
# ONE WATER NYC:
## 2023 Water Demand Management Plan

NYC Environmental Protection

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## 2023 Water Demand Management Plan

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# Strategies for Success: Achievements in Demand Management

# STRATEGIES FOR SUCCESS:
## ACHIEVEMENTS IN DEMAND MANAGEMENT

**Water has played an essential role in making New York City a cultural and economic capital of the world.**

The New York City Department of Environmental Protection (DEP) holds the critical mission of enriching the environment and protecting public health for New Yorkers. DEP provides high quality drinking water to more than nine million New Yorkers daily, as well as managing wastewater and stormwater across the five boroughs.

Despite a steady increase in population since the 1980s, New York City's average daily water demand has decreased dramatically over the past several decades; since 2009, the daily demand has been below that of the 1960s drought. Several factors are responsible for this decrease, including increased efficiency and awareness regarding water conservation and the implementation of DEP's **Water Demand Management Program.**

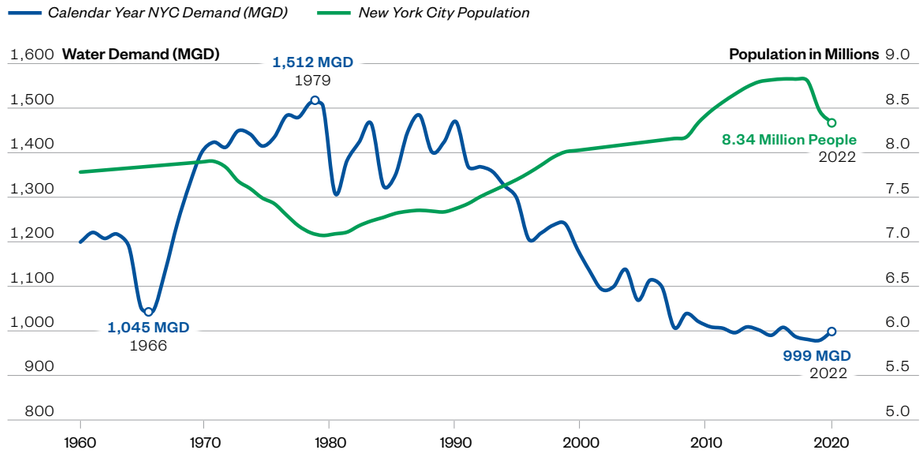
*Ashokan Reservoir*

This report will highlight successes of the Demand Management Program over the past 10 years and dive into case studies for more detail within each strategy, closing this chapter of the Water Demand Management Program.

This report will also set the stage for the next phase of DEP's Demand Management Program and introduce the new drivers and vision for a One Water strategy, which will focus on long-term planning that considers growth and redevelopment, climate change, and the best ways to incorporate equity and affordability into DEP's projects moving forward.

### Historical Water Demand and Population

Since 2009, average daily demand has been below the 1960s drought-of-record (1,045 MGD). Demand in 2022 slightly increased from 2021 which was a 60+ year low (979 MGD).




**Average Daily Demand (Million Gallons per Day, MGD)**
2013: 1,006
2014: 996
2015: 1,009
2016: 1,002
2017: 990
2018: 1,008
2019: 987
2020: 981
2021: 979
**2022: 999**

**Per Capita Demand (Gallons per Day, GPD)**
2013: 117
2014: 115
2015: 115
2016: 113
2017: 112
2018: 114
2019: 112
2020: 111
2021: 116
**2022:** 120



**The driver of the 2013 Water Demand Management Plan was to optimize water supply during the Delaware Aqueduct shutdown and repair.**

The Delaware Aqueduct shutdown will begin in October 2024 and is expected to last eight months. As part of its planning process for the shutdown, DEP evaluated various options and developed a cost-effective program with a focus on water demand management through conservation. The most cost-effective options are what became the top demand management strategies.

*Workers inside the Delaware Aqueduct Bypass Tunnel*

**Municipal Water Efficiency Program** focused on retrofitting and replacing water fixtures in public facilities.

**Residential Water Efficiency Program** replaced inefficient fixtures in multi-family buildings.

**Non-Residential Water Efficiency Program** created voluntary water conservation programs and provided cost-sharing incentives to the private sector.

**Water Distribution System Optimization** focused on leak detection, pressure management, and metering.

**Water Supply Shortage Management** revised the Water Shortage Emergency Rules in preparation for potential changes in DEP's water supply.

**Wholesale Customers Water Demand Program** developed and implemented demand management plans for the largest wholesale customers that were tailored to their individual water systems.

*DEP's Water Resources Art and Poetry Contest Winner, 2016*

# 10-YEAR PROGRAM RETROSPECTIVE

**In 2013, as part of the Water for the Future Program,** DEP collaborated on public and private partnerships and implemented a comprehensive Water Demand Management Program to accomplish significant water savings. Water savings are typically based on estimated efficiency of low flow fixtures and other conservation measures compared to historical water usage. Automated Meter Reading (AMR) data was used when available to track savings.

## CONSERVATION STRATEGIES

**Municipal Water Efficiency**

**Residential Water Efficiency**

**Non-Residential Water Efficiency**

**Water Distribution System Optimization**

**Water Supply Shortage Management**

**Wholesale Customers Water Demand**

### FDNY Training Academy Reuse Project
**(2013 - 2018)**

Installed a reuse system to reduce potable water use during trainings and replaced old fixtures with high efficiency toilets and urinals at 12 firehouses; achieved **.03 MGD** water savings.

### Wholesale Customers Demand Management
**(2014 – current)**

Created to reduce water demand through fixture replacement and advanced metering systems; achieved **5.31 MGD** water savings.

### Water Conservation & Reuse Grant
**(2016 – current)**

Incentivizes building owners to install retrofits and onsite water reuse systems that achieve a minimum water savings of one million gallons per year.


