

# Water Revitalization Plan

Working together to bring you safe, reliable drinking water today and tomorrow.

*Updated December 2022*





This plan focuses on **drinking water** improvements



## What will *revitalization* mean for Philadelphians?

It means newer, stronger infrastructure. It means improving the pipes, treatment plants, and processes we rely on for safe water in every neighborhood. We need to do this work now to be ready for the challenges facing our changing city.



Increases service level



Reduces service risks



Strategic PWD drinking water improvements

This is Philadelphia's 25-year plan to upgrade and strengthen essential drinking water infrastructure.

From the river to your home, we aim to keep the system **safe, reliable, and resilient** for the future.

# Why Philadelphia needs this plan

Most of our drinking water infrastructure was first built or installed over 60 years ago. Our generation must continue these critical upgrades and improvements. The first projects in this plan will provide the necessary foundation for later projects.

**Goals & Criteria:** We used these to evaluate our solutions.

|  |   |  |
|--|---|--|
| <p><b>Water quality</b></p> <p>Achieve present and future federal and state requirements</p>       | <p><b>Capital availability</b></p> <p>Manage financial resources to make necessary investments in the water system while keeping rates affordable</p> | <p><b>Service pressure</b></p> <p>Provide reliable water pressure for system operation</p> |
| <p><b>Operability</b></p> <p>Ensure system-wide resiliency for a range of emergency conditions</p> | <p><b>Water quantity</b></p> <p>Provide long-term water supply to the service area</p>  | <p><b>Public inclusion</b></p> <p>Engage customers in the process</p>                      |

## Our planning process

The project team followed a comprehensive planning process to develop the final recommendations in the Water Revitalization Plan.

### History & existing conditions

- Reviewed relevant department history
- Established existing system characteristics

### Goal setting

- Set goals through a series of Departmental workshops
- Projected future water demands

### Drivers & boundary conditions

- Reviewed current and future water quality regulations
- Evaluated forecasted climate change impacts

### Risk identification

- Identified and measured risks to meet service goals
- Prioritized risks based on severity

### Evaluate alternate solutions

- Examined alternatives for drinking water facilities and large transmission mains
- Sequenced recommendations to maintain service levels throughout the plan

### Capital improvement plan

- Conducted financial evaluation of improvement projects and their sequencing
- Incorporated projects into the capital improvement plan

**An investment in future generations.**

Upgraded facilities to deliver safe, reliable drinking water supply for the next 50 years and beyond.



**Clean water on tap when you need it.**

Improved water service and a more reliable distribution system.

**Working with Philadelphians.**

Construction jobs in Philadelphia over the next 25 years, including local small business partners.

**Best practices for construction.**

Ensure safe, clean worksites and minimize disturbances.

**Your dollar goes further.**

Projects are scheduled to balance spending as efficiently as possible over time.



**A solid investment.**

Increased transparency of PWD's long-term capital needs.

**A commitment to health and safety.**

Continued partnership with regulators to maintain or exceed requirements for clean water.



**Open lines of communication.**

Clear channels to provide information and maintain collaboration to resolve community concerns.



# Benefits to residents

Aligning multiple projects makes the work more efficient and more affordable.

This plan requires a comprehensive understanding of the City's drinking water infrastructure needs today and in the future. It includes a series of projects that have been carefully planned and sequenced to mitigate negative impacts to residents during construction and to result in minimal disruptions to service or water quality.

The City has a proud history of delivering high-quality water with some of the most affordable rates in the country. This plan provides a clear path to continue to deliver safe, reliable drinking water for our community into the future.

As the Water Revitalization Plan is implemented, it will provide numerous benefits to the city for years to come:

- **An investment in future generations.**  
Upgraded facilities to deliver safe, reliable drinking water supply for the next 50 years and beyond.
- **Working with Philadelphians.**  
Construction jobs in Philadelphia over the next 25 years, including local small business partners.
- **Clean water on tap when you need it.**  
Improved water service and a more reliable distribution system.
- **A focus on community.**  
Best practices for construction ensure safe, clean worksites and minimize disturbances.
- **Open lines of communication.**  
Clear channels to provide information and maintain collaboration to resolve community concerns.
- **Your dollar goes further.**  
Projects are scheduled to balance spending as efficiently as possible over time.
- **A commitment to health and safety.**  
Continued partnership with regulators to maintain or exceed requirements for clean water.
- **A solid investment.**  
Increased transparency of PWD's long-term capital needs.



