

Executive Summary

The *City Beautiful H₂O Program Plan* (Program Plan) is Capital Region Water's responsible approach to addressing a combination of system-wide infrastructure deterioration and failure with high-priority water quality compliance activities. Capital Region Water (CRW) must balance delivery of reliable service with Federal Clean Water Act (CWA) and Commonwealth Clean Streams Law obligations in a manner our ratepayers can afford.



The Program Plan balances the high-priority activities between two broad categories:

- ***Rehabilitation of the Sewer System:*** Catch-up on previously deferred operation and maintenance needs, and implement a comprehensive asset management system to ensure the sewer system continues to provide reliable service to Capital Region Water customers.
- ***Wet Weather Control:*** Reduce combined and sanitary sewer overflows, and control backups onto streets and into basements to improve the health of local waterways, and protect public health and safety.

The financial capability of Capital Region Water's City ratepayers frames the balanced priorities of the Program Plan, setting the upper limit of service costs that will be assessed in the next 20 years.

A financial capability and affordability analysis was completed in accordance with the United States Environmental Protection Agency (US-EPA) requirements to assess the financial capability of Capital Region Water and its customers within the City of Harrisburg to pay for the Program Plan. The results of the analysis revealed that there is significant financial stress and economic hardship for customers located within the City of Harrisburg. The following key customer statistics highlight this limited financial capability:

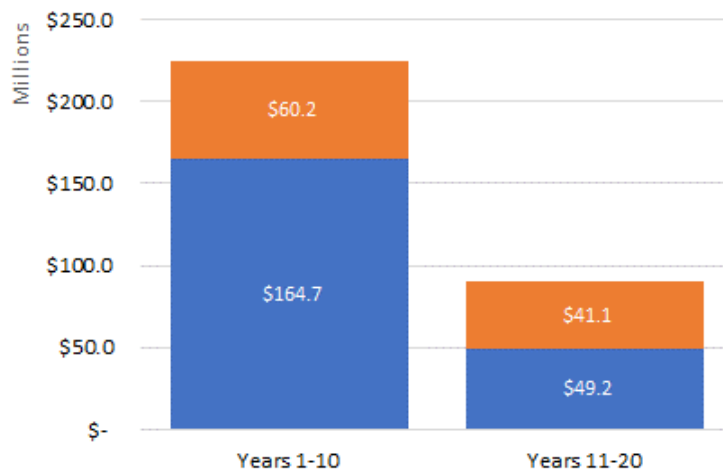
- Unemployment has ranged between 14 percent and 17 percent in recent years, which has averaged approximately 10 percentage points higher than national, state and county levels.
- Approximately 32 percent of the population is living below the poverty level, which is more than double the national, state and county poverty levels.
- The median household income of \$33,289 (in 2015) is more than \$20,000 lower than that of the national, state, and county, and is only approximately \$8,000 higher than the poverty threshold for a family of four.

- An estimated 25 percent of the households within the City currently pay a wastewater bill that is more than 2.0 percent of their income, and approximately 30 percent of households have a combined water and sewer bill that exceeds 4.0 percent of income. Federal affordability guidelines state that there is a high financial burden when the total residential wastewater and stormwater costs reach 2.0 percent of the median household income (MHI).

A high financial burden level, according to Federal affordability guidelines, is expected to occur in Harrisburg when approximately \$225 million (escalated), or \$185 million (in 2017 dollars) of additional capital costs are incurred by CRW over the next ten years. This will require a more than doubling of Capital Region Water’s residential wastewater bills to generate sufficient revenue, from approximately \$336 per year to \$787 per year over the next 10 years. However, some customers in Harrisburg are already experiencing economic hardship and affordability issues, and these conditions may worsen as capital spending continues, and rates increase in the future.

Capital Region Water has already determined that approximately \$113 million (escalated), or \$102 million (in 2017 dollars) is required to fund high-priority projects to rehabilitate the Advanced Wastewater Treatment Facility and the conveyance system. This leaves only approximately \$112 million (escalated), or \$83 million (in 2017 dollars) of additional capital funding capacity over the next 10 years before the level of high financial burden is reached according to Federal guidelines. This is why Capital Region Water is pursuing the maximum amount of schedule relief possible from the US-EPA for Program Plan implementation and why an implementation plan of longer than 20-years is justified.