### WAIT... Mobile App
**(2016 – current)**

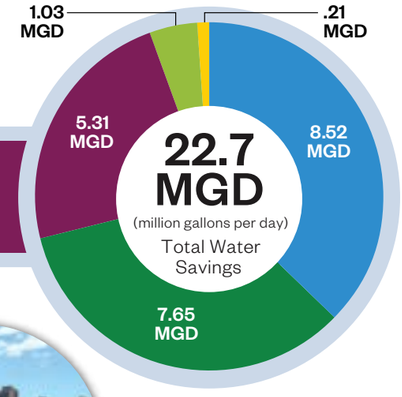
Engages the community and encourages voluntary water conservation in residential buildings during combined sewer overflow (CSO) events. The app notifies users when a large storm event is occurring so they can minimize their water use.


### Water Challenges
**(2016 – current)**

Engages wastewater resource recovery facilities, hotels, restaurants, hospitals, and universities through competitions that encourage water use reductions at each facility.

### Water Shortage Emergency Rules

Promulgated in May 2022 to support additional contingency water savings, if necessary, during future planned infrastructure repairs or unplanned water supply shortages.




### Department of Parks Spray Shower Retrofits
**(2013 - 2017)**

Installed push-button activated timers to limit water use at 400 spray shower locations; saved over **1.1 MGD**.

### Department of Education Fixture Retrofits/ Porcelain Recycling
**(2013 - 2023)**

Retrofitted 40,000 toilets and urinals at 500 schools and reused the porcelain of the old toilets for green infrastructure and ecological restoration projects; achieving **3.8 MGD** water savings.

### Toilet Replacement Project
**(2014 - 2021)**

Offered vouchers to install high efficiency toilets; replaced more than 13,000 toilets, achieving **.63 MGD** water savings.

### Brooklyn Botanic Gardens Stream Restoration
**(2015 - 2019)**

Implemented an efficient pumping and rainwater reuse system for outdoor irrigation; achieved **0.06 MGD** water savings.

### Central Park Recirculation Project
**(2018 - current)**

Recirculates water between Central Park's northern water bodies; anticipated to achieve **.48 MGD** water savings and **3.8 Million Gallons per Year (MGY)** CSO reduction.

# MUNICIPAL WATER EFFICIENCY PROGRAM

## FOCUS: Achieve water savings through efficient water fixtures in public facilities.

The New York City government workforce is comprised of over 280,000 employees working in over 50 city agencies, in dozens of City-owned facilities and buildings. Each employee uses water for daily operational needs and to carry out responsibilities that are critical to New York City.

By developing partnerships with other municipal agencies, the Municipal Water Efficiency Program (MWEP) has achieved the most water savings of all the programs initiated under the Water Demand Management Plan. Through MWEP, DEP has advanced a wide-ranging effort that incorporated water efficiency retrofits, education, metering, and water benchmarking.

Total Water Savings
**8.52 MGD**
Estimated based on retrofitted fixture efficiency and automated meter readings (AMR)

## KEY HIGHLIGHTS

**CUNY** – City University of New York
**DCAS** – Department of Citywide Administrative Services
**DOE** – Department of Education
**DPR** – Department of Parks and Recreation
**FDNY** – Fire Department of New York
**HHC** – Health + Hospitals Corporation
**NYCHA** - New York City Housing Authority

### 3.8 MGD DOE
Over **500** public schools have been retrofitted with over **40,000** new fixtures.

### 1.1 MGD DPR
Push-button activated buttons installed on **400** spray showers

**9** recreational centers retrofitted

### .07 MGD HHC
**1,471** fixtures retrofitted at Harlem Hospital

Planned fixture retrofits and vacuum pump replacement underway at **5** additional hospitals

### .03 MGD FDNY
Funded **30,000** GPD reuse facility at FDNY training facility and retrofitted **12** firehouse bathrooms

### 2.73 MGD DEP
Organized **5** water challenges with **14** wastewater facilities to promote water conservation across the agency. A 6th water challenge will conclude at the end of 2023

### .67 MGD NYCHA
Retrofitted toilets across NYCHA residences through the Toilet Replacement Program (TRP)

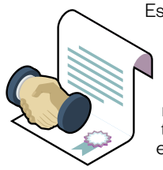
### .06 MGD Brooklyn Botanic Garden
Funded pump system portion of water recirculation and reuse project

### .04 MGD CUNY
**10** Campus buildings retrofitted at City College

**1,035** fixture retrofits underway across 4 buildings at Queens College, expected to save **.03** MGD

### .02 MGD DCAS
Retrofitted fixtures at **4** DCAS owned buildings

## ACHIEVEMENTS



Established successful partnerships with
**8**
municipal agencies to implement water efficiency measures

