



The Pittsburgh Water and Sewer Authority

2023 – 2027 Capital Improvement Plan

Approved on October 28, 2022



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Pittsburgh
Water & Sewer
Authority

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Introduction

The Pittsburgh Water and Sewer Authority (“**the Authority**” or “**the PWSA**”) is a body corporate and politic organized and existing under the Act pursuant to Resolution No. 36 of the Council of the City of Pittsburgh (the “**City**”), duly enacted on February 6, 1984, approved by the Mayor on February 8, 1984, and effective February 16, 1984. The Secretary of the Commonwealth of Pennsylvania approved the Authority’s Articles of Incorporation and issued a Certificate of Incorporation on February 17, 1984. Articles of Amendment were approved and a Certificate of Amendment was issued by the Pennsylvania Department of State on December 11, 1989, to include, among authorized projects, low head dams and facilities for generating surplus electric power. Articles of Amendment were approved and a Certificate of Amendment was issued by the Pennsylvania Department of State on May 9, 2008, to extend the term of existence of the Authority to May 21, 2045. Articles of Amendment were approved and a Certificate of Amendment was issued by the Pennsylvania Department of State on March 19, 2020, to extend the term of existence of the Authority to March 13, 2070 and to include stormwater systems.

Under its Articles of Incorporation, the Authority is specifically authorized to acquire, hold, construct, finance, improve, maintain, operate, own and lease, either as lessor or lessee, projects of the following kinds and character: sewers, sewer systems or parts thereof, waterworks, water supply works, and water distribution systems, low head dams, facilities for generating surplus power, and stormwater systems.

The System provides water to approximately 75,000 customers or 84% of the total population in the geographic boundaries of the City. The Authority provides wastewater collection and transmission service to almost the entire City, estimated at 301,000 residents. The System does not include wastewater treatment facilities; such facilities are the responsibility of Allegheny County Sanitary Authority (“**ALCOSAN**”), a separate and distinct legal entity.

The Authority operates and maintains a 117 million gallon per day (MGD) rapid sand type water treatment plant, a 21 MGD microfiltration plant, approximately 964 miles of water mains, over 32,000 valves and fire hydrants, 1 raw water pump station, 10 finished water pump stations, 4 in-ground reservoirs, 10 storage tanks, approximately 1,220 miles of sanitary, storm and combined sewers, 29,500 manholes, 25,000 catch basins and inlets, 98 combined sewer overflow outfalls, 195 storm outfalls, and 4 wastewater pump stations.

Pennsylvania Public Utility Commission Oversight of the Authority

On December 21, 2017, the Pennsylvania legislature enacted Act 65 of 2017 (“**Act 65**”), placing the Authority under the jurisdiction of the Pennsylvania Public Utility Commission (“**PUC**”) pursuant to the Pennsylvania Public Utility Code (the “**Public Utility Code**”). Act 65 applies most of the provisions of the Public Utility Code to the Authority in the same manner as a “public utility,” resulting in regulation of the Authority’s rate making, its operating effectiveness, debt issuances and other aspects of conducting its business similar to the way the PUC regulates investor-owned utilities. Act 65 includes provisions that allow the Authority to impose, charge or collect rates or charges as necessary to permit the Authority to comply with its covenants with the holders of any bonds or other financial obligations of the Authority, and prohibits the PUC from requiring the Authority to take any action that would cause the interest on the Authority’s financial obligations to be includible in gross income of the holders of such obligations for federal income tax purposes.

Capital Improvement Program

Overview

The PWSA's Capital Improvement Program (CIP) focuses on sustaining cost-effective operations, while optimizing the system's asset performance and life expectancy. The 2023-2027 Capital Improvement Program invests in programs which consider risk and consequence of asset failure and levels of service benefits.

Development and Approval Process

The PWSA’s CIP process begins each year in May when project nominations are solicited from the entire organization. At the completion of the nomination period, the CIP Review Committee screens, evaluates and prioritizes the nominated projects to determine the projects that should be included in the CIP. Further planning efforts consist of the preparation of a project sheet, which provides more detailed information on a project’s potential scope options, risks, schedule, and the

cost estimate. This process lasts several months and culminates with the presentation of the updated CIP to PWSA's Board of Directors. Projects that are not selected for execution at any stage will be re-assessed during the next year's CIP development process.

Capital Project Prioritization

Due to funding limitations and the need to renew/replacing a significant amount of aging infrastructure, the following criteria are used to evaluate and prioritize capital projects:

- Regulatory Compliance
- Safety
- Operating Efficiency
- Quality of Service
- Organizational Goals
- Social Impact

Funding Sources

The PWSA Capital Improvement Program is funded through several primary sources to which specific programs and projects are allocated. These funding sources include, but are not limited to, Debt (Revenue Bonds), Distribution System Improvement Charge ("DSIC"), Water Infrastructure Finance and Innovation Act ("WIFIA"), Pennsylvania Infrastructure Investment Authority ("PENNVEST"), American Rescue Plan Act ("ARPA") and cost shares with other entities.

Capital Improvement Plan Organization

The CIP is organized into six project classes (types):

- Water Treatment Plant
- Water Pumping and Storage
- Water Distribution
- Wastewater System
- Stormwater
- Miscellaneous

Each project class is then made up of individual projects. Projects are defined based upon current information, which range from annual allowances for asset renewal and/or replacement activities, to major, multiple phase facility renewal projects.

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Project Information

The following information is provided for each project:

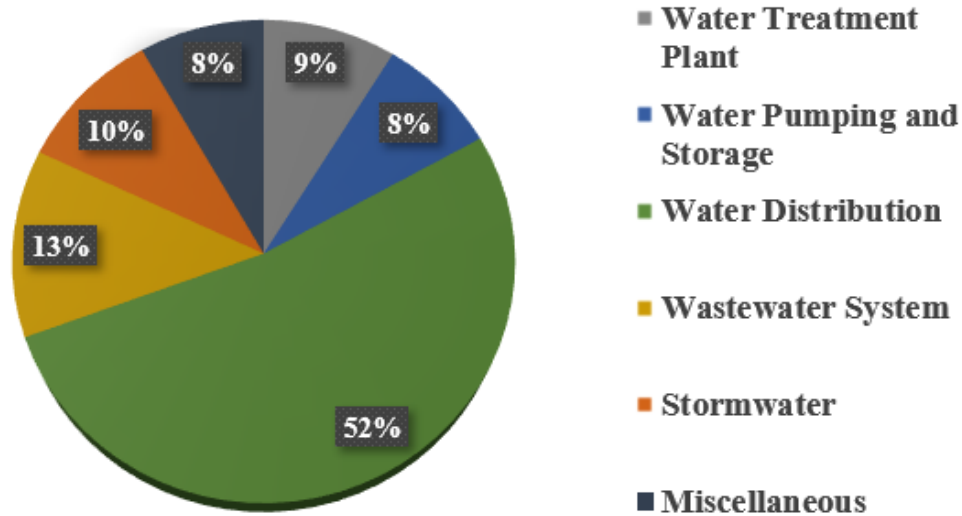
- **Cash Flow Summary** – Estimated five-year cash flow for the project.
- **DSIC Eligibility** – Determination of whether costs qualify under the Distribution System Improvement Charge.
- **Funding Source(s)** – Proposed funding source(s) for the project.
- **Impact on Operations** – Describes the anticipated impact to the PWSA’s operations when the project is completed.
- **Phase** – Phase in the project life-cycle (i.e. assessment/design/construction).
- **Priority** – Criteria utilized to prioritize the project.
- **Project Class** – Type of project.
- **Project Description** - A basic understanding of the project’s intent and scope of work.
- **Project Justification** - A detailed explanation to why the project is needed.
- **Project Name** – Descriptive name assigned to the project.
- **Project Number** – Unique number(s) assigned to track the project from inception to completion. This number is established once a project is approved.
- **Risk(s)** - Outlines the risk(s) to the PWSA if the project is delayed or is not selected.

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Historical and Forecasted Capital Expenditures

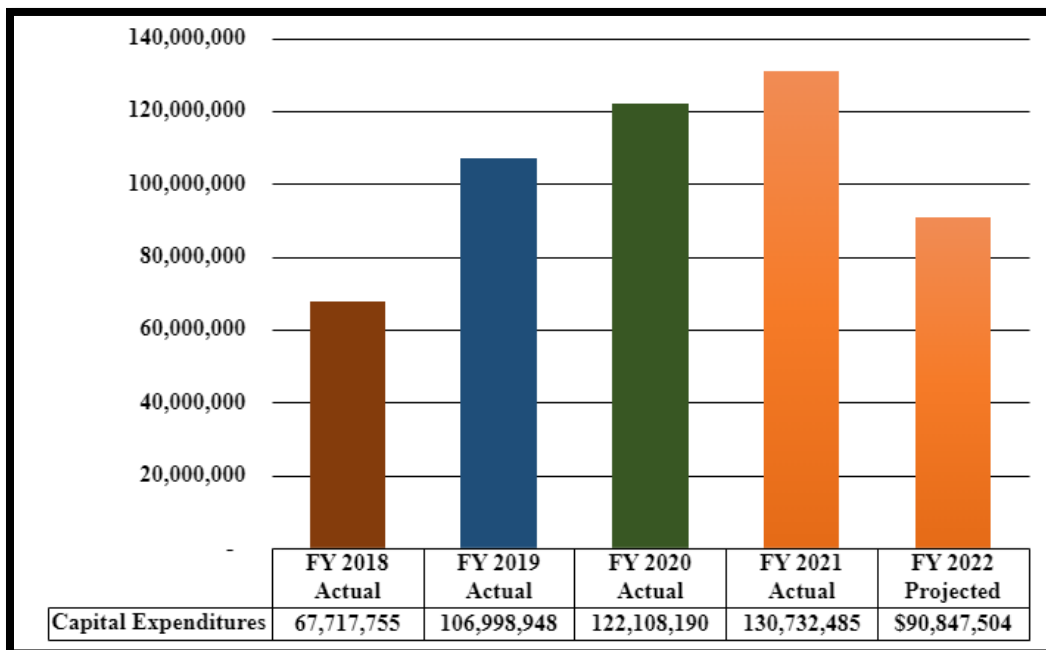
The figures below illustrate the historical capital expenditures by project class for FY 2018 – FY 2021 as well as the historical and forecasted capital expenditures for FY 2018 – FY 2021.

Figure 1. Historical Capital Expenditures by Project Class: FY 2018 – FY 2021



	FY 2018 - Actual	FY 2019 - Actual	FY 2020 - Actual	FY 2021 - Actual	Total
Water Treatment Plant	7,275,878	15,665,185	8,959,256	5,946,283	\$ 37,846,602
Water Pumping and Storage	11,732,850	9,667,165	7,304,722	5,941,184	34,645,921
Water Distribution	27,185,518	55,588,889	64,838,953	76,722,470	224,335,829
Wastewater System	9,225,987	15,152,656	8,767,047	20,632,500	53,778,189
Stormwater	3,156,175	6,901,255	15,791,622	15,614,923	41,463,976
Miscellaneous	9,141,347	4,023,798	16,446,590	5,875,126	35,486,861
Total	\$ 67,717,755	106,998,948	122,108,190	130,732,485	\$ 427,557,378

Figure 2. Historical and Forecasted Capital Expenditures: FY 2018 – FY 2022



2023-2027 Capital Improvement Program

The figures below illustrate the proposed breakdown of the project classes, funding sources, and yearly cash flows for the 2023 to 2027 CIP.

Figure 3. Proposed Yearly Capital Cash Flow by Project Class

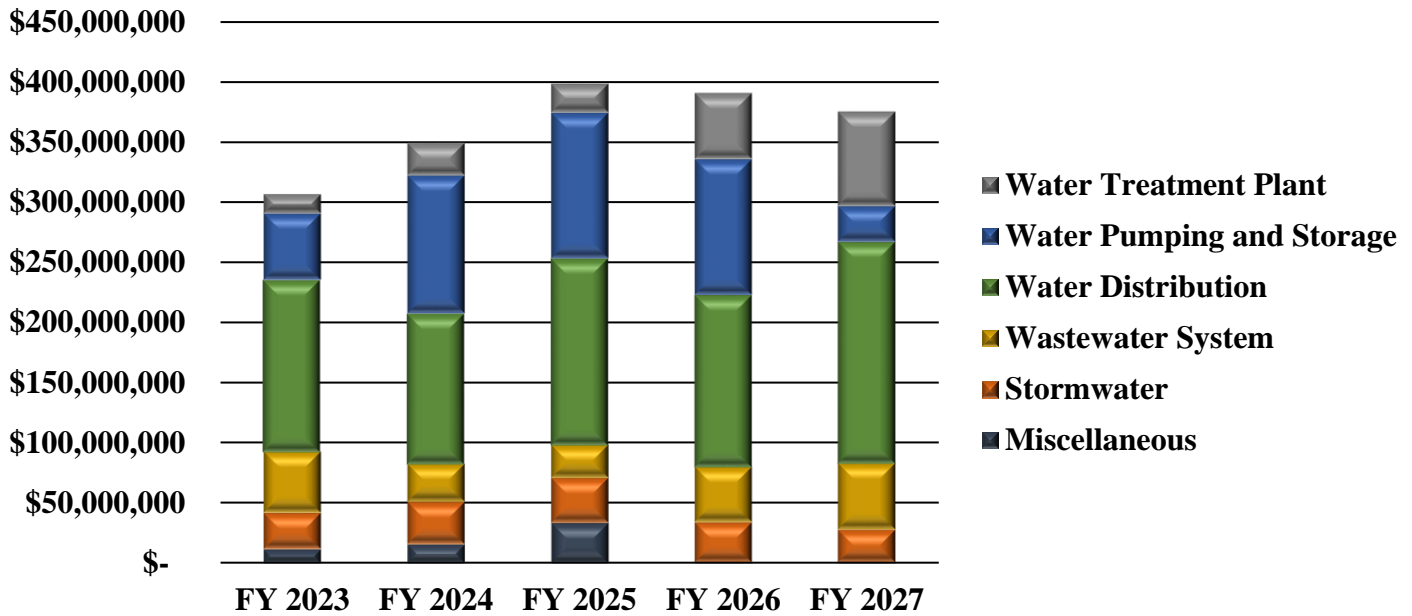


Figure 4. Capital Requirements

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total
Water Treatment Plant	\$ 16,030,211	26,885,665	24,038,988	54,790,691	78,451,718	\$ 200,197,272
Water Pumping and Storage	55,304,597	115,127,475	121,491,637	113,245,473	30,009,851	435,179,033
Water Distribution	143,302,527	125,439,446	155,468,790	143,283,004	184,525,120	752,018,887
Wastewater System	50,634,240	31,442,487	27,579,779	45,751,309	54,918,077	210,325,892
Stormwater	29,822,932	34,827,423	36,884,821	33,038,424	26,808,750	161,382,350
Miscellaneous	11,439,316	15,500,000	33,000,000	500,000	500,000	60,939,316
Total Capital Requirements	\$ 306,533,823	349,222,497	398,464,014	390,608,900	375,213,516	\$ 1,820,042,750

