

Battery Park City Sustainability Plan Progress Report

NEW YORK STATE OF OPPORTUNITY.

Battery Park City Authority

September 2024

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NEW YORK STATE OF OPPORTUNITY.

Battery Park City Authority

Battery Park City Sustainability Plan Progress Report

September 2024



Foreword

The BPC Sustainability Plan, built on decades of environmental leadership at Battery Park City, was released four years ago in 2020.

Developed with a diverse array of stakeholders, the plan provides guidance for the Authority and broader BPC community. Since its release, the BPCA has made substantial progress understanding building energy use, improving stormwater management, advancing multiple climate change resiliency projects, accelerating zero waste and composting initiatives, and mapping biodiversity and local habitats within BPC.

In this progress report, BPCA is reporting on work from 2020 through 2023 and has begun conversations about updating the goals and targets in the 2020 plan.

BPCA plans to further engage with buildings to determine feasible goals relating to energy usage and water recycling as many initiatives in the Sustainability Plan require accelerated action and transparency from buildings on key sustainability metrics.

Other items in the plan related to embodied carbon and sustainable materials, renewable energy generation, and mobility are due for renewed conversations with stakeholders about what is feasible and where to focus future attention.

Overall, this reflective process is essential to align the targets and goals with emerging environmental realities and continue prioritizing target metrics for greatest impact.

As we move forward, BPCA is committed to evolving the Sustainability Plan targets to better align with current goals and to remain an ambitious example of sustainability for other communities in New York City and beyond.

BPCA will continue to publish progress reports to keep the community informed and engaged, ensuring transparency and accountability. In 2025, BPCA will release a formal Sustainability Plan update and recommit to a holistic sustainability vision, acknowledging any direction shifts.

Readers of this progress report are encouraged to review materials and regular updates provided on the BPCA Sustainability website, sign up for newsletters, attend sustainability-related programming across the neighborhood, and reflect on your own practices and how you can play a part in BPC's efforts for a more sustainable future.

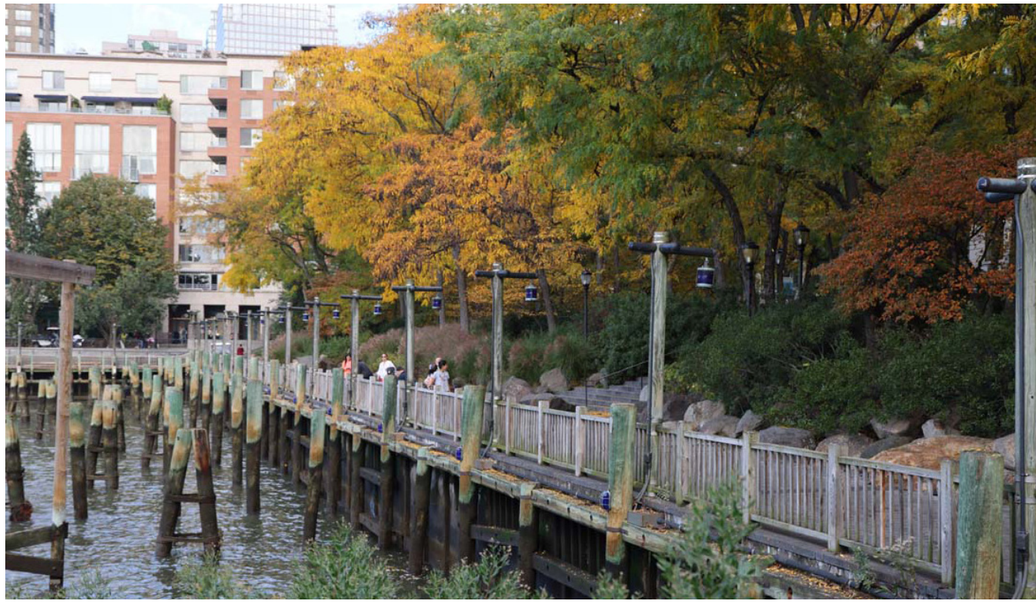
Sincerely,

Raju Mann
President & CEO

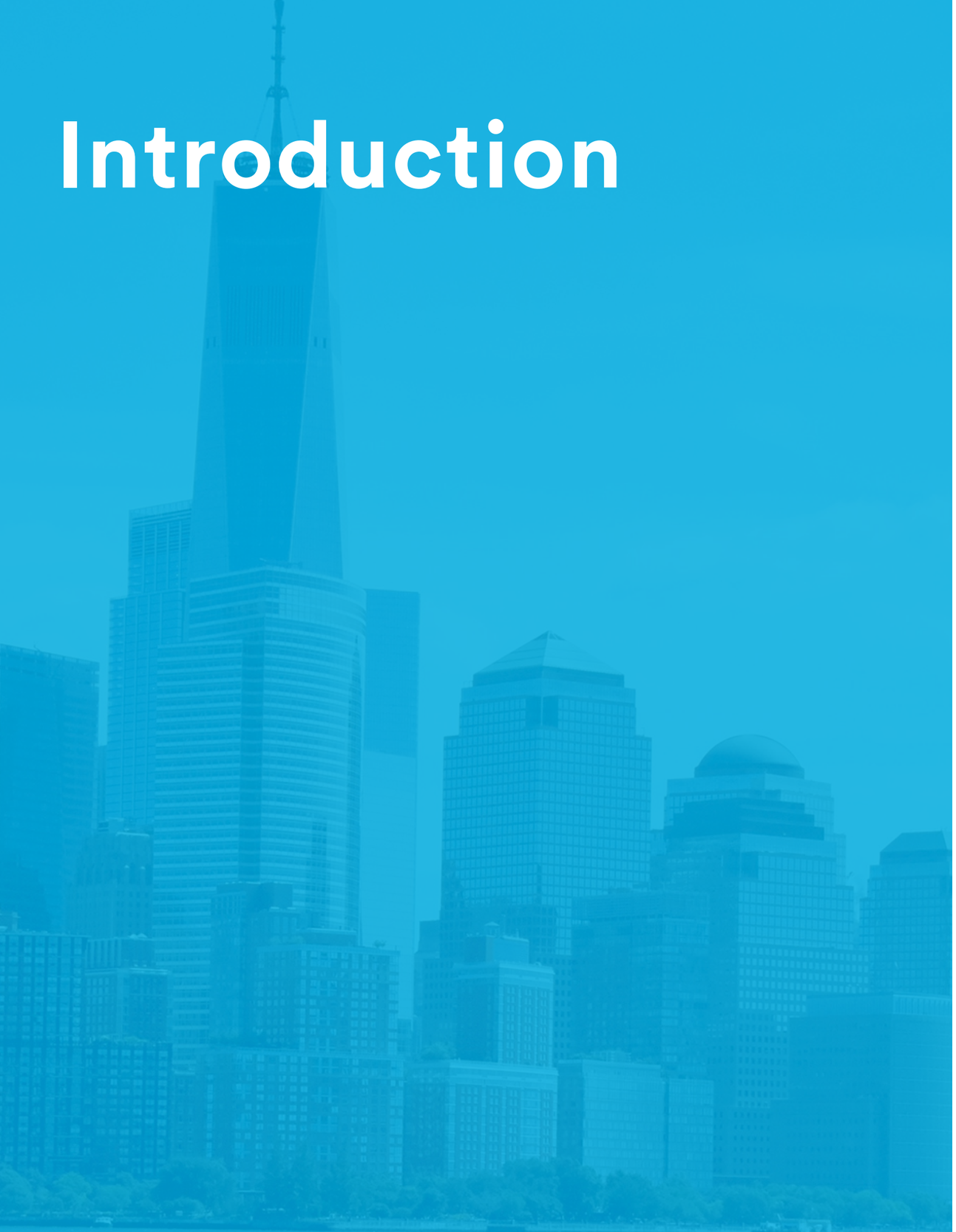








Introduction



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Introduction

Background

In 2020, the Battery Park City Authority (BPCA) published the first Battery Park City Sustainability Plan. The Plan is a comprehensive plan to achieve progressive sustainability targets over the 10 years following its release, and lays the groundwork for continued sustainability action after 2030. Targets were established for BPC as a whole, BPCA as an organization, or both where neighborhood-wide coordination is needed. The plan was developed in consultation with a broad range of residential, local, and governmental stakeholders and it provides the framework for developing a carbon neutral Battery Park City by 2050, in keeping with the mandate set forth in New York State's 2019 Climate Leadership and Community Protection act to reduce greenhouse gas emissions.

The plan is centered on four Topic Areas:



Elements of the Plan

The Plan is categorized by Topic Areas that serve as the main chapters of this report. As the Plan is read, Topic Areas are further broken down into broad aspirations and discrete methods for achievement. In that spirit, the Sustainability Plan is divided into **Strategies**, **Targets, Milestones**, **Actions,** and **Sub-Actions**.

18 **Strategies** are primary methods for achieving Battery Park City's sustainability goals and include deep energy retrofits, organic waste collection, etc.

25 **Targets** are the objectives set to achieve each Strategy within 10 year's of the Plan's release. These targets are either **BPC Targets**, those meant to be achieved neighborhood-wide, or **BPCA Targets**, those meant to be achieved in BPCA-owned and leased spaces (both indoor and outdoor) as it leads by example.

64 **Supporting Milestones** were placed along a timeline from 2020 to 2030, meant for BPCA to track to demonstrate progress toward meeting the 2030 Targets.

46 **Actions** provide more detailed initiatives to be implemented underneath each Strategy for the purposes of achieving the Targets. Actions can be **BPCA-led Actions**, those meant to be primarily implemented and managed by BPCA; **BPC-wide Actions**, those meant to be implemented across Battery Park City and require collaboration with all buildings and major stakeholders; or be **shared by both** BPCA and the community at-large.

142 **Sub-Actions** are the implementation steps to support each Action. The Sustainability Implementation Plan published in 2020 further elaborated on these Sub-Actions, and outlined the policies, programs, partnerships, tools, and funding mechanisms available to implement them.

Purpose of this Report

Since the release of the BPC Sustainability Plan, the neighborhood has seen progress towards the goals and ambitions set out in 2020. Recent efforts include the implementation of major coastal resilience projects, a biodiversity and urban tree canopy audit to inform habitat management, and purposeful updates to BPCA practices and protocols to better align with sustainability objectives. This progress report contains the key findings from a comprehensive review of progress made towards the goals outlined in the BPC Sustainability Plan between the calendar years 2020 and 2023. Some progress is determined based on New York City Local Law 84 (LL84) benchmarking data which typically comes out in the Fall of the following year and so this report contains 2022 updates for LL84-based results.

This report summarizes and documents progress and will inform priorities for furthering sustainability efforts across the neighborhood. Since the Plan was published, implementation efforts have highlighted areas where some commitments should be re-evaluated to determine a preferred as the plan of action, and other areas there may have been slower progress due to hurdles BPC may need to overcome in future years. This progress report will set the foundation for a deeper understanding of progress and provide an opportunity to influence action as we get closer to 2030. Moving forward, BPCA will publish an annual progress report to communicate progress made against the BPC Sustainability Plan. This reporting will be in conjunction with broader annual BPCA reporting, regular BPCA website updates, and BPCA newsletters. If you have a project that deserves a shout out in any of these publications, we'd love to hear about them - please share your successes with BPCA.

Throughout the progress report, sustainability progress is indicated by a series of icons that convey implementation status ranging from not started to initiated or in progress, to completed.

Not Started

No progress has been made yet or progress data is unavailable

Initiated

Initial steps have been taken such as preliminary planning or small-scale efforts

In Progress

Action is actively being implemented at-scale

Completed

Action has been fully completed



Progress Highlights

89% of all actions have been started

Energy



of actions have been started

BPCA has made significant progress in understanding building energy use and studying the potential for energy efficiency across the neighborhood through projects such as the development of the BPC Building Inventory and the District Energy Feasibility Study. There is still progress to be made in deep energy retrofits for buildings and implementing enhanced electrification in building energy systems.

Progress Highlights:

- E-1: About 40% of BPC buildings' GHG emissions are below LL97 2030 targets. *Target of all buildings' emissions to be below Local Law 97 2030 target by 2029.*
- E-2: On-site combustion from fossil fuels is 773 million kBtu, an 13% reduction from the baseline. *Target of fossil fuel combustion being capped at 831 million kBtu by 2030.*
- E-2: As a step towards planning for energy reduction, BPCA's space at 75 Battery completed an ASHRAE Level II energy audit.
- E-4: 14% of BPC electricity comes from renewable energy sources. *Target of 70% of BPC electricity coming from renewable resources by 2030.*
- E-5: As of 2022, there has been a 2.5% reduction in BPC GHG emissions from 2017 levels. *Target of 33% reductions in GHG emissions from 2017 levels by 2030.*

Water



of actions have been started

Through efforts such as the resiliency projects and piloting permeable pavers, BPCA has made strides towards improving stormwater management and becoming resilient to future storms in BPC. More can be done to improve the monitoring and management of water consumption within buildings and to maximize on-site greywater treatment and reuse.

Progress Highlights:

- W-1: As of 2022, BPC building water use intensity has reduced on average by 35% since 2017. *Target to reduce the water use intensity for residential and commercial buildings 10% by 2030.*
- W-3: BPCA completed a pilot project to test permeable pavement options and is using the results of the pilot to inform its use in capital projects.
- W-3: BPCA has continued investment and design and construction work on major climate resiliency projects across the neighborhood.

Materials & Waste



of actions have been started

BPCA has made significant progress in its zero waste and composting initiatives, particularly through hosting public events and outreach campaigns to foster community involvement in waste minimization and waste diversion efforts. The ongoing resiliency projects also prioritize material reuse. The extent and frequency of waste audits can be improved to further understand and prevent excess waste generation.

Progress Highlights:

- M&W-1: Numerous waste-related events have been held in BPC to promote behavior change for waste reduction and increased recycling and reuse.
- M&W-3: BPCA added more than 60 recycling bins to the parks, providing recycling options for the first time in BPC open spaces.
- M&W-3: As of 2022, there has been a 16% reduction in compacted landfill waste in BPC compared to 2019. *Target of 50% reduction in compacted landfill waste by 2030.*
- M&W-4: BPCA's Composting Program has increased its processed weight of organic waste by 57% from 2020 to 2023.
- M&W-5: South Battery Park City Resiliency Project has been able to divert 48% of materials from landfill.