The Dilworth Plaza water feature points to the history of public water supply in Philadelphia and the future of safe, clean, and affordable water for the whole city.

## New ways to mitigate impacts for neighborhoods ▶

Best practices for construction ensure safe, clean worksites and minimize disturbances. Residents will have clear channels to report and resolve quality of life impacts.



# A history of clean drinking water in Philadelphia

In the early 1800s, Philadelphia became one of the first cities in America to provide its residents with a public drinking water system. Early on, the Schuylkill River was the drinking water supply. About a century later, the water supply grew to include the Delaware River. These rivers continue to be the source of Philadelphia's drinking water today. PWD provides safe, reliable, affordable, and high-quality drinking water to its residents.

In the 1950s and 1960s, Philadelphia invested significantly in its drinking water system. The Philadelphia Water Department has maintained these drinking water facilities for the last 60+ years, but some of the facilities are reaching the end of their expected service life.

**1682**

Philadelphia is founded. >



**1793-98**

Yellow fever kills thousands of residents.

**1799-1822**

Philadelphia forms a watering committee. The water works opened and expanded. >



**1840s**

Philadelphia buys land upstream along Schuylkill River to protect the water source.

**1860-1909**

Philadelphia's population doubles. Typhoid kills 27,000.

**1900-1912**

Philadelphia builds five slow sand filtration plants. >



**1914**

The water supply is chlorinated. Typhoid and Cholera eradicated. >



**1957**

PWD constructs new rapid sand filters and pump stations. >



**1996**

PWD joins the Partnership for Safe Water demonstrating optimized treatment process.

**2019**

PWD develops a forward-looking, 25-year Water Revitalization Plan that provides a clear path to deliver safe, clean, and affordable drinking water into the future.



# We must upgrade now

The City is facing a challenge similar to other large cities across the country:

## **the need to update its aging infrastructure.**

Our facilities are showing their age and require significant investments to maintain a sufficient, safe supply of water to Philadelphia. Without investment in the near term, PWD will likely experience more on the spot repairs, which can be costly and have a negative impact on city residents.

The City is taking proactive steps to meet federal water quality regulations now and in the future. We also need to improve our drinking water system's resiliency to provide a reliable supply to city residents for any range of possible events, such as natural disasters.

By strategically aligning several projects on a 25-year timeline, we can extend capital spending over decades in order to keep water rates affordable for our residents.

PWD's drinking water quality consistently performs better than the drinking water standards required by EPA regulations to maintain public health. Our commitment is to maintain the same level of quality in the future while also keeping rates affordable.



▲ An original Pumping Station highlights our history of providing clean drinking water to the City of Philadelphia.



▲ Recent construction projects, such as construction of the East Park Storage Tanks, focus on replacing aging facilities to better serve our customers.