Figure 5. Funding Sources

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total
Debt (Revenue Bonds)	\$ 122,335,310	150,214,517	203,743,270	236,469,077	316,179,204	\$ 1,028,941,377
PENNVEST	127,409,339	97,299,382	86,216,706	47,511,528	10,020,526	368,457,481
WIFIA/PENNVEST	35,113,456	89,843,438	98,036,402	98,113,624	40,456,543	361,563,462
DSIC - Water	6,028,526	6,058,669	6,088,962	6,119,407	6,150,004	30,445,568
DSIC - Wastewater	2,359,691	2,371,490	2,383,347	2,395,264	2,407,240	11,917,032
ARPA	10,582,757	-	-	-	-	10,582,757
WIFIA	2,540,345	3,310,501	1,995,327	-	-	7,846,173
Cash (Rates)	164,400	124,500	-	-	-	288,900
Total Funding Sources	\$ 306,533,823	349,222,497	398,464,014	390,608,900	375,213,516	\$ 1,820,042,750



2023-2027 Project Summary



Page	Project Name	2023 Budget	2024 Budget	2025 Budget	2026 Budget	2027 Budget	Total
Project Class: Water Treatment Plant							
11	Algae Control for Open Basins	\$360,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$360,000.00
12	Aspinwall Water Treatment Plant Electrical and Backup Power Improvements	\$0.00	\$866,981.00	\$1,087,515.00	\$7,794,745.00	\$14,874,582.00	\$24,623,823.00
13	Aspinwall Water Treatment Plant Filter Improvements	\$123,706.90	\$164,942.53	\$246,599.62	\$1,208,045.99	\$1,006,704.99	\$2,750,000.02
14	Aspinwall Water Treatment Plant Filter Building Sodium Hypochlorite Improvements	\$3,222,924.72	\$0.00	\$0.00	\$0.00	\$0.00	\$3,222,924.72
15	Aspinwall Water Treatment Plant Raw Water Intakes - East Intake	\$0.00	\$465,000.00	\$1,116,000.00	\$756,000.00	\$36,000.00	\$2,373,000.00
16	Aspinwall Water Treatment Plant Raw Water Intakes - West Intake	\$469,736.84	\$1,127,368.42	\$767,368.42	\$5,747,368.42	\$8,597,368.42	\$16,709,210.53
17	Chemical Feed Modernization Project/Rapid Mix and Clarifier Improvements	\$1,252,063.75	\$2,789,028.23	\$2,936,058.88	\$16,350,331.00	\$19,072,483.58	\$42,399,965.45
18	Clearwell Emergency Response Project	\$2,741,630.73	\$7,408,660.00	\$7,408,660.00	\$7,408,660.00	\$1,234,457.00	\$26,202,067.73
19	Clearwell Improvements	\$4,293,312.12	\$2,448,008.62	\$107,717.51	\$107,717.51	\$16,708,182.43	\$23,664,938.19
20	Corrosion Control Chemical Storage & Feed Systems	\$50,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50,000.00
21	Highland Park Membrane Filtration Plant Assessment and Critical Process Improvements	\$150,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$150,000.00
22	Highland Park Microfiltration Plant Improvements Project	\$14,128.00	\$0.00	\$0.00	\$0.00	\$0.00	\$14,128.00
23	Hydraulic Valve Replacement Program	\$89,942.53	\$302,298.85	\$2,144,252.89	\$713,505.75	\$0.00	\$3,250,000.02
24	Lime Slurry System Improvements	\$756,079.00	\$3,548,360.00	\$1,182,787.00	\$0.00	\$0.00	\$5,487,226.00
25	Overhead Crane Modernization	\$0.00	\$375,000.00	\$440,000.00	\$0.00	\$0.00	\$815,000.00
26	Phase 1 Sedimentation Basin Rehabilitation and Water Treatment Plant Gate Valve and 84-inch Coupling Project	\$224,921.63	\$299,895.51	\$448,362.94	\$2,196,447.25	\$1,830,372.70	\$5,000,000.03
27	Phase 2 Sedimentation Basin Rehabilitation Project	\$0.00	\$0.00	\$0.00	\$562,304.08	\$749,738.77	\$1,312,042.85
28	Post-Filter Chemical System Improvements	\$0.00	\$0.00	\$0.00	\$607,288.41	\$809,717.87	\$1,417,006.28
29	Powdered Activated Carbon System Improvements	\$40,588.77	\$0.00	\$0.00	\$0.00	\$0.00	\$40,588.77
30	Ross Pump Station	\$0.00	\$1,249,655.17	\$2,499,310.34	\$1,299,310.34	\$13,232,110.34	\$18,280,386.21
31	Sludge Chamber Pump Project	\$386,721.63	\$869,343.78	\$0.00	\$0.00	\$0.00	\$1,256,065.41
32	Water Treatment Plant Filter Backwash System Improvements	\$740,054.00	\$883,290.00	\$2,996,022.00	\$8,880,634.00	\$0.00	\$13,500,000.00
33	Water Treatment Plant Filter Building Roof	\$0.00	\$3,500,000.00	\$0.00	\$0.00	\$0.00	\$3,500,000.00
34	Water Treatment Plant HVAC Improvements	\$0.00	\$163,333.00	\$358,333.00	\$858,333.00	\$0.00	\$1,379,999.00
35	Water Treatment Plant NPDES Permit Autosamplers and Flow Meters	\$164,400.00	\$124,500.00	\$0.00	\$0.00	\$0.00	\$288,900.00
36	Water Treatment Plant Rail Siding Improvements	\$800,000.00	\$300,000.00	\$300,000.00	\$300,000.00	\$300,000.00	\$2,000,000.00
37	WTP Sodium Hypochlorite Tank Emergency Replacement	\$150,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$150,000.00
38	Water Treatment Plant Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total: Water Treatment Plant		\$16,030,210.63	\$26,885,665.11	\$24,038,987.61	\$54,790,690.74	\$78,451,718.12	\$200,197,272.21
Project Class: Water Pumping and Storage							
40	Aspinwall Pump Station Improvements	\$4,748,965.78	\$15,197,171.56	\$15,197,171.56	\$15,227,973.56	\$2,548,262.93	\$52,919,545.37
41	Aspinwall Pump Station to Lanpher Reservoir Rising Main	\$2,147,166.98	\$29,622,031.14	\$44,331,726.56	\$44,331,726.56	\$14,777,242.19	\$135,209,893.42
42	Aspinwall WTP Chemical Unloading Area Improvements, Underground Storage Tank Removal & Replacement	\$1,352,161.22	\$0.00	\$0.00	\$0.00	\$0.00	\$1,352,161.22
43	Bruecken Pump Station Concealed Gutters	\$0.00	\$175,000.00	\$0.00	\$0.00	\$0.00	\$175,000.00
44	Bruecken Pump Station Improvements	\$8,653,054.00	\$30,991,126.00	\$30,991,126.00	\$31,037,546.00	\$5,188,398.00	\$106,861,250.00
45	Chlorine Booster Station Improvements	\$311,268.79	\$6,436,147.83	\$7,007,549.12	\$583,962.43	\$0.00	\$14,338,928.16
46	Disinfection By-Products Mitigation	\$5,183,170.61	\$1,426,705.77	\$0.00	\$0.00	\$0.00	\$6,609,876.38
47	Garfield Tank Improvements	\$0.00	\$122,198.00	\$244,397.00	\$314,224.00	\$2,246,121.00	\$2,926,940.00
48	Herron Hill Pump Station Improvements	\$409,195.41	\$818,390.81	\$496,551.73	\$12,275,862.15	\$0.00	\$14,000,000.09
49	Herron Hill Reservoir Improvements	\$198,631.00	\$0.00	\$0.00	\$0.00	\$0.00	\$198,631.00
50	Herron Hill Reservoir Improvements - Sodium Hypochlorite Building	\$828,429.11	\$0.00	\$0.00	\$0.00	\$0.00	\$828,429.11
51	Herron Hill Tank Pump Station Improvements	\$0.00	\$164,077.30	\$195,528.61	\$1,320,197.05	\$1,320,197.05	\$3,000,000.02
52	Highland 1 Reservoir Liner	\$0.00	\$0.00	\$0.00	\$704,981.00	\$0.00	\$704,981.00
53	Highland No. 2 Reservoir Liner and Cover Replacements	\$2,122,235.00	\$6,515,354.50	\$4,072,096.57	\$0.00	\$0.00	\$12,709,686.07
54	Highland Reservoir Pump Station and Rising Main	\$23,789,287.16	\$14,537,145.09	\$8,983,409.85	\$0.00	\$0.00	\$47,309,842.10
55	Howard Pump Station Improvements	\$0.00	\$0.00	\$577,266.93	\$1,154,533.85	\$694,763.73	\$2,426,564.51
56	Inline Pump Station (Coral and Pacific) Improvements	\$0.00	\$32,979.66	\$39,434.13	\$264,367.82	\$263,218.39	\$600,000.00

Project Class: Water Pumping and Storage Cont.							
57	Lanpher Reservoir Improvements	\$2,778,963.09	\$6,370,326.38	\$3,716,023.72	\$0.00	\$0.00	\$12,865,313.19
58	Lincoln Pump Station Improvements	\$288,633.46	\$288,633.46	\$1,258,748.41	\$2,109,323.13	\$1,054,661.57	\$5,000,000.03
59	Lincoln Pump Station: Bypass Pump Station Project	\$2,155,907.00	\$2,164,264.00	\$0.00	\$0.00	\$0.00	\$4,320,171.00
60	Lincoln Tank Improvements	\$337,528.74	\$203,588.76	\$3,680,670.52	\$0.00	\$0.00	\$4,221,788.02
61	Mission Pump Station Improvements	\$0.00	\$0.00	\$577,267.00	\$1,154,534.00	\$694,764.00	\$2,426,565.00
62	Pump Station Architectural	\$0.00	\$0.00	\$0.00	\$2,500,000.00	\$0.00	\$2,500,000.00
63	Saline Pump Station Improvements	\$0.00	\$0.00	\$0.00	\$192,422.00	\$288,633.00	\$481,055.00
64	Spring Hill Tank Improvements	\$0.00	\$62,335.00	\$122,669.00	\$73,819.00	\$933,589.00	\$1,192,412.00
65	Water Pumping and Storage Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total: Water Pumping and Storage		\$55,304,597.34	\$115,127,475.27	\$121,491,636.70	\$113,245,472.55	\$30,009,850.86	\$435,179,032.71

Project Class: Water Distribution							
67	2019 Large Diameter Water Main Improvements - Rising Main 3/4	\$3,062,142.13	\$240,769.90	\$0.00	\$0.00	\$0.00	\$3,302,912.04
68	2019 Large Diameter Water Main Improvements - Rising Main 4	\$12,529,326.00	\$4,176,441.00	\$0.00	\$0.00	\$0.00	\$16,705,767.00
69	Bus Rapid Transit Water Distribution	\$1,500,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,500,000.00
70	District Metering Program	\$0.00	\$0.00	\$2,600,000.02	\$3,380,000.02	\$3,380,000.02	\$9,360,000.06
71	Hazelwood Backup Feed (formerly Duck Hollow Main Replacement)	\$175,156.10	\$175,156.10	\$1,115,470.61	\$1,534,487.21	\$0.00	\$3,000,270.02
72	Herron Hill - Squirrel Hill Boundary Adjustments	\$0.00	\$0.00	\$52,928.57	\$355,186.81	\$635,884.62	\$1,044,000.00
73	Interconnection Vault Stormwater Removal	\$453,007.96	\$1,225,931.03	\$611,310.34	\$0.00	\$0.00	\$2,290,249.34
74	Intermediate Diameter Water Main Replacement Program	\$0.00	\$0.00	\$2,603,833.08	\$4,488,230.43	\$42,775,187.01	\$49,867,250.52
75	Intermediate Meter Replacement Program	\$143,076.92	\$84,307.69	\$86,538.46	\$87,000.00	\$87,000.00	\$487,923.08
76	Large Diameter Water Main Replacement Program	\$2,980,665.80	\$4,820,095.96	\$23,316,701.96	\$38,087,876.89	\$33,256,579.29	\$102,461,919.89
77	Large Meter Replacement Program	\$1,557,508.32	\$1,341,456.69	\$567,307.69	\$337,000.00	\$337,000.00	\$4,140,272.71
78	Low Pressure Area Remediation	\$0.00	\$0.00	\$23,277.57	\$279,330.90	\$1,393,833.02	\$1,696,441.49
79	Neighborhood Lead Service Line Replacement Program	\$13,582,757.48	\$27,792,500.00	\$55,585,000.00	\$27,792,500.00	\$0.00	\$124,752,757.48
80	North Side Boundary Adjustments	\$0.00	\$0.00	\$79,392.86	\$532,780.22	\$953,826.92	\$1,566,000.00
81	Priority LSLR	\$3,000,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,000,000.00
82	Private Lead Service Line Reimbursement	\$400,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$400,000.00
83	Regulator Valve and Vault Replacement Program	\$378,494.08	\$1,839,360.70	\$3,446,738.96	\$4,173,179.80	\$3,439,080.48	\$13,276,854.01
84	Small Diameter Water Main Replacement Program	\$83,515,128.68	\$75,057,893.92	\$57,763,375.00	\$53,807,131.41	\$89,408,775.74	\$359,552,304.75
85	Small Meter Replacement Program	\$1,723,171.54	\$1,351,089.38	\$480,769.23	\$250,000.00	\$291,667.00	\$4,096,697.15
86	South Side Slopes Boundary Adjustments	\$0.00	\$0.00	\$79,392.86	\$532,780.22	\$953,826.92	\$1,566,000.00
87	Unmetered and Flat Rate Properties	\$327,250.00	\$635,250.00	\$0.00	\$0.00	\$0.00	\$962,500.00
88	Urgent Lead Service Line Replacement	\$1,778,653.60	\$1,749,194.10	\$1,670,085.73	\$1,590,751.08	\$1,246,677.20	\$8,035,361.70
89	Valve Replacement Program	\$2,505,485.32	\$2,800,000.00	\$2,674,358.97	\$2,800,000.00	\$2,925,641.03	\$13,705,485.32
90	Water and Wastewater Safety and Security Improvements	\$1,567,547.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,567,547.00
91	Water and Wastewater Safety and Security Improvements (Pennvest)	\$9,978,156.00	\$0.00	\$0.00	\$0.00	\$0.00	\$9,978,156.00
92	Water Relay Program	\$2,145,000.00	\$2,150,000.00	\$2,712,307.69	\$3,254,769.23	\$3,440,140.58	\$13,702,217.50
93	Water Distribution Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total: Water Distribution		\$143,302,526.93	\$125,439,446.48	\$155,468,789.61	\$143,283,004.22	\$184,525,119.82	\$752,018,887.06