Site



of actions have been started

Open space and parks in BPC are important resources to the local community and to NYC at large. BPCA has been working to better understand the biodiversity and local habitats within BPC, improve standards for protecting trees, and increase awareness of the rich biodiversity within the neighborhood through community engagement and education. There is still work to be done to encourage active transportation and to expand EV charging infrastructure across the neighborhood.

Progress Highlights:

- S-1: A biodiversity audit was conducted of BPC parks to better understand local plant and animal life.
- S-1: A salinity tolerance study was performed on existing plants to determine which should be replaced.
- S-2: Tree planting standards and a tree replacement policy has been developed for construction projects.
- S-2: An urban tree canopy assessment was completed for BPC. This included an urban heat island assessment to understand outdoor thermal comfort in the neighborhood.
- S-3: A weather station was installed in the North End Avenue median to better understand the local microclimate.

Sustainability Investments

In July 2019, BPCA issued $76.3 million in Sustainability Bonds to fund Phase 1 of its Capital Plan, which includes development of a comprehensive resiliency infrastructure – entailing perimeter storm barriers, flood protection systems, waterproofing, and landscaping to protect its residents and assets from climate change. The proceeds also financed projects that enhance public access to open space, accessibility and walkability, and preserve the socio-cultural attributes of Battery Park City. BPCA was selected as the Northeast Deal of the Year by Bond Buyer for its $673 million offering, of which Sustainability Bonds were a part. The issuance was supported by a second party opinion of the financed projects.

In June 2023, BPCA issued $349 million in Sustainability Bonds to continue funding its Capital Plan, providing ongoing infrastructure improvements that advance positive environmental and social outcomes related to climate-resilient infrastructure, energy efficiency, and clean transportation. A second party opinion evaluated the BPCA Sustainability Framework and determined it is credible and impactful and aligns with the Sustainability Bond Guidelines 2021, Green Bond Principles 2021, and Social Bond Principles 2021.

Projects Funded by the 2019 BPCA Sustainability Bonds Fund

Social/Environmental Attribute	Project		Amount Budgeted	Proceeds spent (%) as of Oct 31, 2023	
Resiliency	South Battery Park Resiliency Project	$	30,850,000	100.00%	
	North and West Battery Park Resiliency Project		13,500,000	100.00%	
	Ballfield Resiliency		7,850,000	76.51%	
	Interim Flood Measures *		500,000	0.00%	96.47%
Open Space	Pile Remediation/Seawall Reconstruction		11,350,000	100.00%	
	South Cove Jetty - Replanking		2,200,000	59.23%	
	Esplanade Granite Wall Restoration		1,750,000	0.00%	
	Upper Room		1,300,000	0.07%	76.23%
LEED Building	Community Ctr. Leak Renovation		7,300,000	100.00%	
	Pier A		3,500,000	2.32%	68.34%
Safe Walking and Cycling	South End Ave. Streetscape Redesign		2,800,000	0.10%	
	Asphalt Granite Repair		1,100,000	0.00%	
	West Thames Bridge		800,000	63.06%	
	Empire Trail Gateway Marker		600,000	54.28%	15.72%
Open Space and Recreation	Rockefeller Park Playground		2,400,000	95.70%	
	PS-89 Playground		600,000	100.00%	
	Kowsky Plaza Playground Play Surface		500,000	23.97%	86.19%
Energy Efficiency	Street Lights		750,000	0.00%	0.00%
Total		**$**	**89,650,000**		**82.81%**

* Flood barrier protection measures were purchased in the Fall of 2019 using bond funds from a prior issuance.

UN Sustainability Development Goals

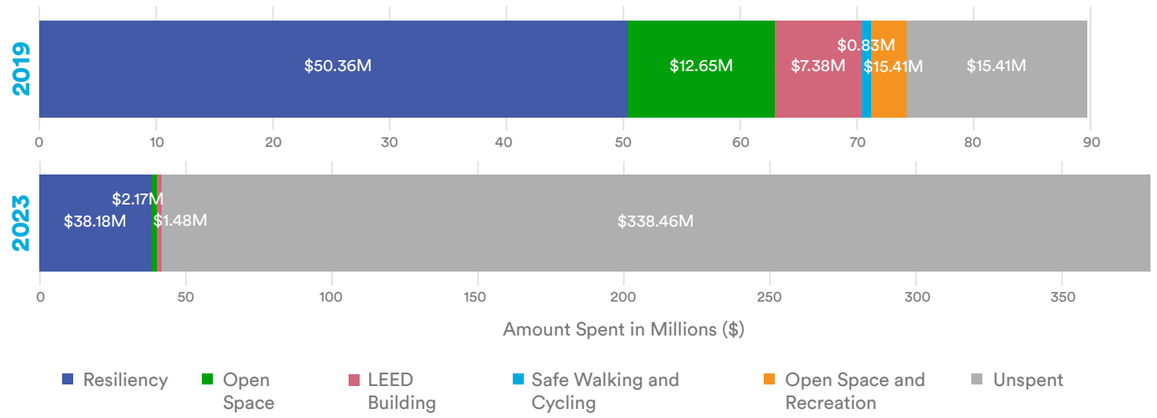
The Sustainable Development Goals (SDGs) were adopted in September 2015 by the United Nations General Assembly and form part of an agenda for achieving sustainable development across the globe by 2030. The bonds issued under the BPCA Sustainability Bonds Frameworks are expected to help advance SDGs 7 - Affordable and Clean Energy; 9 - Industry, Innovation, and Infrastructure; 11 - Sustainable Cities and Communities; and 13 - Climate Action. The use of these proceeds within resilience, energy efficiency, clean transportation, and affordable basic infrastructure are aligned with those recognized by the Green Bond Principles and Social Bond Principles as well.



Projects Funded by the 2023 BPCA Sustainability Bonds Fund

Social/Environmental Attribute	Project		Amount Budgeted	Proceeds spent (%) as of Oct 31, 2023	
Resiliency	South Battery Park Resiliency Project	$	265,225,703	3.68%	
	North and West Battery Park Resiliency Project		81,107,947	35.04%	11.02%
Open Space	Pile Remediation/Seawall Reconstruction		19,490,000	11.13%	
	Rockefeller Park House		3,000,000	0.00%	9.64%
LEED Building	Community Ctr. Leak Renovation		2,400,000	61.62%	
	Pier A		9,060,000	0.00%	12.90%
Total		**$**	**380,283,650**		**11.00%**

Sustainability Bonds Budgeted and Spent by Social/ Environmental Attribute as of October 2023



All data based on the end of year bond reporting through October 31, 2023

How to Read this Progress Report

Strategy reference number

Indicates responsibility for a Sub-Action sits primarily with BPCA or the BPC community at-large, or is shared

Strategy Name

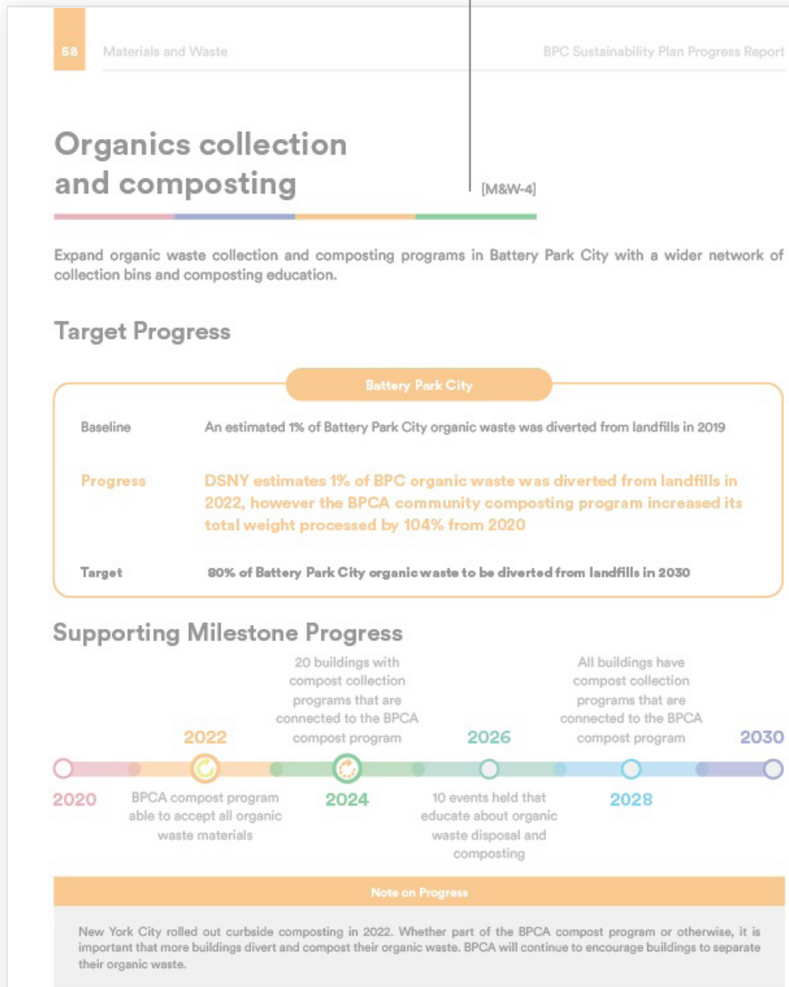
Strategy Description

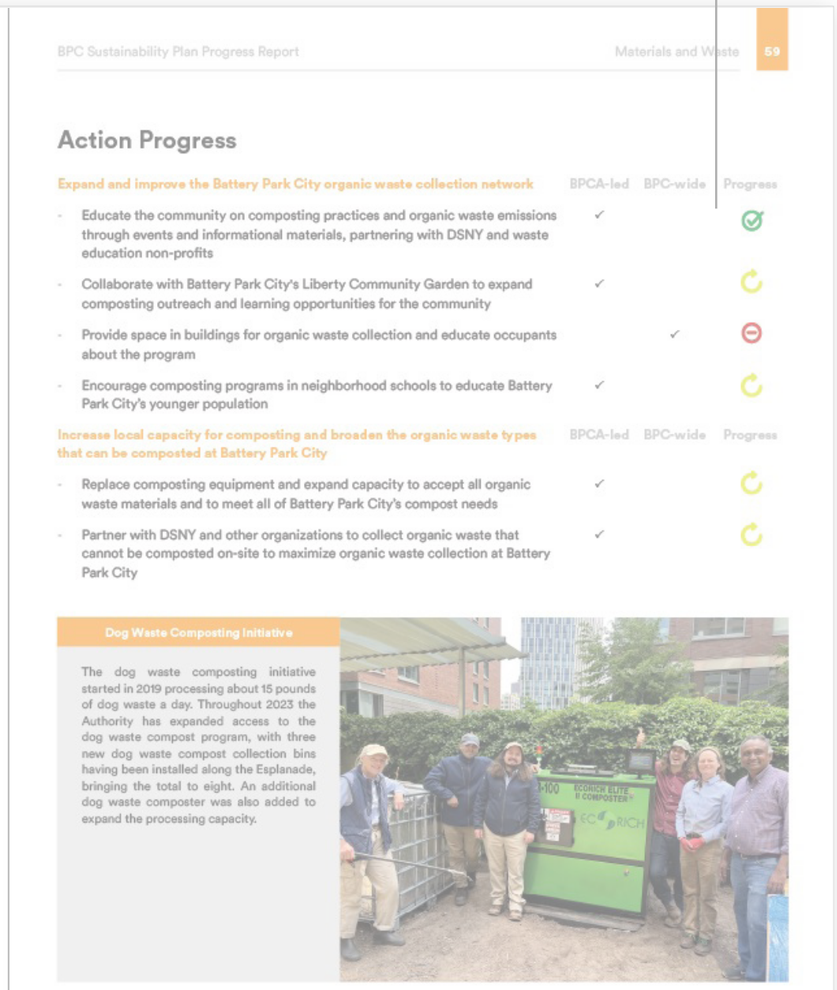
2030 Targets and Progress

Supporting Milestones

Additional achievements to measure and track on the path toward fulfillment of the 2030 Targets

Notes further explaining level of progress on targets and milestones





Actions and their Progress

The progress status of each Sub-Action is denoted by the legend below

Progress Key

- Not Started
- Initiated
- In Progress
- Completed

Actions

Sub-Actions

S Progress funded by sustainability bonds

Practice and project highlights to showcase progress



Energy

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26 Deep energy retrofits

28 Building electrification

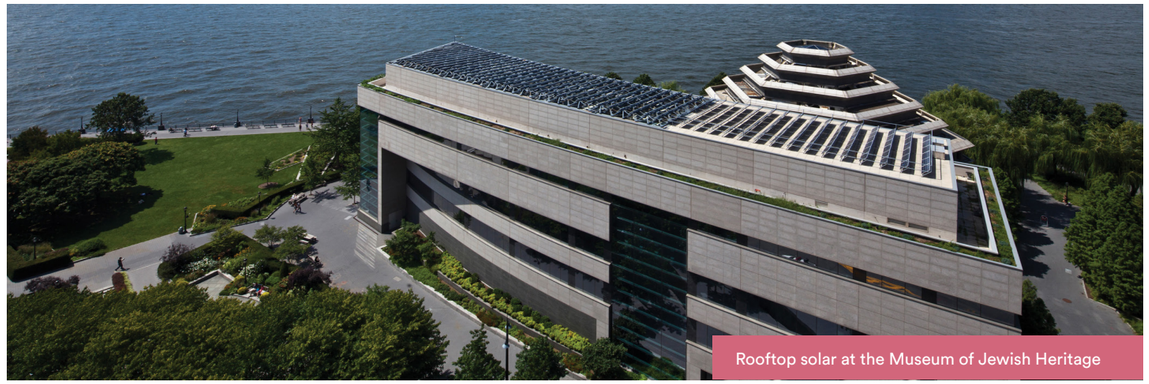
30 Low-carbon district energy systems

32 Renewable energy supply and storage

34 GHG emissions monitoring and reporting

Energy at-a-glance

Energy consumption by buildings is responsible for the majority of greenhouse gas emissions in Battery Park City and is a key focus of major efforts outlined in the Sustainability Plan. In the Plan, the Energy topic area includes energy consumption, energy generation, monitoring and management, as well as strategies for GHG emissions monitoring and reporting. Since the publication of the Plan, Battery Park City has made progress in developing an understanding of building energy use and emissions, connecting building owners with energy efficiency resources, and studying potential strategies to optimize energy use on a neighborhood scale.



