative will demonstrate simple recipes and offer samples that are made of ingredients from the market. Visitors can also double the value of their SNAP, WIC, and Senior benefits to make healthy eating more affordable.

Impacts: Since 2009, money spent on fresh produce has increased substantially, showing the increased availability of healthy foods and residents taking advantage of it to better their health. Over 2,000 consumers shopping with federal nutrition benefits, and their families, benefited from increased affordable access to fresh produce, brought through the DVCP. In 2012: Over \$89,000 in healthy, locally grown fresh food was purchased by consumers with limited incomes in Bridgeport. A record \$54,955 in revenue went to Cecarelli Farm of Northford, CT from the two farm stands alone, from customers shopping with SNAP (formerly the Food Stamp Program), WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children) and Senior Farmers Market Nutrition Program benefits, and DVCP incentives.

7. Provide green space linkages

Partners

Groundwork Bridgeport
Greater Bridgeport Regional Council (GBRC)

Sidewalk Improvement

Progress: Redesigning streets and adding sidewalks has been underway on various roads in the city to make areas more pedestrian-friendly and resilient.

Impacts: Providing infrastructure that increases pedestrian safety encourages fitness through active transportation in Bridgeport.

Complete Streets and Connection to Bike Trails

Progress: (Refer to Green Fields & Green Wheels 12) Making Bridgeport's streets "complete streets" is 50% complete, as construction to incorporate sidewalks and bike trails on both high and low-traffic roads is in progress. Implementation of bike trails along the Pequonnock River and connecting neighboring cities provides an alternate transit option for those commuting to different areas of the greater Bridgeport region.

Impacts: Complete streets provide additional transportation opportunities and has led to an increase in overall traffic efficiency in Bridgeport. In addition, it incorporates the value of public health by providing a physical alternative to travel by car.

Pleasure Beach Master Plan

Aerial Perspective



Pleasure Beach, a once popular amusement park destination, is now an abandoned peninsula disconnected from the mainland since it burned down in 1996. By 2014 the city will reopen this historic location. Improvements to Pleasure Beach will improve its ecological function and create a space for community recreation, supporting BGreen 2020 goals of increasing public access to the waterfront and promoting natural habitats.

The city has developed and begun implementing the Pleasure Beach Master Plan, which promotes the coexistence of humans and wildlife as a place for recreational activity as well as environmental conservation. The Master Plan recommends a Park Enhancement Program to develop and build desired facilities while preserving the old structures and the natural environment. The city is working on a design to rebuild the boardwalk and include restrooms, concession stands, and benches. Construction for new recreational opportunities is underway, including the newly implemented fishing pier that open in December of 2011. In addition, the city plans to incorporate water taxi service between the mainland and Pleasure Beach; taxis are on order for service beginning in December 2013. Offering the public this service will provide easy access to Pleasure Beach, which will allow for more waterfront opportunities. With these new green infrastructure installments, all current projects within the Pleasure Beach Master Plan are, altogether, about 50% complete. Additional work to complete phase one and begin phase two will include a design to reconnect power lines to the Island and further construction to build the recommended facilities.

Water Resources

SUMMARY

Because much of the surface of urban environments is covered in pavement, water from rain and snow is not absorbed by soil and is instead channeled into drainage systems which, in Bridgeport, combined stormwater and sewage into pipes that eventually flow to the water treatment plant for processing. Treating rainwater that could have been used for landscaping or other purposes is unnecessary and is a burden for the city budget. During heavy rainfalls, too much stormwater flowing into the sewer system pushes raw sewage into surrounding waterways. The Water Pollution Control Authority is working with the State of Connecticut to prevent polluted water from flowing into the sound by properly maintaining the system and continuing projects to separate the sanitary and stormwater sewers. Diverting precipitation from the sewer system reduces the load at the sewage treatment plant to prevent sewage overflow, protecting Bridgeport's water quality and decreasing the amount of energy required for water treatment.

IMPACTS

| | |
|---|------------------|
| Stormwater diverted from sewer system & water treatment plant from installed projects (gallons per year) | 2,279,500 |
|---|------------------|

| | |
|--|-------------------|
| Stormwater diverted from sewer system & water treatment plant from installed projects and projects under development (gallons per year) | 24,424,500 |
|--|-------------------|

| | |
|--|----------------|
| Estimated energy saved from stormwater diversion from water treatment plant processing (kwh per year) | 111,131 |
|--|----------------|

| | |
|---|-------------|
| Carbon emissions avoided from stormwater energy savings (metric tons per year) | 78.4 |
|---|-------------|

STRATEGIES & PROGRESS

1. Conduct water resource education and stewardship programs

Partners

CT Fund for the Environment (CFE)
SW Conservation District
Groundwork Bridgeport
U.S. Environmental Protection Agency (EPA)
The Workplace
Pequonnock River Alliance
Fairfield County Community Foundation
Rivers Alliance of Connecticut
CT Department of Energy and Environmental Protection (DEEP)

Pequonnock River Initiative

Progress: The City received the 318 Grant from DEEP and working to improve the water quality in the Pequonnock River Watershed. The released plan for conservation and community outreach was performed and clean-up initiatives are 50% complete. Recommendations for future work include porous pavement, stream buffer enhancements, and drainage improvements.

Impacts: The Plan encourages land stewardship through education and outreach, water conservation, and open space preservation to ensure sustainable growth. In addition, green infrastructure installations will reduce the amount of rainwater entering the combined sewer system that empties along the shoreline to prevent sewage overflow during heavy rain events.

EPA Water Stewardship Programs

Progress: Grant funds were received for Groundwork Bridgeport to train youth as water resource protection activists, to educate residents and business owners about their role in protecting scarce water resources, to host neighborhood meetings that engage neighborhood residents, and mark city drains in English and/or Spanish to indicate that they drain into the Long Island Sound and must be kept clean.

Impacts: Wastewater and drinking water handler certifications were awarded to 51 young adults, stormwater management training was given to 20 young adults and a two-week "Water Boot Camp" for 18 public school students was held using EPA funding to increase interest in water stewardship employment opportunities in Bridgeport.

Ash Creek Conservation Association

Progress: The Ash Creek Conservation Association is a community group whose mission is to advocate for the protection and restoration of the Ash Creek Tidal Estuary on Bridgeport's western border. Ongoing work by the Association includes increasing awareness of the estuary's ecological value, organizing community events, and contributing to planning

efforts that impact the estuary, such as the Rooster River Watershed Based Plan. In 2012 the Association developed a master plan for the estuary supported by grants from Fairfield County Community Foundation, the EPA, and Rivers Alliance of Connecticut.

Impacts: The Association has held multiple cleanups of the estuary each year and contributed to infrastructure and land use decisions that protect the health of the estuary.

2. Limit stormwater flow into the waste treatment system

GHG reduction: 728.25 MT CO₂e (Projected)

Partners

Groundwork Bridgeport
Water Pollution Control Authority (WPCA)

Implement permeable pavement and bioswales at Webster Arena

Progress: An area south of I-95 that was the site of the Pequonnock Apartments for many years is now used for overflow parking at Webster Arena. The city is considering using Low Impact Design techniques including permeable surfaces to divert, sequester and store sheet flow.

Impacts: Implementation is projected to divert approximately 1,912,500 gallons sheet flow/year.

Mummy Pond

Progress: A flood gate is being designed to retain stormwater runoff at Seaside Park.

Impacts: Rain water sequestration and protection and conservation of water resources that avoids stormwater flooding.

Reduce pollution flowing into the Sound

Progress: WPCA operations and management noticed the high percentage of pollution flowing into the Sound and working to improve the efficiency of the treatment facilities to mitigate that pollution. Mitigation efforts include upgrading the collection and treatment systems and implementing green technology in many areas of the city to maintain the separation between stormwater and the water treatment facility.

Impacts: Limiting water pollution increases water quality. If 10% of the green infrastructure feasibility plan recommendations were to be implemented, 130MG of rainfall would be diverted each year while providing 80-550 jobs.

WPCA Management

Progress: Development of a strategic plan to minimize the weaknesses within the WPCA maintenance facility includes new ways of reducing the unnecessary stormwater runoff entering the facility for processing. Incorporating green infrastructure under WPCA management will reduce the amount of unnecessary gallons of water processed (an energy-intensive activity).