# Plan projects

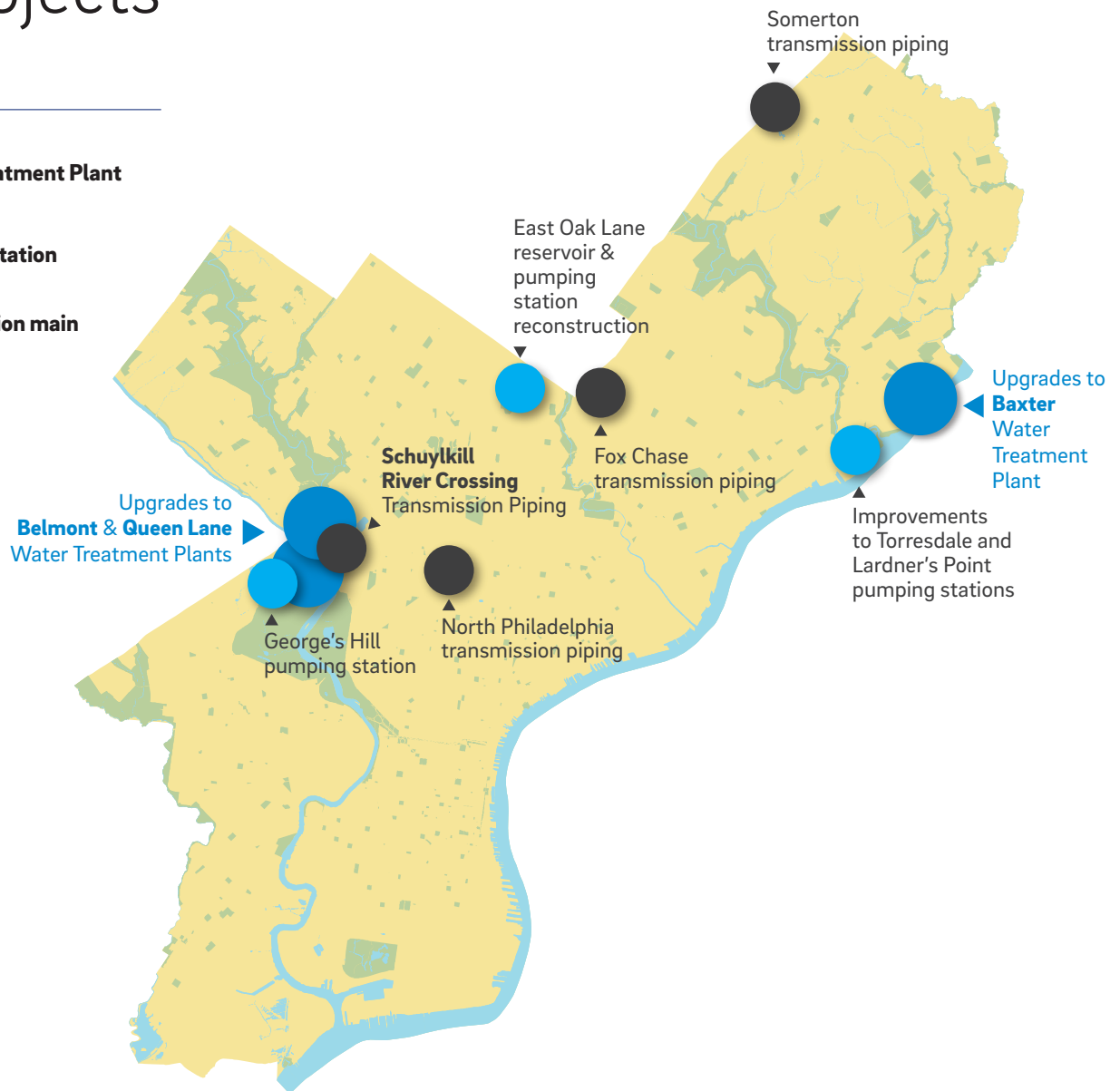
The Water Revitalization Plan identified approximately 400 projects focused on the improvement of existing facilities and construction of several new facilities.

The planned estimate for the program, as of 2019, was \$2.5 billion over 25 years. The timeline has already begun.

## Key projects

### LEGEND

-  Water Treatment Plant
-  Pumping station
-  Transmission main



This map reflects 10 key projects that are part of the larger Water Revitalization Plan. All projects that are part of the Water Revitalization Plan are subject to change over time.