Rooftop solar at the Museum of Jewish Heritage

Understanding Building Energy Use

The first step in taking action toward reducing building energy use is to collect data to understand how energy is being used in buildings. This includes considerations of what building systems are using energy for which purposes, and what patterns or trends exist in their energy use. In 2021, the Battery Park City Building Inventory was developed through surveys and engagement with building owners and managers, alongside an analysis of Local Law 84 energy benchmarking data. The primary survey contained questions relating to the buildings' heating and cooling systems, domestic hot water, cooking equipment, and other energy-using systems. It also included questions around sustainability-related improvement projects such as energy efficiency improvements, sustainability certifications, and renewable power purchasing or GHG emissions offsets. This inventory serves as a consolidated resource combining quantitative benchmarking data and qualitative considerations relating to BPC buildings' energy systems and energy use. Targeted recommendations and resources were provided back to buildings to improve their building's performance.

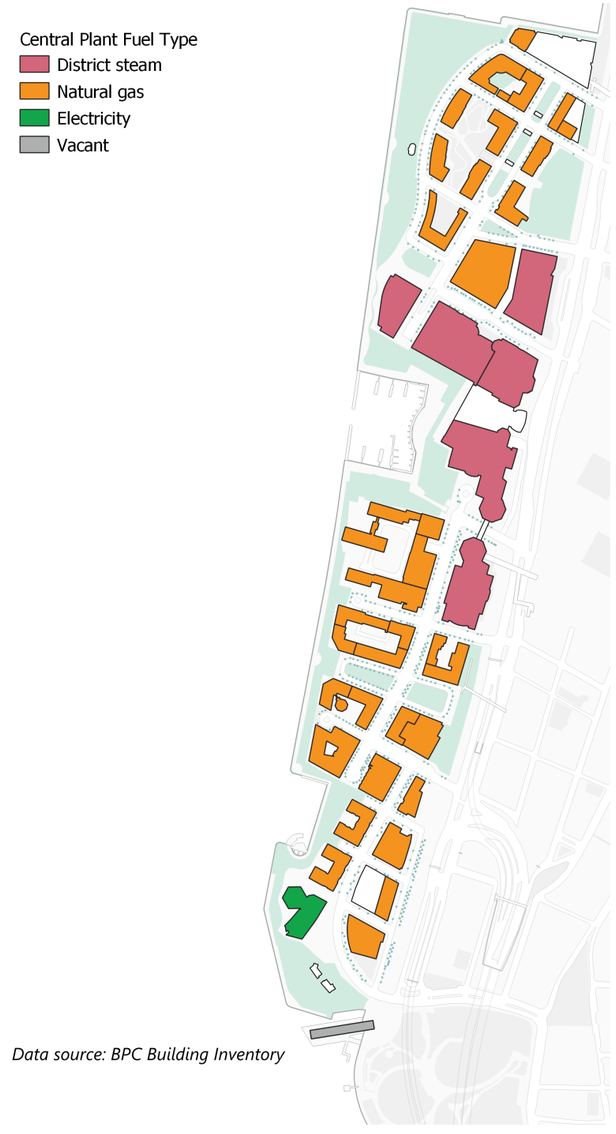
Battery Park City Authority also conducted a detailed ASHRAE Level II energy audit at the Authority's Parks Operations Facility at 75 Battery Place. This audit evaluated the performance of building systems. Through this audit, various energy conservation measures (ECMs) were identified that have the potential to reduce energy consumption and operational costs. Each ECM was evaluated to determine its applicability and effectiveness based on energy savings, energy cost savings, and the cost of implementation.

District Energy Study

The BPC District Energy Feasibility Assessment, completed in Spring 2023, explored the potential for low-carbon district energy systems in the neighborhood, aiming to evaluate a range of potential energy scenarios to support decarbonization in BPC. Three district-scale options were evaluated with ranging levels of on-site renewable generation: a low temperature thermal network supported by air-source heat pumps, a low temperature thermal network supported by ground-source heat pumps, and a low temperature thermal network supported by river water heat exchange.

A fourth scenario was assessed that considered building-by-building electrification supported by renewable energy generation pilots and a renewable power purchase agreement (PPA). All scenarios were assessed using a comprehensive set of both quantitative and qualitative criteria including capital costs, operational and maintenance costs, available incentives and rebates, GHG reduction potential, controllability and risk, level of sustainability leadership, and complexity of implementation and operation.

District energy systems are complex and require coordination from multiple stakeholders as well as lengthy design and construction timelines. That being said, they can be useful tools for introducing renewable energy systems at scale and decarbonizing a neighborhood but are often easier implemented when envisioned during building or site design and construction rather than as a district-wide retrofit. With this in mind and given the complexity of integrating such a large-scale project with ongoing resiliency projects, BPCA decided to pursue a decarbonization solution that is building-by-building, prioritizing electrification and on-site renewable energy projects. Even this solution will require immense coordination and effort on behalf of BPC buildings. BPCA will serve as a trusted resource to buildings as they electrify their fossil-fuel based systems.



Data source: BPC Building Inventory

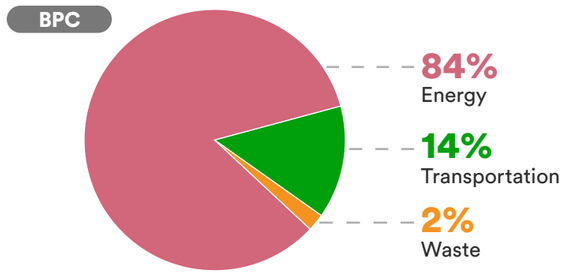
Greenhouse gas inventories

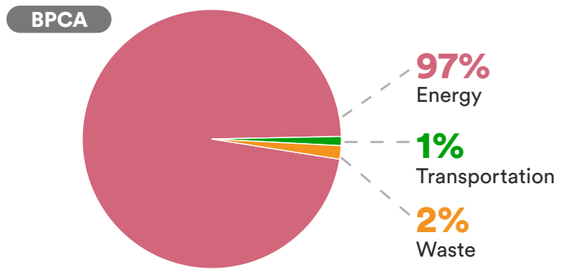
Achieving carbon neutrality across Battery Park City by 2050 is a driving target for BPCA and the community. This long-term goal and commitment from the BPCA Board is aligned with NY State ambition to be carbon neutral statewide by 2050. As such, BPCA is committed to regularly monitoring annual GHG emissions. Tracking progress toward this goal started with the development of a baseline greenhouse gas (GHG) inventory for calendar year 2017 using the Global Protocol for Community-Scale Greenhouse Gas Inventories (GPC) framework. This inventory detailed Scope 1, 2, and 3 emissions from the sectors of Energy, Transportation, and Waste, both for BPCA's operations and across all of Battery Park City. Since 2017, there have been four updated GHG inventories developed for years 2019, 2020, 2021, and 2022, which have been used to track progress and observe trends in emissions over time.

2022 GHG Inventory

In calendar year 2022, 84% of emissions for Battery Park City came from the stationary energy sector, most of which was attributed to grid electricity consumption. Transportation contributed 14% of total BPC emissions and waste contributed 2% of the total. For BPCA operations, emissions were also primarily from stationary energy (97%), with the remaining 3% made up of waste (2%) and transportation (1%). A further breakdown of the 2022 emissions inventory is below.

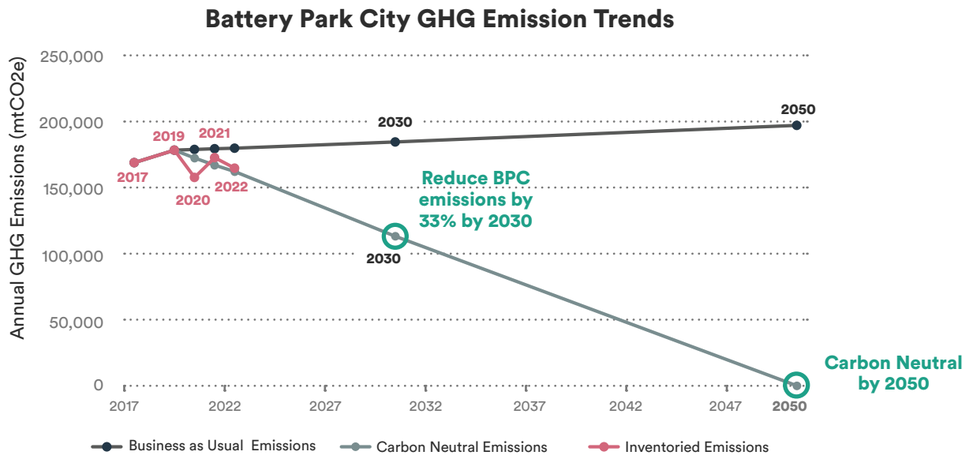
Sector	Sub-Sector	Scope	BPC Emissions (tCO2e)	BPCA Emissions (tCO2e)
Energy			**139,172**	**1,800**
	Fossil Fuel Combustion	Scope 1	25,698	273
	Grid Electricity	Scope 2	87,730	1,471
	District Steam/Chilled Water	Scope 2	25,744	56
Transportation			**22,492**	**21**
	BPCA Vehicle Fleet	Scope 1, 2	21	21
	Passenger Vehicles	Scope 2,3	9,499	-
	Public Transit	Scope 3	12,972	-
Waste			**2,999**	**31**
	Landfilled Waste	Scope 3	2,763	19
	Biologically Treated Waste	Scope 1	12	9
	Wastewater Treatment	Scope 3	224	3
Total			**164,663**	**1,851**





Trends in GHG Emissions Over Time

With five GHG inventories for BPC now completed, trends can be observed and evaluated to determine the best course of action for further emissions reductions in the future. Across Battery Park City, there has been an overall 2.5% reduction in GHG emissions from the 2017 baseline. Recent GHG inventories show the impacts of the COVID-19 pandemic including a deep reduction in 2020 and a seemingly gradual return to business-as-usual afterwards. Given the inconsistencies between 2021 and 2022 we are likely still reaching a new equilibrium post-COVID that will continue to be monitored as it relates to our annual emissions.



As the buildings/energy sector represents nearly 84% of BPC's GHG emissions, it is the area with the most potential for reduction. Over the last five years, BPC has seen modest reductions in energy emissions from reductions in energy use across electricity, fossil fuels, and district steam and chilled water. Larger efforts to decarbonize the grid also influence BPC's GHG emissions as the grid is cleaner, the emissions associated with BPC electricity use will go down.

Transportation sector emissions in Battery Park City have been most affected by pandemic-related shifts. Between 2021 and 2022, there was a notable drop in the percentage of Battery Park City workers and residents working from home – 36.5% in 2021 as compared to 24.6% in 2022. This resulted in more vehicle miles traveled (VMT) across passenger vehicles, subway, and buses in 2022 as more people returned to office and increased their use of public and private transit. Transportation emissions are therefore on an upward trend, despite minor reductions in electricity-based emissions from the subway due to NY's cleaner grid.

As Local Law 97 compliance inches closer and we near 2030, BPCA and the wider community will intensify decarbonization efforts, particularly of its buildings. Overall, the neighborhood is on trend to achieve carbon neutrality by 2050 but continued effort from all stakeholders is needed to keep BPC on track.

Energy Strategies

Strategy 1: Deep energy retrofits

Strategy 2: Building electrification

Strategy 3: Low-carbon district energy systems

Strategy 4: Renewable energy supply and storage

Strategy 5: GHG emissions monitoring and reporting

Deep energy retrofits [E-1]

Upgrade building facades, windows, and mechanical systems to reduce building energy consumption and costs, reduce GHG emissions, and meet NYC building emission compliance targets ahead of the current deadlines.

Target Progress

Battery Park City Authority Spaces

Baseline In 2019, BPCA indoor spaces had a carbon footprint of 1,200 tCO2e/yr, equivalent to 135,000 gallons of gasoline consumed each year

Progress **In 2022, BPCA indoor spaces had a carbon footprint of 1,140 tCO2e/yr, a 5% reduction**

Target **All BPCA indoor spaces will achieve net zero emissions by 2025 by prioritizing local renewable generation**

Battery Park City

Baseline 90% of Battery Park City buildings exceed the 2030 limit provisionally set by Local Law 97 (10% below limits)

Progress **In 2022, 29% of BPC buildings' emissions were below Local Law 97 2030 targets**

Target **All buildings' operational emissions will be below Local Law 97 2030 target by 2029**

Supporting Milestone Progress



Note on Progress

Target progress is determined based on building-level data as reported through Local Law 84 benchmarking and so 2030 projections for Local Law 97 compliance is estimated assuming no changes in the future. To better understand planned upgrades, management practices, and LL97 compliance plans, BPCA will engage in one-on-one conversations with buildings.