Project Class: Wastewater System							
95	31st Ward Pump Station and Appurtenances - Phase 2	\$958,333.00	\$726,666.67	\$613,666.67	\$7,447,000.00	\$7,447,000.00	\$17,192,666.33
96	6122 and 6150 Mifflin Road Demolition	\$50,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50,000.00
97	Browns Hill Road Sewer Pump Station Replacement	\$432,000.00	\$1,608,000.00	\$1,880,000.00	\$0.00	\$0.00	\$3,920,000.00
98	Large Diameter Sewer Rehabilitation Program	\$12,774,486.37	\$2,997,238.10	\$4,266,000.00	\$4,897,000.00	\$4,957,000.00	\$29,891,724.46
99	M-29 Outfall Improvements	\$250,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$250,000.00
100	Maytide Storm and Sanitary Sewer System Improvements	\$118,026.95	\$4,026,497.00	\$1,957,785.00	\$0.00	\$0.00	\$6,102,308.95
101	Queenston Sewer Improvements	\$2,210,550.00	\$243,203.00	\$0.00	\$0.00	\$0.00	\$2,453,753.00
102	Sewer Reconstruction Program	\$2,691,769.00	\$1,810,000.00	\$1,810,000.00	\$1,886,458.21	\$2,701,329.79	\$10,899,557.00
103	Sewers Under Structures Program	\$6,786,029.94	\$2,373,663.24	\$2,422,730.16	\$3,530,382.94	\$3,386,507.35	\$18,499,313.62
104	Small Diameter Sewer Rehabilitation Program	\$24,363,045.00	\$17,657,219.00	\$14,629,597.00	\$27,990,467.53	\$36,426,240.26	\$121,066,568.79
105	Wastewater Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total: Wastewater System		\$50,634,240.26	\$31,442,487.00	\$27,579,778.83	\$45,751,308.67	\$54,918,077.41	\$210,325,892.16

Project Class: Stormwater							
107	Braywood Stormwater Improvements	\$434,625.00	\$439,375.00	\$0.00	\$0.00	\$0.00	\$874,000.00
108	Bus Rapid Transit Phase 2	\$0.00	\$500,000.00	\$500,000.00	\$500,000.00	\$0.00	\$1,500,000.00
109	Bus Rapid Transit Stormwater Infrastructure Improvements	\$71,382.00	\$785,634.29	\$703,637.86	\$0.00	\$0.00	\$1,560,654.15
110	Catch Basin and Inlet Replacement Program	\$11,539,876.64	\$16,007,303.03	\$14,436,109.17	\$14,867,220.83	\$15,308,750.00	\$72,159,259.67
111	Dragoon Way Stormwater Improvements	\$983,000.00	\$95,625.00	\$0.00	\$0.00	\$0.00	\$1,078,625.00
112	Fleury Way Stormwater Infrastructure Improvements	\$476,212.00	\$0.00	\$0.00	\$0.00	\$0.00	\$476,212.00
113	Four Mile Run Stormwater Infrastructure Improvements	\$645,557.00	\$4,500,108.00	\$8,723,924.00	\$6,171,203.00	\$0.00	\$20,040,792.00
114	Haverhill Street Improvements Project	\$1,003,900.00	\$104,500.00	\$0.00	\$0.00	\$0.00	\$1,108,400.00
115	Lawn and Ophelia	\$203,741.00	\$0.00	\$0.00	\$0.00	\$0.00	\$203,741.00
116	Martin Luther King Field Stormwater Infrastructure Improvements	\$3,096,867.00	\$1,324,108.00	\$0.00	\$0.00	\$0.00	\$4,420,975.00
117	Maryland Avenue Stormwater Infrastructure Improvements	\$6,925.00	\$0.00	\$0.00	\$0.00	\$0.00	\$6,925.00
118	MS4 Permit PRP Plan Sediment Reduction Project	\$173,000.00	\$605,000.00	\$307,500.00	\$0.00	\$0.00	\$1,085,500.00
119	Saw Mill Run Municipal Separate Storm Sewer System Compliance	\$0.00	\$0.00	\$500,000.00	\$1,500,000.00	\$1,500,000.00	\$3,500,000.00
120	Saw Mill Run Watershed Improvements	\$850,000.00	\$150,000.00	\$0.00	\$0.00	\$0.00	\$1,000,000.00
121	Southside Flats Sewer Separation	\$3,327,529.00	\$2,232,587.00	\$0.00	\$0.00	\$0.00	\$5,560,116.00
122	Southside Stormwater Infrastructure Improvements	\$2,029,140.00	\$2,703,667.00	\$0.00	\$0.00	\$0.00	\$4,732,807.00
123	Stewart Avenue Stormwater Infrastructure Project	\$1,400,000.00	\$1,515,389.00	\$894,444.00	\$0.00	\$0.00	\$3,809,833.00
124	Thomas and McPherson Stormwater Infrastructure Improvements	\$854,905.13	\$0.00	\$0.00	\$0.00	\$0.00	\$854,905.13
125	Volunteer's Field Stormwater Infrastructure Improvements	\$413,125.42	\$0.00	\$0.00	\$0.00	\$0.00	\$413,125.42
126	Wet Weather Program Projects	\$500,000.00	\$2,500,000.00	\$10,000,000.00	\$10,000,000.00	\$10,000,000.00	\$33,000,000.00
127	Wightman Park Phase 2 Project	\$182,166.00	\$0.00	\$0.00	\$0.00	\$0.00	\$182,166.00
128	Woodland Road Stormwater Infrastructure Improvements	\$245,256.31	\$0.00	\$0.00	\$0.00	\$0.00	\$245,256.31
129	Woods Run Stream Removal Stormwater Infrastructure Improvements	\$1,385,724.66	\$1,364,127.00	\$819,206.00	\$0.00	\$0.00	\$3,569,057.66
130	Stormwater Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total: Stormwater		\$29,822,932.16	\$34,827,423.32	\$36,884,821.02	\$33,038,423.83	\$26,808,750.00	\$161,382,350.34
Project Class: Miscellaneous							
132	2023 Capital Project Reclassification	\$8,639,316.00	\$0.00	\$0.00	\$0.00	\$0.00	\$8,639,316.00
133	New Headquarters and Operations Facility	\$2,500,000.00	\$15,000,000.00	\$32,500,000.00	\$0.00	\$0.00	\$50,000,000.00
134	Utility Cost Shares	\$300,000.00	\$500,000.00	\$500,000.00	\$500,000.00	\$500,000.00	\$2,300,000.00
135	Miscellaneous Contingency	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total: Miscellaneous		\$11,439,316.00	\$15,500,000.00	\$33,000,000.00	\$500,000.00	\$500,000.00	\$60,939,316.00



Water Treatment Plant



Water Treatment Plant

Algae Control for Open Basins

PROJECT NUMBER: 2023-100-100-0

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Installation of up to 5 ultrasonic buoys in the Sedimentation Basin and Highland 1 Reservoir (open basins) to provide non-chemical control of algae growth in these waters exposed to sunlight. Installation includes solar powered buoy, anchor system, associated instrumentation, and remote monitoring service.

PROJECT JUSTIFICATION:
Open reservoirs subject to sunlight allow for the growth of algae starting in early spring through late fall. Algae can impact water production operations by increasing total organic carbon in the water and physically fouling downstream filters.

RISK(S):
Buoys require maintenance including removal in the winter to avoid ice damage. Instruments require infrequent maintenance.

IMPACT ON OPERATIONS:
Reduced chemical usage at Highland 1 for treating reservoir and reduced filter backwashed water requirements at Aspinwall Pump Station.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$360,000	\$0	\$0	\$0	\$0	\$360,000	

Water Treatment Plant

Aspinwall Water Treatment Plant Electrical and Backup Power Improvements

PROJECT NUMBER: 2017-322-100-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:

Improvements to electrical systems at the Water Treatment Plant, including provisions for stand-by or backup power systems, upgrades to existing electrical distribution system, replacement of motor control centers, and associated panels, conduit, wiring, and systems.

PROJECT JUSTIFICATION:

Electrical systems at the Water Treatment Plant have generally met the end of their useful lives and spare/replacement parts are unavailable.

RISK(S):

Electrical power is critical to maintain pumping and treatment of water. Failure of these systems will result in the inability to produce water to meet demand and/or quality requirements.

IMPACT ON OPERATIONS:

Increased operating efficiency, flexibility, and reliability and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$866,981	\$1,087,515	\$7,794,745	\$14,874,582	\$24,623,823	Debt (Revenue Bonds)

Water Treatment Plant

Aspinwall Water Treatment Plant Filter Improvements

PROJECT NUMBER: 2023-100-101-0

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:
Improvements for filters at the Water Treatment Plant to address various recommendations from regulatory agencies including safety issues, improve process control, and monitoring. Project components including providing hand railing around filter basins to facilitate operator inspections, adding components to allow safer performance of required quarterly monitoring and cell entry, moving IFE turbidimeters to locate them within 10 feet of sample points, addressing structural issues, and other electrical and safety updates.

PROJECT JUSTIFICATION:
To meet industry standards and regulatory recommendations, turbidimeters should be located not more than 10 feet away from the sample taps. Currently, meters are located up to 30 feet away, reducing meter response time and data accuracy. Structural deficiencies in the floor and beams of the filter building have been observed as evidenced by cracks and water leakage.

RISK(S):
Violations of permit conditions as a result of turbidimeter locations and sample travel time. Safety and compliance issues with not accessing filter cells for observation during backwash and quarterly/annual inspections. Not properly assessing and repairing areas of structural deficiencies could lead to catastrophic failure. Foundation sagging in the filter building could result in excessive leakage or inability to produce filtered water.

IMPACT ON OPERATIONS:
Relocation of turbidimeters will shorten tubing distance between meter and sample point. Tubing is an annual replacement item, so less distance results in less time and material for replacement. Repair of structure deficiencies will result in less water leakage and maintain the integrity of the facility to reduce operational repairs and water in storage areas.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$123,707	\$164,943	\$246,600	\$1,208,045	\$1,006,705	\$2,750,000	

Water Treatment Plant

Aspinwall Water Treatment Plant Filter Building Sodium Hypochlorite Improvements

PROJECT NUMBER: 2017-322-101-8 / 9 / 10 / 11

DSIC Eligible: No

PHASE: Construction
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,
PROJECT DESCRIPTION: General and mechanical work will include demolition, new filling station, new storage and pumping room, furnishing and installing new storage tanks, feed pumps and piping. HVAC work will include furnishing and installing new HVAC system including air handling unit, condensing unit, exhaust system and ductwork. Plumbing work will include new water service lines inside building, furnishing and installing eyewash stations, hot water units, sanitary drain modifications and installation of a wet sprinkler fire suppression system and fire alarm system. Electrical work will include furnishing and installing power wiring and conduit to new equipment, control wiring to instrumentation and program system integration services to operate the new treatment process.
PROJECT JUSTIFICATION: To increase storage of sodium hypochlorite solution as required by PADEP and enhance the operational safety and efficiency of the system.
RISK(S): Not meeting requirements of PADEP if project not completed.
IMPACT ON OPERATIONS: Operating budget will likely decrease due to efficiencies.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$3,222,925	\$0	\$0	\$0	\$0	\$3,222,925	

Water Treatment Plant

Aspinwall Water Treatment Plant Raw Water Intakes - West Intake

PROJECT NUMBER: 2018-322-100-0

DSIC Eligible: No

PHASE: Design
PRIORITY: Regulatory, Quality of Service
PROJECT DESCRIPTION: Project will include condition assessment, renewing or replacing the existing West and East Raw Water Intake Gate House buildings and associated systems, including gates, screens, and associated mechanical equipment as well as the addition of SCADA. Influent piping through the Ross Pump Station will also be addressed.
PROJECT JUSTIFICATION: The West Gate is 90% closed and inoperable. Both gate houses are in need of rehabilitation or replacement. The West Gatehouse is 100 years old, and the East Gate is almost 90 years old.
RISK(S): Both gates have reach the end of their useful life and need replaced. Failure of the East Gate would cause a disruption to the supply of water.
IMPACT ON OPERATIONS: Modernization of systems will require less time spent in operations and maintenance of these facilities.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$469,737	\$1,127,368	\$767,368	\$5,747,368	\$8,597,368	\$16,709,209	Debt (Revenue Bonds)

Water Treatment Plant

Aspinwall Water Treatment Plant Raw Water Intakes - East Intake

PROJECT NUMBER: 2023-100-102-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Regulatory, Quality of Service

PROJECT DESCRIPTION:

Project will include condition assessment, renewing or replacing the existing West and East Raw Water Intake Gate House buildings and associated systems, including gates, screens, and associated mechanical equipment as well as the addition of SCADA. Influent piping through the Ross Pump Station will also be addressed.