Over
**44,000**
fixtures upgraded

Completed upgrades and retrofits in over
**560**
facilities

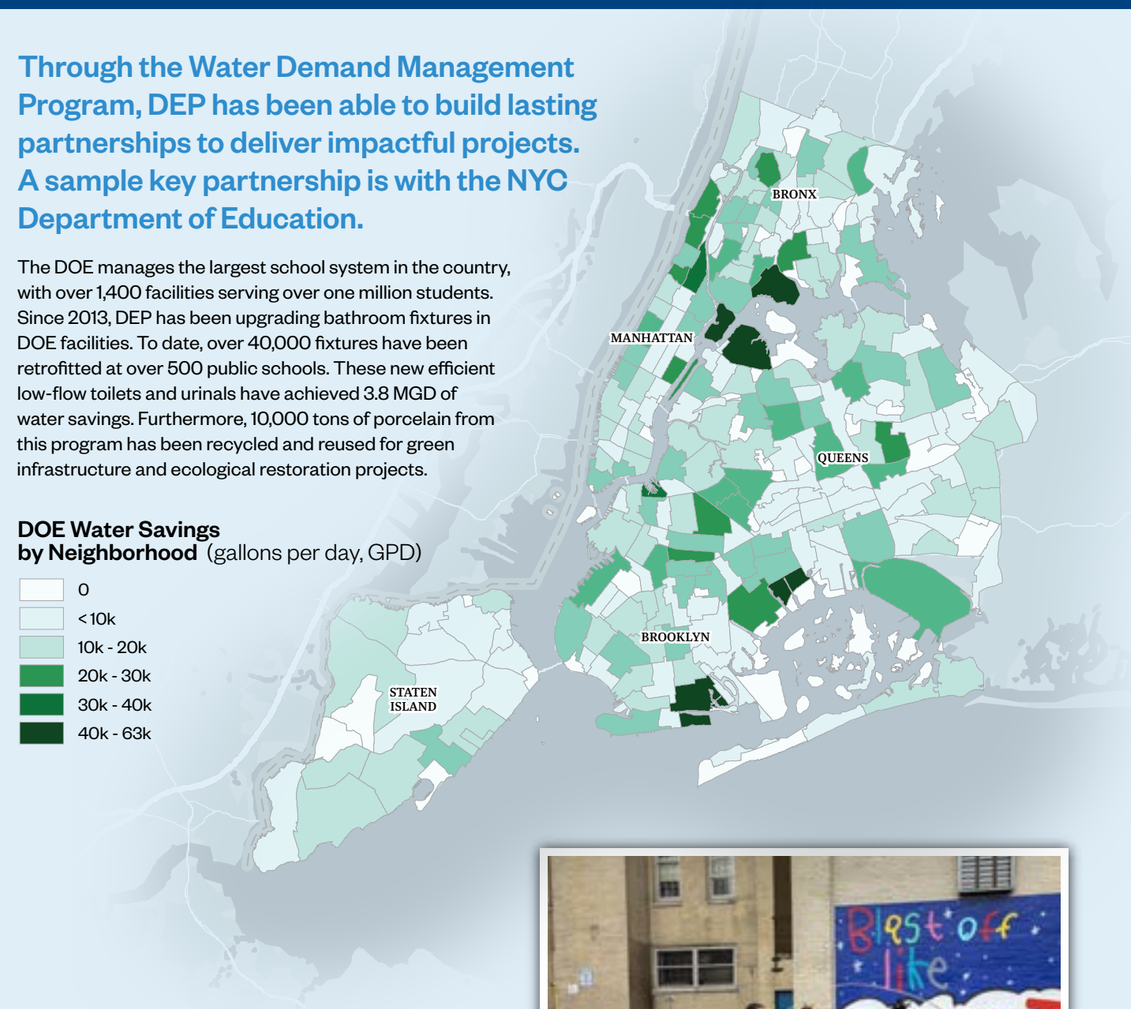


# CASE STUDY: PARTNERSHIP WITH DEPARTMENT OF EDUCATION

## Through the Water Demand Management Program, DEP has been able to build lasting partnerships to deliver impactful projects. A sample key partnership is with the NYC Department of Education.

The DOE manages the largest school system in the country, with over 1,400 facilities serving over one million students. Since 2013, DEP has been upgrading bathroom fixtures in DOE facilities. To date, over 40,000 fixtures have been retrofitted at over 500 public schools. These new efficient low-flow toilets and urinals have achieved 3.8 MGD of water savings. Furthermore, 10,000 tons of porcelain from this program has been recycled and reused for green infrastructure and ecological restoration projects.

**DOE Water Savings by Neighborhood** (gallons per day, GPD)




**PRE-1980S TOILET**
**5+**
gallons per flush

**HIGH-EFFICIENCY TOILET TODAY**
**1.28**
gallons per flush

*Students from PS 107 in the Bronx playing outside*

# RESIDENTIAL WATER EFFICIENCY PROGRAM

## FOCUS: Replace inefficient fixtures in multi-family buildings.

Residential water demand accounts for the highest water use by land use type, making up 84% of meter-billed water consumption. The Residential Water Efficiency Program was critical in reducing residential demand from inefficient fixtures. The main initiatives were the Toilet Replacement Program (TRP) and the Home Water Savings Kits, through which participants learned the benefits of conservation and how much water and monetary savings can be achieved when inefficient fixtures are replaced and leaks are identified.

Total Water Savings
**1.03 MGD**
Estimated based on retrofitted fixture efficiency

**.4 MGD**
home water kit savings

Over
**13,000**
residential toilets retrofitted citywide through the TRP

**.63 MGD**
Total water savings through the Toilet Replacement Program

**KEY HIGHLIGHTS**

Expanded TRP to
**86**
NYCHA facilities in 2017 (545 toilets retrofitted)

Provided
**100,000**
complimentary apartment household water surveys in single and multi-family customer units

Expanded TRP to
**96**
homeowner water assistance program (HWAP) customers



# NON-RESIDENTIAL WATER EFFICIENCY PROGRAM

## FOCUS: Create water conservation incentives for private properties.

The Non-Residential Water Efficiency Program targets the private sector to promote water conservation practices by providing cost sharing incentives. One program that is part of the Non-Residential Water Efficiency Program is the water and wastewater rate discount programs for installation on private property. Additionally, DEP has partnered with restaurants, hotels, hospitals, and universities to issue yearlong challenges to reduce their water consumption by at least 5%.

To further incentivize the use of reuse systems, Water Conservation and Reuse Grant Pilot Program was launched in 2016. While the primary goal of this program is to conserve potable water, onsite water reuse is also an important part of DEP's integrated approach towards managing water resources by reducing flows to the sewer system and wastewater facilities, which can contribute to reductions in combined sewer overflows.

Total Water Savings
**.21 MGD**
Estimated based on automated meter readings (AMR)

**Water Conservation and Reuse Grant Program**
DEP provides funding for the installation of certain nonpotable water systems and other efficiency measures. One active grant is in progress with Domino Sugar. See page 30 for case study details.