Action Progress

Conduct deep energy retrofits of buildings in Battery Park City	BPCA-led	BPC-wide	Progress
• Conduct a full inventory of existing buildings systems (type, installation date, maintenance issues, equipment lifetime, replacement/decommissioning plans) to inform opportunities to achieve economies of scale in retrofit strategies.	✓		
• Provide deep energy retrofit technical guidance and support to buildings	✓		
• Consider elements of indoor environmental quality, occupant health and comfort, waste, and water that can be improved through the process of deep energy retrofits		✓	
• Facilitate access to financing, technical support programs, and incentives to achieve cost-effective retrofits	✓		

Educate building operators and building users about energy efficiency opportunities	BPCA-led	BPC-wide	Progress
• Develop educational programs about building retrofits for building owners and operators as well as for residents and tenants	✓		
• Organize energy management training for facilities staff and building operators	✓		
• Publish educational materials such as case studies and toolkits to track and promote retrofit successes in the community	✓		
• Facilitate the adoption of green leases between commercial building owners and tenants		✓	

Install Building Energy Information Systems (EIS) to both track and manage energy consumption	BPCA-led	BPC-wide	Progress
• Work with the New York Power Authority (NYPA) to use the NY Energy Manager tool for all BPCA spaces	✓		
• Work with the New York Energy Research and Development Authority (NYSERDA) to increase BPC building participation in the Real Time Energy Management program	✓		
• Connect building owners to programs and partners to install building automation systems and sub-metering to improve consumption monitoring and control capabilities	✓		
• Work with Con Edison to increase participation in Smart Metering and Demand Response programs	✓		
• Work with NYC Retrofit Accelerator to develop capital plans and educational strategies for all BPC buildings	✓		

Building electrification [E-2]

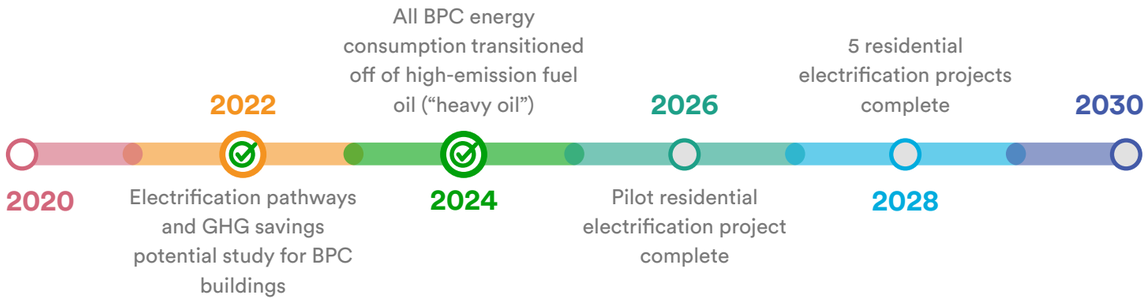
Transition building heating, hot water, and cooking equipment away from fossil fuel equipment and toward electric equipment to enable GHG reductions.

Target Progress

Battery Park City

Baseline	On-site combustion from fossil fuels provided approximately 887 million kBtu of energy in 2019
Progress	**On-site combustion from fossil fuels provided 773 million kBtu of energy in 2022, a 13% reduction from baseline**
Target	**On-site combustion from fossil fuels capped at 831 million kBtu of energy by 2030**

Supporting Milestone Progress



Action Progress

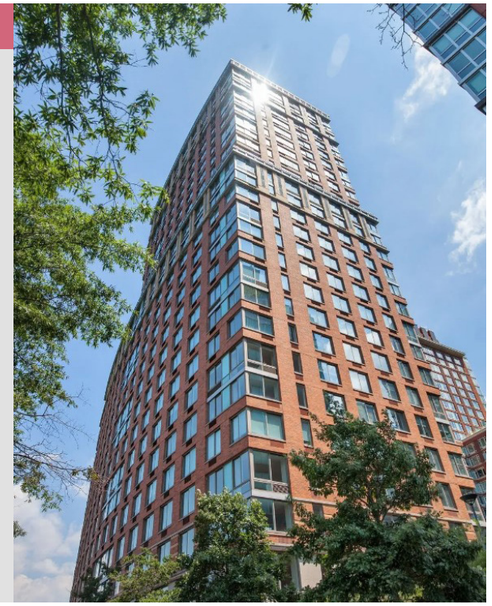
Assess potential to electrify buildings heating, domestic hot water, and cooking systems during upgrades and renovations	BPCA-led	BPC-wide	Progress
• Develop building electrification plans that considers available technologies, existing building typologies, business cases, and battery storage	✓	✓	⊖
• Explore opportunities to aggregate electric heating equipment procurement to reduce costs	✓		⊖
• Study and implement building envelope improvements to reduce the heating load to improve the viability of electric heat pump heating systems		✓	⊖
• Pilot the full electrification (heating, domestic hot water, and cooking) of a residential or commercial building and share outcomes		✓	⊖

Provide information and educational materials about the fossil fuel transition and electrification opportunities	BPCA-led	BPC-wide	Progress
• Review and disseminate information about forthcoming legislation impacting fossil fuel transition	✓		↻
• Connect building owners and residents to programs and partners to facilitate electrification of systems and appliances	✓		↻

River & Warren Electrification

Looking to reduce greenhouse gas emissions, River & Warren has been able to implement budget-friendly energy upgrades over the past three years. At River & Warren, 30% of the building's packaged terminal air conditioners (PTACs), in-unit heating and cooling devices, have been replaced with a low-carbon model that allows unit-owners to disconnect from the condo's gas-generated steam heat supply by instead using a built-in electric heating coil in the new units. Rooftop exhaust fans have also been replaced with more efficient fans, using 70% less power, that also have low maintenance and timers for enhanced control.

Based on recent data supporting these upgrades, the building has been able to reduce their energy use by 47% since 2017. These steps towards an electrified and energy efficient building have ensured that River & Warren will be Local Law 97 compliant for at least the next decade.



Low-carbon district energy systems

[E-3]

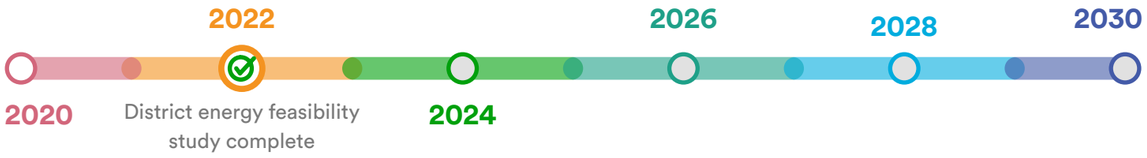
Connect building heating and/or cooling systems to a district-scale energy network to realize efficiencies from balancing loads and centralized management.

Target Progress

Battery Park City

Baseline	In 2019, a district energy system serves Brookfield Place
Progress	**District Energy Feasibility Study complete; next steps to be determined by BPCA**

Supporting Milestone Progress



Action Progress

Evaluate the potential for low-carbon district energy networks across Battery Park City	BPCA-led	BPC-wide	Progress
• Conduct a full inventory of existing buildings heating and cooling systems (type, installation date, maintenance issues, equipment lifetime, replacement/ decommissioning plans)	✓		✓
• Study the feasibility of establishing district energy solutions for different areas of Battery Park City and establish recommendations for low-carbon district energy systems	✓		✓
• Develop a model of Battery Park City building energy profiles to investigate district energy systems in collaboration with NYSERDA	✓		✓
• Develop a district energy system in Battery Park City based on results of feasibility study	✓		Next steps to be determined

Battery Park City Electrification and Renewable Energy Generation

As part of the District Energy Feasibility Study, a scenario was explored focusing on building electrification, renewable energy projects, and a renewable power purchase agreement (PPA). In this scenario, power supply would be supported by a combination of on-site energy pilots like rooftop wind turbines, tidal river turbines, and battery storage, on top of existing renewable generation systems within BPC. Currently, there is 160 kW of rooftop solar PV capacity and 196 kW of building-integrated PV capacity installed across nine BPC buildings.

In order to meet the additional electricity needs of electric boilers, chillers, and heat pumps, on-site renewable energy would need to be maximized to achieve a fully decarbonized neighborhood before the grid is projected to be fully clean in 2040. For this reason, a renewable energy PPA could be explored to provide 100% clean energy. A renewable PPA is a financial agreement between an energy provider and a customer. The provider operates renewable generation infrastructure and sells energy to the customer at a fixed rate per unit of energy use. These are typically 10 to 25 year agreements that allow customers access to clean energy without incurring the upfront costs of purchasing and installing renewable generation system themselves. When evaluating this scenario it was found to have a high cost benefit and a high potential to reduce GHG emissions across BPC.



Renewable energy supply and storage

[E-4]

Increase the amount of solar, wind, or other renewable energy generation systems at Battery Park City and procure cleaner electricity to meet the rest of the demand.

Target Progress

Battery Park City Authority Spaces

Baseline BPCA's electricity supply comes from a NYPA natural gas generation plant in Queens

Progress **Some renewables are provided through grid-supplied power (~7%) but there are no dedicated on-site renewables or renewable energy credits for BPCA spaces**

Target **100% of electricity supplied to BPCA spaces to come from renewable energy sources by 2025**

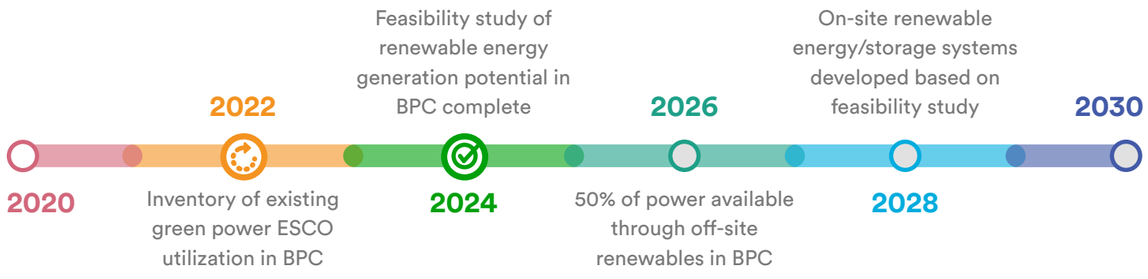
Battery Park City

Baseline 14% of BPC electricity came from renewable energy sources in 2019

Progress **14% of BPC electricity came from renewable energy sources in 2022, no change from baseline**

Target **70% of BPC electricity to come from renewable energy sources by 2030**

Supporting Milestone Progress



Action Progress

Increase renewable energy generation and storage at Battery Park City	BPCA-led	BPC-wide	Progress
• Study opportunities to incorporate on-site distributed energy generation such as solar PV, fuel cells, wind turbines, and battery storage	✓		
• Engage Battery Park City in technical and financial support programs to facilitate renewable energy procurement available through government organizations and utilities	✓		
• Engage solar installers to perform assessments of rooftop generation potential for buildings with excess roof space, prioritizing buildings with impending roof upgrades	✓		
• Connect renewable energy developers with Battery Park City customers to facilitate off-site community distributed generation development and off-take	✓		
• Identify additional opportunities to align resiliency actions and parks and open space projects with renewable energy generation in Battery Park City	✓		

Procure 100% renewable electricity for Battery Park City	BPCA-led	BPC-wide	Progress
• Explore Community Choice Aggregation and other models and partnerships to procure 100% renewable electricity for all of Battery Park City	✓		
• Conduct outreach with residents to maximize awareness of clean power purchasing options through ESCOs	✓		
• Work with developers to identify opportunities for off-site community energy for off-take by Battery Park City customers	✓		

Improve the energy resilience and flexibility of Battery Park City by exploring energy storage options	BPCA-led	BPC-wide	Progress
• Identify critical facilities and community spaces, which necessitate special energy backup/resilience	✓		
• Explore the addition of battery storage to provide backup power, as well as revenue generating grid services such as demand response and peak shaving		✓	
• Explore opportunities to add battery storage to on-site solar systems and electric vehicle charging stations		✓	

GHG emissions monitoring and reporting

[E-5]

Prioritize actions that can reduce GHG emissions and move Battery Park City toward its goal of being carbon neutral by 2050.

Target Progress

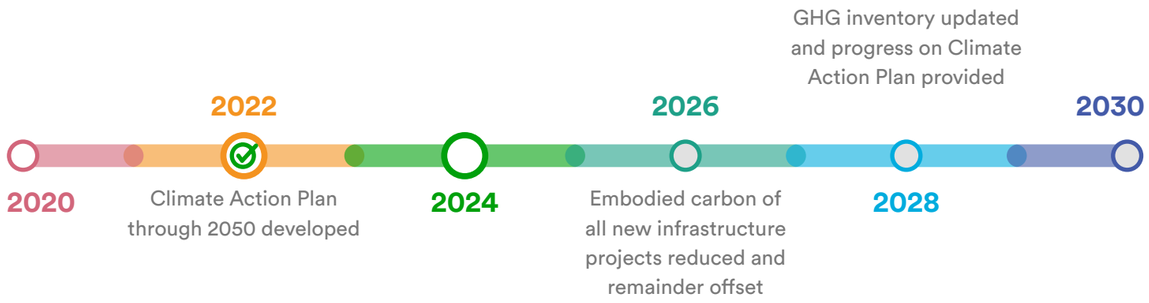
Battery Park City Authority Spaces

Baseline	BPCA's 2017 GHG emissions totaled 1,870 tCO2e
Progress	**1% reduction in BPCA GHG emissions in 2022 compared to 2017**
Target	**50% reduction in GHG emissions from 2017 levels by 2030**

Battery Park City

Baseline	Battery Park City's 2017 emissions totaled 168,900 tCO2e
Progress	**2.5% reduction in BPC GHG emissions in 2022 compared to 2017**
Target	**33% reduction in GHG emissions from 2017 levels by 2030**

Supporting Milestone Progress



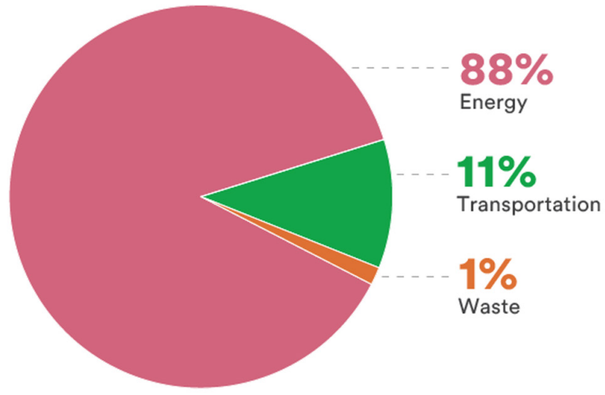
Action Progress

Lead by example in comprehensive decarbonization and carbon sequestration	BPCA-led	BPC-wide	Progress
• Develop a Climate Action Plan that builds off of the Sustainability Plan and establishes GHG reduction pathways for buildings, transportation, and waste for 2020–2050	✓		✓
• Develop a sustainability policy for the BPCA Employee Handbook	✓		✓
• Quantify the carbon sequestration potential of existing flora and soils	✓		✓
Lead by example in the construction of new zero carbon buildings and spaces	**BPCA-led**	**BPC-wide**	**Progress**
• Work with building owners, developers, and designers to identify strategies and verified offsets to reduce embodied carbon of new construction	✓		⊖
• Disclose one-time offset of embodied carbon for all new construction		✓	⊖
• Establish a standard for new building construction, or select from an existing one, such as the Passive House or Net Zero Carbon standards	✓		✓

BPC Climate Action Plan

The BPC Climate Action Plan (CAP) was published in April 2022 putting a focus on the climate mitigation potential of BPC sustainability actions and quantifying and mapping GHG reductions between a baseline year of 2017 and target year of 2050. The CAP provides a high-level roadmap for Battery Park City to successfully achieve a carbon neutral neighborhood (where GHG emissions are net-zero over the course of a year). Achievement of this target will require deep reductions in emissions and potentially carbon offsets, as needed.