Impacts: 60% of the water entering the WPCA maintenance facility is unmetered stormwater that had to be treated or expelled directly into the sound. A 10% reduction of flow to the treatment facility with the installation of green infrastructure would significantly reduce energy use, reducing costs and greenhouse gas emissions.

Seaside Village Green Infrastructure Plan

Residents and Yale volunteers at a community planting



Seaside Village is a community in the South End of Bridgeport that was developed during World War I to provide housing for wartime workers employed at nearby industries. In the last few years, Seaside Village has been stressed by recurring flooding that has damaged property, disrupted lives, and made it difficult to maintain these historic properties. Supported by Fairfield County Community Foundation, students at Yale University conducted a feasibility study to determine whether green infrastructure could reduce ongoing flooding issues in Seaside Village. Green infrastructure uses low-impact design techniques to reduce environmental stresses and protect land from the changing environment. The study concluded that green infrastructure could be highly beneficial for building resiliency in Seaside Village, and included recommendations for the use of rain gardens and other mitigation strategies to implement the best on-site stormwater management for Seaside Village. Design and construction is fully complete and bioswales and rain gardens have been installed. The Seaside Village community, Yale Urban Ecology Lab, and the Connecticut Chapter of the Nature Conservancy continue to monitor, assess, and improve the installation's performance. Green infrastructure has already reduced flooding issues in some of the overflow parking areas.

Seaside Village is only one neighborhood of many in Bridgeport vulnerable to frequent storm weather events that cause heavy flooding. Findings and recommendations from the Seaside Village Green Infrastructure study provided further information on flooding, elevations, and green space issues as well as areas where there are additional opportunities for flood control. Inspired by the work in Seaside Village, the city is developing a larger Green Infrastructure Plan that adopts recommendations from the Seaside Village Green Infrastructure Plan into the greater Bridgeport region. In an effort to expand this plan throughout Bridgeport, the city has taken on specific on-site stormwater management projects to institute best practices that coordinate land planning and water resources protection.

Pequonnock and Rooster River Initiatives

Installing solar panels at the fish ladder



The Pequonnock River Watershed is 29 square miles stretching from Bridgeport Harbor north to Monroe and encompassing residential, commercial, and undeveloped areas. Approximately 80% of the Pequonnock River does not meet minimum water quality standards for recreation or habitat quality. The Towns of Monroe and Trumbull and the City of Bridgeport realized the need for a comprehensive plan to reduce pollutant runoff and worked together to create the Pequonnock River Watershed Based plan with financial support from the US EPA, CT DEEP, and Fairfield County Community Foundation. The plan outlines the measures necessary to enhance opportunities for recreation on the river, restore habitat, and reduce flooding in the dense urban areas along the river. Prepared by Fuss & O'Neill in September 2011, the plan includes goals to build the capacity of stakeholders within the initiative, improve water quality, protect and restore habitat, ensure sustainable growth and open space preservation within the watershed, and to promote stewardship of the Pequonnock River through education and outreach. Implementation so far has included the construction of a fish passage in Bridgeport to improve movement of river herring, blueback, and eel, and the construction of Knowlton Park in Bridgeport's East Side Neighborhood. A similar project is underway to create a Rooster River Watershed Plan and subsequent implementation.

The success of the Pequonnock River Initiative inspired a similar intermunicipal watershed based plan for the Rooster River along Bridgeport's western boundary. This plan was completed in November of 2013 and will be implemented in the same fashion through a similar Citizens Technical Advisory Council convened by the Greater Bridgeport Regional Council. Bridgeport has applied for EPA Clean Water funds for implementation.

Projects related to water quality improvement often align with several BGreen 2020 goals. For example, Knowlton Park, along the Pequonnock River, incorporates low-impact design features such as rain gardens, riparian edge restoration, and permeable pavement to reduce the amount of rainwater entering the combined sewer system. Knowlton Park also meets BGreen 2020's land use and green space goals: the park will provide shoreline access to a dense neighborhood that currently has little access to open space. Developing underutilized space into parks revitalizes neighborhoods and encourages reinvestment while providing space for outdoor recreation. Knowlton Park and the initiatives within the Pequonnock River Watershed Based Plan exemplify the triple-bottom-line approach to sustainability to simultaneously improve environmental, economic and social sustainability in Bridgeport.

3. Maintain the stormwater system to prevent flooding

GHG reduction: 32 MT CO₂e (Projected)

Partners

Water Pollution Control Authority (WPCA)

Establish a Stormwater Authority

Progress: While the WPCA maintains the collections system in the water treatment facility, the Stormwater Authority will work to reduce the amount of stormwater flooding into the treatment facilities.

Impacts: The Stormwater Authority will maintain the separation of stormwater runoff from waste water treatment facility. If the four demonstration projects outlined in the Green Infrastructure Feasibility Scan were implemented, then 9,855,000 gal of water would be diverted each year.

4. Institute best practices for on-site stormwater management

Partners

Fairfield County Community Foundation

Yale University

Discovery Museum

Anaergia

Water Pollution Control Authority (WPCA)

RESCO

Bridgeport Energy Improvement District

City Department of Public Facilities

FlexiPave

Bridgeport Conservation Corps

Grey Water Pipeline at the Wheelabrator Bridgeport Waste to Energy Plant

Progress: See detail under Green Energy & Buildings Strategy #3.

Impacts: This would save RESCO potentially \$2.4M per year while increasing revenue at the WPCA \$100K each year.

Implement permeable paving at Discovery Museum and Harbor Yard

Progress: Permeable pavement has been installed at the Discovery Museum and Harbor Yard.

Impacts: Green infrastructure allows stormwater to drain naturally, preventing flooding.

Rain barrels

Progress: The Conservation Corps distributed 5,000 rain barrels even before the implementation of BGreen. More rain barrel placement is being discussed for various areas of the city.

Impacts: Water captured in rain barrels can be reused without being treated at the waste water treatment facility. 5,000 60 gallon rain barrels in Bridgeport have the capacity to divert 300,000 gallons of rain water.

Seaside Village Green Infrastructure Program

Progress: Yale University did a study of green infrastructure to prevent storm flooding with rain gardens and other mitigation strategies. Initial implementation of green infrastructure is complete.

Impacts: If 5 gallons of rain water can be sequestered per square foot of bio-retention area (depending on soil type, vegetation etc.), an 8,000 square foot area installed here would potentially potentially sequester 40,000 gallons a year.

Anaerobic Digester for Sludge

Progress: The design of a sludge waste anaerobic digester at the West End Sewage Treatment Plant is 50% complete. When the new technology is installed, it will convert sludge to energy and that energy will be used to run the plant. It will also reduce the volume of sludge material shipped to New Haven to be burned. This digester will be incorporated in Eco-Technology Park.

Impacts: This advanced technology system will provide renewable energy to run the sewage treatment plant; any excess energy produced will be used for other municipal purposes or sold back to the electric grid.

5. Coordinate land planning to include consideration of stormwater management and water resources protection

Partners

Fuss & O'Neill
Housatonic Community College
Save the Sound
Water Pollution Control Authority (WPCA)
Seaside Village Association
Yale University
Fairfield University
Fairfield County Community Foundation (FCCF)
CT Fund for the Environment (CFE)
Greater Bridgeport Regional Council (GBRC)
CT Department of Energy and Environmental Protection (DEEP)
SKEO Solutions

Pequonnock River Watershed Based Plan

Progress: To maintain and improve the water quality along the banks, WPCA's work overlaps with the Pequonnock River Initiative to maintain stormwater overflow in sewer drains and currently 50% complete with phase 1 of rehabilitating the collections sewer system to avoid future overflow of water treatment.

Impacts: The Pequonnock River Watershed Based Plan works to improve water quality, protect and restore habitat, ensure sustainable growth and open space preservation within the watershed while promoting stewardship of the Pequonnock River through education and outreach. The impacts of this include limiting stormwater flooding and reducing rainwater flow into the treatment facility. (Refer to Water Resources 2)

Green Infrastructure and Save the Sound

Progress: This city-wide plan started in Seaside Village where Yale worked with the city to design the green stormwater management system. Construction in this area is now complete and has expanded into this wider project. Save the Sound conducted an assessment of the benefits of green infrastructure to Bridgeport and the city is pursu-

ing \$5.5M funding grant for targeting implementation in lieu of sewer separation. DEEP will possibly provide financial support of an additional 100K for the proposed green infrastructure plan.