**Water Rate Discounts**
DEP offers a **25% water fee discount** to customers who install water reuse systems that **reduce the building's water consumption by at least 25%**

**A 76% wastewater fee discount** is also offered for properties that discharge less than 25% of their flow

**KEY HIGHLIGHTS**

**Water Challenges**
Organized 4 sector-specific water challenges with hotels, restaurants, and universities, saving .21 MGD

**Plumbing Code Updates**
Updated standards for onsite nonpotable water systems, which went into effect late 2022

# WATER DISTRIBUTION SYSTEM OPTIMIZATION

## FOCUS: Enhance leak detection, pressure management, and metering.

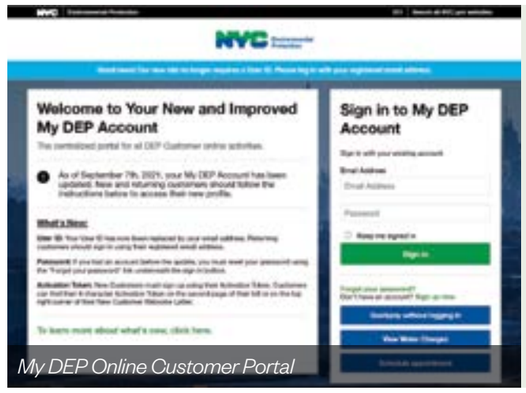
DEP delivers over one billion gallons of drinking water to over nine million New Yorkers every day. Delivery of this water is made possible through 7,000 miles of water mains and 830,000 service lines in residential and non-residential buildings and a vast water supply system that encompasses 2,000 miles of protected watershed, including 19 reservoirs and three controlled lakes. For operating and maintaining the large in-city distribution system, much of which is underground, DEP employs systemwide best practices, which include pressure management, systemwide leak detection and repair, meter replacement, Automated Meter Reading (AMR) software, and providing an online platform for customers to track and monitor water use and detect leaks in their buildings.

Total
Water Savings
**7.65 MGD**
Estimated based on typical volume reduction by leak fixed

*DEP staff installing an automated water meter*

### Optimize Metering and Replace Large Water Meters

**1,820**
**large meters replaced in 2022**




*My DEP Online Customer Portal*

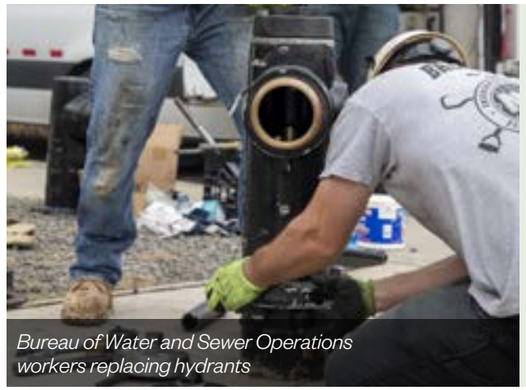
### Customer Data and Leak Alerts

About
**472,000**
**customers enrelled in My DEP Account**
to view their bills
and water usage;
over
**696,000**
**customers signed up for leak alerts**.

*DEP field staff marking the street in preparation for upcoming repairs*

### Leak Detection

In 2022, **DEP surveyed a total of**
**811 miles**
**of water mains.** As a result of leaks proactively found and repaired, DEP estimates that
**5.76 MGD**
**of water was saved.**



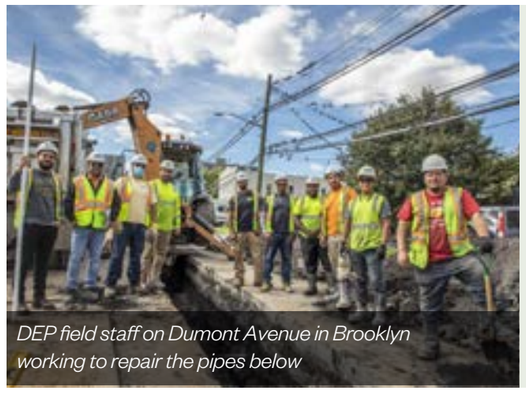
*Bureau of Water and Sewer Operations workers replacing hydrants*

### Hydrant Maintenance and Illegal Use

Leaking and/or vandalized fire hydrants can result in significant water waste; an illegally opened fire hydrant can release more than **1,000 gallons per minute.**

DEP Stats in 2022:

| 7,435 | 822 | 10,462 |
|---|---|---|
| **hydrants repaired** | **hydrants replaced** | **hydrants maintained** |



*DEP field staff on Dumont Avenue in Brooklyn working to repair the pipes below*

### Optimize Pressure Management

In 2022 DEP completed
**5,079**
preventive maintenance inspections/calibrations on pressure regulating valves

In 2022, the number of breaks per 100 miles was 6.92, slightly above the City's 10-year average of 6.58, and well below the accepted industry average of 25 breaks per 100 miles annually. DEP also overhauled 48 of the 504 pressure regulating valves that are in use citywide.

# WHOLESALE CUSTOMERS WATER DEMAND PROGRAM

## FOCUS: Develop and implement tailored demand management plans for the largest wholesale customers.

The Wholesale Customer Demand Management Program was launched by DEP in 2014 to extend demand reduction strategies to its wholesale customers (Utility Partners). The goal of this program is for Utility Partners to implement demand management projects to reduce demand by 5% from their 2013 baseline demand. These Utility Partners include the Town of Greenburgh, the Village of Ossining, the Village of Scarsdale, the Village of Tarrytown, Westchester Joint Water Works (WJWW), the City of White Plains, and the City of Yonkers. Unfortunately, unforeseen circumstances brought on by the COVID-19 pandemic resulted in DEP and its Utility Partners agreeing to terminate the existing contracts under this program.

However, DEP's robust outreach and engagement, coupled with the determination and initiative of Utility Partners, resulted in a sustained average savings of 5.31 MGD. These savings were achieved through a combination of multiple demand management strategies such as water loss control, automated metering infrastructure and monthly billing, municipal upgrades, residential indoor fixture replacement voucher programs, and water filtration plant upgrades. DEP thanks and recognizes its participating Utility Partners for implementing conservation projects and water loss control strategies to achieve these savings.