PROJECT JUSTIFICATION:

The West Gate is 90% closed and inoperable. Both gate houses are in need of rehabilitation or replacement. The West Gatehouse is 100 years old, and the East Gate is almost 90 years old.

RISK(S):

Only one gate is operational. Failure of the East Gate would result in a major disruption to the supply of water for the City of Pittsburgh.

IMPACT ON OPERATIONS:

Modernization of systems will require less time spent in operations and maintenance of these facilities.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$465,000	\$1,116,000	\$756,000	\$36,000	\$2,373,000	Debt (Revenue Bonds)

Water Treatment Plant

Chemical Feed Modernization Project/Rapid Mix and Clarifier Improvements

PROJECT NUMBER: 2023-100-103-0

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Upgrade of chemical feed systems (equipment, storage, instrumentation, and injection points) to meet current regulatory requirements, improve chemical application, and optimize the water treatment process. Upgrades include ferric chloride, potassium permanganate, and other chemical systems located in the chemical building and possible construction of a new chemical building or repurposing of existing facilities. Assess, design, and construct repairs to structural defects associated with settlement with the pipe bridge between the Chemical Building and Screen Room.

PROJECT JUSTIFICATION:
Chemical feed improvements will address recommendations from both consultants and regulatory agencies. The lack of attention to the pretreatment chemical feed systems could cause over/under dosing of chemicals leading to permit violations or the loss of a chemical system resulting in an emergency project.

RISK(S):
Not addressing these recommendations will put the PWSA at risk for permit violations and failures at the Water Treatment Plant.

IMPACT ON OPERATIONS:
Optimization and flow/residual pacing of chemicals can result in reduced chemical consumption. New storage and chemical feed equipment will result in reduced maintenance costs associated with repairs on the existing pumps, maintaining storage bins and feeders. Improvements to SCADA system and flow/residual pacing will reduce manual adjustments to chemical feed systems.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$1,252,064	\$2,789,028	\$2,936,059	\$16,350,331	\$19,072,484	\$42,399,966	

Water Treatment Plant

Clearwell Emergency Response Project

PROJECT NUMBER: 2017-323-100-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

Long-term bypass of the existing 100 + year old clearwell (finished water structure) including the construction of pump wetwells at the Aspinwall and Bruecken Pump Stations, modifications to the clearwell inlet and outlet gate house, and the construction of a bypass line around the clearwell to the outlet gate house.

PROJECT JUSTIFICATION:

The clearwell was constructed in 1908 and has not undergone any major modifications or upgrades since. The clearwell has two main functions: providing equalization storage that allows the filters to operate independently of potential fluctuations in system demands and providing sufficient contact time for disinfection agents to meet the requirements of the Surface Water Treatment Rule and Long-Term 2 Enhanced Surface Water Treatment Rule. In order to replace the clearwell, a long-term bypass is required in order to provide adequate suction pressure for the pump stations.

RISK(S):

Failure of the Clearwell would cause a disruption to the supply of water.

IMPACT ON OPERATIONS:

Ability to meet system reliability and water quality regulations.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$2,741,631	\$7,408,660	\$7,408,660	\$7,408,660	\$1,234,457	\$26,202,068	

Water Treatment Plant

Clearwell Improvements

PROJECT NUMBER: 2023-100-104-0

DSIC Eligible: No

PHASE: Planning
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Replacement of the existing 100 + year old clearwell (finished water structure) with multi-celled clearwell to allow for maintenance.
PROJECT JUSTIFICATION: The clearwell was constructed in 1908 and has not undergone any major modifications or upgrades since. It has two main functions: providing equalization storage that allows the filters to operate independently of potential fluctuations in system demands, and providing sufficient retention contact time for disinfection agents to meet the requirements of the Surface Water Treatment Rule and Long-Term 2 Enhanced Surface Water Treatment Rule.
RISK(S): Failure of the Clearwell would cause a disruption to the supply of water.
IMPACT ON OPERATIONS: Ability to meet system reliability and water quality regulations.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$4,293,312	\$2,448,009	\$107,718	\$107,718	\$16,708,181	\$23,664,938	

Water Treatment Plant

Corrosion Control Chemical Storage & Feed Systems

PROJECT NUMBER: 2017-322-107-0

DSIC Eligible: No

PHASE: Construction
PRIORITY: Regulatory, Quality of Service
PROJECT DESCRIPTION: Installation of three phosphoric acid storage and feed systems located at Aspinwall Pump Station, Bruecken Pump Station, and the Membrane Filtration Plant to provide corrosion control in the distribution system.
PROJECT JUSTIFICATION: Required in order to lower lead levels in water.
RISK(S): Not completing this project will increase the risk of not maintaining lead levels below the PADEP action level.
IMPACT ON OPERATIONS: In order to prevent algae growth in the open Highland No. 1 Reservoir, treatment must occur at three major locations with 7 injection points. This requires additional maintenance of treatment facilities at satellite locations.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$50,000	\$0	\$0	\$0	\$0	\$50,000	

Water Treatment Plant

Highland Park Membrane Filtration Plant Assessment and Critical Process Improvements

PROJECT NUMBER: 2017-322-104-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals

PROJECT DESCRIPTION:
Complete a condition assessment of systems supporting the treatment process and perform critical improvements to maintain water treatment and allow full warranty of replacement modules. Improvements may include electrical, chemical feed, strainers, and other support systems.

PROJECT JUSTIFICATION:
Membrane module failure rate has continually increased over the last several years and are more than 5 years beyond the manufacturer’s recommended replacement cycle. To allow module membrane manufacturers to extend a full warranty, a system condition assessment is needed. A detailed condition assessment is needed to address other critical worker safety and degradation of equipment that are essential to maintain the water treatment process. Improvements to the plan are required in order to restart the Membrane Filtration Plant.

RISK(S):
Exposes the Authority to higher costs to address emergency failures and exposes the Highland No. 1 Service Area to a potentially deficient or non-complaint water supply.

IMPACT ON OPERATIONS:
Increase operating flexibility and reliability.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$150,000	\$0	\$0	\$0	\$0	\$150,000	

Water Treatment Plant

Highland Park Microfiltration Plant Improvements Project

PROJECT NUMBER: 2021-322-100-0

DSIC Eligible: No

PHASE:

Planning

PRIORITY:

Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

Repair damage caused by process water leakage from second floor membrane racks to composite floor deck system and structural steel framing above main floor of Microfiltration Plant (MFP). Construction joints in floor were sealed during the MFP UV Project. This project will repair deterioration to composite deck system and structural steel support system and apply protective coatings. This project will also repair damage to the surface of concrete floor and sump pump in acid storage room caused by leakage from acid storage tanks, piping connections and acid mixing operations.

PROJECT JUSTIFICATION:

This project will increase the safety and security of operations in addition to maintaining the integrity of chemical containment in the event of future failure.

RISK(S):

The risk of delaying the project could cause potential damage to equipment on the first floor of the MFP from falling concrete or steel deck fragments. With respect to repair of the acid storage room floor, the risk of delaying the project is the lack of integrity in the provisions for chemical containment in the event of tank failure. Acid is able to leak through the damaged sump pump into the subfloor where it could damage underground cast iron plumbing and ductile iron process piping.

IMPACT ON OPERATIONS:

This project will mitigate the potential for future emergency repairs to the first floor ceiling components or to the acid room floor that would likely be funded from the Operating Budget.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$14,128	\$0	\$0	\$0	\$0	\$14,128	

Water Treatment Plant

Hydraulic Valve Replacement Program

PROJECT NUMBER: 2023-100-105-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: This project is retrofitting the various hydraulic valve actuators primarily in the filters to electric valve actuators.
PROJECT JUSTIFICATION: Improve operational control while modernizing the facility to better align with industry standard practices.
RISK(S): Inefficient operations resulting from an aged facility that do not align with industry standard practices.
IMPACT ON OPERATIONS: Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$89,943	\$302,299	\$2,144,253	\$713,505	\$0	\$3,250,000	

Water Treatment Plant

Lime Slurry System Improvements

PROJECT NUMBER: 2017-322-101-7 / 12 / 13

DSIC Eligible: No

PHASE: Design
PRIORITY: Safety, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Lime slurry system capacity expansion improvements to include demolition, installation of additional tanks, chemical feed equipment, minor revisions to the existing lime slurry system, and SCADA communications equipment and SCADA interface.
PROJECT JUSTIFICATION: Adequate lime storage is mandated by PADEP. New system will be more efficient/require less labor to operate and maintain.
RISK(S): The extra storage for liquid lime is critical to the reliable operation of the Water Treatment Plant.
IMPACT ON OPERATIONS: Adequate storage, increased reliability and efficiency, less housekeeping labor.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$756,079	\$3,548,360	\$1,182,787	\$0	\$0	\$5,487,226	

Water Treatment Plant

Overhead Crane Modernization

PROJECT NUMBER: 2024-100-100-0

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Replacement and upgrade of existing cranes at Bruecken, Mission, Aspinwal, and Ross Pump Stations.

PROJECT JUSTIFICATION:
The current age of existing overhead cranes are well beyond their useful life and are in need of a replacement.

RISK(S):
Inefficient operations resulting from an aged facility that do not align with industry standard practices.

IMPACT ON OPERATIONS:
Increase operating flexibility and reliability.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$0	\$375,000	\$440,000	\$0	\$0	\$815,000	

Water Treatment Plant

Phase 1 Sedimentation Basin Rehabilitation and Water Treatment Plant Gate Valve and 84-inch Coupling Project

PROJECT NUMBER: 2023-100-106-0
DSIC Eligible: No

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Phase 1 of the rehabilitation of the existing sedimentation Basins as recommended by the 2019 WTP CIP (Arcadis 2019) and EPA CEP (2017). Projects including regrading around existing sedimentation Basins to mitigate stormwater infiltration, rehabilitation or replacement of existing sluice gates including drain gates, disconnect existing stormwater outfall including related permitting, repair of existing vaults. The WTP portion of the project will include replacement of various isolation valves at the plant and the encasement of an existing 84-inch diameter pipe coupling.
PROJECT JUSTIFICATION: The sedimentation basins are the only system in the Water Treatment Plant process that is open to the environment. As such, care must be taken to prevent infiltration of contaminants via surface runoff. These repairs and valve replacements were recommended by regulating agencies. Working isolation valves are required in order to properly isolate and maintain treatment. Proactive repair/maintenance will reduce the chance of complete failure of the asset.
RISK(S): Inability to isolate the sedimentation basins in the event of an emergency and/or uncontrolled runoff into the Basins could cause regulatory violations.
IMPACT ON OPERATIONS: Ability for staff to quickly isolate the sedimentation basins as part of routine or emergency maintenance.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$224,922	\$299,896	\$448,363	\$2,196,447	\$1,830,372	\$5,000,000	

Water Treatment Plant

Phase 2 Sedimentation Basin Rehabilitation Project

PROJECT NUMBER: 2026-100-100-0

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Phase 2 of this project includes cleaning the sedimentation basins, rehabilitation of weirs, intakes, and associated structures.

PROJECT JUSTIFICATION:
The sedimentation basins serve a role in secondary clarification of water after the clarifiers. This clarification combined with the fact that the basins are uncovered has led to accumulation of sediment in the basins. Secondly, structural defects in the existing concrete structure cannot be detected due to the presence of this sediment. Once the sediment is removed, each basin will be removed from service for a structural inspection and concrete repair. If moderate/major structural defects are not proactively addressed, complete failure will eventually occur and excavation will be required. Any complete failure that occurs will result in dramatically increased expenditures for repair.

RISK(S):
Possible regulatory violations due to sediment, possible failure of structure due to lack of maintenance.

IMPACT ON OPERATIONS:
Ability for staff to quickly isolate the sedimentation basins as part of routine or emergency maintenance.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$0	\$0	\$0	\$562,304	\$749,739	\$1,312,043	

Water Treatment Plant

Post-Filter Chemical System Improvements

PROJECT NUMBER: 2026-100-101-0

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Construction of new building for soda ash, fluoride, and phosphoric acid system closer to the feed point providing updated equipment, storage, instrumentation, and injection points. This will result in meeting current regulatory requirements, improve chemical application, and optimize the water treatment process. Portions of this project may be combined with the Clearwell Improvements Project or Aspinwall Pump Station Project.

PROJECT JUSTIFICATION:
The improvements from this project will address the recommendations from various regulatory agencies. In addition, the lack of attention to the post-filter chemical feed systems could cause over/under dosing of chemicals leading to permit violations or the loss of a chemical system resulting in an emergency project.

RISK(S):
Potential violations of permit conditions as a result of improper dosing of chemicals or failure of a chemical system resulting in emergency action.

IMPACT ON OPERATIONS:
Optimization and flow/residual pacing of chemicals can result in reduced chemical consumption. New storage and chemical feed equipment will result in reduced maintenance costs associated with repairs on the existing pumps, maintaining storage bins and feeders. Moving soda ash closer to the point of injection will reduce issues with feeding the chemical from the other end of the plant. Improvements to SCADA system and flow/residual pacing will reduce manual adjustments to chemical feed systems.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$0	\$0	\$0	\$607,288	\$809,718	\$1,417,006	

Water Treatment Plant

Powdered Activated Carbon System Improvements

PROJECT NUMBER: 2017-322-101-2/ 3

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:
Powdered Activated Carbon System Improvements are to include the replacement of a carbon premix tank and existing carbon slurry pumping and dosing pipework.

PROJECT JUSTIFICATION:
Components of the chemical treatment systems can no longer be operated in an effective and reliable manner to meet water quality requirements. The storage and pumping systems associated with these chemicals have reached the end of their useful life and are susceptible to failures.

RISK(S):
Inefficient operation of chemical systems results in increased operating costs, including chemical consumption, labor, solids generation and disposal, and wear on equipment.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, reliability, and life expectancy and improved safety conditions.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$40,589	\$0	\$0	\$0	\$0	\$40,589	

Water Treatment Plant

Ross Pump Station

PROJECT NUMBER: 2018-323-101-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Regulatory, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

Replacement of aged pump and valve equipment, meters, SCADA, electrical equipment, HVAC, auxiliary systems, as well as the rehabilitation of the building architectural and energy management systems.

PROJECT JUSTIFICATION:

Pump station is in need of rehabilitation. Pumps and ancillary systems are beyond their design life.