Impacts: The proposed projects in the green infrastructure plan would sequester 9,855,000 gallons of water from sheet flow.

Yellow Mill and Johnson Creek Projects

Progress: Small Waters and Marine Fisheries grants supporting work with Housatonic Community College to perform biological assessments, which are 25% complete. The City is working with SKEO on these areas to come up with an action plan. Johnson Creek has been determined too polluted for feasible clean-up projects or initiatives at the moment.

Impacts: Increasing water access provides educational opportunities while supporting green infrastructure projects.

Rooster River Program

Progress: The 319 Grant from DEEP was received for the city and community partner, Fairfield, to work on developing a watershed based plan of the two adjoining communities and a series of projects to improve water quality in the Rooster River Watershed. Two stakeholder/steering committee meetings and one public workshop have been held.

Impacts: The project works to increase water quality to improve river health.

Seaside Grove

Progress: This grove area is currently an asphalt drive that the city will soon be removing and converting to a water-permeable surface to absorb rain and flood waters. Its close proximity to the Long Island Sound will be important for maintaining the water quality of the Sound.

Impacts: In addition to improving the water quality and access to the waterfront, 15,550 square feet of permeable surface will be created, sequestering 77,500 gallons of water.

6. Institute water conservation programs in residential, commercial and industrial sectors

Partners

SW Community Health Center
Water Pollution Control Authority (WPCA)
Conservation Corps

Rain Barrel Placement

Progress: The Conservation Corps decided to buy rain barrels, rather than build them from previous pickle barrels, at a \$10 discounted rate of \$52/barrel. These rain barrels collect rain water, which is treated and reused in places such as community gardens for watering. Also see Water Resources strategy #4.

Impacts: Rain barrels will collect stormwater that would otherwise contribute to flooding or flow to the water treatment facility. Water collected is used to grow plants in community gardens.

Build resiliency at Webster Arena

Progress: Permeable sidewalks at the Arena are in place. A more resilient turf is being installed in the parking area to allow for water infiltration.

Impacts: Stormwater runoff at the Arena has decreased. Also see Green Energy & Buildings strategy #7.

Bioswale at Housatonic Community College

Progress: The WPCA has placed a bioswale at Housatonic Community College to collect rain water off of the roof to prevent water overflow to sewer drains.

Impacts: The bioswale reduces stormwater flow to the water treatment plan and increases the area of green infrastructure in Bridgeport.

7. Institute water conservation programs at municipal and school facilities

Partners

Water Pollution Control Authority (WPCA)
Conservation Corps

Water management in parks facilities

Progress: See Water Resources strategy #9.

Impacts: See Water Resources strategy #9.

8. Develop Green Building guidelines to include water use considerations

Partners

Greater Bridgeport Regional Council (GBRC)
Department of Energy and Environmental Protection (DEEP)
Federal Energy Management Agency (FEMA)
Fletcher Thompson Architects

Lower flood insurance costs for region

Progress: GBRC awarded FEMA community resilience innovation program grant of \$35,000 for a Regional Flooding Risk Assessment and Community Rating System Feasibility study. The study has been completed and recommendations have been made.

Impacts: Maintaining flood insurance will be more affordable to Bridgeport residents, preventing deterioration of property from uninsured damages.

Water-saving measures at the Mechanics and Farmers building

Progress: Fletcher-Thompson's retrofit of the Mechanics and Farmers building includes water-saving measures in pursuit of LEED certification. Use of this building will be for the architecture company's headquarters and residential use downtown.

Impacts: Fletcher-Thompson is embracing sustainability as a standard in all of its projects, an example of private business making efforts to reduce their impact.

9. Pursue opportunities for water reuse in outdoor water demand planning

Partners

Water Pollution Control Authority (WPCA)
Bridgeport Conservation Corps
Bridgeport Parks & Recreation Department

Water management in parks facilities

Progress: An effort to recycle stormwater in parks rather than have stormwater flow into drains was implementation of splash pads in Luis Munoz Marin Park and Washington Park. However, more work is necessary due to continued stormwater flow into the drain system.

Impacts: Greywater from splash pads could be reused to maintain landscaping in parks to limit storm water flow.

Rain Barrel Placement

Progress: Used to collect rain/stormwater for community garden watering after treatment. Community Garden managed by Community Land Trust will implement rainwater conservation system.

Impacts: The Conservation Corps distributed 5,000 rain barrels to community gardens and the Reservoir Community Farm to be used for maintenance.

10. Pursue ban on plastic bags

Plan to adopt it as a city policy

Progress: Future initiative

Impacts: Reducing plastic bag use would reduce problems with plastic bags blocking storm drains and being swept into waterways.

Municipal Solid Waste, Materials Use & Recycling

SUMMARY

The city has partnered with several organizations to increase recycling habits and improve waste management. The original BGreen report proposed green initiatives to limit the amount of pollution and waste produced in Bridgeport through program development, policy change, and education. So far the city has made significant progress as organizations including the Bridgeport Downtown Special Services District (DSSD), Recyclebank, and RESCO, to name a few, have implemented strategies that focus on waste reduction, and recycling has increased by 69% across the city. Like all BGreen efforts, community involvement is highly important to the promotion of the city's sustainability and cleanliness. In order to continue increasing the productivity of waste management and recycling, City of Bridgeport departments are dedicated to continue working with partnered organizations, local schools, and the greater community to clean up Bridgeport.

IMPACTS

| | |
|--|------------------|
| Materials recycled (Tons/ year) | 5,000 |
| Municipal Savings from increased recycling (\$/year) | \$225,000 |
| Estimated Greenhouse Gas Impact (Metric tons avoided per year through single-stream & mattress recycling and purchasing recycled materials) | 7,824 |

STRATEGIES & PROGRESS

1. Identify the best recycling program to increase participation

Reduction so far: **6449 MT CO2e**

Partners

City of Bridgeport
 Wheelabrator Bridgeport
 Bridgeport Regional Business Council
 Fairfield County Community Foundation
 Connecticut Department of Economic & Community Development
 Workplace, Inc.
 Recyclebank
 Park City Green
 Greater Bridgeport Community Enterprises
 Family ReEntry/Fresh Start Program
 St. Vincent de Paul Society of Lane County, Oregon
 Robert Wood Johnson Foundation
 Bridgeport Board of Education
 USAgain

Adopt single-stream recycling

Progress: This recycling program has been 100% implemented with distribution of new totes. In conjunction with Recyclebank, there has been an increased amount of recycling by 64%. Single-stream recycling was extended into the schools in the fall of 2013.

Impacts: Recyclebank promotions and single-stream recycling have lead to an over 60% increase in recycling in the first 12 months of its adoption, saving the city \$130k in tip fees and generating \$95k from SWEROC in new revenue in the 2012 fiscal year. The city brings in 5,000 tons per year and projects to earn \$100k in new revenue in the next fiscal year.

Park City Green

Progress: The State's first mattress recycling facility is 100% complete and open. They deconstruct mattresses and sell the steel, wood, foam and cotton back into the recycled commodities market. More info on this initiative in Green Businesses, Jobs & Purchasing.

Impacts: About 375 tons of solid waste per year is diverted by deconstructing mattresses, resulting in a GHG reduction while encouraging recycling and creating 15 - 20 jobs in the next few years.

Open grease recycling facility

Progress: Information in Green Energy & Buildings strategy #3.

Impacts: See above.

Single-Stream Recycling



Mayor Finch working with Bridgeport residents to recycle

One of the key goals of BGreen was to identify and establish the best recycling program to enable increased utilization of waste. Under the leadership of Mayor Finch and the city council, the city implemented a single-stream recycling program that eliminates the need to sort recyclables and streamlines the storage and distribution process by providing Bridgeport households with free blue toters.

This crucial infrastructure investment yielded an impressive 69% increase in citywide recycling during the first twelve months. To put in perspective, the single-stream program brings in over 5000 tons of household recyclables annually, which offsets more than \$130,000 in disposal fees and reduces the need for incineration. In addition, the city is generating more than \$100,000 in *new* revenue annually from recyclables for a net savings of \$230,000 per year.

