WATER AND SEWER INFRASTRUCTURE

Program Description

These programs construct and maintain the infrastructure, facilities, and equipment which provides safe, reliable, and compliant drinking water, sanitary sewer collection, and wastewater treatment for the County's residents, businesses, and visitors. In addition to the County owned and operated systems and facilities, there are programs for the Washington Aqueduct Division (WAD) which is the potable water treatment plant owned and operated by the Army Corps of Engineers that provides Arlington's drinking water, and for the Blue Plains Advanced Wastewater Treatment Plant which treats approximately six percent of Arlington County's wastewater. The County's Water Pollution Control Plant (WPCP) provides wastewater treatment for 94 percent of the County, and also treats wastewater from portions of Fairfax County, the City of Falls Church, and the City of Alexandria, collectively known as the Inter-Jurisdictional (IJ) partners. These IJ partners' flows comprise approximately 17 percent of the wastewater volume treated at the WPCP; therefore, they pay a portion of the capital costs for maintenance and upgrades at the Water Pollution Control Plant and for the large transmission sewer mains which convey their wastewater. The WPCP Capital Improvement Program directly supports Arlington's vision for a world class, environmentally friendly, sustainable community as well as the Water Pollution Control Bureau's (WPCB) mission of safely and cost-effectively protecting public health and the environment.

Program Summary

The Capital Improvement Programs (CIP) for the water distribution and sanitary sewer collection systems are guided by System Plans adopted by the Board in 2014 for the Water Distribution system and in 2024 for the Sanitary Sewer system. Programs for both systems are bifurcated into Expansion and Capital Sustainment (formerly called Non-Expansion) programs. The Expansion programs provide additional system capacity to accommodate anticipated growth through the year 2040 and are included in the Water Distribution and Sanitary Sewer Improvements Programs, while the Capital Sustainment programs are focused on asset maintenance, rehabilitation, and replacement and are included in the WS Maintenance Capital Program.

The System Plans for both systems identify large infrastructure projects to expand capacity, improve redundancy, and replace or rehabilitate existing infrastructure, as well as identify key programs based upon core asset management principles. Many of the large infrastructure projects in the System Plans have already been completed, others are well-underway, and others are programmed in this CIP. Likewise, most of the asset-based infrastructure programs are recurring programs which rehabilitate or replace a consistent portion of our infrastructure on a regular cycle to ensure that we are maintaining a system which is efficient, reliable, and avoids abrupt funding needs.

Meaningful changes from the previous CIP include increased priority placed on both finished and source (raw) water resiliency projects and programs. At the Washington Aqueduct, the County's wholesale water supplier which is managed by the U.S. Army Corps of Engineers, the three wholesale customers (DC Water, Fairfax Water, and Arlington County) approved increased funding to address previously deferred and planned capital investments. Conceptual planning has also started for future projects related to regulatory changes. Additionally, the County is conducting a study which is exploring options to increase our own finished water redundancy through connections with regional partners. Regionally, Arlington is partnering with the water resources team at the Metro Washington Council of Governments (COG) and our regional water utility partners in a scoping and study effort for Potomac River source water resilience. The effort is backed by recently passed Water Resources Development Act which authorized a secondary source study for the National Capital Region.

The WPCP Capital Sustainment Program (formerly called WPCP Non-Expansion) focuses on projects that rehabilitate, replace, and/or upgrade existing WPCP infrastructure, including process control/ automation, to ensure that the facility can safely protect the public health and the environment by reliably maintaining continuity of service and simultaneously meeting the permit requirements. Also included in the Capital Sustainment program are annual repairs and replacement of current equipment and infrastructure at the plant and 15 pumping and metering stations. WPCP Capital Sustainment also funds Arlington's pro-rata share of improvements at DC Water's Blue Plains Advanced Wastewater Treatment Plant and the associated conveyance infrastructure.

The WPCP Capital Sustainment Program provides for significant investment in the Solids Handling processes at the Plant. The 2001 WPCP Master Plan identified the need to address Solids Handling, but prioritized the liquid processes and capacity issues, and thus the Solids Planning was deferred. A subsequent Solids Master Plan was adopted by the County Board in conjunction with the FY 2019 - FY 2028 CIP. The Solids Master Plan identified core criteria spanning operational, economic, environmental, regulatory, and social considerations. It evaluated the state of current technology to identify processes which best meets the needs of the community. This suite of projects to replace and upgrade the solids handling processes and equipment, collectively known as Arlington Re-Gen, has been broken into three phases, described below:

• Re-Gen, Phase I - Immediate project needs to replace solids handling critical equipment that are failing and costly and labor-intensive to maintain. These projects are anticipated to be completed by the end of Fiscal Year 2024.