Total Water Savings
**5.31 MGD**
Estimated based on typical volume reduction by leak fixed and automated meter readings (AMR)

CASE STUDY:
### PARTNERSHIP WITH THE CITY OF YONKERS

In January 2023, DEP was able to reinitiate our partnership with the City of Yonkers, NYC's largest wholesale customer, to implement a combination of tailored demand management strategies. Yonkers obtains all its water from the NYC water supply and is experiencing shortage risks for maintenance and rehabilitation projects due to its aging distribution system, which serves a diverse topography. To address this, Yonkers has selected three main strategies for implementation:

**Initiate leak detection, pressure management, and leak repairs**
Estimated Savings:
**1.1 MGD**

**Implement a customer portal with semi-annual billing and advanced metering infrastructure leak alerts**
Estimated Savings:
**.2 MGD**

**Contingency future fixture replacements as needed and pending available funding**
Estimated Savings:
**.05 MGD**

**In total this partnership is expected to result in an additional 1.3 MGD in savings over the course of 5 years.**



# WATER SUPPLY SHORTAGE MANAGEMENT

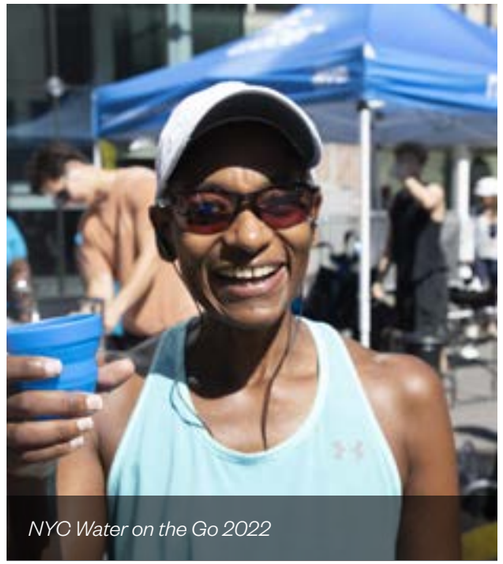
## FOCUS: Revise the Water Shortage Emergency Rules in preparation for potential changes in DEP's water supply.

DEP continually examines water use restriction best practices to adapt to future water supply conditions. These future conditions could include changing hydrologic conditions due to climate change, aging infrastructure, unplanned water supply shortages caused by events such as drought or infrastructure outages, and planned temporary, non-emergency infrastructure repairs.

In preparation for the Delaware Aqueduct shutdown, DEP revised the Water Shortage Emergency Rules to address potential changes in DEP's water supply, and these changes have been effective as of May 13, 2022. Although Water Supply Shortage Management does not provide permanent demand savings, this strategy plays a key role in temporarily reducing demand when supply is limited.

*Croton Lake Gatehouse*

# ADAPTING FOR THE FUTURE



*NYC Water on the Go 2022*

**The Demand Management Program has proven to be a cost-effective approach that created exciting opportunities and partnerships across multiple sectors throughout New York City.**

The program continues to provide benefits to the city, with an emphasis on reducing nonrevenue water, optimizing metering infrastructure, and reducing losses in the distribution system with continuous improvement and monitoring efforts.

The water savings achieved over the past 10 years has increased the reliability of the water system and reduced city water demand by more than 22.7 MGD. Reducing water demand has also reduced our carbon footprint and the amount of wastewater produced in the city. Thinking of the water system holistically has proven there are many ways to benefit the urban water cycle.

*Recreational Boating in DEP's Upstate Watershed*

## Moving Forward

The key driver of the 2013 Water Demand Management Plan was to reduce demand and optimize water supply during the Delaware Aqueduct shutdown and repair. As environmental, social, and economic landscapes continue to transform, it will be necessary to adapt management strategies to ensure future needs are met in a sustainable and equitable manner.

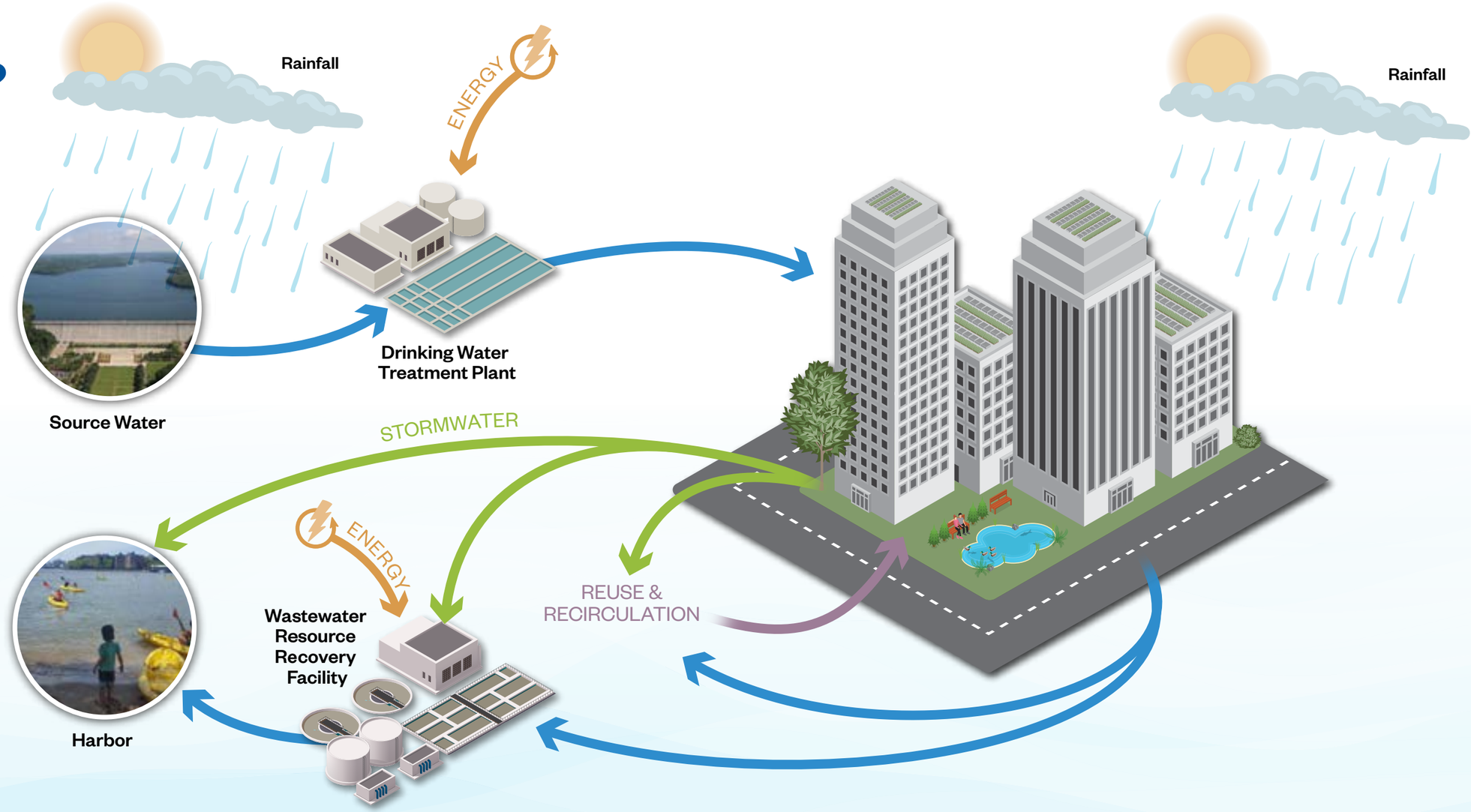
Cities across the country have seen the value in viewing their water resources holistically. Many cities across the country have adopted plans specifically to incorporate holistic planning. As the largest combined water and wastewater utility in the United States, DEP will implement holistic planning to continue to be a nationwide leader and meet the growing challenges of the 21st century.