2017 BPC GHG Inventory



Water



3

38 Introduction

40 Water conservation

44 Water recycling systems

46 Resiliency and stormwater management

Water at-a-glance

Water is a central part of life in Battery Park City, given the neighborhood's location on the Hudson River. BPC already experiences the effects of climate change and has been dealing with water-related issues like sea level rise, storm surge, and flooding risk. BPC also has the challenge of reducing water use and maximizing water recycling and reuse. The Battery Park City Sustainability Plan outlined targets, milestones, and actions related to indoor and site water consumption and conservation, water recycling systems, and stormwater management.

13th **WEDG Verified project in the nation with 125 WEDG Verification points earned**

50.86% **of the SBPCR project site will be composed of greenscapes or plantings**



Permeable Paving Pilot

Permeable Pavers

An action from the BPC Sustainability Plan is to increase the permeability of Battery Park City through pavement modifications and green stormwater infrastructure. One way to do this is to replace existing impermeable pavement with permeable pavers that allow stormwater to infiltrate into the neighborhood's soil and help mitigate stormwater run-off more effectively. In 2023, BPCA implemented a permeable paver pilot at four sites: South End Avenue cul-de-sac, Rockefeller North Lawn pathway, and two sites on the South Esplanade. Across these four sites, four different types of pavers were piloted. The pilot assessed the permeable pavement's efficacy in reducing stormwater runoff, mitigating water accumulation, and decreasing existing pooling of water after storms have passed. The pilot also assessed the ease of procurement and installation, purchase price, and ongoing maintenance costs of each of the permeable paver options. The feedback and results of the pilot will continue to inform future hardscape replacements, improvements, and capital projects. Wagner Park has utilized the study to identify permeable pavers for 55% of its pavement in redesign.

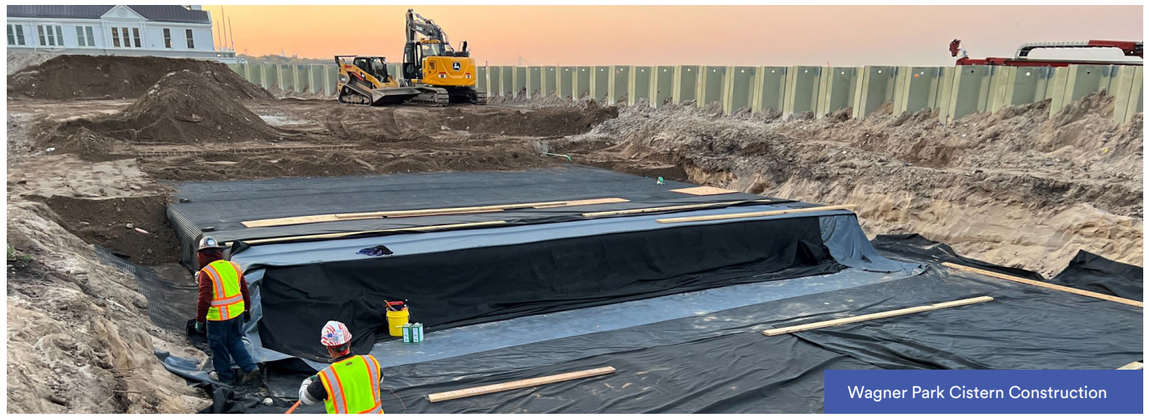
Resiliency Project Updates

The ongoing BPC resiliency projects aim to provide flood protection for the neighborhood, and are primarily focused on threats of flooding from storm surge and sea level rise. The South Battery Park City Resiliency Project (SBPCR) is currently under construction and is planned to be completed in 2025. The North/West Battery Park City Resilience project is currently in design with projected completion in 2030. These initiatives will create an integrated coastal flood risk management system in coordination with citywide resilience efforts, incorporating approximate design flood elevations ranging from 15 to 21 feet.

The SBPCR recently achieved Waterfront Edge Design Guidelines (WEDG) Verification, becoming just the 13th project in the nation to do so. WEDG is a rating system and set of guidelines focused on creating resilient, ecological, and accessible waterfronts. In order to achieve verification, projects must undergo a rigorous technical review conducted by Waterfront Alliance and a team of field experts. During this review, the project is evaluated against scoring criteria related to site assessment and planning, climate and hazard resilience, community access and connections, edge composition, natural resources and sustainability, and innovation. Out of the 215 possible points in the standard, the SBPCR earned 125 points. Highlights of the initiatives contributing to these points include:

- Reduced contribution to urban heat island effect through increasing lawn and softscape and the use of cool pavers
- Preservation and increase of ecosystem connectivity through designing 4,085 square feet of new bio-enhanced surfaces including new open water habitat and planted habitat areas
- Practice of environmentally responsible construction through construction and demolition waste management planning

Wagner Park Cistern: As part of the SBPCR, a cistern has been installed in Wagner Park that is able to store over 16,500 cubic feet of water for reuse, designed to store the 95th percentile storm event. This cistern is expected to significantly increase Battery Park City's capacity to both manage stormwater and reduce potable water demand for irrigation and other uses. Before entering the cistern, stormwater in normal conditions will be pre-treated to filter out sediment so that stored water can be more readily filtered and disinfected prior to being reused. In storm events, a pipe will allow water to be discharged from the cistern to the storm drain system in Battery Place.



Wagner Park Cistern Construction

Water Strategies

Strategy 1: Water conservation

Strategy 2: Water recycling systems

Strategy 3: Resiliency and stormwater management

Water conservation [W-1]

Reduce the amount of water that is consumed in Battery Park City through more efficient equipment and education aimed at behavior change.

Target Progress

Battery Park City Authority Spaces

Baseline 47 million gallons of water used by BPCA spaces in 2019

Progress **8% increase in potable water consumed by BPCA spaces in 2022 compared to 2019**

Target **Reduce the amount of potable water consumed by BPCA spaces by 20% by 2030**

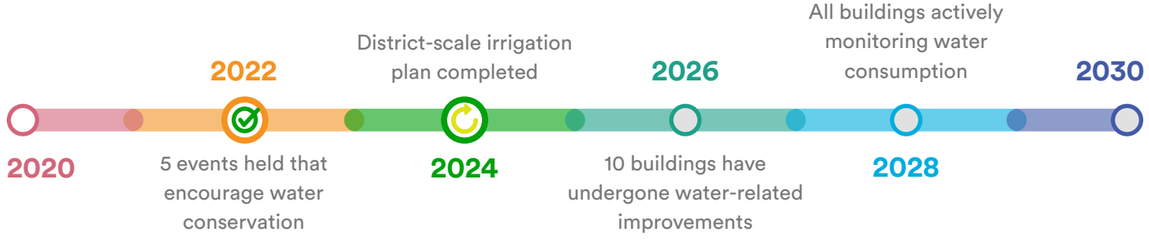
Battery Park City

Baseline Median multifamily water use intensity in BPC was 41.7 gal/SF/yr in 2017; Median commercial water use intensity in BPC was 40.8 gal/SF/yr in 2017

Progress **5% reduction in residential water use intensity and a 65% reduction in commercial water use intensity in 2022 compared to 2017**

Target **Reduce the water use intensity for residential and commercial buildings 10% by 2030**

Supporting Milestone Progress



Note on Progress

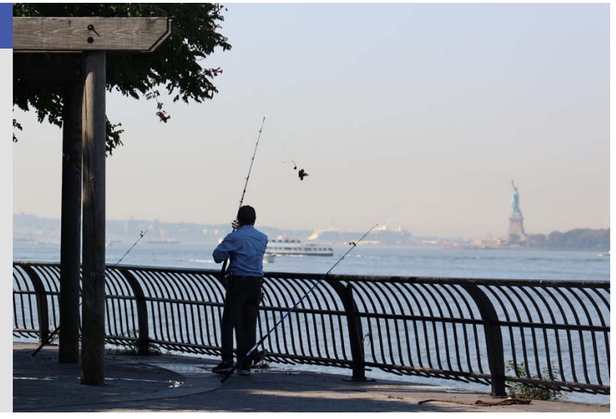
BPCA tracks its potable water use through its water bills and to ensure accurate progress reporting, BPCA is working to confirm the source of water meters and verify consumption trends.

Action Progress

Improve the monitoring and management of water consumption	BPCA-led	BPC-wide	Progress
• Install smart water meters in all buildings		✓	⊖
• Install smart sub-meters for all residential units and commercial tenants, as appropriate, to improve monitoring and consumption transparency		✓	⊖
• Establish and implement a district-wide smart irrigation plan	✓		↻
Minimize potable water losses through sprinkler irrigation or leaks	**BPCA-led**	**BPC-wide**	**Progress**
• Install leak detection equipment for irrigation systems across Battery Park City	✓		◌
• Expand drip irrigation from flower beds to the majority of landscaped areas, including lawns	✓		↻
Encourage water conservation in buildings	**BPCA-led**	**BPC-wide**	**Progress**
• Conduct water audits of buildings to document efficiency of appliances, fixtures, and HVAC systems and provide recommendations for improvements		✓	⊖
• Install low flow fixtures and water-efficient appliances		✓	◌
• At the time of building upgrades or renovations, install water-efficient HVAC systems		✓	⊖
Educate the community on water conservation practices through a behavior change campaign	**BPCA-led**	**BPC-wide**	**Progress**
• Educate the community on water conservation and sustainable choices through a behavior campaign with informational materials and events	✓		↻

Educational and Community Events

BPCA continues to host multiple events throughout the year related to water conservation and education of the larger waterfront and aquatic ecosystem. On May 20th, 2023 BPCA hosted 'Go Fish!' a celebration of life in the Hudson Estuary and the relationship between the fish in the ecosystem and the community's health. In July, City of Water Day was a harbor-wide celebration organized by the Waterfront Alliance in collaboration with BPCA. Programming included a family workshop educating the public of the ongoing work of BPCA as environmental stewards.



Water recycling systems [W-2]

Install systems that treat wastewater from sinks and showers or stormwater for reuse in toilets, cooling towers, irrigation, and other uses at Battery Park City.

Target Progress

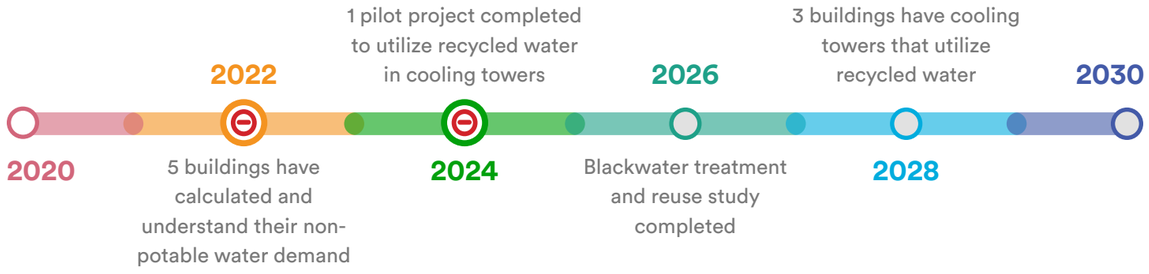
Battery Park City Authority Spaces

Baseline	Of parks and landscape care at BPC, only Teardrop Park utilized recycled water in 2019
Progress	No progress made
Target	**15% of non-potable water demand for parks and landscape care provided by recycled water by 2030**

Battery Park City

Baseline	11% of built area at BPC served by a water recycling system in 2019
Progress	No progress made (data unavailable)
Target	**29% of built area at BPC served by a water recycling system by 2030**

Supporting Milestone Progress



Note on Progress

The BPCA target for this strategy pushes BPCA to expand water recycling in neighborhood landscaping. This is something that is being evaluated as part of the ongoing resiliency projects. For BPC, progress is harder to determine due to limited data availability and limited knowledge of water recycling within each building. For the 2024 milestone and BPC target, BPCA is unaware of a building piloting cooling tower water reuse and would be a building-led initiative. Moving forward, BPCA will further engage with buildings to determine feasible goals related to water recycling, possibly shifting target timelines or metrics.

Action Progress

Maximize greywater reuse for all non-potable demands at Battery Park City	BPCA-led	BPC-wide	Progress
• Determine non-potable water demand for each building		✓	⊖
• Explore water recycling systems for use in cooling towers		✓	⊖
• Utilize treated water or captured stormwater for washing site pavement/ walkways and for irrigation needs	✓	✓	↻
• Consider a Battery Park City “purple pipe network” for shared water treatment and reuse resources	✓		⊖

Expand blackwater treatment and reuse systems	BPCA-led	BPC-wide	Progress
• Study the potential for blackwater treatment and reuse systems	✓		⊖



Teardrop Park, an example of effective water reuse in BPC

Resiliency and stormwater management

[W-3]

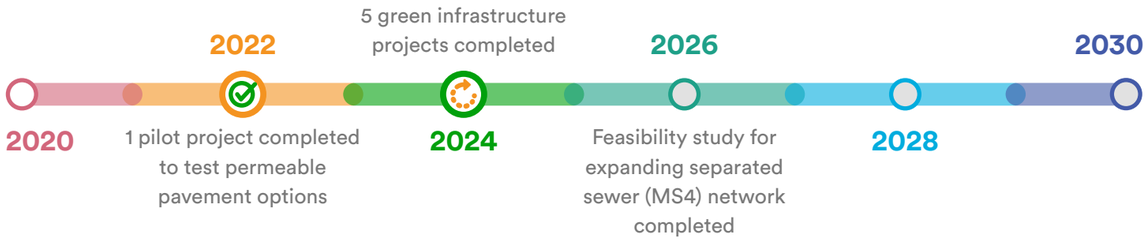
Improve resiliency to protect against major storms, upgrade stormwater infrastructure, and increase the amount of permeable surfaces in Battery Park City.