• Re-Gen, Phase II - Projects that need to be completed in advance of Phase III. This may involve additional equipment replacement or demolition of underutilized facilities in preparation for the Phase III construction.

• Phase III - Implementation of technology to provide long-term sustainability of the WPCP's solids handling processes, using processes that are less likely to be subjected to increasing regulatory demands, while reducing the impacts on the surrounding community and increasing energy efficiency.

With the completion of the 2001 WPCP Master Plan (MP01) program in 2014, which increased treatment system capacity from 30 million gallons per day (MGD) to 40 MGD and looking at the steady treatment volumes despite growing population, no treatment system capacity expansion projects are included in this CIP.

10 YEAR CATEGORY SUMMARY (in $1,000s)

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	10 Year Total
WS Maintenance Capital	30,605	30,615	31,640	35,840	35,440	35,200	33,415	94,455	29,355	31,455	388,020
Water Distribution	3,400	3,010	6,685	12,430	22,650	23,495	34,770	715	585	61,240	168,980
Sanitary Sewer System Improvements	900	260	265	275	275	285	285	295	295	300	3,435
WPCP Capital Sustainment	36,810	71,930	71,540	62,275	29,730	5,465	11,820	9,570	11,575	8,735	319,450
Total Recommendation	**71,715**	**105,815**	**110,130**	**110,820**	**88,095**	**64,445**	**80,290**	**105,035**	**41,810**	**101,730**	**879,885**
Implementation Adjustment	(14,340)	(21,160)	(22,030)	(22,160)	(17,620)	(12,890)	(16,060)	(21,010)	(8,360)	(20,350)	(175,980)
Adjusted CIP	**57,375**	**84,655**	**88,100**	**88,660**	**70,475**	**51,555**	**64,230**	**84,025**	**33,450**	**81,380**	**703,905**

PROGRAM FUNDING SOURCES (in $1,000s)

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	10 Year Total
New Funding											
Federal Funding	0	0	0	0	0	0	0	0	0	0	0
State Funding	0	0	0	0	0	0	0	0	0	0	0
Developer Contributions	7,900	9,385	9,665	10,270	10,265	10,875	10,875	11,420	11,415	12,025	104,095
New Bond Issue	3,400	10,820	17,665	33,795	50,545	32,890	48,535	74,355	15,550	73,785	361,340
PAYG	7,993	13,202	19,470	18,050	22,355	19,790	19,930	16,365	12,830	14,065	164,050
Short Term Finance	0	0	0	0	0	0	0	0	0	0	0
Stormwater Utility Fee Revenue	0	0	0	0	0	0	0	0	0	0	0
Other Funding	9,040	13,050	13,495	10,940	4,930	890	2,050	1,795	2,225	1,645	60,060
Subtotal New Funding	28,333	46,457	60,295	73,055	88,095	64,445	81,390	103,935	42,020	101,520	689,545
Previously Approved Funding											
Authorized but Unissued Bonds	23,640	52,205	52,225	34,290	0	0	0	0	0	0	162,360
Issued but Unspent Bonds	0	0	0	0	0	0	0	0	0	0	0
Other Previously Approved Funds	20,242	7,738	0	0	0	0	0	0	0	0	27,980
Subtotal Previously Approved Funding	43,882	59,943	52,225	34,290	0	0	0	0	0	0	190,340
Total Funding Sources	**72,215**	**106,400**	**112,520**	**107,345**	**88,095**	**64,445**	**81,390**	**103,935**	**42,020**	**101,520**	**879,885**
Implementation Adjustment	(14,340)	(21,160)	(22,030)	(22,160)	(17,620)	(12,890)	(16,060)	(21,010)	(8,360)	(20,350)	(175,980)
Adjusted CIP	**57,875**	**85,240**	**90,490**	**85,185**	**70,475**	**51,555**	**65,330**	**82,925**	**33,660**	**81,170**	**703,905**