The city also partnered with the online incentive program Recyclebank to encourage greater recycling city-wide. The Recyclebank program provides up to \$200 a year in awards to households that recycle. Recyclebank also offers periodic training programs for residents to learn more about the importance of recycling and implement best practices for recycling throughout the city. Recyclebank established a comprehensive school-wide recycling system in local schools that encourages students to recycle. Blackham students, for example, participated in a month-long fundraiser with Recyclebank and the school is now fully recycling. Events such as this bring sustainability into school curricula.

2. Expand residential recycling through outreach and bin distribution to all residents

Partners

Bridgeport Conservation Corps
Blackham School
Recyclebank

Launch Recyclebank Program

Progress: The Recyclebank program offers residents incentives for recycling. So far, 2,000 residents have signed up for the program thanks to outreach done by the Conservation Corps and Recyclebank.

Impacts: 12% of households have enrolled in Recyclebank programs.

Distribute toters to all households in Bridgeport

Progress: All households in Bridgeport received toters for single-stream recycling.

Impacts: Refer to Municipal Solid Waste, Materials Use & Recycling strategy #1.

3. Expand commercial recycling through education and infrastructure to all businesses

Partners

US Environmental Protection Agency
Greater Bridgeport Community Enterprises (GBCE)
Bridgeport Regional Business Council
City of Bridgeport
Vita Nuova
Green Point Energy Partners
Bridgeport Board of Education
USAgain

Develop Comprehensive Recycling Programs

Progress: Single-stream recycling has been adopted by the city and Recyclebank works to educate residents on the importance of recycling. In addition, GBCE is currently piloting two green enterprises, one for book recycling and the other for textile recycling (more information at Municipal Solid Waste, Materials Use & Recycling strategy #6). Textile recycling was implemented at schools with USAgain containers.

Impacts: Single-stream recycling has been adopted at several Bridgeport organizations like the St. Vincent's Medical Center and continues to be adopted in other locations. (Refer to Municipal Solid Waste, Materials Use & Recycling strategies #1 and #6). Schools receive \$25/month in revenue from USAgain for recycled textiles.

Composting

Progress: Efforts to establish a comprehensive approach to composting have made great progress. Initially, the city participated in a EPA pilot with Providence to identify best practices used throughout the U.S. As a result, the city is entering into a memorandum of understanding with Green Point Energy Partners to develop a regional anaerobic digester for food waste that will include a compost manufacturing plant. And the city continues to focus on leaf collection, which occurs every year.

Impacts: With an average yearly tonnage of 57,000 of all waste, 50% is considered organic waste that could be diverted to a food waste digester (refer to Municipal Solid Waste, Materials Use & Recycling strategy #9), which would result in significant GHG reductions.

4. Promote Downtown Special Services District recycling indoors and out

Partners

Downtown Special Services District (DSSD)

Commercial Recycling Pilot

Progress: DSSD organized a centralized recycling pickup for commercial businesses downtown, but its affiliation with the city does not allow for commercial pickup at no cost. Therefore, recycling was decentralized.

Impacts: Determined unfeasible.

5. Promote recycled and recyclable materials purchased by the municipal and commercial sectors

GHG reduction: 1375 MT CO2e (Current)

Partners

United Illuminating (UI)

Greater Bridgeport Transit (GBT)

Bridgeport Regional Business Council (BRBC)

Green Procurement Plan

Progress: A Green purchasing ordinance adopted by the city is under implementation with the plan to purchase 40% of green office supplies for green businesses that take on green programs aligned with BGreen initiatives. Looking to regionalize green purchasing through coordinated efforts with municipalities and shift to 35% postconsumer content.

Impacts: The City spends about \$4,672,000 for office supply paper each year. Businesses that move to Bridgeport offering green products could sell their products to the city to support BGreen projects. Requiring the purchase of green office supplies results in GHG reductions.

6. Institute recycling for municipal facilities, operations, and events at municipal sites

Partners

Greater Bridgeport Community Enterprises (GBCE)

Park City Green

Bridgeport Conservation Corps

Recyclebank

St. Vincents Medical Center

Bridgeport Regional Business Council

Provide recycling bins at all events taking place on municipal sites

Progress: The Conservation Corps hosts promotion tents at various events to promote and distribute green program information, including specific information regarding recycling bins.

Impacts: Conservation Corps receives about 1,500 requests per year to sign up for programs offered to residents.

GBCE Pilot Programs

Progress: GBCE is currently piloting a Book Recycling program and a Textile Program, and in the process of contacting and building relationships with the Bridgeport community and local libraries.

Impacts: These recycling programs would work to increase recycling by using books and other materials for other purposes. These programs also create more jobs.

St. Vincent's Medical Center

Progress: St. Vincent's Medical Center has developed a comprehensive sustainability plan, has moved to singlestream recycling, is incorporating energy efficiency measures in the facility, and is evaluating other green business practices to incorporate into their program.

Impacts: Greening programs at the medical center estimate recycling 276,789 lbs of cardboard waste, 224,460 lbs of office paper generated waste, and approximately 60,000 lbs of plastic, bottles and cans annually.

7. Establish comprehensive district-wide recycling at our schools

Partners

Recyclebank

Bridgeport Board of Education

Blackham School, Luis Munoz Marin School, Geraldine W. Johnson

School, Bridgeport Regional Aquaculture Science & Technology Center,

Fairchild Wheeler Inter-district Magnet High School

32 Bridgeport elementary schools

Environmental Protection Agency

Connecticut Resources Recovery Authority

Develop comprehensive school recycling

Progress: The Bridgeport Board of Education was awarded a \$25,000 Environmental Protection Agency Grant to pilot a paper recycling program at Geraldine W. Johnson and Luis Munoz Marin Schools in 2010. Connecticut Resources Recovery Authority provided environmental education classroom programs and teacher workshops. The grant

helped launch the district-wide single stream recycling program in the fall of 2013. City schools launched a district-wide recycling program in the fall of 2013. Green Teams were created at 32 elementary schools.

Impacts: Recycling increased at Johnson and Marin Schools, as well as within the surrounding neighborhoods. The pilot helped launch the district-wide single stream recycling program. Single-stream recycling is occurring at 32 Bridgeport Elementary Schools. Fairchild Wheeler and the Aquaculture school are also recycling paper.

8. Engage residents in anti-dumping and “pride in community” anti-litter campaigns

Partners

Downtown Special Services District (DSSD)
Groundwork Bridgeport
Bridgeport Department of Public Facilities
Bridgeport Neighborhood Revitalization Zones (NRZs)

Build pride in community campaign

Progress: NRZs have neighborhood clean-ups, anti-bligh campaigns, and present neighborhood beautification awards.

Impacts: Five neighborhoods have NRZ plans, with two more neighborhood plans in the works. More than 800 volunteers participated in the Fall 2012 program

9. Establish a composting center for food waste

Partners

City of Bridgeport Department of Public Facilities

Green Point Energy Partners Anaerobic Digester

Progress: (Refer to Green Energy & Buildings 3)

Impacts: The facility would not only provide 50-60 living wage jobs but also produce a significant reduction in GHG emissions.

10. Expand recycling expectations for construction and demolition waste

Partners

General Electric (GE)
New School Construction Program

Develop a Construction and Demolition task force and make policy changes

Progress: In an effort to improve recycling of all materials, a massive GE building demolition is salvaging much of the building material for reuse.

Impacts: Reuse of the GE building materials will limit the amount of waste and pollution produced in Bridgeport.

11. Engage recycling operators in recycling education campaigns

Partners

Recyclebank
Blackham School
Environmental Protection Agency
Connecticut Resources Recovery Authority
Bridgeport Board of Education
Bridgeport Department of Public Facilities
Winters Bros. Waste Systems of Connecticut

Educate residents about accurate information on recycling

Progress: The Bridgeport Board of Education was awarded a \$25,000 Environmental Protection Agency Grant to pilot a paper recycling program at Geraldine W. Johnson and Luis Munoz Marin Schools in 2010. Connecticut Resources Recovery Authority provided environmental education classroom programs and teacher workshops. The grant helped launch the district-wide single stream recycling program in the fall of 2013. The BOE Building Operations created a recycling video and literature. The video is available on the City and BOE websites. Winters Bros. Waste Systems of CT created recycling literature that has been posted on the City website and reproduced by Public Facilities for distribution to residents. Recyclebank advertises periodic training programs, which have been incorporated into Blackham School

Impacts: Training programs educate and prepare students to recycle. This also brings recycling initiatives into the homes which improves overall recycling in Bridgeport. The recycling message is consistent.