This leads us to our next chapter of demand management: **One Water.**

# PART 2
# Beyond Demand Management: New York City's One Water Journey

# WHAT IS ONE WATER?

One Water is a holistic approach to water management which emphasizes that all water has value. While water may seem infinite, less than 1 percent of water is accessible for human use. Because the amount of water in the world is finite, the benefit of every drop should be maximized. One Water requires looking at the water system in its entirety, considering the current and future needs of all its users, and balancing them with future spending commitments to preserve affordability.




## WATERSHED APPROACH

Considering the entire water cycle builds on the success of our upstate watershed programs and provides the right water for the right use (including the reuse and recirculation of our water resources where possible).

## FLEXIBLE FRAMEWORK

Planning holistically allows DEP to adjust quickly to future events such as climate change impacts, unexpected budgetary restrictions, evolving regulatory requirements, and changing organizational priorities.

## NATURAL RESOURCE USE

Using less water reduces the need for energy for treatment at our water and wastewater facilities, and also leaves more water in the natural environment.

## MAXIMIZE CO-BENEFITS

Utilizing green infrastructure provides natural treatment for stormwater while reducing flooding from rain events and also reducing the stress on the overall system. Collected rainwater can be reused for nonpotable applications.

## COMMUNITY-BASED PROGRAMS

Learning about the water cycle helps New Yorkers understand how their water use impacts the water system. Incentive and affordability programs support water savings and provide equitable opportunities for financial relief for water services.

# WHY ONE WATER?

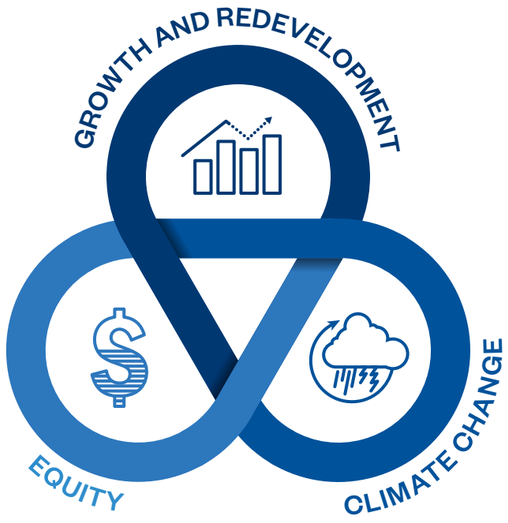
**One Water embraces establishing new strategies to address citywide issues including population growth, climate change, and equity. Our One Water approach also considers how water management decisions impact the surrounding water bodies and influence the quality of life in New York City.**

**EQUITY:** Improving equity is an important component of DEP's long-term planning strategy. Climate change risks are expected to exacerbate existing inequalities across the city, emphasizing the need to make cost-effective investments that address multiple objectives and to identify the most vulnerable communities. Lowering water bills coupled with incentive programs will help to address affordability concerns across the city.

**Reliable** access to safe drinking water is a top priority

**Affordability** of water services is essential

**Community partnerships** help shape our water future




**GROWTH AND REDEVELOPMENT:** Recently updated water demand and wastewater projections through 2055 show that demand and flow are expected to increase. While the updated projections will assist in identifying specific areas for water conservation and reuse projects, mitigating increases in demand and promoting low-impact development will also require an improved understanding of the potential impacts of population growth and other community changes.

**Integrated planning** promotes low impact development

**Water reuse** saves water and reduces CSO events

**Innovative design solutions** achieve co-benefits

**CLIMATE CHANGE:** Climate scientists predict an upward trend in precipitation and that there will be a 1.5x increase in rainy days greater than 1 inch by the 2080s. This coupled with an over 50% increase in intense hurricanes by 2100 and up to 30 inches of sea level rise by the 2050s indicate that we need to continue planning and be ready to adapt. Although the Northeast region of the United States is considered water rich, the area is still subject to periodic drought, so we need to implement "no regrets" strategies for both wet and dry extremes.