RISK(S):

Exposes the Authority to higher capital costs to address emergency failures, and exposes customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:

Increased operating efficiency, flexibility, reliability, life expectancy, and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$1,249,655	\$2,499,310	\$1,299,310	\$13,232,110	\$18,280,385	Debt (Revenue Bonds)

Water Treatment Plant

Sludge Chamber Pump Project

PROJECT NUMBER: 2021-322-102-0

DSIC Eligible: No

PHASE: Design
PRIORITY: Regulatory Compliance, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Replacement of existing Sludge Pump and related components to the sludge chamber.
PROJECT JUSTIFICATION: The submersible pumps are not operational because they are not capable of handling the type of sludge coming from the clarifier drainage. The pump system needs to be designed to ensure the proper pump size and selection suitable for sludge handling is utilized.
RISK(S): Inefficient operations resulting from an aged facility that do not align with industry standard practices.
IMPACT ON OPERATIONS: Increased operating efficiency, flexibility, reliability, and life expectancy,.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$386,722	\$869,343	\$0	\$0	\$0	\$1,256,065	Debt (Revenue Bonds)

Water Treatment Plant

Water Treatment Plant Filter Backwash System Improvements

PROJECT NUMBER: 2023-100-107-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Improvements to filter backwash system to increase capacity and provide greater high backwash flow rates and addressing issues.
PROJECT JUSTIFICATION: The backwash system cannot attain high wash flow rates recommended by regulators, which may be impacting filter performance/backwash frequency. In addition, the backwash system has areas that can be improved to help with operations including resolving pump vibration and shutdown issues at low flow rates.
RISK(S): Potential noncompliance with permitted design of filter system and water quality issues.
IMPACT ON OPERATIONS: Improved operating efficiency.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$740,054	\$883,290	\$2,996,022	\$8,880,634	\$0	\$13,500,000	

Water Treatment Plant

Water Treatment Plant Filter Building Roof

PROJECT NUMBER: 2024-100-101-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Roof and parapet flashing replacement at the Water Treatment Plant filter building.
PROJECT JUSTIFICATION: The existing roof is aged and in need of replacement.
RISK(S): Continued deterioration of the roof could result in a emergency replacement.
IMPACT ON OPERATIONS: Decrease in yearly maintenance for the existing roof.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$0	\$3,500,000	\$0	\$0	\$0	\$3,500,000	

Water Treatment Plant

Water Treatment Plant HVAC Improvements

PROJECT NUMBER: 2024-100-102-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Improvements to aged HVAC systems at the Water Treatment Plant.
PROJECT JUSTIFICATION: The HVAC systems at the Water Treatment Plant are at risk for failure due to its age.
RISK(S): Failure of HVAC systems.
IMPACT ON OPERATIONS: Reduction in future maintenance costs associated with aging equipment and multiple HVAC units.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$0	\$163,333	\$358,333	\$858,333	\$0	\$1,379,999	

Water Treatment Plant

Water Treatment Plant NPDES Permit Autosamplers and Flow Meters

PROJECT NUMBER: 2023-100-108-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Purchase and installation of autosamplers to improve the ability of DEP required sampling.
PROJECT JUSTIFICATION: This project is necessary to ensure that all of the required DEP sampling gets performed in a safe and efficient manner.
RISK(S): The risks with not completing or delaying this project would be potentially missing sampling deadlines for DEP required sampling.
IMPACT ON OPERATIONS: Improved operating efficiency.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Cash (Rates)
Annual Allocation	\$164,400	\$124,500	\$0	\$0	\$0	\$288,900	

Water Treatment Plant

Water Treatment Plant Rail Siding Improvements

PROJECT NUMBER: 2023-100-109-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Replacement of failed railroad ties, missing aggregate, and switch/track/stop repairs or removal for the rail siding at Aspinwall Pump Station.
PROJECT JUSTIFICATION: Rail siding is required to maintain an alternate means of chemical delivery to Aspinwall Pump Station. This project will allow for the annual replacement of rail siding in order to meet rail standards.
RISK(S): Failure to pass rail inspection and loss of alternate chemical delivery means.
IMPACT ON OPERATIONS: Improved operating efficiency.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$800,000	\$300,000	\$300,000	\$300,000	\$300,000	\$2,000,000	

Water Treatment Plant

WTP Sodium Hypochlorite Tank Emergency Replacement

PROJECT NUMBER: 2022-322-101-0

DSIC Eligible: No

PHASE: Construction
PRIORITY: Regulatory Compliance, Safety, Quality of Service
PROJECT DESCRIPTION: The project includes the replacement of three Sodium Hypochlorite storage tanks.
PROJECT JUSTIFICATION: This is an urgent project to maintain adequate treatment capabilities.
RISK(S): The project includes the emergency replacement of three Sodium Hypochlorite storage tanks. There are four existing storage tanks. Two of the storage tanks will be removed from service in 2022 due to leakage and the age of the other two is such that they are at the end of their useful life. They will be replaced with three new tanks in kind to maintain the required storage capacity.
IMPACT ON OPERATIONS: Maintain adequate treatment capabilities.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$150,000	\$0	\$0	\$0	\$0	\$150,000	Debt (Revenue Bonds)

Water Treatment Plant

Water Treatment Plant Contingency

PROJECT NUMBER: 2023-100-110-0

DSIC Eligible: No

PHASE: Not Applicable
PRIORITY: Not Applicable
PROJECT DESCRIPTION: Water Treatment Plant contingency pass-through project.
PROJECT JUSTIFICATION: Improved efficiency of capital improvement plan fund management.
RISK(S): No identified risks.
IMPACT ON OPERATIONS: Improved efficiency of capital improvement plan management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$0	\$0	\$0	\$0	\$0	\$0	



Water Pumping and Storage



Water Pumping and Storage

Aspinwall Pump Station Improvements

PROJECT NUMBER: 2017-323-104-0

DSIC Eligible: No

PHASE:
Construction – Project Close

PRIORITY:
Regulatory Compliance, Safety Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:
Replacement of aged pump and valve equipment, electrical equipment, HVAC, auxiliary systems, and rehabilitation of the building architectural and energy management systems at the Bruecken and Aspinwall Pump Stations or replacement with a single high service pump station at the Water Treatment Plant.

PROJECT JUSTIFICATION:
The pump Station is in need of renovations and upgrades to maintain service, restore a 20 to 25 year useful life expectancy, and to provide safer conditions for staff. Additionally, installation of variable frequency drives will reduce water pressure surges during start-up, and allow the pumps to operate over a wide range of flow, allow the pumps to operate while the clearwell is being replaced. Alternately, a new high service pump station to replace the existing pump stations is also being investigated.

RISK(S):
Exposes the Authority to higher capital costs to address emergency failures and customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, and reliability and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$4,748,966	\$15,197,172	\$15,197,170	\$15,227,974	\$2,548,263	\$52,919,545	WIFIA/PENN VEST

Water Pumping and Storage

Aspinwall Pump Station to Lanpher Reservoir Rising Main

PROJECT NUMBER: 2018-323-100-0

DSIC Eligible: No

PHASE:

Design – Project Close

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:

Construction of a new, redundant rising main from Aspinwall Pump Station to Lanpher Reservoir.

PROJECT JUSTIFICATION:

The existing 60" rising main that supplies the Lanpher Reservoir is a 150 year old riveted steel pipe, has several tap connections to critical and bulk customers, and has experienced recent pipe failures. The proposed rising main would serve as a primary supply source for the Lanpher Reservoir during the Clearwell Replacement Project and a redundant supply line in case of a failure or planned cleaning and rehabilitation of the existing 60" supply main.

RISK(S):

Failure of the rising main could impact up to half of PWSA's customers.

IMPACT ON OPERATIONS:

Increased operating flexibility and reliability.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$2,147,167	\$29,622,031	\$44,331,727	\$44,331,727	\$14,777,241	\$135,209,893	WIFIA/PENN VEST

Water Pumping and Storage

Aspinwall WTP Chemical Unloading Area Improvements and Underground Storage Tank Removal and Replacement

PROJECT NUMBER: 2022-322-100-0

DSIC Eligible: No

PHASE:
Design – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Design and construction of secondary spill containment around railcar and truck chemical unloading areas. A nearby tunnel underdrain must also be disconnected from the combined sewers, and will be completed as part of the work in the area.

PROJECT JUSTIFICATION:
Required as part of PADEP regulatory recommendations.

RISK(S):
Not completing the work could lead to future environmental incidents and potential violations from regulatory agencies due to chemical spills.

IMPACT ON OPERATIONS:
Increased flexibility and reliability, system compliance, and improved environmental conditions.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$1,352,161	\$0	\$0	\$0	\$0	\$1,352,161	Debt (Revenue Bonds)

Water Pumping and Storage

Bruecken Pump Station Concealed Gutters

PROJECT NUMBER: 2024-300-100-0

DSIC Eligible: No

PHASE:
Planning – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Concealed gutter replacement and related improvements at Bruecken Pump Station.

PROJECT JUSTIFICATION:
The existing concealed gutters backup with water and can cause leakage inside of the building.

RISK(S):
Continued leaks will eventually damage roof substrate and interior and exterior masonry.

IMPACT ON OPERATIONS:
Reduced service repair needs and improved efficiency of operations.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$175,000	\$0	\$0	\$0	\$175,000	Debt (Revenue Bonds)

Water Pumping and Storage

Bruecken Pump Station Improvements

PROJECT NUMBER: 2017-323-106-0

DSIC Eligible: No

PHASE:
Construction – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Replacement of aged pump and valve equipment, electrical equipment, HVAC, auxiliary systems, and rehabilitation of the building architectural and energy management systems.

PROJECT JUSTIFICATION:
The pump station was constructed in 1931. The pump station is in need of renovations and upgrades to maintain service, restore a 20 to 25 year useful life expectancy, and to provide safer conditions for staff. Additionally, installation of variable frequency drives will reduce water pressure surges during start-up, allow the pumps to operate more efficiently over a wide range of flow demands, and will reduce the required size of the new Clearwell.

RISK(S):
Exposes PWSA to higher capital costs to address emergency facility failures and its customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, reliability, and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$8,653,054	\$30,991,126	\$30,991,126	\$31,037,546	\$5,188,398	\$106,861,250	WIFIA/PENN VEST

Water Pumping and Storage

Chlorine Booster Station Improvements

PROJECT NUMBER: 2019-323-101-0

DSIC Eligible: No

PHASE:
Design – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Replacement of existing chlorine injection facilities at reservoirs and tanks for chlorine residual.

PROJECT JUSTIFICATION:
PWSA boosts chlorine residual at a majority of its storage facilities. Recent changes to PADEP regulations require an increase in minimum chlorine residual levels in the distribution system. All chlorine booster facilities need to be upgraded in order to meet these requirements.

RISK(S):
Exposes the Authority's customers to poor water quality.

IMPACT ON OPERATIONS:
Increased flexibility and reliability, system compliance, and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$311,269	\$6,436,148	\$7,007,549	\$583,962	\$0	\$14,338,928	

Water Pumping and Storage

Disinfection By-Products Mitigation

PROJECT NUMBER: 2020-323-101-0

DSIC Eligible: No

PHASE:

Design – Project Close

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

Replacement of existing trihalomethane (THM) removal systems at Allentown tanks, Squirrel Hill tank, and Brashears tanks.

PROJECT JUSTIFICATION:

Repair of the existing system to improve the level of service provided to customers.

RISK(S):

Delaying the replacement of the existing systems will result in increased downtime of the existing systems that need to be repaired. This will lead to possible regulatory violations for exceeding THM levels.

IMPACT ON OPERATIONS:

Decrease in yearly maintenance for the existing system.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$5,183,171	\$1,426,705	\$0	\$0	\$0	\$6,609,876	Debt (Revenue Bonds)

Water Pumping and Storage

Garfield Tank Improvements

PROJECT NUMBER: 2024-300-101-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Rehabilitation or replacement of the existing tank. Increase of tank capacity may be necessary.

PROJECT JUSTIFICATION:
The Garfield Elevated Storage Tank was constructed in 1959 and last rehabilitated in 1992. The existing tank does not have sufficient capacity to meet PADEP's requirements for sizing, which states that a tank must have sufficient capacity to meet average day demand plus fire flow demand. This project will provide adequate storage through system redundancy to meet the pressure district's demand and fire flow conditions.

RISK(S):
Exposes PWSA customers to poor water quality from coating problems or a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased flexibility and reliability, system compliance, and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$122,198	\$244,397	\$314,224	\$2,246,121	\$2,926,940	Debt (Revenue Bonds)

Water Pumping and Storage

Herron Hill Pump Station Improvements

PROJECT NUMBER: 2023-300-100-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Replacement of aged pump and valve equipment, electrical equipment, HVAC, auxiliary systems, and rehabilitation of the building architectural and energy management systems as prioritized by the recommended Finished Water Pump Stations Condition Assessment Project.

PROJECT JUSTIFICATION:
The pump station was originally constructed in the late 1890's. The pump station is in need of renovations and upgrades to maintain service, restore a 20 to 25 year useful life expectancy, and to provide safer conditions for staff.

RISK(S):
Lack of facility planning exposes PWSA to higher capital costs to address emergency failures and customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, and reliability and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$409,195	\$818,391	\$496,552	\$12,275,862	\$0	\$14,000,000	Debt (Revenue Bonds)

Water Pumping and Storage

Herron Hill Reservoir Improvements

PROJECT NUMBER: 2019-323-100-0

DSIC Eligible: No

PHASE:
Construction – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Replacement of existing reservoir liner and cover and associated reservoir rehabilitation. Replacement of existing chlorine injection system. Project close-out phase in 2023.

PROJECT JUSTIFICATION:
The existing cover has reached the end of its useful life and must be replaced. Existing chlorine feed systems are beyond their useful life and must be replaced.

RISK(S):
Exposes the Authority's customers to poor water quality from reservoir failure and inadequate booster disinfection.