12. Investigate options for special needs and bulk pick-up

Partners

City of Bridgeport
Bridgeport Regional Business Council (BRBC)

Mattress Recycling Facility

Progress: Bridgeport is home to the state's first mattress recycling facility. See strategy #1 for details.

Impacts: Provides an alternative disposal method for used mattresses that makes use of resources. See strategy #1 for details.

Household Hazardous Waste

Progress: Bridgeport provides twice-yearly hazardous waste collection.

Impacts: Keeps hazardous substances out of solid waste stream and wastewater.

Green Businesses, Jobs and Purchasing

SUMMARY

Bridgeport initiated green business growth to support existing businesses, such as Sikorsky Aircraft, while recruiting new businesses as well to open facilities and maintain green programs. A number of BGreen strategies provide incentives for employers to build facilities and expand their workforce in Bridgeport. In an effort to attract and grow green businesses in Bridgeport, the city is working with the Bridgeport Regional Business Council and other partners on developing programs for both employers and employees that involve themselves in sustainable efforts within their facility and management systems. Action so far has sparked significant job growth as an influx of green businesses enters Bridgeport's market.

IMPACTS

| | |
|--|-----|
| # of New Green Businesses in Bridgeport | 14 |
| Workers Trained or Employed in Green Industry Jobs | 900 |

STRATEGIES & PROGRESS

1. Establish model Green Collar Jobs career-ladder training continuum within existing secondary and higher educational institutions

Partners

The Workplace
Student Conservation Association
Greater Bridgeport Community Enterprises (GBCE)
Fairfield County Community Foundation (FCCF)

Green Jobs Training

Progress: The Workplace Inc. received a \$4M grant from the Federal Department of Labor to develop four career ladder training programs in areas that include energy, water resource management, transit operations and maintenance, and green buildings & infrastructure. More than 600 people were recruited and more than 400 people were placed in green jobs.

Impacts: This increases job creation and availability for residents by providing 600 people with skills to obtain employment in green industries.

Student Conservation Association

Progress: Ten workers did a project at the Beardsley Park after going through the career-ladder training program.

Impacts: Training opportunities such as this develop skills and experience which help long-term employment prospects for participants.

Boot Camp Farms Urban Agriculture Center Greenhouse Project



Boot Camp Farms will open the first of its state-of-the-art commercial hydroponic greenhouses as well as a not-for-profit community center and retail outlet in Bridgeport on what is currently 3.8 acres of blighted brownfields in the city's east end. This innovative green business will provide at least three dozen full-time job opportunities for residents as growers in the greenhouses and staffing in the community center and retail outlet, in addition to the 150 temporary construction jobs to erect the greenhouses, community center, and retail outlet. The greenhouses, the largest hydroponic agriculture project in the State of Connecticut, will be an important large-scale supplier of vegetables for the Tri-State area for produce distributors as well as local vendors and restaurants. This will improve access to fresh, high quality produce to help alleviate the food desert in the East End of Bridgeport through the subsidized retail outlet.

Free job training in urban farming at the community center will be provided by UConn's Agriculture Department which will offer certificate courses for those who wish to pursue agriculture as a career. The community center will also provide a venue to educate children on the importance of agriculture and a healthy lifestyle. Brownfield remediation and construction of two 40,000 square foot glass atrium-style greenhouses has begun with the support of a \$1 million grant from Connecticut's Department of Economic and Community Development, the first of which should be operational by the end of 2013. The project is the first of its kind, creating a green, sustainable agriculture business on formerly undevelopable land.

2. Create a Green Business Incubator and/or a Green Business Cluster

Partners

Bridgeport Regional Business Council (BRBC)
Park City Green
Bridgeport Biodiesel
Boot Camp Farms, LLC
Flexi Pave
The Workplace
Greater Bridgeport Community Enterprises
Fairfield County Community Foundation
Connecticut Center for Advanced Technologies

Become a center of excellence for green business growth by developing a marketing strategy and identify a facility to bring in 10 start-up companies

Progress: The City and the BRBC are working to expand current green businesses in the city as well as recruit new businesses. Some of the companies that have either expanded their green product lines or opened up a new business in Bridgeport include Santa Energy, Park City Green, Flexi-Pave, Bridgeport Biodiesel, Enviro Express., American Oil Solutions, RSP Systems, Dominion Energy and Boot Camp Farms. Considering the number of incoming businesses, the potential for creating green business incubators by housing several start-ups in the same building is high. Other business development opportunities in the pipeline include two anaerobic digesters, a green building supply company, a seaweed manufacturing facility, a propane filling station, natural gas vehicle retrofit services, and many others.

Impacts: Green business recruitment, expansion and environmental remediation all create green jobs and reduce Bridgeport's carbon footprint. In addition, CDBG provided \$39,000 to Greater Bridgeport Community Enterprises for the Business Incubator, which helped create 21 jobs this fiscal year. The goal is to have over 100 to be created in five years.

3. Provide education and support to green existing businesses

Partners

Reservoir Community Farm/Green Village Initiative
Greater Bridgeport Community Enterprises
Bridgeport Conservation Corps
The Workplace
Groundwork Bridgeport
Bridgeport Lighthouse Afterschool Program
Bridgeport Regional Business Council (BRBC)
Community Capital
Bridgeport Biodiesel
Discovery Museum

Develop green business strategies specific to existing Bridgeport businesses

Progress: BRBC hosted an energy conservation forum with UI to provide businesses with information on how to lower their energy costs and enhance energy conservation opportunities. Outreach will continue in other areas of green business operations.

Impacts: This initiative allows for more businesses to adopt green business strategies, help them lower their cost of operations, and reduce their carbon footprint.

Conservation Corps

Progress: The Conservation Corps, made up of about 30 young adults in Bridgeport and a partnership with the Workplace, Groundwork Bridgeport and the Lighthouse Afterschool Program, hosts promotion tents at various events to distribute information for the Reservoir Community Garden, Petroleum Recycling, and other green businesses offering middle to low-income neighborhood sustainable and affordable deals. Community Development Block Grant funds provide \$100,000 in funding per year, allowing 30-35 young people to present environmental information to 750 households.

Impacts: During the last three seasons, the Conservation Corps has helped nearly 2,000 Bridgeport residents sign up for green programs.

GBCE Green Team

Progress: The Green Team job training program has just completed the third cycle of three programs focused on brownfield remediation and deconstruction. Students are placed with employers after completing the training program which helps provide jobs opportunities for more residents.

Impacts: Out of the 52 students enrolled in the training program, 48 finished and 23 have been placed in a green job so far.

Discovery Museum

Progress: This historic museum designed by the Harvard Five of architecture focuses displays on green technology and green designs for weatherization and reduced carbon footprints. The BRBC hosts historic events at the museum and has also expanded in Discovery Museum Magnet School. (Refer to Green Marketing, Education and Outreach strategy #2).

Impacts: Support for the advanced technology and available information in the museum attracts new businesses and investors to Bridgeport.

4. Establish a Green Collar Resource Center

Partners

United Illuminating (UI)
Connecticut Energy Efficiency Fund
Downtown Special Services District (DSSD)

Ensure that co-benefits and synergy are maximized in the local green economy

Progress: Workshops were held for small businesses on energy efficiency and waste reduction with UI and the CT Energy Efficiency Fund to provide ways businesses can adopt green practices.

Impacts: Out of the estimated 120 businesses being recruited to Bridgeport, 10% open a facility or office and adopt green practices available at the resource center.

