Water
Revitalization Plan
v2 | March 2022

Building reliable infrastructure for today. Investing for a resilient tomorrow.
The Water Revitalization Plan is Philadelphia’s 25-year plan to upgrade and strengthen essential drinking water infrastructure. From facilities to distribution, we’re keeping the system **safe, reliable, and resilient** for the future.

- Increases Service Level
- Decreases Risks
- Focuses PWD drinking water facility capital spending
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. These investments will come with an ever-increasing price tag. Without spending 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 contamination or natural disasters.

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

**PWD’s drinking water quality consistently performs better than the drinking water standards developed by the EPA to maintain public health. Our commitment is to maintain the same level of quality in the future while also keeping rates affordable.**
Water Revitalization Planning Guidance

Six goals and criteria were established by a steering committee, comprised of members from across PWD.

Service Goals

- **Water quality**
  Achieve present and future regulatory requirements

- **Operability**
  Provide the appropriate system redundancy for a wide range of emergency conditions

- **Capital availability**
  Manage financial resources to make necessary investments in the water system while keeping rates affordable

- **Water quantity**
  Provide long-term water supply to the service area

- **Service pressure**
  Provide adequate water pressure for system operation

- **Public perception**
  Seek public engagement to meet service goals

These criteria were used to evaluate each solution and helped us identify potential risks.

The collaborative committee brought together hands-on experience operating PWD facilities and lessons learned working with similar utilities across the nation.

---

Project Team Engagement

- **Core Review Committee**
  - Source Water Protection
  - Water Treatment
  - Water Conveyance
  - Engineering Planning

- **Bureau of Laboratory Services**
  - Engineering Design
  - Construction

- **Planning and Research**

- **Consultant**

---
Our Planning Process

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

The first step in the planning process was establishing the historical context of the water system and existing system characteristics. At the same time, the Steering Committee established the service goals for the 25-year planning horizon. This was followed by a detailed condition assessment of the existing water supply facilities to document the current condition of these assets and identify repair, replacement, or improvement needs.

The planning team also studied other planning drivers including water demand projections, regulatory requirements, and environmental factors. Based on the service goals, the team developed a detailed risk assessment for each of the service goals, determining the likelihood and consequence of each risk occurring. This analysis guided the identification of the highest risks for the Water Revitalization Plan.

The team developed and evaluated a wide range of alternatives to determine their effectiveness in addressing the identified risks. These alternatives addressed risks at water treatment plants, water pumping stations, water storage facilities, and large water transmission mains. Each alternative was evaluated based on performance and estimated construction costs. This enabled the Steering Committee to review the alternatives and select the alternative that reduced the risks to the service goals in the most cost-effective manner.

The selected alternative was a group of projects that collectively reduced or removed the identified risks. The Steering Committee recommended these projects for financial and constructibility analysis. These recommended projects were assembled into a feasible construction schedule based on the projects’ dependencies and sequencing. This schedule determined the capital requirements for each year of the 25-year planning horizon, which were balanced with the need to keep rates affordable. The plan is a living document that will continue to be updated throughout the 25-year implementation period to address any changes that arise.
The Water Revitalization Plan identified approximately 400 projects focused on the rehabilitation of some existing facilities and construction of several new facilities.

The combined estimate of these projects, to be completed over the next 25 years, is $2.5 billion, half of which is already currently budgeted. The 10 key projects are highlighted in the graphic below and to the right.
LARGE-SCALE FACILITY PROJECTS

Water Treatment Plant

Key component: ultraviolet (UV) treatment addition

Benefit: long-term regulatory compliance and drinking water quality

Water Treatment Plant

Key component: additional treatment capacity and UV treatment addition

Benefit: long-term regulatory compliance, drinking water quality, and supply redundancy

Water Treatment Plant

Key component: reconstruction of entire plant with additional treatment capacity and UV treatment

Benefit: increased reliability and modularity and supply redundancy

Reservoir & Pumping Station

Key component: reservoir & pumping station reconstruction, transmission piping and automated valve

Benefit: drinking water quality and increased reliability
The 25-year implementation schedule was developed to consistently provide quality drinking water to residents throughout program implementation.

The sequencing is critical because the projects work together to maintain this reliable service. This implementation timeline also provides a clear road map of the timing of the projects for stakeholders across the city. These projects will provide comprehensive water supply benefits to the city.