Target Progress

Battery Park City Authority Spaces

Baseline	38% of Battery Park City's parks and public open spaces were permeable in 2019
Progress	**Resilience projects are in progress where green infrastructure projects and increased permeability are being considered as part of these projects**
Target	**All BPC Resiliency Projects completed and 46% of Battery Park City's parks and public open spaces to be permeable by 2030**

Supporting Milestone Progress



Note on Progress

The BPC resiliency projects are on track to be completed by 2030. Through these projects, data will be collected to calculate permeability or to inform an updated metric that better captures the stormwater management capabilities of the neighborhood.

Action Progress

Work to make Battery Park City more resilient to major storms	BPCA-led	BPC-wide	Progress
• Complete planned BPC Resiliency Projects (North, West, South, Ball Fields & Community Center) (S)	✓		
• Adapt BPC buildings to prepare for major storms and increased flooding (S)		✓	

Increase the permeability of Battery Park City through pavement modifications and green stormwater infrastructure	BPCA-led	BPC-wide	Progress
• Explore opportunities to convert hardscape to softscape	✓		
• Conduct a pilot project to test out different permeable pavement options	✓		
• Install permeable pavements in areas most impacted by rain events	✓		
• Identify locations for bioswales, green roofs, and rain gardens in Battery Park City and implement projects as upgrades are made to structures, streets, or parks	✓		

Improve stormwater infrastructure to limit combined sewer overflow incidents	BPCA-led	BPC-wide	Progress
• Identify and implement opportunities for additional stormwater detention and storage to improve stormwater management and enable water recycling systems (S)	✓		
• Partner with DEP to study the feasibility of expanding separated sewer (MS4) network to areas north of Liberty Street	✓		



Permeable Paver Installation

(S) Items funded by Sustainability Bonds



Materials and Waste

4

50 Introduction

54 Sustainable consumption

56 Sustainable building materials

58 Waste diversion

60 Organics collection and composting

62 Construction and demolition activities

Materials and Waste at-a-glance

Waste has a significant impact on the urban environment of Battery Park City. Wise consumption choices from the outset paired with robust reuse programs can minimize the amount of waste produced in BPC while recycling and composting programs can further reduce the amount of waste sent to landfills. BPCA has proven their leadership in this space through their management of BPC waste, their policies and protocols, and ever-growing composting initiative. The Battery Park City Sustainability Plan introduced targets and actions related to minimizing consumption in order to minimize waste produced, and increasing waste diversion practices that separate recyclable materials and organics from landfill waste.



Park Waste Audit

Zero Waste Initiatives

BPCA's 75 Battery Place facility received TRUE Zero-Waste Certification in 2019, achieving a 90% diversion rate. The Zero Waste Advisory Committee has helped expand those zero-waste practices throughout the organization. BPCA has recently expanded its efforts into open space and park operations, setting zero-waste goals for BPC parks. 60 recycling bins were installed throughout the parks and educational zero-waste signage has been put on recycling cans promoting proper waste separation. In 2021, park and street trash waste audits were performed to establish a baseline for the parks' goal of reaching TRUE Zero-Waste Certification. Park waste audits will continue to be conducted periodically to track progress toward this goal. In 2023, BPCA was able to divert 173,633 pounds of waste from its operations from landfill by reducing single use items such as cleaning supply containers, paper products paired with reusing park materials such as bench slats and pavers.

BPCA has also hosted events aimed at involving the public in zero waste initiatives. For example, in partnership with the Lower East Side Ecology Center, an e-waste recycling drive was held on Esplanade Plaza in November 2023. Participants were invited to donate unwanted electronics for e-waste use and recycling. Because electronics are difficult to dispose of, recycling electronic waste decreases energy and water use, reduces pollution, and keeps hazardous chemicals out of air and water. During this event, over 1,188 pounds of electronics were collected and diverted from landfill.

Composting Initiatives

BPCA has long been a leader in composting initiatives including a recent expansion of the program and the hosting of educational community events about organic waste management. Battery Park City Authority's composting program runs year-round, producing compost from plant and fruit and vegetable food waste. Two new compost collection bins were added in the neighborhood in 2023 bringing the total number of collection bins to six. The design of a new composting space, expanding processing ability to all organic inputs, was completed and will be constructed in the summer of 2024. In addition, BPCA's Dog Waste Composting Program has expanded significantly. All BPC Dog Runs now have composting bins along with three collection bins along the Esplanade.

During 2023 Earth Week, BPCA partnered with local schools and organizations to carry out hands-on activities across the neighborhood including composting tutorials, environmental education, and worm composting activities. BPCA hosted a compost tour with 30 NYC Master Composter students organized with the NYC Compost Project, a virtual compost and sustainability tour for local Girl Scout troops, and Earth Day Story Time and Compost Lessons with Work Readiness Students and students from PS 276, PS 226, and Montessori schools. These educational events are meant to increase public awareness and knowledge of proper composting practices, and get community members involved in the practice of composting, especially starting at a young age.

60
Recycling bins
have been installed across the neighborhood

173,000+
Pounds
of waste was diverted from BPCA operations in 2023

4
Waste audits
of park spaces conducted during 2023

Sustainable Procurement Guidelines and Permitting

In an effort to minimize upfront consumption of goods and waste generation, Battery Park City Authority has incorporated sustainability into its Procurement Guidelines. The Guidelines outline how environmental aspects should be considered in the purchase of goods, including packaging waste and single use plastics. Solicitations for services are instructed to take into consideration a description of the service provider's environmentally sustainable business practices or activities. Any procurement activities must also be aligned with New York State's sustainable procurement and operational practices, which list waste reduction, materials reuse, recyclability, and compostability as key factors to be considered in procurement specifications.

Additionally, sustainability has been incorporated into the permitting process for events to be hosted within Battery Park City. There is now guidance urging event hosts to reduce their event's impact through choices like using large pitchers or carafes for drinks rather than individual bottles, using reusable utensils and plates, ensuring any disposable materials are recyclable, and collecting organics to be processed through BPCA's robust composting program. The permitting webpage also has a list of local businesses that may be potential vendors for events, helping minimize environmental impacts of purchasing.

Materials and Waste Strategies

Strategy 1: Sustainable consumption

Strategy 2: Sustainable building materials

Strategy 3: Waste diversion

Strategy 4: Organics collection and composting

Strategy 5: Construction and demolition activities

Sustainable consumption [M&W-1]

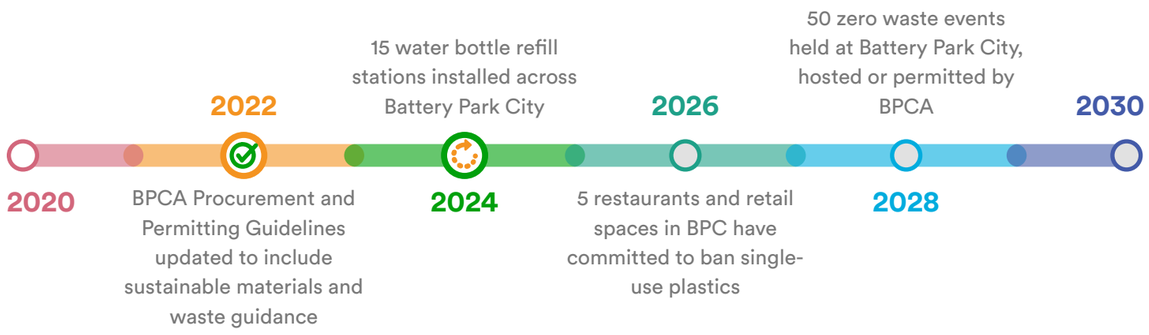
Alter consumption patterns and reduce single-use materials and other wasteful items by encouraging reuse and donations.

Target Progress

Battery Park City

Baseline	In 2019, BPCA was a leader in sustainable material consumption by avoiding single-use plastics and transitioning to reusable products
Progress	**Events are being held to help foster sustainable behavior change**
Target	**Achieve behavior change that supports waste reduction, recycling, and reuse in Battery Park City by 2030**

Supporting Milestone Progress



Note on Progress

Water bottle refill stations will be installed as part of the resiliency projects with the hopes that these stations will encourage the use of reusable water bottles across the neighborhood. As a first step, a standard BPCA refill station has been selected to be installed across projects.

Action Progress

Limit the amount of materials that enter and the amount of waste that exits Battery Park City, through procurement and permitting	BPCA-led	BPC-wide	Progress
• Ensure that BPCA Procurement Guidelines contain sustainability guidance and provide direction on the consumption and tracking of materials that enter and exit Battery Park City	✓		
• Ensure that the BPCA permitting processes set sustainability goals and ensure limits on the materials that come in and go out of Battery Park City	✓		
• Procure zero waste or circular economy vendors for catering and other services		✓	
Reduce the use of single-use materials through infrastructure and programming	**BPCA-led**	**BPC-wide**	**Progress**
• Eliminate single-use plastics and other wasteful materials across Battery Park City restaurants and retail spaces		✓	
• Expand the availability of water bottle refill stations that encourage the use of reusable water bottles	✓		
Educate the community on consumption patterns and alternatives to reduce waste generation	**BPCA-led**	**BPC-wide**	**Progress**
• Host educational events to showcase sustainable behaviors and products for the home and workplace	✓		
• Develop a guide for residents on sustainable materials and consumer goods to educate them while shopping including guidance on eco-labels, sustainable wood products, etc.	✓		
• Develop a program to promote Battery Park City businesses to encourage local shopping	✓		

BPCA Park Operations Waste Reduction and Recycling

Since December 2022, BPCA Park Operations have special take back programs including Nitrile gloves. They also participate in bulk purchasing to reduce the amount of plastic containers needed including:

- 5 gallon concrete buckets instead of 1 gallon
- Refilling 5 gallon water jugs rather than continual purchase



S Items funded by Sustainability Bonds

Sustainable building materials

[M&W-2]

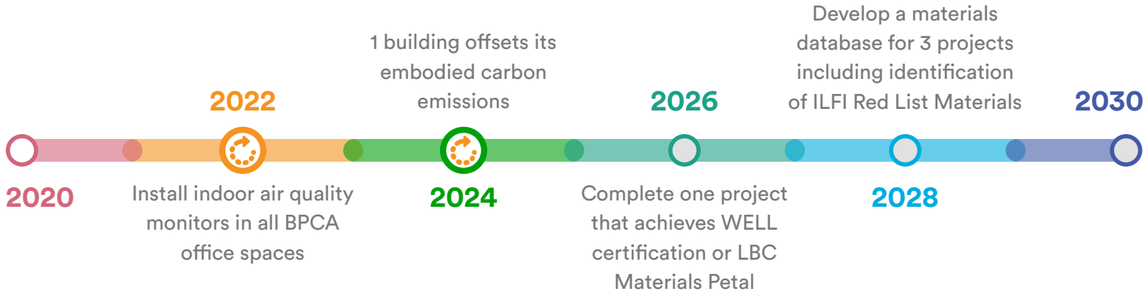
Promote the reuse and recycling of building materials and the selection of materials that enhance indoor air quality.

Target Progress

Battery Park City

Baseline	Sustainable building material use not tracked
Progress	**Resiliency projects in progress are tracking material use**
Target	**25% of construction or renovation project materials, by weight, to be from the ILFI Declare database, Cradle to Cradle certified, or other comparable sustainable materials by 2030**

Supporting Milestone Progress



Note on Progress

The new Wagner Park Pavilion, to be completed in 2025, will offset its embodied carbon as part of its ILFI Net Zero verification, which will be awarded after the pavilion has been open for a year. For future projects, BPCA will evaluate the most relevant industry standards and metrics related to measuring embodied carbon and sustainable materials. Additionally, BPCA will engage with buildings to obtain more information on the material selection and sustainability aspects of their own projects.

Action Progress

Improve indoor health and wellness through material selection	BPCA-led	BPC-wide	Progress
• Avoid volatile organic compounds (VOCs) and VOC-emitting materials or equipment in homes and commercial spaces	✓	✓	
• Reference the ILFI Red List during fit-outs, renovations, or construction projects to avoid harmful materials	✓	✓	
• Consider the installation of indoor air quality monitors throughout Battery Park City	✓	✓	

Support the reduction of embodied carbon in buildings and materials	BPCA-led	BPC-wide	Progress
• Develop material databases for buildings that identify the embodied carbon associated with the materials in a building that can be updated and used for assessment during renovations	✓		
• During major renovation or construction projects, collaborate with BPCA and other partners to identify sources of reusable materials in Battery Park City or beyond	✓	✓	

Material Reuse During Construction

During major construction as part of the South BPC Resiliency project, several opportunities were identified in which material could be salvaged and reused in Battery Park City. Highlights include:

- Salvaged 27 shrubs and 132 perennials from the Museum of Jewish Heritage gardens into other areas of Battery Park City in March 2023.
- Coordinated salvage of 37 perennials and 9 shrubs from affected areas in Wagner Park for use in other areas of BPC. BPCA staff and other NYC parks have been involved with over 1,000 salvaged perennials and 200 shrubs.
- Currently identifying viable partnerships for sustainable disposal and potential reuse options of pavers and bluestones, asphalt, concrete, and rock.



Waste diversion [M&W-3]

Increase the amount of reused and recycled materials, and separately dispose of organic waste, to reduce the amount of waste sent to landfill and the associated GHG emissions.

Target Progress

Battery Park City Authority Spaces

Baseline 90% of 75 Battery Place waste was diverted from landfills in 2019 - a leader within BPCA-managed spaces

Progress **54% diversion from landfills from all BPCA-managed spaces, including indoor and outdoor spaces, in 2022**

Target **Zero waste[1] sent to landfills from BPCA-managed spaces by 2030**

Battery Park City

Baseline 8.5 million pounds of residential landfill waste compacted in 2019

Progress **In 2022, 16% reduction in landfill waste sent to compactors compared to 2019**

Target **50% reduction in landfill waste sent to compactors by 2030**

Supporting Milestone Progress



[1]BPCA defines Zero Waste according to the TRUE certification definition of at least 90% diversion from landfill.