Park City Green Mattress Recycling Facility



Workers at Park City Green strip raw materials from discarded mattresses

Park City Green is Connecticut's first mattress recycling facility and a cornerstone of Bridgeport's Eco-Technology Park. Operating since June 2012, Park City Green has already created seven jobs and deconstructed more than 11,000 old mattresses that would otherwise have wound up in far-away landfills or burned in an incinerator. Founded by Greater Bridgeport Community Enterprises, Inc. under its non-profit umbrella, Park City Green was created on the model of social venture enterprises developed by St. Vincent de Paul Society of Lane County, Oregon. St. Vincent de Paul actively participated in the start-up of Park City Green with the support of a grant from the Robert Wood Johnson Foundation. The City of Bridgeport and the Bridgeport Regional Business Council provided counsel and funding for siting the operation and renovating its space. Within three years, Park City Green should reach the goal of repurposing material from 100,000 mattresses a year. Up to 85 percent of a mattress can be recycled; using this previously untapped resource extends the usable life of the materials such as foam, steel, cotton and wood through re-manufacturing. Wood from mattresses and box springs are used for mulch or compost, metal springs are scrapped, foam is repurposed as carpet padding, and cotton is used to stuff car seats. Making use of mattress components prevents the unnecessary production of new materials while avoiding the greenhouse gas production that comes with shipping and incinerating heavy materials. In addition to mattresses, PCG is also processing used books, reselling those with value and sending the remainder to paper recycling facilities. This new opportunity creates an additional revenue stream and down the road, even more job opportunities for local residents.

Park City Green's primary focus is to create jobs for low-income Bridgeport area residents experiencing barriers to employment: at risk youth, the formerly incarcerated, housing authority residents, and veterans having difficulty returning to civilian life. At full production, Park City Green will employ 15-20 workers in direct administrative and entry level warehouse and production jobs, and 5-10 indirect jobs will be created in logistics and transportation. Skills training in warehouse management, forklift driving, and materials handling is available to employees to broaden their opportunities and marketable skills. Having Park City Green as an anchor facility in the Eco-Technology Park will help draw other green collar industries to Bridgeport establishing the city as a leader in sustainable business.

5. Provide weatherization training and certification for 100 students

Partners

The Workplace
Greater Bridgeport Community Enterprises (GBCE)

Bridgeport Environmental Job Training

Progress: The GBCE and the Workplace opened an eight week classroom and hands-on preparation course for students entering careers in the environmental field.

Impacts: Refer to Green Businesses, Jobs and Purchasing strategy #3.

6. Pilot a green purchasing program for municipal facilities and operations

Partners

City of Bridgeport Purchasing Department
BRBC

Green Purchasing Program

Progress: The city administration has agreed to buy green products and services for a growing proportion of its purchases for all municipal facilities and operations. This is another one of the city's major sustainability achievements that will support Bridgeport's progression toward a model green community.

Impacts: This program will also be a part of an incentive package to draw in more green businesses into the city.

7. Promote recycled and recyclable materials purchase by the city and commercial sector

Partners

City of Bridgeport Purchasing Department
BRBC

Develop a regional environmentally preferred purchasing policy

Progress: This policy is under review for future implementation. This policy involves the city's hope to regionalize the Green Purchasing Program through coordinated efforts with neighboring municipalities and expand the recent shift to 35% post-consumer content in the Green Procurement Plan into the commercial sector.

Impacts: This policy will help the city maintain green businesses by guaranteeing them business opportunities.

8. Promote green purchasing in the residential sector

Partners

City of Bridgeport Department of Public Health
Wholesome Wave
Reservoir Community Farm/Green Village Initiative
Boot Camp Farms

Help residents use safer products in their homes

Progress: Action includes expanding existing programs for training and educating residents on the use of green products and how to improve indoor air quality.

Impacts: Efforts are still being made to make a significant impact on Bridgeport.

Increase food access throughout Bridgeport

Progress: The City is working with the Department of Public Health and Wholesome Wave to increase overall food access throughout Bridgeport, especially in the East End which is known as a food desert. One effort taken so far was opening farmers markets in the East End and East Side. In addition, Boot Camp Farms is opening a greenhouse business on the East Side that will employ veterans and supply fresh produce to residents (see sidebar).

Impacts: Providing businesses and corner stores with healthy produce addresses the problem of food deserts in certain neighborhoods and increases the health of Bridgeport's residents.

Green Marketing, Education and Outreach

SUMMARY

Marketing and education encourages support of BGreen’s goals and participation in implementing its strategies, and also helps Bridgeport attract investment from both the public and private sectors. Educational strategies that improve the awareness of environmental sustainability issues locally include the youth and senior Conservation Corps, which recruit local residents to work on education and service projects. A second and perhaps more important function of the Conservation Corps is to help Bridgeport households access programs that can benefit them, such as programs that help pay for energy efficiency improvements or lower cost energy providers. The participation of Recyclebank in Bridgeport’s recycling program has helped drive awareness of recycling and incentive participation. Participation in BGreen by the Board of Education and other partners has resulted in school curricula that include sustainability lessons allowing students to learn how, for example, recycling, energy efficiency and conservation, and community gardening all contribute to a healthier environment and save money.

IMPACTS

| | |
|--|-----------|
| Young Adults Involved in Outreach | 209 |
| Leveraged CDBG Funds supporting sustainability-related neighborhood projects (\$ most recent program year) | \$338,000 |
| Students attending environment-themed schools | 1250 |



Columbus School students building flower boxes

STRATEGIES & PROGRESS

1. Conduct neighborhood outreach to educate and involve Bridgeport households in BGreen initiatives and sustainable best practices

Partners

Bridgeport Conservation Corps
Community Development Block Grant Program

Conservation Corps

Progress: The Conservation Corps in its third summer of outreach on recycling and various conservation programs with at-risk youth, as well as disseminating information through BConnected about green infrastructure, renewable energy, energy efficiency, etc. The Conservation Corps reaches out to about 13,000 households a year and receives about 1,500 requests to sign up for energy saving, recycling and other programs offered to residents.

Impacts: Word of mouth is increasing among residents about new sustainability practices, leading more households to participate in BGreen efforts.

Promotional tents at community events

Progress: The Conservation Corps hosts promotional kiosks in public areas, near churches and community centers, to educate residents on BGreen initiatives and resources. These tents are held during events in middle to low-income neighborhoods.

Impacts: Promotional tents have helped sign up 1,500 requests from residents to sign up for BGreen programs supporting energy efficiency and recycling.

Funding for educational programs

Progress: Community Development Block Grant funding is being spread out and prioritized for organizations that address BGreen goals, including education. In addition, the Emergency Operation Center has done emergency preparedness outreach.

Impacts: In the program year 38, ten organizations that received BGreen bonus points on their CDBG grants were for youth and education initiatives. Total funding was \$338,295.

Green Village Initiative's Reservoir Community Farm and Community Gardens



Green Village Initiative's Reservoir Community Farm

Green Village Initiative (GVI), a grassroots environmental non-profit, has partnered with the Board of Education and the City of Bridgeport to install gardens at every school to teach students about the importance of local food in healthy and sustainable lifestyles. GVI has completed 20 school gardens, with 14 more to be built in the next few years on Garden Build Days, where nearly 250 volunteers construct a garden while also beautifying the surrounding neighborhood. Produce grown in spring and fall is used in cafeteria lunches, while summer produce is sold at a reduced rate to individuals or to local restaurants. School Garden Coordinators are responsible for garden maintenance and are supported with a stipend from the Fairfield County Community Foundation. They also run after-school programs for students interested in learning more, with the help of GVI summer interns.

A full-time farmer runs GVI's Reservoir Community Farm in Bridgeport's North End, which acts as the nonprofit's support center for school gardens and community garden workshops. Reservoir Community Farm's farm stand began selling produce to the surrounding neighborhood in June 2013, expanding access to produce in a neighborhood considered to be a food desert. The neighborhood has also seen a 34% decrease in crime from the six months before the farm was built to six months after its construction, suggesting that the farm activities have improved the safety of the area. GVI is working with Common Ground High School in New Haven to replicate their model in every school in the state, allowing every city to see the environmental, economic and social benefits that Bridgeport has seen.

GVI is a new grantee of the Local Sustainability Matching Fund, a national project of the Funders' Network for Smart Growth and Livable Communities. Funding from the Local Sustainability Matching Fund was a result of an application submitted by the Fairfield County Community Foundation.

2. Develop school-wide sustainability education and youth engagement opportunities

Partners

Board of Education
Reservoir Community Farm/Green Village Initiative
Funders' Network for Smart Growth and Livable Communities
Fairfield County Community Foundation
SoundWaters
Blackham School
Recyclebank
Bridgeport Regional Business Council (BRBC)
Discovery Magnet School
Fairchild Wheeler Interdistrict Magnet School

Develop an inventory of existing green curricula and programs

Progress: Sustainability initiatives and education programs are incorporated into school curricula thanks to the collective impact of the Board of Education, local schools and supporting businesses and organizations.