IMPACT ON OPERATIONS:
Increased flexibility and reliability, system compliance, and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$198,631	\$0	\$0	\$0	\$0	\$198,631	

Water Pumping and Storage

Herron Hill Reservoir Improvements - Sodium Hypochlorite Building

PROJECT NUMBER: 2019-323-100-1 / 2 / 3 / 4

DSIC Eligible: No

PHASE: Construction – Project Close
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Replacement of existing chlorine injection system.
PROJECT JUSTIFICATION: Existing chlorine feed systems are beyond their useful life and must be replaced.
RISK(S): Exposes the Authority's customers to poor water quality and possible PADEP violations due to inadequate booster disinfection.
IMPACT ON OPERATIONS: Increased flexibility and reliability, system compliance, and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$828,429	\$0	\$0	\$0	\$0	\$828,429	Debt (Revenue Bonds)

Water Pumping and Storage

Herron Hill Tank Pump Station Improvements

PROJECT NUMBER: 2024-300-102-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Replacement of aged pump and valve equipment, electrical equipment, HVAC, auxiliary systems, and rehabilitation of the building architectural and energy management systems as prioritized by the recommended Finished Water Pump Stations Condition Assessment Project.

PROJECT JUSTIFICATION:
The pump station is in need of renovations and upgrades to maintain service, restore a 20 to 25 year useful life expectancy, and to provide safer conditions for staff.

RISK(S):
Lack of facility planning exposes PWSA to higher capital costs to address emergency failures and customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, and reliability and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$164,077	\$195,529	\$1,320,197	\$1,320,197	\$3,000,000	Debt (Revenue Bonds)

Water Pumping and Storage

Highland 1 Reservoir Liner

PROJECT NUMBER: 2026-300-100-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Replacement of existing Highland 1 Reservoir liner.

PROJECT JUSTIFICATION:
The reservoir liner is past it's useful design life and is in need of replacement.

RISK(S):
Failure to replace the liner could result an emergency repairs or replacement.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, reliability, and life expectancy,.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$0	\$0	\$704,981	\$0	\$704,981	Debt (Revenue Bonds)

Water Pumping and Storage

Highland No. 2 Reservoir Liner and Cover Replacements

PROJECT NUMBER: 2019-323-102-0 / 1

DSIC Eligible: No

PHASE:
Construction – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Replacement of existing reservoir liner and cover and associated reservoir rehabilitation. Replacement of existing chlorine injection system and an upgrade of the reservoir outlet structure.

PROJECT JUSTIFICATION:
The Highland No. 2 Reservoir will be used as a temporary Clearwell while the new Clearwell is being constructed. Existing chlorine feed facilities must be upgraded to meet PADEP regulatory requirements for distribution chlorine residual. Existing reservoir outlet structure must be upgraded to accommodate new Highland Reservoir Pump Station.

RISK(S):
Exposes PWSA customers to poor water quality from reservoir failure and inadequate booster disinfection.

IMPACT ON OPERATIONS:
Increased flexibility and reliability, system compliance, and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	WIFIA/Debt (Revenue Bonds)
Annual Allocation	\$2,122,235	\$6,515,355	\$4,072,096	\$0	\$0	\$12,709,686	

Water Pumping and Storage

Highland Reservoir Pump Station and Rising Main

PROJECT NUMBER: 2017-323-101-0/ 5

DSIC Eligible: No

PHASE:

Design – Project Close

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

Construction of a new finished water pump station and transmission main to supply water to the Highland No. 1 Service Area from Highland No. 2 Reservoir.

PROJECT JUSTIFICATION:

All water supply for the Highland No. 1 Service Area currently flows through the Highland No. 1 Reservoir and the MFP. There is no other source water supply for the Highland No. 1 Service Area. In addition to providing alternate supply, this project is to temporarily provide finished water that meets the chlorine disinfection rules to the Highland No. 1 Service Area during the Clearwell Replacement Project. Additionally, this new facility could also be designed to service the Garfield pressure district, thus eliminating the rehabilitation of the Highland Pump Station.

RISK(S):

Failure of the two rising mains (No. 1 or No. 2), MFP, or Bruecken Pump Station would result in significant service disruption.

IMPACT ON OPERATIONS:

Increased operation and maintenance labor and expenses. Increased operating flexibility in the future.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$23,789,287	\$14,537,145	\$8,983,410	\$0	\$0	\$47,309,842	

Water Pumping and Storage

Howard Pump Station Improvements

PROJECT NUMBER: 2025-300-100-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Replacement of aged pump and valve equipment, electrical equipment, HVAC, auxiliary systems, and rehabilitation of the building architectural and energy management systems as prioritized by the recommended Finished Water Pump Stations Condition Assessment Project.

PROJECT JUSTIFICATION:
The pump station was originally constructed between 1900 and 1904. The pump station is in need of renovations and upgrades to maintain service, restore a 20 to 25 year useful life expectancy, and to provide safer conditions for the staff.

RISK(S):
Lack of facility planning exposes the Authority to higher capital costs to address emergency failures and its customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, and reliability and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$0	\$577,267	\$1,154,534	\$694,764	\$2,426,565	Debt (Revenue Bonds)

Water Pumping and Storage

Inline Pump Station (Coral and Pacific) Improvements

PROJECT NUMBER: 2024-300-103-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Replacement of aged pump and valve equipment, electrical equipment, HVAC, auxiliary systems, and rehabilitation of the building architectural and energy management systems as prioritized by the recommended Finished Water Pump Stations Condition Assessment Project.

PROJECT JUSTIFICATION:
The pump station is in need of renovations and upgrades to maintain service, restore a 20 to 25 year useful life expectancy, and to provide safer conditions for staff.

RISK(S):
Lack of facility planning exposes the Authority to higher capital costs to address emergency failures and its customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, reliability, and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$32,980	\$39,434	\$264,368	\$263,218	\$600,000	Debt (Revenue Bonds)

Water Pumping and Storage

Lanpher Reservoir Improvements

PROJECT NUMBER: 2017-323-105-0 / 1 / 2 / 3

DSIC Eligible: No

PHASE:
Construction – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Replacement of existing reservoir liner and cover and associated reservoir rehabilitation. Replacement of existing chlorine injection system.

PROJECT JUSTIFICATION:
The existing cover failed and had to be replaced on an emergency basis as part of the PADEP October 2017 Administrative Order. Existing chlorine feed systems are beyond their useful life and must be replaced.

RISK(S):
Exposes the Authority's customers to poor water quality from reservoir failure and inadequate booster disinfection.

IMPACT ON OPERATIONS:
Increased flexibility and reliability, system compliance, and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$2,778,963	\$6,370,326	\$3,716,024	\$0	\$0	\$12,865,313	

Water Pumping and Storage

Lincoln Pump Station Improvements

PROJECT NUMBER: 2023-300-101-0

DSIC Eligible: No

PHASE:
Planning – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Replacement of aged pump and valve equipment, electrical equipment, HVAC, and auxiliary systems, and rehabilitation of the building architectural and energy management systems as prioritized by the recommended Finished Water Pump Stations Condition Assessment Project.

PROJECT JUSTIFICATION:
The pump station was originally constructed in 1952. The pump station is in need of renovations and upgrades to maintain service, restore a 20 to 25 year useful life expectancy, and to provide safer conditions for staff.

RISK(S):
Lack of facility planning exposes the Authority to higher capital costs to address emergency failures and customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, and reliability and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$288,633	\$288,633	\$1,258,748	\$2,109,323	\$1,054,663	\$5,000,000	Debt (Revenue Bonds)

Water Pumping and Storage

Lincoln Pump Station: Bypass Pump Station Project

PROJECT NUMBER: 2020-323-100-0/ 1/ 2

DSIC Eligible: No

PHASE:
Construction – Project Close

PRIORITY:
Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Construction of a temporary bypass pump station that will be used at the Lincoln Pump Station and Saline Pump Station. This pump station will allow for the existing pump station to be taken off line completely for rehabilitation.

PROJECT JUSTIFICATION:
Repair of existing pump station while trying to keep it online increases the cost and construction time. This is a cost effective way to provide temporary pumping.

RISK(S):
Delaying the construction of this pump station will delay the renewal of existing pump stations that are in need of upgrades.

IMPACT ON OPERATIONS:
Decrease in yearly maintenance for the existing system.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$2,155,907	\$2,164,264	\$0	\$0	\$0	\$4,320,171	

Water Pumping and Storage

Lincoln Tank Improvements

PROJECT NUMBER: 2023-300-102-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Rehabilitation or replacement of the existing tank.

PROJECT JUSTIFICATION:
Constructed in 1939, this tank is nearing the end of its useful life. The last inspection, which was performed in 2018, noted deficiencies that need to be addressed to ensure water quality standards are met.

RISK(S):
Exposes the Authority's customers to poor water quality from coating problems or a potentially deficient water supply in the event of tank failure.

IMPACT ON OPERATIONS:
Increased flexibility and reliability and system compliance.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$337,529	\$203,589	\$3,680,670	\$0	\$0	\$4,221,788	

Water Pumping and Storage

Mission Pump Station Improvements

PROJECT NUMBER: 2025-300-101-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Replacement of aged pump and valve equipment, electrical equipment, HVAC, auxiliary systems, and rehabilitation of the building architectural and energy management systems as prioritized by the recommended Finished Water Pump Stations Condition Assessment Project.

PROJECT JUSTIFICATION:
The Mission Pump Station is the only pumping station located south of the Monongahela River and was originally constructed between 1910 and 1912. The pump station is in need of renovations and upgrades to maintain service, restore a 20 to 25 year useful life expectancy, and to provide safer conditions for staff.

RISK(S):
Lack of facility planning exposes the Authority to higher capital costs to address emergency failures and its customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, and reliability and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$0	\$577,267	\$1,154,534	\$694,764	\$2,426,565	Debt (Revenue Bonds)

Water Pumping and Storage

Pump Station Architectural

PROJECT NUMBER: 2026-300-101-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Rehabilitate exterior and interior masonry, glazing, and roof of existing pump stations

PROJECT JUSTIFICATION:
Existing building façade, roof, and window systems are in need of upgrade to protect interior pumps and electrical equipment from the elements. Rehabilitation of these pump stations has not occurred within the past 40 years for most facilities.

RISK(S):
Façade collapse, leaking roof and windows could lead to equipment failures

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, and reliability and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$0	\$0	\$0	\$2,500,000	\$0	\$2,500,000	

Water Pumping and Storage

Saline Pump Station Improvements

PROJECT NUMBER: 2026-300-102-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Replacement of aged pump and valve equipment, electrical equipment, HVAC, auxiliary systems, and rehabilitation of the building architectural and energy management systems as prioritized by the recommended Finished Water Pump Stations Condition Assessment Project.

PROJECT JUSTIFICATION:
The pump station was originally constructed in 1935. The pump station is in need of renovations and upgrades to maintain service, restore a 20 to 25 year useful life expectancy, and to provide safer conditions for staff.

RISK(S):
Lack of facility planning exposes the Authority to higher capital costs to address emergency failures and its customers to a potentially deficient water supply.

IMPACT ON OPERATIONS:
Increased operating efficiency, flexibility, and reliability and improved safety conditions for staff.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$0	\$0	\$192,422	\$288,633	\$481,055	Debt (Revenue Bonds)

Water Pumping and Storage

Spring Hill Tank Improvements

PROJECT NUMBER: 2024-300-104-0

DSIC Eligible: No

PHASE:
Not Started – Project Close

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Perform a comprehensive inspection of the existing storage tanks and rehabilitation or replacement of the existing tanks.

PROJECT JUSTIFICATION:
Constructed in 1929 of riveted steel, the coatings and structure of these tanks need to be rehabilitated due to corrosion.

RISK(S):
Exposes the Authority's customers to poor water quality from coating problems or a potentially deficient water supply in the event of tank failure.

IMPACT ON OPERATIONS:
Increased flexibility and reliability and system compliance.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$62,335	\$122,669	\$73,819	\$933,589	\$1,192,412	Debt (Revenue Bonds)

Water Pumping and Storage

Water Pumping and Storage Contingency

PROJECT NUMBER: 2023-300-103-0

DSIC Eligible: No

PHASE:
Not Applicable – Project Close

PRIORITY:
Not Applicable

PROJECT DESCRIPTION:
Water Pumping and Storage contingency pass-through project.

PROJECT JUSTIFICATION:
Improved efficiency of capital improvement plan fund management.

RISK(S):
No identified risks.

IMPACT ON OPERATIONS:
Improved efficiency of capital improvement plan management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$0	\$0	\$0	\$0	\$0	\$0	



Water Distribution



Water Distribution System

2019 Large Diameter Water Main Improvements - Rising Main 3/4

PROJECT NUMBER: 2019-325-103-0

DSIC Eligible: No

PHASE: Construction
PRIORITY: Regulatory Compliance, Safety Operating Efficiency, Quality of Service,
PROJECT DESCRIPTION: Strategic replacement or rehabilitation of large diameter water mains (16-inch and larger) and appurtenances to improve system reliability and hydraulics, including internal and external inspections.
PROJECT JUSTIFICATION: Maintaining a proactive approach to replacing large mains will ensure that large mains are replaced before the end of their useful life.
RISK(S): The consequences of failure for larger mains are much greater than for smaller distribution mains, which typically include significant service outages (larger area and longer time frame impacts), as well as property and roadway damage.
IMPACT ON OPERATIONS: Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	WIFIA/Debt (Revenue Bonds)
Annual Allocation	\$3,062,142	\$240,770	\$0	\$0	\$0	\$3,302,912	

Water Distribution System

2019 Large Diameter Water Main Improvements - Rising Main 4

PROJECT NUMBER: 2019-325-103-1

DSIC Eligible: No

PHASE: Procurement
PRIORITY: Regulatory Compliance, Safety Operating Efficiency, Quality of Service,
PROJECT DESCRIPTION: Strategic replacement or rehabilitation of large diameter water mains (16-inch and larger) and appurtenances to improve system reliability and hydraulics, including internal and external inspections.
PROJECT JUSTIFICATION: Maintaining a proactive approach to replacing large mains will ensure that large mains are replaced before the end of their useful life.
RISK(S): The consequences of failure for larger mains are much greater than for smaller distribution mains, which typically include significant service outages (larger area and longer time frame impacts), as well as property and roadway damage.
IMPACT ON OPERATIONS: Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$12,529,326	\$4,176,441	\$0	\$0	\$0	\$16,705,767	WIFIA/PENNV EST

Water Distribution System

Bus Rapid Transit Water Distribution

PROJECT NUMBER: 2020-325-102-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Safety, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
The City of Pittsburgh is making roadway improvements on Fifth Ave and Forbes Ave from downtown through Oakland, with full depth reconstruction planned on Forbes from Crosstown Blvd to Craft Ave and on Fifth between Crosstown Blvd and the Birmingham Bridge. The City's work, in partnership with the Port Authority, will include signal pole upgrades, traffic redesign, sidewalk bumpouts, and new bus shelters. The full depth reconstruction portion of the project has the potential to affect existing 15-inch, 16-inch, 20-inch, and 6-inch mains that are 80-100+ years old. The full depth replacement of the roadway along with lowering of the roadway could result in damage to these mains. These mains should be replaced as part of this project.