Planned Capital Expenditure Amounts (in Future \$s)

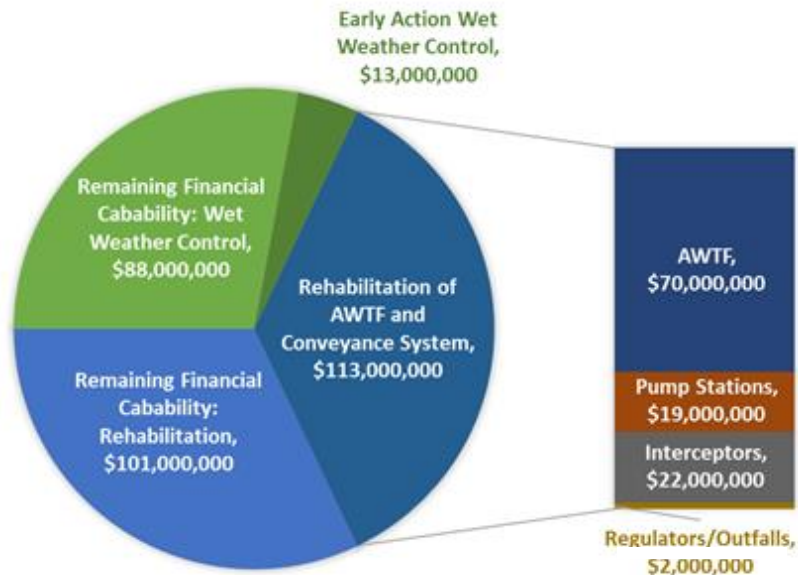


■ Rehabilitation and Replacement Capital Projects ■ Wet Weather Control I Projects

Projected Type	Years 1-10	Years 11-20	Total
Rehabilitation & Replacement	\$164,700,000	\$49,200,000	\$213,900,000
Wet Weather Control	60,200,000	41,100,000	101,300,000
Total	\$224,900,000	\$90,300,000	\$315,200,000

A 20-year financial analysis concluded that a total of approximately **\$315 million in capital projects** (\$253 million in 2017 dollars) could be funded by Capital Region Water over a 20-year period (\$225 million in the first 10 years and \$90 million in the next) while keeping the affordability threshold at or just below the high financial burden threshold. A portion of this total 20-year investment will be needed to continue to address decades of deferred maintenance (prior to CRW ownership and operation) and to preserve system reliability (\$214 million), whereas the remaining portion of this capital funding capacity (\$101 million) will be available for local, neighborhood, green stormwater infrastructure (GSI) projects.

Priorities for implementing these projects will be established annually, based on the findings of the CCTV inspections, the combined sewer overflow (CSO) and/or sewer surcharge reduction benefits gained, and opportunities to incorporate controls into development or public works projects, gaining economies of scale.



Within the affordability framework of the Program Plan, the high-priority activities will address the following problems with our separate and combined wastewater/stormwater collection, conveyance, and treatment systems:

Collection System. An initial assessment revealed that nearly 40 percent of CRW’s collection sewers may be in poor to very poor condition. Capital Region Water is conducting a systemwide video camera inspection survey to identify specific rehabilitation priorities and costs. In addition, modeling of Capital Region Water’s collection system revealed numerous hydraulic “pinch-points”, heightening the risk of surcharged sewers backing up into basements or flooding streets. Ultimately, the cost of repairs and stormwater controls are expected to **exceed \$100 million**.



Conveyance System. Capital Region Water’s estimated cost to accomplish high-priority improvements is **\$43 million (\$41 million in 2017 dollars)**, to preserve/enhance existing capacity and minimize the risk of system failure. Completed inspections identified structural and operational deficiencies and debris buildups, attributed to decades of deferred maintenance along the interceptor sewers. Major repairs and hydraulic enhancements are required for CRW’s two major pumping stations, interceptor pipe, and each of its 59 flow regulating structures.

Advanced Wastewater Treatment Facility (AWTF). Recent evaluations reveal that most treatment processes are in fair overall physical condition, but require some capital replacement investments and additional operation and maintenance (O&M) expenditures. Capital Region Water’s estimated cost to accomplish these improvements is **\$70 million (\$61 million in 2017 dollars)**, which are considered to be a high priority, needed to preserve and enhance existing capacity and minimize the risk of major system failure.

Overall Program Plan Benefits

Over the next 20 years, with the implementation of \$315 million in capital projects (\$253 million in 2017 dollars), the Program Plan is expected to provide distinct benefits to Capital Region Water’s customers:

- Renew Capital Region Water’s major wastewater assets, restoring structural integrity, enhancing operational performance, and providing a sustainable foundation for efficient system performance.
- Improve water quality, eliminating nearly 500 million gallons per year of combined sewer discharges and restore stream function.
- Support community renewal, providing reliable sewer infrastructure that incorporates green stormwater infrastructure to reduce polluted discharges and flood risks.