Action Progress

Support the development of reuse centers and educational programs across Battery Park City to influence behavior change	BPCA-led	BPC-wide	Progress
• Host events for people to bring atypical waste and learn about options for reuse, donation, or recycling	✓		
• Host reuse events like a costume swap, a drop a bag, take a bag event, or fix it events where broken items can be brought in for repair rather than being thrown away	✓		
• Donate unused food from food retailers and restaurants		✓	

Expand recycling and composting activities through additional infrastructure, education, and training	BPCA-led	BPC-wide	Progress
• Develop consistent signage for waste, recycling, and organics collection across Battery Park City	✓		
• Pilot recycling bins in parks to assess the impact on waste diversion	✓		
• Develop an education program to raise awareness about available recycling and composting programs and how community members can contribute	✓		
• Train at least one building management staff member for each building to achieve the NYC Zero Waste Building Maintenance Training Certificate, or similar		✓	
• Enroll in optional recycling programs such as e-waste recycling and clothing donations		✓	
• Identify creative ways to reduce the amount of waste sent to landfill by BPCA Parks Operations and Parks Programming events	✓		

Conduct waste audits and collect waste data to better understand diversion and track progress	BPCA-led	BPC-wide	Progress
• Conduct regular audits of residential waste sent to compactors and public trash cans throughout the neighborhood, and report findings to residents and building owners	✓		
• Pilot weighing all building waste brought to BPCA compactors on a regular basis	✓		
• Conduct regular waste audits of commercial properties and tenant spaces		✓	
• Send waste in clear bags to compactors to allow for a visual check for contamination		✓	

Organics collection and composting

[M&W-4]

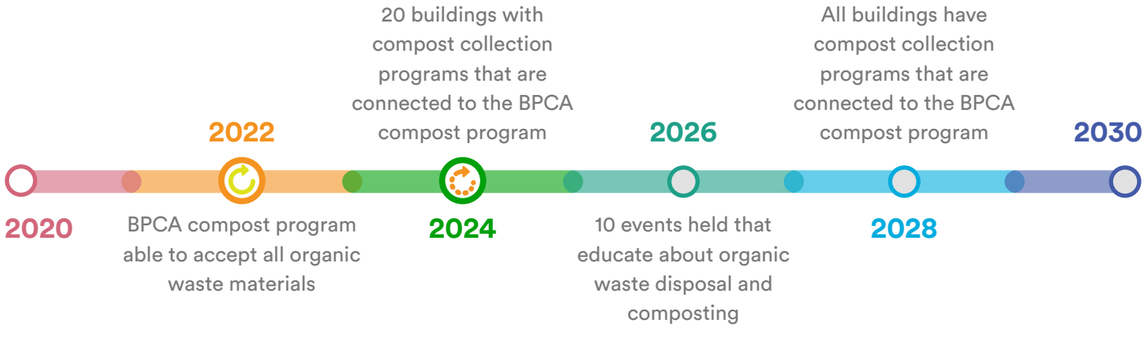
Expand organic waste collection and composting programs in Battery Park City with a wider network of collection bins and composting education.

Target Progress

Battery Park City

Baseline	An estimated 1% of Battery Park City organic waste was diverted from landfills in 2019
Progress	**DSNY estimates 1% of BPC organic waste was diverted from landfills in 2022, however the BPCA community composting program increased its total weight processed by 104% from 2020**
Target	**80% of Battery Park City organic waste to be diverted from landfills in 2030**

Supporting Milestone Progress



Note on Progress

New York City rolled out curbside composting in 2022. Whether part of the BPCA compost program or otherwise, it is important that more buildings divert and compost their organic waste. BPCA will continue to encourage buildings to separate their organic waste. Depending on data availability as the NYC program is expanded, this target may be shifted from a diversion percentage to a weight-based amount of organic waste collected.

Action Progress

Expand and improve the Battery Park City organic waste collection network	BPCA-led	BPC-wide	Progress
• Educate the community on composting practices and organic waste emissions through events and informational materials, partnering with DSNY and waste education non-profits	✓		
• Collaborate with Battery Park City's Liberty Community Garden to expand composting outreach and learning opportunities for the community	✓		
• Provide space in buildings for organic waste collection and educate occupants about the program		✓	
• Encourage composting programs in neighborhood schools to educate Battery Park City's younger population	✓		

Increase local capacity for composting and broaden the organic waste types that can be composted at Battery Park City	BPCA-led	BPC-wide	Progress
• Replace composting equipment and expand capacity to accept all organic waste materials and to meet all of Battery Park City's compost needs	✓		
• Partner with DSNY and other organizations to collect organic waste that cannot be composted on-site to maximize organic waste collection at Battery Park City	✓		

Dog Waste Composting Initiative

The dog waste composting initiative started in 2019 processing about 15 pounds of dog waste a day. Throughout 2023 the Authority has expanded access to the dog waste compost program, with three new dog waste compost collection bins having been installed along the Esplanade, bringing the total to eight. An additional dog waste composter was also added to expand the processing capacity.



Construction and demolition activities [M&W-5]

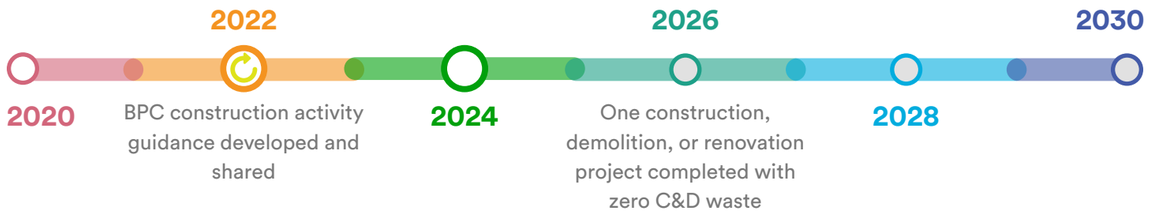
Reduce the impact of construction and demolition related activities in the neighborhood and recycle or reuse construction and demolition waste.

Target Progress

Battery Park City

Baseline	Construction and demolition waste not tracked
Progress	**The South BPC Resiliency project has been able to divert 48% of materials from the landfill**
Target	**95% of construction and demolition waste recycled or reused by 2030**

Supporting Milestone Progress



Note on Progress

BPC has an ambitious target related to construction and demolition waste diversion. It is important to maximize the amount of material reuse and recycling and there is room to grow. BPCA continues to advance construction and demolition diversion in construction projects like the resiliency projects and will engage with buildings to obtain more insight on their projects' construction and demolition waste.

Action Progress

Develop more sustainable construction practices at Battery Park City and increase the amount of C&D waste recycled or reused	BPCA-led	BPC-wide	Progress
• Establish construction guidance with requirements for C&D recycling and reporting	✓		
• At the time of major renovation or construction, develop a plan for managing C&D waste and reusing materials as applicable	✓	✓	
• At the time of major renovation or construction, post signage explaining sustainability elements of the project	✓	✓	
• Minimize C&D waste resulting from the construction of resiliency projects	✓		
Mitigate the impacts of construction and renovations by sequencing and coordinating activities and sharing materials	**BPCA-led**	**BPC-wide**	**Progress**
• Work with BPCA in the development of construction plans and schedules to identify potential coordination with other projects		✓	
• Where possible, work alongside other ongoing local projects to identify material reuse opportunities, or other opportunities such as equipment sharing, during construction		✓	

The SBPCR WEDG Certification

The SBPCR Project included a Construction and Demolition Waste Management Plan as part of its application for WEDG verification. The plan details waste reduction tracking and documentation methods. The project also follows the BPCA Green Guidelines as construction guidance for the neighborhood.



Site



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74 Environmental monitoring and data sharing

76 Active transportation

78 Electric vehicle infrastructure

Site at-a-glance

Across Battery Park City, neighborhood streets, sidewalks, parks, and other open spaces lend themselves to extensive community use and interaction. Whether commuting along streets, gathering at the ball fields, or walking along the Esplanade, BPC residents and visitors frequently spend time in the public realm. In the Battery Park City Sustainability Plan, Site targets and strategies were developed to further sustainability in these spaces. Battery Park City has since made significant progress toward implementing actions related to habitats and ecosystems, mobility, resiliency, and general environmental quality.



BPCA-led Nature Walk

Public Awareness Campaigns

Because open spaces are a significant factor in the quality of life of BPC community members, it is important to have community education, involvement, and input in the management of the neighborhood's public spaces. Battery Park City has hosted multiple public awareness campaigns, some highlights of which include:

iNaturalist: BPC has hosted multiple City Nature Challenge Bio-Blitz where members from the BPC community used the citizen science app iNaturalist to document neighborhood parks' biodiversity. In one event, 27 distinct observations of bird, insect, and other wildlife species were counted. Outside of the challenges, the iNaturalist app has been used to continue educating staff and members of the public about and encouraging them to participate in wildlife monitoring. For example, spotted lanternfly adult populations throughout the neighborhood were monitored and controlled in 2023 thanks to submissions through the app.

Keep it Wild! Awareness Campaign: BPCA launched the Keep it Wild! public awareness campaign in 2021, which encourages the public to responsibly observe wildlife across the neighborhood's 36 acres of parks and public spaces. The campaign reminds park users that Battery Park City's green spaces provide all the food and habitat these animals need and that wildlife does not benefit from human interaction, as well as includes resources about how to help injured animals found in BPC's parks and public spaces.

Biodiversity and Tree Canopy Assessment

One goal of the Sustainability Plan was to "enhance the biodiversity of plant and animal life at Battery Park City and ensure that the wildlife is resilient to climate change." As an early step in working toward this goal, the plan called on BPCA to "conduct a simplified audit of biodiversity to calculate a Biodiversity Index." Additionally, another Site goal in the Plan aimed to "improve the environmental quality and pedestrian environment of Battery Park City by addressing air quality, noise pollution, and the urban heat island effect," with an associated action of "measur[ing] and assess[ing] the BPC tree canopy."

To advance both of these actions, BPCA commenced an urban tree canopy assessment and biodiversity data audit across Battery Park City, for use as an ongoing management tool. The project involved five main phases: data audit and precedent study, methodology and software selection, data collection and field work, community engagement, and analysis and reporting. As completed in December 2023, BPCA now has a complete urban tree canopy and biodiversity database housed in the TreePlotter software, accessible by all. This tool as well as recommendations from the reports will help to shape future standards and practices and enable BPCA to better protect and grow BPC's local biodiversity and habitats.

94% of the 9,000 perennial plants purchased in 2023 were native plant species

902 species of plantings in Battery Park City

358 native species of plantings in Battery Park City parks and open spaces

273 insect species

91 bird species

Resiliency Projects

One way BPC is making improvements to its parks and open spaces is through resiliency projects. The South Battery Park City Resiliency Project (SBPCR) achieved WEDG verification, part of which included pursuing the encouragement of innovative design and pilot studies of new materials. The SBPCR indicates development of intertidal habitats along the Esplanade Bulkhead using an eco-concrete. In addition to habitat creation, Wagner Park will offer a new public education program by piloting an artificial reef with a series of terraced and planted habitat shelves enhancing the intertidal ecosystem, providing visitors the opportunity to learn more about efforts to enhance the health of New York shorelines in highly urban contexts. Additionally, the North/West Battery Park City Resiliency Project (NWBPCR) is also pursuing WEDG certification. These innovative ecological solutions showcase BPC's commitment to furthering resilience, biodiversity, and environmental education in its public spaces.

Site Strategies

Strategy 1: Biodiversity and habitats

Strategy 2: Quality of life

Strategy 3: Environmental monitoring and data sharing

Strategy 4: Active transportation

Strategy 5: Electric vehicle infrastructure

Biodiversity and habitats [S-1]

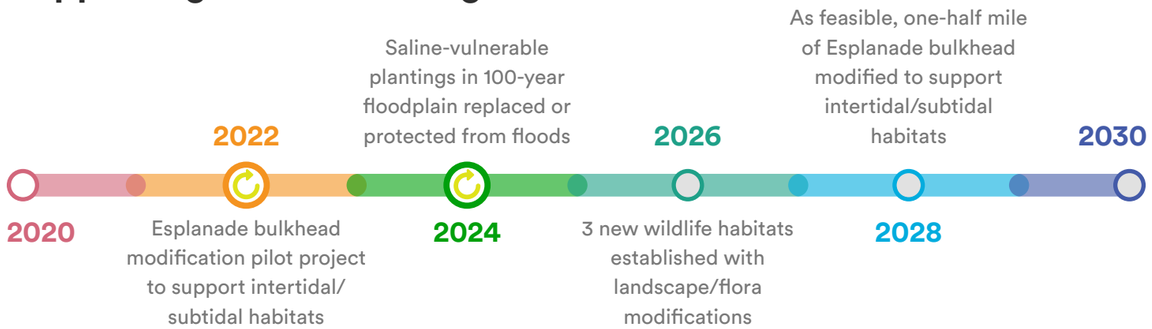
Enhance the biodiversity of plant and animal life at Battery Park City and ensure that the wildlife is resilient to the changing climate.

Target Progress

Battery Park City Authority Spaces

Baseline	Plant species richness, measured as number of species/cultivars per acre, varies across parks and Esplanade areas (26 to 140 species/acre)
Progress	**Total number of species per acre of all vegetated area in BPC, including lawn area, was 86 species/acre (or 2 unique species per 1,000 sqft) in 2023**
Target	**Establish and advance toward appropriate biodiversity index targets for each park area**

Supporting Milestone Progress



Earth Day and Climate Week

BPCA's Climate Week and Earth Week programming has grown significantly since 2020. For both Earth Day and Climate Week in 2022, Battery Park City hosted nature walks, tours, gardening, and a ladybug release to promote biodiversity. For Climate Week starting September 20th, 2023, BPCA produced a range of free public programming, including a visit to meet the beekeepers at BPC's beehive, a talk about BPC's tree canopy and biodiversity, a nature walk, film screening, musical performances, and more. These events have fostered significant community engagement in appreciating and improving BPC's open spaces.