**Drought** risk may be affected by changes in rainfall and temperature

**Reducing combined sewer overflow** events improves water quality

**Resiliency** of the water system is increased by demand management

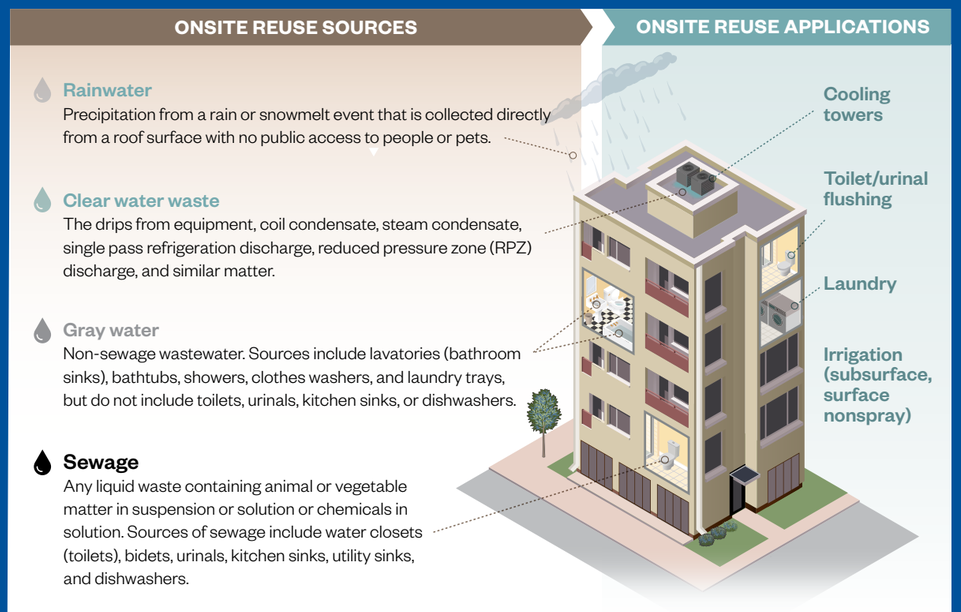
# INITIAL ONE WATER FOCUS AREAS

**Throughout history we have understood the need to be stewards of water resources. We will continue this ethic as we work to implement One Water for New York City. We have identified three areas where we will focus our efforts. Our initial focus areas will include Reuse and Recirculation, Education and Outreach, and Affordability.**

## REUSE AND RECIRCULATION

Reuse and recirculation involves the recycling of nonpotable water for purposes other than drinking. The implementation of this focus area helps ensure water resources are used wisely and responsibly across NYC. Currently, there are approximately 30 buildings in NYC with onsite reuse systems, and DEP is coordinating with the Department of Health and Mental Hygiene to develop guidance for the development and operations of future systems. One Water benefits include:

- Decreases potable water demand
- Reduces flow to sewers and treatment at wastewater facilities
- Increases capacity in the combined sewers, reducing Combined Sewer Overflow (CSO) events
- Improves receiving water quality




## EDUCATION AND OUTREACH

Education and outreach promote public engagement and increased community involvement in the development of One Water priorities. Expanding this focus area facilitates timely public input on project selection. One Water benefits include:

- Raises awareness on One Water and the urban water cycle
- Promotes awareness about water stewardship and supports behavior change
- Provides information on assistance and water conservation incentive programs
- Engages residents on their connection to water quality in New York Harbor


## AFFORDABILITY

Affordability places people at the center of One Water to ensure everyone has access to the water they need. Through this focus area, DEP works to balance the needs of underserved communities and prioritize customer affordability. One Water benefits include:

- Ensures public accessibility to clean water
- Reduces water usage by providing incentive to use less water
- Emphasizes the importance of water for future generations

# The Domino District Non-Potable Water Reuse Project

The Domino District Non-Potable Water Reuse Project in Brooklyn, NY includes the installation of a district-scale nonpotable water reuse system that will be able to treat over 400,000 gallons per day (gpd) of wastewater generated from the Domino Sugar factory redevelopment and adjacent buildings. The system will produce treated nonpotable water to be used in place of potable water for toilet flushing, cooling towers, and irrigation. The project will reduce the demand on New York City's potable water supply system by saving up to 200,000 gallons of potable water per day while also reducing flows to combined sewers and wastewater treatment facilities.


## PROJECT STATUS

In Proposal

## LEGEND

- New Building
- Existing Building
- Domino District
- Private Sewer
- Non-Potable Water Distribution
- Treated Effluent to Stormwater Outfalls
- Discharge to Existing Sewer

## One Water Benefits

- Treats and reuses up to .40 MGD of wastewater as nonpotable water, offsetting .13 - .20 MGD potable water, which optimizes water supply
- Diverts wastewater from the sewer to reuse on site, addressing sewer capacity constraints and reducing Combined Sewer Overflow (CSO) discharge to the East River

**~200,000**
Gallons per day of reduced city water demand

**~3,000,000**
Gallons per year of reduced combined sewer overflow



The Domino District Non-Potable Water Reuse Project will treat and reuse wastewater, reducing both potable water demand and CSO events.

# Central Park Recirculation Project

DEP is partnering with the Department of Parks and Recreation and Central Park Conservancy to construct a system to capture and recirculate stormwater in the Park's northern waterbodies. These waterbodies, the Pool, Loch, and Harlem Meer, are currently fed by City water. City water flows by gravity from the Pool to the Loch and Meer and overflows to the City's combined sewer system at the outflow of the Meer. By replacing city water with stormwater, this project will reduce potable water demand and reduce combined sewer overflows to the East River. In addition, recirculation will improve the water quality of the Park's northern waterbodies.


## PROJECT STATUS

Under Design



# One Water Benefits

- Replaces potable water with stormwater captured and reused from 205 acres of the park north-end and the Conservatory Garden
- Reduces potable water use by .48 MGD and relieves system stress during potential water supply shortages
- Recirculates .65 MGD of stormwater from the Meer up to the Pool and the Loch; reducing flows sent to the Wards Island WRRF for treatment
- Reduces wet weather flow by 66.7 MGY and Combined Sewer Overflow (CSO) discharge by 3.8 MGY, addressing capacity constraints on the wastewater and stormwater infrastructure

**~480,000**
Gallons per day of reduced water consumption

**~3,800,000**
Gallons per year of reduced combined sewer overflow

# Wait... App

Wait...is at the nexus of demand management and water quality improvement and targets residential water uses that individuals can choose to delay (such as laundry, showers, dishwashing, and toilet flushing). The program works to increase capacity in the combined sewer system during large storm events through voluntary and temporary water conservation. It also engages the community by encouraging residents to understand their connection to water quality in the New York Harbor.