Funding the Program

The implementation of the Water Revitalization Plan has been scheduled to maintain the affordability of safe, clean drinking water for all Philadelphia residents—now and into the future.

This implementation plan was carefully developed based on the capital requirements for each large project and the impact on customer rates.

To maintain affordability for all residents of Philadelphia, PWD’s Tiered Assistance Program (TAP) will continue along with affordable rate increases. The rate increases will be consistent with water rates in Philadelphia’s peer cities and will reduce the likelihood of sudden rate increases that could arise from future emergency infrastructure repairs.

The funding for the Water Revitalization Plan implementation has also been coordinated with PWD’s other infrastructure requirements for wastewater and stormwater improvements to avoid significant capital needs from occurring at the same 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

Sequencing Schedule (refers to map on page 5)

<table>
<thead>
<tr>
<th>Project</th>
<th>25-Year Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>#5 - Pumping stations rehabilitation &amp; reconstruction</td>
<td>🟢</td>
</tr>
<tr>
<td>#7 &amp; #9 - New transmission piping</td>
<td>🟢</td>
</tr>
<tr>
<td>#1 - Water Treatment Plant upgrade</td>
<td>🟢</td>
</tr>
<tr>
<td>#2 - Water Treatment Plant upgrade (Phase 1)</td>
<td>🟢</td>
</tr>
<tr>
<td>#3 - Water Treatment Plant upgrade</td>
<td>🟢</td>
</tr>
<tr>
<td>#2 - Water Treatment Plant upgrade (Phase 2)</td>
<td>🟢</td>
</tr>
<tr>
<td>#4 - Reservoir &amp; pumping station reconstruction</td>
<td>🟢</td>
</tr>
<tr>
<td>#8 - New transmission piping</td>
<td>🟢</td>
</tr>
<tr>
<td>#6 - New pumping station</td>
<td>🟢</td>
</tr>
<tr>
<td>#10 - New transmission piping near pumping station</td>
<td>🟢</td>
</tr>
</tbody>
</table>

Plus, on-going facility rehabilitation projects at
Water Treatment Plants, Pumping Stations, and Storage Facilities
Aligning multiple projects makes the work more efficient and more affordable.

This plan required a comprehensive understanding of the needs of the City’s drinking water infrastructure today and in the future. It includes a series of projects that have been carefully planned and sequenced to minimize impacts on the communities around the water treatment plants during construction and to result in no 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:

- **A guarantee for future generations.** Upgraded facilities to deliver safe, reliable drinking water supply for the next 50 years and beyond
- **Built by Philadelphians for Philadelphians.** Construction jobs in Philadelphia over the next 25 years
- **Clean water on tap when you need it.** Improved water service and a more reliable distribution system
- **A focus on community.** New rules for construction sites ensure safe, clean worksites and set hours to minimize disturbances.
- **Open lines of communication.** Clear channels to understand, report and resolve impacts to the community.
- **Your dollar goes further.** Projects are scheduled to balancing spending to match customer rates at the right time
- **A commitment to health and safety.** Continued partnership with regulators to maintain, or exceed requirements for clean water.
- **A solid investment.** Increased financial transparency for the Water Rate Board and bond rating agencies of PWD’s capital needs for the long term

New ways to mitigate impacts for neighborhoods

New rules for construction sites ensure safe and clean worksites and set hours to minimize disturbances. Residents will have clear channels to report and resolve quality of life impacts.

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

Built by Philadelphians for Philadelphians.
Construction jobs in Philadelphia over the next 25 years

A focus on community.
New rules for construction sites ensure safe, clean worksites and set hours to minimize disturbances.

A solid investment.
Increased financial transparency for the Water Rate Board and bond rating agencies of PWD's capital needs for the long term

Your dollar goes further.
Projects are scheduled to balancing spending to match customer rates at the right time

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 understand, report and resolve impacts to the community.
Randy E. Hayman, Esq.
Water Commissioner

Melissa LaBuda
Deputy Commissioner of Finance

Donna Schwartz
Deputy Commissioner and Director of Operations

Marc Cammarata
Deputy Commissioner of Planning and Environmental Services

Stephen Furtek
General Manager of Engineering and Construction

Philadelphia Water Department
1101 Market Street
Philadelphia, PA 19107
215.685.6300
www.phila.gov/water