Action Progress

Maintain status as a leader in sustainable parks and open spaces	BPCA-led	BPC-wide	Progress
• Formalize a role to document and manage wildlife inventories	✓		✓
• Develop a BPCA Parks Standard Operating Procedures (SOP) for sustainable landscape management	✓		↻
Raise awareness about Battery Park City's rich biodiversity	**BPCA-led**	**BPC-wide**	**Progress**
• Host "BioBlitz" education events, where the community can participate in learning about and inventorying plant species	✓		✓
• Develop biodiversity signage throughout Battery Park City to highlight different species	✓		✓
• Facilitate walking tours of Battery Park City with biodiversity-related topics such as birds, insects, or plants	✓		✓
• Partner with BPC schools to establish "in-the-field" biodiversity education programs	✓		✓
Enhance and expand existing habitats	**BPCA-led**	**BPC-wide**	**Progress**
• Conduct a simplified audit of biodiversity within park and Esplanade spaces over 0.75 acres, excluding special landscapes (such as paved plazas/ memorials), to calculate a biodiversity index for each space	✓		✓
• Provide support for buildings that have already installed green roofs to enhance their habitat functionality	✓	✓	⊖
• Study and establish flora and fauna patches and corridors to enhance local biodiversity as well as contribute to the larger urban ecosystem	✓		↻
• Connect with NYC Department of Parks and Recreation (DPR) and the Hudson River Park Trust to coordinate broader ecosystem planning efforts and potential habitat linkages	✓		↻
• As feasible, develop subtidal and intertidal habitats along the Esplanade bulkhead (S)	✓		↻
Ensure that plants are resilient to the changing climate	**BPCA-led**	**BPC-wide**	**Progress**
• Consider salinity-resilience in park plantings	✓		✓
• Phase out plant species that are not adapted to changing climate / hardiness zone	✓		✓

(S) Items funded by Sustainability Bonds

Quality of life [S-2]

Improve the environmental quality and pedestrian environment of Battery Park City by addressing air quality, noise pollution, and the urban heat island effect.

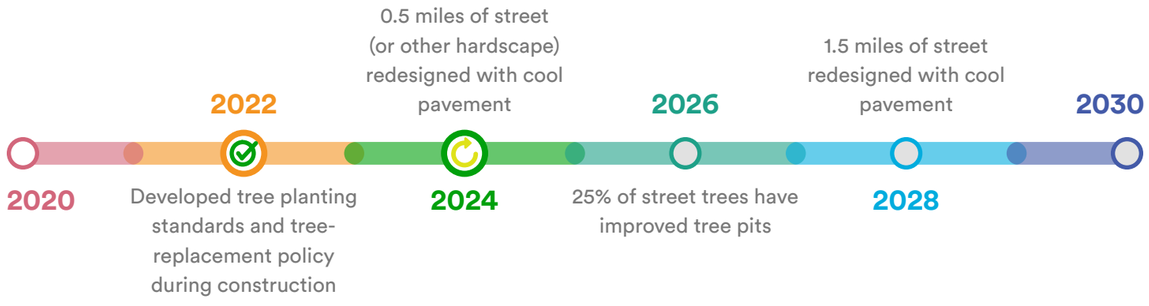
Target Progress

Battery Park City

Baseline	680 street trees in 2015
Progress	**635 street trees as of 2023**
Target	**720 street trees by 2030**

Street trees only account for 36% of all trees in BPC. There are a total of 1,750 trees in BPC, as counted during the 2023 BPC Tree Canopy Assessment. BPCA plans to expand this target to include all BPC trees to align with BPCA's goal to create and maintain a thriving urban tree canopy throughout the neighborhood.

Supporting Milestone Progress



Note on Progress

In addition to permeability, the BPCA permeable paving pilot also considered the solar reflectance index (SRI) of the materials, which measures a surface's ability to reflect and release heat thus keeping the pavement cooler. As a result, materials with high SRI are being used in the SBPCR project and will be included in the design of the NWBPCR project.

Action Progress

Mitigate the Urban Heat Island (UHI) effect	BPCA-led	BPC-wide	Progress
• Measure and assess the Battery Park City tree canopy, including both streets and parks/open spaces	✓		
• Study existing microclimates and wind conditions in Battery Park City	✓		
• Increase the density of street trees and park trees in less dense areas	✓		
• Install shading structures on sidewalks and in parks/open spaces to decrease the heat index	✓		
• Implement cool surfaces for sidewalks, roadbeds, and other hardscape areas in parks and open spaces (as appropriate)	✓		

Mitigate high winds, noise pollution, and air pollution	BPCA-led	BPC-wide	Progress
• Consider planting strategies and wind barrier installations to mitigate winter wind effects while accentuating cooling summer breezes	✓		
• Study the planting of additional park trees and shrubs adjacent to the Battery Park City ferry terminal to determine the sound dampening and air pollution mitigation effects	✓		

Protect landscape environments during construction activities	BPCA-led	BPC-wide	Progress
• Develop a standard for tree plantings and tree bed care, as well as protection standards during construction activities	✓		
• Develop a tree replacement policy that requires that during construction, a replacement tree or trees must sequester the same amount of carbon dioxide within 5 years as the tree before	✓		



BPC Open Spaces Enhance Quality of Life

Environmental monitoring and data sharing [S-3]

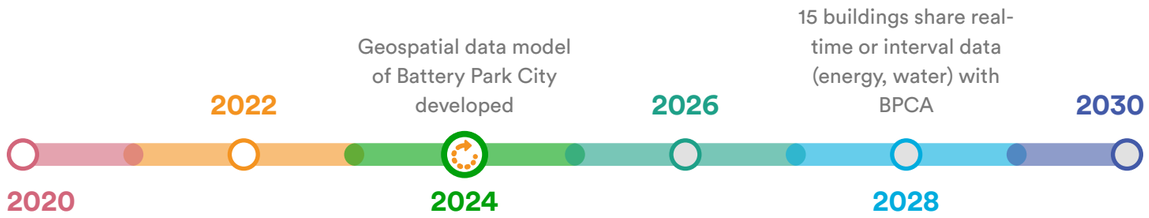
Measure site environmental conditions and building performance, use it to improve BPCA's operations and decision-making, and share this data with the public.

Target Progress

Battery Park City Authority Spaces

Baseline	BPCA has one weather station, located in a plant nursery on North End Avenue
Progress	**No progress made**
Target	**Install air quality monitors, weather stations, and noise sensors, and share this environmental data with the public by 2030**

Supporting Milestone Progress



Note on Progress

BPCA has many spatial resources and datasets like neighborhood urban tree canopy and biodiversity and resiliency maps. BPCA is exploring how to expand on these efforts and connect datasets into one platform for informing future projects and to enable operational efficiencies across the neighborhood.

Action Progress

Increase internet connectivity in Battery Park City	BPCA-led	BPC-wide	Progress
• Where appropriate, replace existing light poles with multi-feature "smart poles" that have light sensors for auto-dimming, expanded free public WiFi, and other features	✓		⊖
Monitor environmental quality and provide real-time data to the public	BPCA-led	BPC-wide	Progress
• Study potential locations and financing mechanisms to install localized air quality, temperature and humidity, wind, and noise sensors throughout Battery Park City	✓		⊖
• Explore the installation of public display panels which provide visitor information, real-time information (weather, mobility, etc.), and updates on sustainability initiatives at Battery Park City	✓		◔
Develop digital tools for asset management and expand smart city initiatives	BPCA-led	BPC-wide	Progress
• Develop a data model of Battery Park City's buildings and public spaces, to be used for internal asset management and as the basis of a public-facing mapping platform and environmental and building performance data-sharing gateway	✓		⊖
• Work with property managers and building owners to share data from building Energy Information Systems (EIS) to a BPCA-managed data platform, on a real-time or interval-reported basis	✓		⊖



Education of the Urban Heat Island Effect from Pavements

Active transportation [S-4]

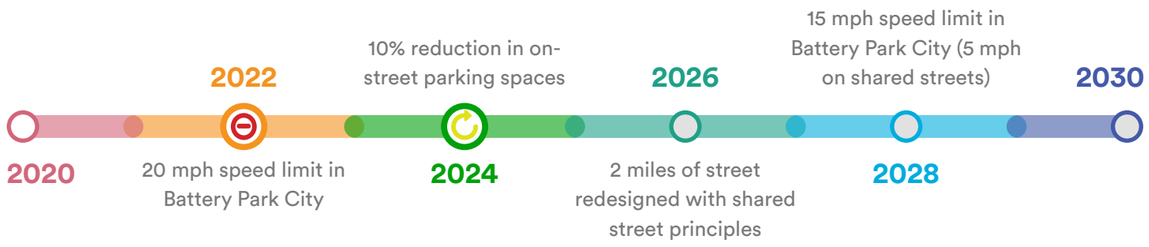
Change commuting and transportation patterns so that more people choose non-motorized travel such as walking, biking, or scootering.

Target Progress

Battery Park City

Baseline	Streets follow the NYC speed limit (25 mph)
Progress	**No progress made**
Target	**All streets redesigned for pedestrian safety by 2030**

Supporting Milestone Progress



Note on Progress

BPCA will revisit and study this target as well as other ways to measure the implementation of actions that encourage and enhance active transportation in BPC, in alignment with NYC's Vision Zero initiative.

Action Progress

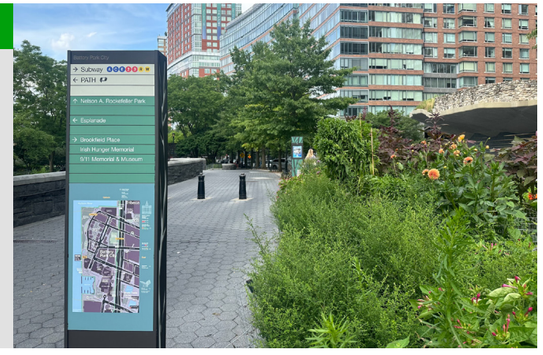
Prioritize shared streets design principles in street redesigns to encourage lower speeds and safer streets	BPCA-led	BPC-wide	Progress
• Evaluate opportunities and locations for the reduction of on-street parking	✓		
• Improve/install bike and pedestrian facilities, such as curb extensions, street narrowing, and bike lanes (S)	✓		
• Incorporate high-contrast and/or raised pavement treatments at intersections, as well as mid-block crossings, to enhance safety for pedestrians and bicyclists (S)	✓		
• Install road and other wayfinding signage to protect against pedestrian-bicyclist conflicts	✓		
• Develop a plan for improving ride-sharing logistics and minimizing traffic	✓		

Encourage commercial tenants to promote 100% transit/non-motorized transportation	BPCA-led	BPC-wide	Progress
• Educate commercial tenants on transportation demand management (TDM) strategies, such as transit pass subsidies, providing employee shower facilities, and flextime/telecommute options		✓	

Reduce heavy vehicle trips through Battery Park City	BPCA-led	BPC-wide	Progress
• Centralize waste collection points on-site to limit garbage truck trips through the neighborhood	✓		
• Encourage retail tenants to coordinate logistics and seek "cargo sharing" opportunities		✓	
• Establish north and south logistics centers for residential packages	✓		

Wayfinding Signage

BPC has integrated wayfinding signage throughout the area to enhance safety and mitigate potential conflicts between pedestrians and bicyclists. By clearly delineating paths and routes, BPC's wayfinding system not only prevents accidents but also promotes a seamless flow of foot and bike traffic enhancing active transportation throughout the neighborhood.



(S) Items funded by Sustainability Bonds

Electric vehicle infrastructure

[S-5]

Expand the availability of electric vehicle charging infrastructure to transition from gasoline-powered vehicles to electric vehicles, electric bikes, and electric scooters.

Target Progress

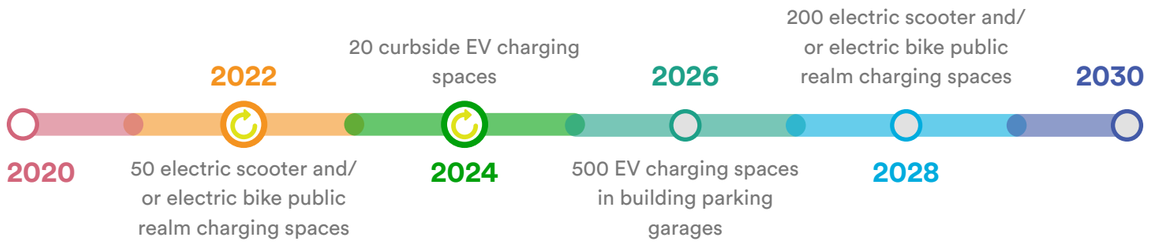
Battery Park City Authority Spaces

Baseline	Non-electric vehicles are used by BPCA for certain maintenance and operations procedures
Progress	**81% of BPCA vehicles are zero emission/battery electric vehicles in 2023**
Target	**100% of BPCA vehicles are EVs by 2030**

Battery Park City

Baseline	0% of public realm (curbside) spaces are for EV charging in 2019
Progress	**No progress made**
Target	**25% of public realm (curbside) parking spaces are upgraded to allow EV charging by 2030**

Supporting Milestone Progress



Note on Progress

BPCA is completing an EV infrastructure study in 2024 which will be used to inform upcoming capital projects. As part of the study, BPCA will develop a BPC EV Guide for Building and Garage owners which will also be a valuable tool in expanding EV adoption across the neighborhood.

Action Progress

Expand EV charging infrastructure across Battery Park City to incentivize the transition to EVs, electric bicycles, and electric scooters	BPCA-led	BPC-wide	Progress
• Install curbside electric bicycle/scooter charging infrastructure	✓		
• Work with partner organizations to install curbside Level 2 EV charging stations	✓		
• Connect building owners to EV charging station installation partners and financing	✓		
• Mandate EV-ready and EV-installed spaces for any new construction that has parking	✓		
• Retrofit existing parking structures to have EV-installed spaces		✓	
• Replace BPCA's on-road/off-road vehicle fleet with 100% electric vehicles, and explore opportunities for biofuels for other maintenance/specialized equipment	✓		

BPCA's Electric Vehicles

As part of New York State's commitment to reducing greenhouse gas emissions, executive agencies of New York State are committed to leading by example and converting the State fleet to 100% zero emission vehicles (ZEV) by 2035, as outlined in Executive Order 22. BPCA has created a ZEV conversion plan. In 2023, already 81% of the BPCA fleet vehicles are battery electric vehicles (BEV).




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