# Project snapshots



## Schuylkill River Crossing

Transmission piping

**Key component:** new water main connection across the Schuylkill River

**Benefit to customers:** water supply resiliency

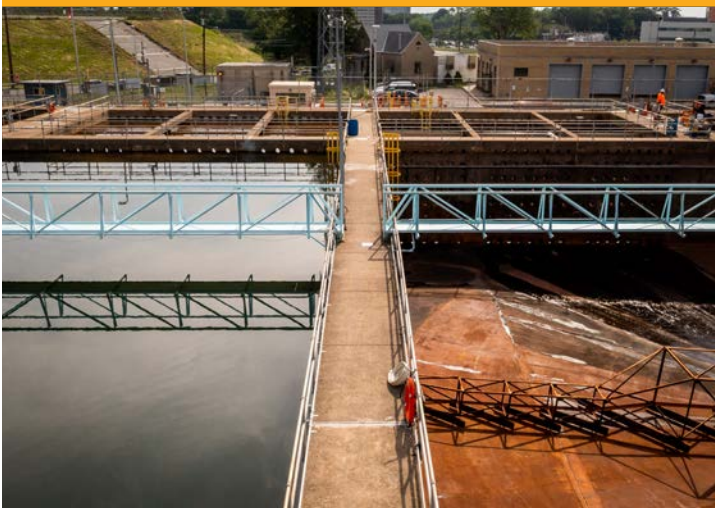


## Baxter Water Treatment Plant

Plant upgrade

**Key component:** ultraviolet (UV) treatment addition

**Benefit to customers:** long-term regulatory compliance and improved drinking water quality



## Belmont Water Treatment Plant

Plant upgrade

**Key components:** additional treatment capacity and ultraviolet (UV) treatment addition

**Benefit to customers:** long-term regulatory compliance, improved drinking water quality, and supply redundancy



## Queen Lane Water Treatment Plant

Plant upgrade

**Key component:** reconstruction of treatment plant with upgraded treatment technologies

**Benefit to customers:** long-term regulatory compliance, improved drinking water quality, and supply reliability

# Timeline & funding

The 25-year schedule allows PWD to continue providing safe and reliable drinking water to residents during project work.

Sequencing is critical to maintain consistent service throughout the interconnected projects. This timeline also helps communicate the planned work to stakeholders across the city.

## Federal funding

PWD is actively applying for Federal Assistance and has been awarded hundreds of millions of dollars in low-interest loans. Our strong record of planning for big investments will pay off as Philadelphia begins to access resources made available by the Bipartisan Infrastructure Law passed in 2021.

Thanks to our efforts, Philadelphia is well-poised to take advantage of this opportunity to further invest in the health and sustainability of our city while seeking to minimize costs for our customers. We look forward to the support of local stakeholders and officials as we pursue State and Federal funding.

## Keeping rates affordable

The funding for the Water Revitalization Plan has also been coordinated with PWD's other infrastructure requirements for wastewater and stormwater improvements.

The **Tiered Assistance Program (TAP)** and the **Senior Citizen Discount Program** continue to provide reduced bills for customers with lower incomes or hardships.



Similar to the recent East Park Storage Tanks construction project, the Water Revitalization Plan is expected to provide construction jobs in the City over the next 25 years.

# Sequencing schedule (refers to map & information on pages 8–9)

| Project   | 25-Year Implementation                    |
|---|---|
| Improvements to Torresdale and Lardner's Point pumping stations | [Bar chart showing implementation period] |
| Somerton transmission piping                                    | [Bar chart showing implementation period] |
| Schuylkill River Crossing transmission piping                   | [Bar chart showing implementation period] |
| North Philadelphia transmission piping                          | [Bar chart showing implementation period] |
| George's Hill pumping station                                   | [Bar chart showing implementation period] |
| Fox Chase transmission piping                                   | [Bar chart showing implementation period] |
| Upgrades to Baxter Water Treatment Plant                        | [Bar chart showing implementation period] |
| Upgrades to Belmont Water Treatment Plant                       | [Bar chart showing implementation period] |
| Improvements to East Oak Lane reservoir and pumping station     | [Bar chart showing implementation period] |
| Upgrades to Queen Lane Water Treatment Plant                    | [Bar chart showing implementation period] |
| Ongoing rehabilitation projects at facilities                   | [Bar chart showing implementation period] |

*This schedule reflects key projects that are part of the larger Water Revitalization Plan. All projects that are part of the Water Revitalization Plan are subject to change over time.*



“The improvements detailed in this plan represent the biggest investment in our drinking water system in a generation. This is the result of long-term, strategic planning that benefits the overall health of our water system and demonstrates our commitment to ensuring clean, safe, and reliable water for all of Philadelphia’s residents and businesses.”

— Randy E. Hayman, Esq,  
Philadelphia Water Department Commissioner



# Disclosure statement

This document is provided as of December 2022. If you are viewing this document after that date, there may have been events that occurred subsequently that could materially alter the information that was presented. By presenting this information, PWD has not undertaken any obligation to update the information beyond the date of the document. Data, estimates and other information provided are not warranted as to completeness or accuracy and are subject to change without notice. The information contained in this document represents the recommendations and goals of PWD to upgrade and strengthen water infrastructure and is a summary of its Water Revitalization Plan; however, by presenting this information, PWD has not undertaken any obligation to implement any of the plans or recommendations set forth therein. This document is provided for your information and convenience only.



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