Impacts: With school curricula focusing on sustainability, the important messages of recycling, community involvement and available green programs are being brought home to spread awareness to the larger population.

Develop recommendations for green education

Progress: The Reservoir Community Farm is running a school gardening program that incorporates student internships as well to further higher-level education, SoundWaters has created an out-of-school education program to learn the science of the Long Island Sound, and the Watershed program is recommending an educational component.

Impacts: Students are actively participating in green education programs such as SoundWaters, which educates more than 25,000 students on the biology of Long Island Sound across the region.

Expand recycling within schools

Progress: City schools launched a district-wide recycling program in the fall of 2013. 32 Bridgeport Elementary Schools and the Bridgeport Regional Vocational Aqua Culture School and Fairchild Wheeler Inter-district Magnet High School are single-stream recycling. Bassick, Central and Harding High Schools and Pride Academy and Learning Enrichment are paper recycling and will be adding single stream recycling. Blackham school students participated in Recyclebank as part of a month-long fundraiser and is now fully recycling 100%.

Impacts: 32 Bridgeport Elementary Schools and The Bridgeport Regional Vocational Aqua Culture School and Fairchild Wheeler Inter-district Magnet High School are single stream recycling, ultimately increasing recycling and sending a consistent message on what can and cannot be recycled in school and at home. Green Teams were created at the 32 elementary schools.

Park City Schools & Community Alliance

Progress: The Park City Schools & Community Alliance is an initiative led by the City of Bridgeport Public Facilities/Buildings Operations Department comprised of stakeholders throughout the City, as well as groups of citizens that want to help move Bridgeport forward. Some of the groups involved in this effort are GVI, Rotary, Groundwork Bridgeport, Builders Beyond Borders, BuildOn, FoodCorps/Wholesome Wave, and

Pivot Ministries just to name a few. This effort will be led by the Public Facilities/Building Operations Department. The concept behind the initiative is to use a school as community hubs and to engage local residents with clean up of school areas and the surrounding neighborhoods. Many of these efforts are being delivered into existing educational curriculum such as the gardens we are creating and maintaining and our district-wide recycling program.

Impacts: Neighborhoods are being created with schools as focal points for the community.

Fairchild Wheeler High School

Progress: Completed in 2013, the visionary Interdistrict Magnet High School is one of the most environmentally friendly schools in the state. LEED (Leadership in Energy and Environmental Design) Gold certified, the building will get close to 120kW of power from wind turbines and solar panels. It has a green roof and its construction includes eco-friendly building materials with energy-efficient mechanical systems. The completed landscaping will use native vegetation and 76% of the site will be maintained as open space.

This hi-tech school, which in itself will be a teaching and learning tool for students and staff, offers a 21st century STEM (Science, Technology, Engineering and Math) project-based curriculum focusing on three areas: Information Technology, Biotechnology/Zoological science and Physical Science, Math and Aerospace/Hydrospace Engineering. The Information Technology program will work in conjunction with Sacred Heart University; the Biotechnology and Zoological science program will work in conjunction with The University of Connecticut, the Beardsley Zoo and Mystic Aquarium; and the Physical Science, Math and Aerospace/Hydrospace Engineering program will offer learning and internship programs with the University of Bridgeport, the Discovery Museum, Sikorsky, Kongsberg and other area companies. Partnerships with the three universities will provide significant opportunities for students to acquire college credits. Seven hundred fifty (750) students in grades 9-10 attend the school. Seventy percent (70%) of the students come from Bridgeport and the other 30% will come from the surrounding communities of Trumbull, Fairfield, Shelton, Stratford, Easton/Redding, Monroe and Milford.

Impacts: 750 students will benefit from a healthy school environment and STEM curricula.

Discovery Magnet School

Progress: This city school has been chosen by NASA to launch a satellite into space for study. This school is working to incorporate the Planetarium into student studies. See sidebar for more information.

Impacts: At full enrollment, Discovery Magnet will serve 500 children per year. The education received at Discovery Magnet will help prepare students to pursue careers in science and engineering fields.

3. Brand Bridgeport as a model green community

Partners

City of Bridgeport
Bridgeport Regional Business Council
Regional Plan Association
Fairfield County Community Foundation
Connecticut Energy Efficiency Fund
Clean Energy Finance and Investment Authority

Conservation Corps

Mayor Bill Finch and Conservation Corps Director Wilfred Murphy with the 2013 Conservation Corps



Each summer, the Conservation Corps brings together thirty at-risk young adults who provide public outreach on sustainability to Bridgeport's neighborhoods. The program is a partnership of the City of Bridgeport with The Workplace, Groundwork Bridgeport, and the city's Lighthouse after-School program. The Conservation Corps provides public outreach programs and hosts promotional tents at community events in an effort to educate residents about recycling, energy conservation and savings, stormwater management and the importance of planting trees. This non-profit organization is in its fifth year of summer programming.

So far, the Conservation Corps has helped to increase the number of residents taking advantage of energy and money saving programs. The Conservation Corps has also helped popularize BGreen programs such as Recyclebank's incentives for recycling and weatherization audits that help reduce energy bills. In a diverse city with a variety of income levels, the Conservation Corps focuses their outreach on moderate to low-income neighborhoods and households that can benefit from sustainability by reducing household energy costs. The Conservation Corps outreach helps individual households to understand the role they have in creating a sustainable Bridgeport and to see the benefits of reducing household energy and waste footprints.

Discovery Museum and Magnet School

Adventure Park Ropes Course



Bridgeport's Discovery Magnet School for grades K-8 is the only school on the East Coast to use the innovative STEM curriculum focusing on science, technology, engineering, and math to prepare students for twenty-first century issues. Immersed in nature, the school embraces earth sciences to teach students about their environment through interactive exercises. Access to a remote-operated ROV undersea explorer vehicle allows students to experience the planet's undersea frontier, while the school's CubeSat Launch Initiative NASA Satellite, one of only twenty-four in the nation, shows students their place in the universe during Challenger Learning Center simulations. The school accepts students from in and around Bridgeport, helping to close the expansive achievement gap in Connecticut schools by making a high-quality education available to children who may not have the same opportunities in their home school district. Discovery Magnet School has LEED Gold status under the U.S. Green Building Council program and has taken care to protect its sensitive wetland surroundings.

The school is adjacent to the Discovery Museum, an interactive science and technology museum. The proximity of the school to the Discovery Museum next door gives Magnet School students access to a variety of resources and exhibits, including the 50th Anniversary "Architecture: Art, Science and Energy" exhibit, which showcased sustainable architecture projects, green technology, and built environment impact reductions in celebration of the museum's unique design by Harvard Five architect John M. Johansen. The museum's "First in Flight" exhibit celebrated Bridgeport's Gustave Whitehead, who flew his #21 airplane two years before the Wright brothers, in hopes of rightfully claiming Whitehead's place in history, instilling pride in the community. Aside from celebrating the city's past and future in exhibits, the museum also hosts a challenging five-acre zip line and ropes course at the adjacent Adventure Park.

Provide an "Incentive Package" to attract Green businesses to Bridgeport

Progress: Utilize initiatives from the Green Procurement Program and other business recruitment incentives to market Bridgeport as a place for green business growth. This package would also provide employee training incentives to assist green businesses find qualified workers in the region. Given its geographic proximity to the New York market, Bridgeport is a less expensive but equally attractive alternative to many other locations for business growth and success.

Impacts: This incentive package attracts new businesses to Bridgeport and open facilities, which will also create job opportunities. A product of increased green business in Bridgeport will be a green industrial city with more opportunity at a lower cost.

Social Media

Progress: A BGreen website (www.bgreenbridgeport.org), facebook account (BGreenBridgeport), and twitter feed (@BGreenBPT) were set up in 2010 and are maintained by Regional Plan Association with the support of Fairfield County Community Foundation. All three sites notify public of stats, events, etc. In addition, the city-run BConnected system provides a significant amount of available information for middle to low-income households to take advantage of savings programs.

Impacts: Social media and websites provide a centralized source of information for interested partners and help document ongoing progress.

Partnerships

Progress: The BGreen management team includes staff from City of Bridgeport, Bridgeport Regional Business Council and Regional Plan Association and over 80 organizations have been identified as participating in one or more BGreen project.