PROJECT JUSTIFICATION:
The full depth replacement of the roadway along with lowering of the roadway could result in damage to these mains.

RISK(S):
Replacement of water mains along the Fifth and Forbes corridor reduces the risk of service outages due to breaks, reduces the potential for inadequate capacity for firefighting activities, and improves water quality.

IMPACT ON OPERATIONS:
Increased system reliability and improved system management.

CASH FLOW SUMMARY

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>FUNDING SOURCE(S)</u>
Annual Allocation	\$1,500,000	\$0	\$0	\$0	\$0	\$1,500,000	Debt (Revenue Bonds)

Water Distribution System

District Metering Program

PROJECT NUMBER: 2025-200-100-0, Unidentified

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Installation of system flow meters to track the flow of water and compare to area consumption to determine where leaks are the greatest.

PROJECT JUSTIFICATION:
The district metering is intended to gather additional information on areas with suspected leakage and then prioritize areas for rehabilitation and replacement.

RISK(S):
Failure to track water loss will result in loss of revenue.

IMPACT ON OPERATIONS:
Decreased water loss.

<u>Program Years</u>	<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
	\$0	\$0	\$2,600,000	\$3,380,000	\$3,380,000	\$9,360,000	Debt (Revenue Bonds)
2025 District Metering	\$0	\$0	\$2,600,000	\$780,000	\$0	\$3,380,000	
2026 District Metering	\$0	\$0	\$0	\$2,600,000	\$780,000	\$3,380,000	
2027 District Metering	\$0	\$0	\$0	\$0	\$2,600,000	\$2,600,000	

Water Distribution System

Hazelwood Backup Feed

PROJECT NUMBER: 2023-200-100-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Either repair the existing failed 16" main or abandon and provide interconnections with the Squirrel Hill system.
PROJECT JUSTIFICATION: The Duck Hollow 16" main failed as a result of a landslide in 2018. The main will need to either be abandoned and replaced with emergency interconnections.
RISK(S): Existing failed 16" main does not provide any backup water supply leading to a loss of resiliency.
IMPACT ON OPERATIONS: Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$175,156	\$175,156	\$1,115,471	\$1,534,487	\$0	\$3,000,270	Debt (Revenue Bonds)

Water Distribution System

Herron Hill - Squirrel Hill Boundary Adjustments

PROJECT NUMBER: 2025-200-101-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Main and valve adjustments to move the boundary between the Herron Hill Reservoir and Squirrel Hill pressure districts.
PROJECT JUSTIFICATION: Herron Hill and Squirrel Hill operate on similar hydraulic gradients. There are areas where these two systems intertwine, which has resulted in long dead end lines as well as frequent opening and altering of dividing pressure valves. Moving the boundary of the two zones to incorporate more of the Herron Hill system into the Squirrel Hill system will alleviate these issues as well as alleviate demand on the Herron Hill Reservoir.
RISK(S): Existing long dead ends can cause water quality issues.
IMPACT ON OPERATIONS: Decreased leakage between pressure districts.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$0	\$0	\$52,928	\$355,187	\$635,885	\$1,044,000	

Water Distribution System

Interconnection Vault Stormwater Removal

PROJECT NUMBER: 2022-325-102-0

DSIC Eligible: No

PHASE: Planning
PRIORITY: Regulatory Compliance, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: The purpose of this project is to install permanent sump pumps for stormwater dewatering at all of our interconnection vault locations. This project is required by a Consent Order Agreement.
PROJECT JUSTIFICATION: This project is required by a Consent Order Agreement.
RISK(S): Failure to maintain regulatory compliance.
IMPACT ON OPERATIONS: Improved system efficiency.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$453,008	\$1,225,931	\$611,310	\$0	\$0	\$2,290,249	

Water Distribution System

Intermediate Diameter Water Main Replacement Program

PROJECT NUMBER: 2025-200-102-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Strategic replacement of water mains to improve system reliability as well as improve water pressure, maintain water quality, and minimize disturbance to the community. Program will focus on 16" to 36" diameter mains.

PROJECT JUSTIFICATION:
By maintaining a proactive approach to asset management, efforts can be directed towards remedying assets before their failure, thus saving overall replacement cost. Additionally, projects will be coordinated with other utilities to minimize disturbance to the community and street surface restoration costs. Water quality will also improve by removing tuberculated mains.

RISK(S):
Customers may be subject to service outages or the potential for inadequate pressure.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability, decrease in non-revenue water due to leaks.

	<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
<u>Program Years</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
	\$0	\$0	\$2,603,833	\$4,488,230	\$42,775,187	\$49,867,251	
2025 Intermediate Main Replacement	\$0	\$0	1,283,549	1,541,899	20,364,552	\$23,190,000	Debt (Revenue Bonds)
2026 Intermediate Main Replacement	\$0	\$0	\$1,320,284	\$1,584,614	20,774,834	\$23,679,732	
2027 Intermediate Main Replacement	\$0	\$0	\$0	\$1,361,717	\$1,635,801	\$2,997,518	

Water Distribution System

Intermediate Meter Replacement Program

PROJECT NUMBER: 2021-325-100-0

DSIC Eligible: No

PHASE: Planning
PRIORITY: Operating Efficiency, Quality of Service, Organizational Goals
PROJECT DESCRIPTION: Replacement of customer meters size 1.5" to 2".
PROJECT JUSTIFICATION: Ensure capture of all revenue. As meters age, they typically underestimate the amount of water consumed.
RISK(S): Failure to replace meters annually could result in lost revenue or violate regulatory requirements.
IMPACT ON OPERATIONS: Increased system reliability, reliability, and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$143,077	\$84,308	\$86,538	\$87,000	\$87,000	\$487,923	

Water Distribution System

Large Diameter Water Main Replacement Program

PROJECT NUMBER: 2019-325-103-0, 2019-323-103-1, 2020-325-109-0, 2023-200-101-0, 2024-200-100-0, 2025-200-103-0, 2026-200-100-0, 2027-200-100-0, Unidentified

DSIC Eligible: No

PHASE: Construction / Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Strategic replacement or rehabilitation of large diameter water mains (16" and larger) and appurtenances to improve system reliability and hydraulics, including internal and external inspections.
PROJECT JUSTIFICATION: The Authority's water system has approximately 122 miles of large diameter water mains. Maintaining a proactive approach to replacing large mains will ensure that large mains are replaced before the end of their useful life.
RISK(S): The consequences of failure for larger mains are much greater than for smaller distribution mains, which typically include significant service outages (larger area and longer time frame impacts).
IMPACT ON OPERATIONS: Increased system reliability and improved system management.

Program Year	CASH FLOW SUMMARY						FUNDING SOURCE(S)
	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total	Debt (Revenue Bonds)
	\$2,980,666	\$4,820,096	\$23,316,702	\$38,087,877	\$33,256,579	\$102,461,920	
2020 Large Diameter Main Replacement – Four Mile Run	\$801,877	\$850,000	\$7,156,250	\$17,175,000	\$10,018,750	\$36,001,877	
2023 Large Diameter Main Replacement	\$1,244,067	\$1,137,890	\$11,464,181	\$5,713,862	\$0	\$19,560,000	
2024 Large Diameter Main Replacement	\$934,721	\$1,869,443	\$1,779,098	\$10,361,857	\$8,634,881	\$23,580,000	
2025 Large Diameter Main Replacement	\$0	962,763	1,925,526	1,832,471	10,672,713	\$15,393,473	
2026 Large Diameter Main Replacement	\$0	\$0	\$991,646	\$1,983,292	\$1,887,445	\$4,862,383	
2027 Large Diameter Main Replacement	\$0	\$0	\$0	\$1,021,395	\$2,042,791	\$3,064,186	

Water Distribution System

Large Meter Replacement Program

PROJECT NUMBER: 2023-200-102-0

DSIC Eligible: No

PHASE: Planning
PRIORITY: Regulatory Compliance, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Annual replacement of water meters larger than 1".
PROJECT JUSTIFICATION: Ensure capture of all revenue. As meters age, they typically underestimate the amount of water consumed.
RISK(S): Failure to replace meters annually could result in lost revenue.
IMPACT ON OPERATIONS: Increased system reliability, reliability, and improved system management.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$1,557,508	\$1,341,457	\$567,308	\$337,000	\$337,000	\$4,140,273	Debt (Revenue Bonds)

Water Distribution System

Low Pressure Area Remediation

PROJECT NUMBER: 2021-325-101-0

DSIC Eligible: No

PHASE: Planning
PRIORITY: Regulatory Compliance, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Fix chronically low pressure areas by either extending neighboring higher pressure districts into the area, booster pump stations, or household booster pumps.
PROJECT JUSTIFICATION: This project is in response to the low pressure monitors required by the October 2017 Administrative Order.
RISK(S): Customers may experience temporary service outages as a result of the work on this project.
IMPACT ON OPERATIONS: Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$0	\$0	\$23,278	\$279,331	\$1,393,832	\$1,696,441	

Water Distribution System

Neighborhood Lead Service Line Replacement Program

PROJECT NUMBER: 2021-325-109-0

DSIC Eligible: Yes

PHASE: Planning/Construction
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Neighborhood Lead Service Line Replacement (LSLR) program to replace all remaining public and private lead service lines within the PWSA water service area. Program will be developed once 2023-2026 Small Diameter Water Main Replacement program is fully planned.
PROJECT JUSTIFICATION: Comply with PWSA goals in the Lead Infrastructure Plan approved by PUC.
RISK(S): Compliance with PWSA goals and regulatory recommendations.
IMPACT ON OPERATIONS: Increased operating flexibility and reliability and water quality.

CASH FLOW SUMMARY

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>FUNDING SOURCE(S)</u>
Annual Allocation	\$13,582,757	\$27,792,500	\$55,585,000	\$27,792,500	\$0	\$124,752,757	ARPA/PEN NVEST

Water Distribution System

North Side Boundary Adjustments

PROJECT NUMBER: 2025-200-104-0

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Operating Efficiency, Quality of Service, Organizational Goals

PROJECT DESCRIPTION:
Main and valve installation to move some low pressure areas from the McNaugher Pressure District to the Brashears Pressure District.

PROJECT JUSTIFICATION:
Areas within the McNaugher Pressure District that are near the Brashears Pressure District could have increased pressure by moving the pressure zone boundary through main improvements and valve adjustments.

RISK(S):
Existing services are near or below minimum standards (20 psi).

IMPACT ON OPERATIONS:
Increased system reliability and improved system management.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$0	\$0	\$79,393	\$532,780	\$953,827	\$1,566,000	

Water Distribution System

Priority LSLR

PROJECT NUMBER: 2021-325-107-0

DSIC Eligible: No

PHASE: Construction
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Provide for LSLR at Priority sides including childcare facilities and exceedance locations.
PROJECT JUSTIFICATION: Comply with PWSA goals in the Lead Infrastructure Plan approved by PUC.
RISK(S): Failure to replace private lead service lines poses a public health risk.
IMPACT ON OPERATIONS: Increased operating flexibility and reliability and water quality.

CASH FLOW SUMMARY

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>FUNDING SOURCE(S)</u>
Annual Allocation	\$3,000,000	\$0	\$0	\$0	\$0	\$3,000,000	PENNVEST

Water Distribution System

Private Lead Service Line Reimbursement Program

PROJECT NUMBER: 2023-200-103-0

DSIC Eligible: Yes

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Reimbursement of private line lead service line costs.
PROJECT JUSTIFICATION: Replacing both private and public lead service lines is required to eliminate lead in the water system.
RISK(S): Failure to replace private lead service lines poses a public health risk.
IMPACT ON OPERATIONS: Increased system reliability and improved system management.

CASH FLOW SUMMARY

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>FUNDING SOURCE(S)</u>
Annual Allocation	\$400,000	\$0	\$0	\$0	\$0	\$400,000	Debt (Revenue Bonds)

Water Distribution System

Regulator Valve and Vault Replacement Program

PROJECT NUMBER: 2021-325-102-0, 2023-200-104-0, 2024-200-101-0, 2025-200-105-0, 2026-200-101-0, 2027-325-200-0

DSIC Eligible: No

PHASE: Planning
PRIORITY: Safety, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Replacement of pressure zone interconnection vaults including new pressure regulators, flow meters, pressure transmitters, and SCADA communications.
PROJECT JUSTIFICATION: Existing regulator stations are in need of replacement. This will also aid in identification of non-revenue water.
RISK(S): Failure to fix could result in failure of the vault.
IMPACT ON OPERATIONS: Decreased leakage will result in decrease of pumping energy.