### Mobile App Functionality

- User downloads app, inputs home address or cross streets, and receives real-time Wait... alerts for home sewershed


### Feedback Communication and Education

- App provides positive, real-time feedback on user's delayed water usage from postponed activities
- App includes tabs and links to information on water quality, water conservation, DEP programs and events, and more



### Behavior Change Nudges and Tracking

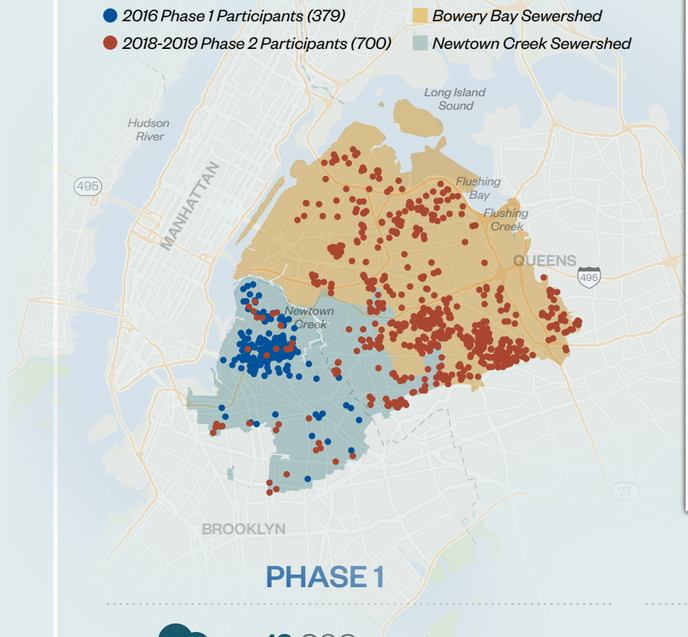
- App provides information on average water usage rates for typical activities (e.g., laundry)
- Users can opt to track and report which activities they delay
- App alerts users when heavy rain is occuring, so users can delay activities, or choose to do laundry the day after heavy rain



# One Water Benefits

- Improves capacity for wastewater and stormwater infrastructure during rainy days, which can help meet the water quality objective of reducing combined sewer overflows (CSO)
- Increases public awareness and education about how each person's actions can improve water quality in local waterways

## Wait... Pilot Program





### PHASE 1

**13** CSO events, June 6 - November 30, 2016

**7.2 hours** hours average CSO event duration

**370** participants (out of 379) completed pilot

**5%** decrease in consumption from baseline

### PHASE 2

**62** CSO events, April 1, 2018 - May 1, 2019

**10.2 hours** average CSO event duration

**690** participants (out of 700) completed pilot

**22%** response rate on participant survey;
88% would participate again

# Affordability and Incentive Programs

**Home Water Assistance Program (HWAP)**

HWAP is an initiative to make water and sewer bills more affordable for low-income homeowners. New York City Homeowners are eligible if their property is a one, two, three or four family home or if they are one of the 50,000 qualified homeowners who received the Home Energy Assistance Program benefit for 2021-2022

**Multi-Family Conservation Program (MCP)**

This program provides qualified multiple-family housing of 4 or more dwelling units with fixed billing charges per unit instead of metered charges. The program promotes water conservation in multiple-family housing, while also giving customers control over their water and wastewater costs.

**Multi-Family Water Assistance Program (MWAP)**

Housing Preservation and Development and the Housing Development Corporation assisted affordable multi-family housing projects can receive a $250 credit per residential unit on their water and sewer bill(s) on a limited first-come, first-served basis.



# One Water Benefits

- Ensures the accessibility and affordability of potable water to low-income communities
- Identifies and prevents high water bills caused by leaks
- Promotes water conservation by providing incentives to multiple family housing

**Households Enrolled**
MCP: 28,000
MWAP: 40,000
HWAP: 66,000

**Savings**
Leak Forgiveness: $4M

**The Leak Forgiveness Program**

Leaks, if undetected, can add significant and unexpected charges to your water bill. This program is designed to provide financial relief to customers while also incentivizing water conservation.

**Water Conservation and Reuse Pilot Program**

The Water Conservation and Reuse Pilot program provides funding for commercial, industrial, and multi-family residential property owners to install a nonpotable water systems and other efficiency measures, which can otherwise cost $50,000 or more on a single private property.

# OUR ONE WATER COMMITMENT

NYC has many diverse stakeholders, and the principles and practices of the people and businesses that make up our dynamic city will play an important role in how we meet our water challenges.

As the largest combined water and wastewater utility in the United States, DEP is committed to becoming a nationwide leader in the One Water movement. We will demonstrate the benefits of integrated, holistic planning to our communities through our actions and support of sustainable projects that promote the value of each and every drop of NYC water.

It is our vision that this collaborative approach to water management will provide the right combination of strategies to secure a sustainable water future for generations to come.


*Public tour at the Newtown Creek Wastewater Resource Recovery Facility*

**At its heart, the One Water approach is about diverse stakeholders coming together to advance common-ground solutions to our water challenges.**

US Water Alliance



# YOUR PART IN ONE WATER

DEP wants YOUR ideas to shape the future of One Water in NYC. Funding and incentives are currently available through our Water Conservation and Reuse Grant Program and through rate incentives. We hope you will reach out to us with your project ideas and to learn more about whether they may qualify for funding.

As part of our commitment to One Water, DEP also invites community feedback. To promote collaboration, foster continual improvement, increase engagement, and identify new programmatic focus areas for DEP's One Water programs, we encourage you to reach out to us with ideas or projects that help promote water sustainability and assist DEP in identifying future opportunities.


**Learn more at nyc.gov/dep/onewater**