Impacts: Partnerships leverage the capacities of the City of Bridgeport and the community's non-profit organizations and businesses to support common goals for the city.

Recognitions

Progress: City of Bridgeport and BRBC received Governor's Climate Change Leadership Award; Regional Plan Association received Green Leader award from Fairfield County Green Drinks; Bridgeport mentioned in Self magazine as one of the healthiest cities for women; Mayor Finch received an A in transportation from CT Post for Earth Day 2011; Mayor Finch received Environmental Hall of Fame award. Bridgeport ranked #10 in transit ridership gains with a 4.3% increase in 2010. Bridgeport names a "Tree City USA" for the past four years as well as winning the Connecticut Urban Forest Council's "Community Award" for outstanding urban forestry program in 2012. Bridgeport is a "Clean Energy Community," a joint program of CEFA and CEEF.

Impacts: Awards bring positive attention to Bridgeport in regards to green businesses, transit use, and the green mindset of the community, and help the city and its partners attract grants and private investment to further additional BGreen initiatives.

Adapting to the Impacts of Climate Change

SUMMARY

Within the last three years, Bridgeport has seen two fifty-year storms, a nor'easter whose snowfall total broke the 1888 record, an increase in intense rainfall, and a tornado. Events such as Hurricanes Sandy and Irene and Winter Storm Nemo have demonstrated Bridgeport's vulnerability to the impacts of climate change: rising sea levels and more severe and frequent storms that bring inland and coastal flooding and interruptions in basic services such as power and transportation that disrupt lives, damage properties, and strain household and municipal budgets. While BGreen 2020 included many strategies intended to help Bridgeport prevent damage from storms and sea level rise, these strategies have now risen in prominence and urgency. City, state, and private resources have been devoted to assisting BGreen neighborhoods in several ways—by physical barriers to vulnerable properties, improvements to utility infrastructure that alleviates regional power problems, and through programs and education that help individual households to adapt to rising insurance costs and prepare for emergencies.

Flooded roadway underpasses limit access to some of the hardest-hit neighborhoods when storms hit.



Preparedness and mitigation strategies will allow Bridgeport to thrive despite a changing climate, and will shorten the time it takes for the city to bounce back from natural disasters. Clean Air-Cool Planet has supported workshops and neighborhood plans to evaluate and improve emergency response by institutions and individual households. Greater Bridgeport Regional Council, the region's metropolitan planning organization, is taking part in FEMA's Community Resilience Innovation Program to do a Regional Flooding Risk Assessment and Community Rating System Feasibility Study to determine risks and vulnerabilities to prepare for natural disaster impacts such as flooding of coastal areas. The engineering firm Stantec is designing an earthen berm along the perimeter of Seaside Park that would protect homes, businesses, and infrastructure in the South End from hurricane storm surges. United Illuminating is installing flood barriers, pumps, and generators at substations and sealing substation buildings and conduits to protect critical elements of the city's electrical system to prevent service disruption as a result of severe storms. The city has received \$2.97 million from the State of Connecticut for natural gas micro-turbines that will form part of a micro-grid protecting key services from electrical outages.

STRATEGIES & PROGRESS

1. Stormwater Management

GHG reduction: 285 MT CO₂e (Projected)

Partners

Clean Air-Cool Planet
The Nature Conservancy

Prevent Stormwater Flooding

Progress: Clean Air-Cool Planet and the Nature Conservancy hosted two workshops in the Spring and Summer of 2012, and suggested preparations for climate change and storm flooding. The report is 100% complete and includes information regarding Bridgeport's current, planned and recommended resiliency improvements. See sidebar.

Impacts: Ways in which Bridgeport can proactively manage emergencies and risks posed by natural hazards are included in the Findings Report from the climate preparedness workshops. The impacts emergency management will have on the city will facilitate community members to initiate projects to maintain neighborhoods and facilities.

2. Emergency Preparedness

Partners

Greater Bridgeport Regional Council (GBRC)
Clean Air-Cool Planet
Federal Emergency Management Agency (FEMA)

Develop Resiliency Plan

Progress: GBRC was awarded a FEMA Community Resilience Innovation Program grant for \$35,000 for a Regional Flooding Risk Assessment and Community Rating System Feasibility Study. Clean Air-Cool Planet is sponsoring a fellow this summer to further develop a resiliency plan. This includes doing surveys to find out how prepared the public has been in past storms, and holding workshops to prepare for future storms. In addition, GBRC is working on a natural hazards mitigation plan by looking at risks and vulnerabilities to prepare for natural disaster impacts on coastal areas. Climate preparedness strategies are being prepared at the neighborhood level.

Impacts: With a Resiliency Plan, the city is able to adapt to the impacts climate change has posed to Bridgeport and also prepare residents for future impacts of natural hazards.

CACP Community Workshops

Participants at the first Clean Air-Cool Planet workshop



Clean Air- Cool Planet and the Nature Conservancy hosted a series of workshops related to climate preparedness in the spring of 2012 in partnership with the City of Bridgeport. The risk assessment performed as part of the workshops brought attention to common concerns within Bridgeport regarding emergency management operations and problematic areas created by hazardous weather. Recommendations were issued shortly afterward including information on Bridgeport's current, planned, and recommended resiliency improvements for vulnerable areas of the city. With this report, the city is working to comprehensively assess and educate residents on the economic, societal and ecological contexts of these improvements.

Clean Air- Cool Planet continued its involvement in Bridgeport by sponsoring summer fellows in Bridgeport during the summers of 2012 and 2013. The 2012 Fellow developed policy recommendations for how to address flood preparedness, including a program that will save residents on their flood insurance bills. The 2013 Fellow factored in new data related to Superstorm Sandy and Winter Storm Nemo and held follow up workshops and developed neighborhood plans for three coastal neighborhoods in Bridgeport. These neighborhood plans are designed to strengthen communications between the Emergency Operations Center and neighborhood leadership in order to foster communities that are better prepared to handle extreme weather.

3. Coastal Adaptation

Partners

City of Bridgeport
Stantec
United Illuminating (UI)

Seaside Park Buffer Reconstruction

Progress: A design is underway to establish an opportunity to protect economic development and sustainable costs for the South End of the city. STANTEC is developing a design, that is currently 25% complete, to provide a solution that will incorporate a berm along the perimeter of Seaside Park.

Impacts: With the berm placement, a rough total of 88,886,294 gallons would be buffered per year, reducing flooding and pressure on water treatment facilities.

Substations to Mitigate Flooding

Progress: UI will spend approximately \$11 million on measures to protect electrical substation equipment that serve individual homes and businesses with electricity. Measures include installing flood barriers for substation yards, buildings and doors; installing pumps and backup station serve generators; installing cameras and water-level sensors; and sealing substation buildings and conduits. These measures are already underway in response to recent flooding from tropical storms impacting the coastal territory. Longer-term initiatives are also under consideration to prepare for sever weather and rising storm surges.

Impacts: Measures taken to mitigate flooding on the coast and near electrical substations will adapt to the coastal nature as storms and climate change impact Bridgeport. UI received national recognition for its recovery efforts after recent storms, winning the Edison Electric Institute's 2011 and 2012 Emergency Award for Restoration.

4. Energy Resilience

Partners

City of Bridgeport
Connecticut Department of Energy and Environmental Protection (DEEP)

Establish a Micro-grid

Progress: In a response to climate change, the city submitted applications to have legislation approve a micro-grid located at the emergency operation center and Lyon Terrace City Hall. Because the existing electrical system downtown is already engineered for resiliency, adding distributed generation microgrids limits the amount of renewable energy that can be added downtown to 50 kW. Governor Malloy and DEEP's Microgrid Pilot Program will provide funds to create microgrids for critical downtown facilities during electrical grid outages

Impacts: The Microgrid Pilot Program granted \$2.97 million for three 600kw natural gas micro-turbines for city hall, the police station, and senior center, which will allow for the city to properly and effectively prepare for and respond to threatening climate events.

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Yale University

Solar schools • Eco-Technology Park
Anaerobic digester • Fuel cell • Biodiesel
Energy efficiency • Geothermal
Complete streets • Urban agriculture
Barnum Station • Fishing pier • Hybrid
buses • Parks Master Plan • Watersheds
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