Program Years	CASH FLOW SUMMARY						FUNDING SOURCE(S)
	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total	
	\$378,494	\$1,839,361	\$3,446,739	\$4,173,180	\$3,439,080	\$13,276,854	
2021 Regulator Valve and Vault Replacement	\$233,422	\$933,717	914,264	\$0	\$0	\$2,081,403	Debt (Revenue Bonds)
2022 Regulator Valve and Vault Replacement	\$89,723	\$517,050	\$257,850	\$292,720	\$0	\$1,157,343	
2023 Regulator Valve and Vault Replacement	\$55,349	\$305,570	\$1,760,920	\$878,161	\$0	\$3,000,000	
2024 Regulator Valve and Vault Replacement	\$0	\$83,024	\$458,355	\$2,641,379	\$1,317,242	\$4,500,000	
2025 Regulator Valve and Vault Replacement	\$0	\$	\$55,349	\$305,570	\$1,760,920	\$2,121,839	
2026 Regulator Valve and Vault Replacement	\$0	\$0	\$0	\$55,350	\$305,570	\$360,920	
2027 Regulator Valve and Vault Replacement	\$0	\$0	\$0	\$0	55,349	\$55,349	

Water Distribution System

Small Diameter Water Main Replacement Program

PROJECT NUMBER: 2020-325-106-0 / 1 / 2, 2021-325-104-0/ 1/ 2, 2022-325-113-0/ 2/ 3, 2023-200-105-0, 2024-200-102-0, 2025-200-106-0, 2026-200-102-0, Unidentified

DSIC Eligible: Yes

PHASE: Construction / Design / Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: Strategic replacement of water mains to improve system reliability as well as improve water pressure, maintain water quality, and minimize disturbance to the community. Program will initially focus on replacing existing 4" and 6" unlined cast iron mains and mains with a history of frequent breaks.
PROJECT JUSTIFICATION: By maintaining a proactive approach to asset management, efforts can be directed towards remedying assets before their failure, thus saving overall replacement cost. Additionally, projects will be coordinated with other utilities to minimize disturbance to the community and street surface restoration costs. Water quality will also improve by removing tuberculated mains.
RISK(S): Customers may be subject to service outages.
IMPACT ON OPERATIONS: Increased operating flexibility and reliability.

Program Year	<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
	\$83,515,129	\$75,057,894	\$57,763,375	\$53,807,131	\$89,408,776	\$359,552,305	
2021 Small Main Replacement	\$27,077,320	\$0	\$0	\$0	\$0	\$27,077,320	Debt (Revenue Bonds) / PENNVEST
2022 Small Main Replacement	\$47,405,571	\$33,861,122	\$0	\$0	\$0	\$81,266,693	
2023 Small Main Replacement	\$7,982,472	\$26,104,038	\$8,701,346	\$0	\$0	\$42,787,856	
2024 Small Main Replacement	\$1,049,756	\$14,287,293	\$37,846,331	\$9,461,583	\$0	\$62,644,963	
2025 Small Main Replacement	\$0	\$805,441	\$10,109,849	\$26,498,219	\$6,624,555	\$44,038,064	
2026 Small Main Replacement	\$0	\$0	\$1,105,849	\$14,431,097	\$38,033,034	\$53,569,980	
2027 Small Main Replacement	\$0	\$0	\$0	\$3,416,232	\$44,751,187	\$48,167,419	

Water Distribution System

Small Meter Replacement Program

PROJECT NUMBER: 2023-200-106-0

DSIC Eligible: No

PHASE: Construction / Not Started
PRIORITY: Regulatory Compliance, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Annual replacement of water meters 1" or less.
PROJECT JUSTIFICATION: Ensure capture of all revenue. As meters age, they typically underestimate the amount of water consumed.
RISK(S): Failure to replace meters annually could result in lost revenue or violate regulatory requirements.
IMPACT ON OPERATIONS: Increased system reliability, reliability, and improved system management.

CASH FLOW SUMMARY

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>FUNDING SOURCE(S)</u>
Annual Allocation	\$1,723,172	\$1,351,089	\$480,769	\$250,000	\$291,667	\$4,096,697	Debt (Revenue Bonds)

Water Distribution System

South Side Slopes Boundary Adjustments

PROJECT NUMBER: 2025-200-107-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Operating Efficiency, Quality of Service, Organizational Goals
PROJECT DESCRIPTION: Main and valve adjustments to move the boundary between the Highland No. 2 and Allentown Pressure Districts.
PROJECT JUSTIFICATION: Areas within the Highland No. 2 pressure district that are near the Allentown pressure district could have increased pressure by moving the pressure zone boundary through main improvements and valve adjustments.
RISK(S): Existing services are near or below minimum standards (20 psi).
IMPACT ON OPERATIONS: Increased system reliability and improved system management.

CASH FLOW SUMMARY

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>FUNDING SOURCE(S)</u>
Annual Allocation	\$0	\$0	\$79,393	\$532,780	\$953,827	\$1,566,000	Debt (Revenue Bonds)

Water Distribution System

Unmetered and Flat Rate Properties

PROJECT NUMBER: 2021-325-103-0

DSIC Eligible: No

PHASE: Planning
PRIORITY: Regulatory Compliance, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Metering unmetered and flat rate properties as required by regulations.
PROJECT JUSTIFICATION: Required per the PUC regulations. The impact of not installing meters is the loss of revenue and lack of ability to accurately estimate water loss in the system.
RISK(S): Failure to comply with PUC regulations and the potential of lost revenue.
IMPACT ON OPERATIONS: Increased system reliability, reliability, and improved system management.

CASH FLOW SUMMARY

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>FUNDING SOURCE(S)</u>
Annual Allocation	\$327,250	\$635,250	\$0	\$0	\$0	\$962,500	Debt (Revenue Bonds)

Water Distribution System

Urgent Lead Service Line Replacement

PROJECT NUMBER: 2021-325-112-0, 2023-200-107-0, 2024-200-103-0, 2025-200-108-0, 2026-200-103-0, 2027-200-102-0

DSIC Eligible: Yes

PHASE: Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact
PROJECT DESCRIPTION: This project involves the private side Lead Service Line Replacements (LSLR) associated with operations public side replacements. It includes provisions for some full line replacements when operations requests both sides be completed due to their workload or other factors.
PROJECT JUSTIFICATION: Compliance with the Lead Infrastructure Plan approved by the PUC. PUC requires termination if a private side lead service line is not replaced the same time the public service line is replaced. Not completing this project would lead to water service terminations.
RISK(S): Required to terminate service if property owners do not replace their private side lead service lines after operations replaces a public side service line.
IMPACT ON OPERATIONS: Increased operating flexibility and reliability and water quality.

Program Year	<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
	\$1,778,654	\$1,749,194	\$1,670,086	\$1,590,751	\$1,246,677	\$8,035,362	
2022 Urgent Lead Service Line Replacement	\$762,720	\$0	\$0	\$0	\$0	\$762,720	DSIC - Water
2023 Urgent Lead Service Line Replacement	\$1,015,934	\$721,566	\$0	\$0	\$0	\$1,737,500	
2024 Urgent Lead Service Line Replacement	\$0	\$1,027,628	\$729,872	\$0	\$0	\$1,757,500	
2025 Urgent Lead Service Line Replacement	\$0	\$0	940,214	\$667,786	\$0	\$1,578,500	
2026 Urgent Lead Service Line Replacement	\$0	\$0	\$0	\$922,965	\$655,535	\$1,578,500	
2027 Urgent Lead Service Line Replacement	\$0	\$0	\$0	\$0	591,142	\$591,142	

Water Distribution System

Valve Replacement Program

PROJECT NUMBER: 2021-325-113-0, 2023-200-108-0, 2024-200-104-0, 2025-200-109-0, 2026-200-104-0, 2027-200-103-0

DSIC Eligible: Yes

PHASE:
Construction / Not Started

PRIORITY:
Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Replacement of defective or non-operational valves on transmission and distribution mains throughout the water distribution system, excluding valves replaced during waterline relays.

PROJECT JUSTIFICATION:
Increasing the number of operable valves in the system will reduce the number of valves that would need to be closed during emergency conditions, and therefore the number of customers that may be impacted.

RISK(S):
A larger number of customers may be subject to service outages.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability.

Program Year	<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
	\$2,505,485	\$2,800,000	\$2,674,359	\$2,800,000	\$2,925,641	\$13,705,485	
2021 Valve Replacement	\$150,000	\$0	\$0	\$0	\$0	\$150,000	DSIC - Water
2022 Valve Replacement	\$722,152	\$0	\$0	\$0	\$0	\$722,152	
2023 Valve Replacement	\$1,633,333	\$1,166,667	\$0	\$0	\$0	\$2,800,000	
2024 Valve Replacement	\$0	\$1,633,333	\$1,166,667	\$0	\$0	\$2,800,000	
2025 Valve Replacement	\$0	\$0	\$1,507,692	\$1,292,308	\$0	\$2,800,000	
2026 Valve Replacement	\$0	\$0	\$0	\$1,507,692	\$1,292,308	\$2,800,000	
2027 Valve Replacement	\$0	\$0	\$0	\$0	\$1,633,333	\$1,633,333	

Water Distribution System

Water and Wastewater Safety and Security Improvements

PROJECT NUMBER: 2022-325-101-0

DSIC Eligible: No

PHASE: Construction / Not Started
PRIORITY: Safety, Operating Efficiency
PROJECT DESCRIPTION: Safety and security improvements throughout PWSA facilities.
PROJECT JUSTIFICATION: Failure to implement safety and security measures will increase the likelihood of a security breach causing harm to PWSA employees and customers.
RISK(S): Security breaches.
IMPACT ON OPERATIONS: Increased safety and security at all PWSA facilities.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$1,567,547	\$0	\$0	\$0	\$0	\$1,567,547	

Water Distribution System

Water and Wastewater Safety and Security Improvements (Pennvest)

PROJECT NUMBER: 2023-200-109-0

DSIC Eligible: No

PHASE: Design
PRIORITY: Safety, Operating Efficiency
PROJECT DESCRIPTION: Safety and security improvements throughout PWSA facilities.
PROJECT JUSTIFICATION: Failure to implement safety and security measures will increase the likelihood of a security breach causing harm to PWSA employees and customers.
RISK(S): Security breaches.
IMPACT ON OPERATIONS: Increased safety and security at all PWSA facilities.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$9,978,156	\$0	\$0	\$0	\$0	\$9,978,156	PENNVEST

Water Distribution System

Water Relay Program

PROJECT NUMBER: 2021-325-110-0, 2023-200-110-0, 2024-200-105-0, 2025-200-110-0, 2026,200-105-0, 2027-200-104-0

DSIC Eligible: Yes

PHASE: Construction
PRIORITY: Safety, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Replacement of existing water mains, valves, fittings, service connections, and hydrants due to emergency situations.
PROJECT JUSTIFICATION: The existing water distribution system is aging and updates are required to address failures that could be significant public safety hazards.
RISK(S): Customers will be subject to service outages or inadequate pressure.
IMPACT ON OPERATIONS: Increased operating flexibility and reliability.

Program Year	<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
	\$2,145,000	\$2,150,000	\$2,712,308	\$3,254,769	\$3,440,141	\$13,702,218	
2022 Water Relay	\$1,500,000	\$0	\$0	\$0	\$0	\$1,500,000	
2023 Water Relay	\$645,000	\$1,290,000	\$0	\$0	\$0	\$1,935,000	
2024 Water Relay	\$0	\$860,000	\$1,720,000	\$0	\$0	\$2,580,000	
2025 Water Relay	\$0	\$0	\$992,308	\$2,232,692	\$0	\$3,225,000	
2026 Water Relay	\$0	\$0	\$0	\$1,022,077	\$2,299,673	\$3,321,750	
2027 Water Relay	\$0	\$0	\$0	\$0	\$1,140,468	\$1,140,468	

Water Distribution System

Water Distribution Contingency

PROJECT NUMBER: 2023-200-111-0

DSIC Eligible: No

PHASE: Not Applicable
PRIORITY: Not Applicable
PROJECT DESCRIPTION: Water Distribution System contingency pass-through project.
PROJECT JUSTIFICATION: Improved efficiency of capital improvement plan fund management.
RISK(S): No identified risks.
IMPACT ON OPERATIONS: Improved efficiency of capital improvement plan management.

CASH FLOW SUMMARY

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>FUNDING SOURCE(S)</u>
Annual Allocation	\$0	\$0	\$0	\$0	\$0	\$0	Debt (Revenue Bonds)



Wastewater System



Wastewater System

31st Ward Pump Station and Appurtenances - Phase 2

PROJECT NUMBER: 2022-424-108-0

DSIC Eligible: No

PHASE:

Planning

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:

Evaluation to identify and locate the source(s) of the infiltration and inflow (I/I), removal of public I/I sources, and rehabilitation/replacement of the Rogers Street and Mifflin Road Pump Station and force main.

PROJECT JUSTIFICATION:

Both sewage pump stations and the force main that convey flow to the Streets Run Sanitary Trunk Sewer were constructed in the late 1940's and are reaching the end of their useful life. Additionally, past studies suggest this sewershed may be significantly impacted by high levels of infiltration/inflow.

RISK(S):

Increased combined sewer overflows and pump station system failures.

IMPACT ON OPERATIONS:

Increased operating flexibility and reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$958,333	\$726,667	\$613,667	\$7,447,000	\$7,447,000	\$17,192,667	

Wastewater System

6122 and 6150 Mifflin Road Demolition

PROJECT NUMBER: 2022-424-104-0

DSIC Eligible: No

PHASE:

Planning

PRIORITY:

Safety, Quality of Service

PROJECT DESCRIPTION:

This project associated with 31st Ward Pump Station and Appurtences - Phase 2 - providing for the demolition of 6122 and 6150 Mifflin Road.

PROJECT JUSTIFICATION:

This project is essential to the completion of the 31st Ward Pump Station and Appurtences project.

RISK(S):

Decreased ability to complete existing projects.

IMPACT ON OPERATIONS:

Increased operating flexibility and reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$50,000	\$0	\$0	\$0	\$0	\$50,000	

Wastewater System

Browns Hill Road Sewer Pump Station Replacement

PROJECT NUMBER: 2022-424-109-0

DSIC Eligible: No

PHASE:

Planning

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:

Construction of a replacement 160 GPM sanitary sewer pump station, including standby power, safer ingress and egress for routine maintenance, a water supply for equipment wash down and odor control facilities, if required. Additionally, perform a condition assessment of the 4" force main (approx. 790 l.f.) constructed in 2007, but not utilized and confirm sanitary sewer separation occurred. Additional sewer separation may need to occur prior to modifying the existing diversion chamber.

PROJECT JUSTIFICATION:

The existing sanitary sewer pump station has reached the end of its useful life. The replacement station will provide increased operating efficiency and resiliency and improved safety conditions for staff.

RISK(S):

If the station is not replaced, pump or wet well failures could occur, which would result in sanitary sewer overflows. Sanitary sewer overflows could result in fines and notice of violations from regulating agencies.

IMPACT ON OPERATIONS:

Increased operating flexibility and reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$432,000	\$1,608,000	\$1,880,000	\$0	\$0	\$3,920,000	

Wastewater System

Large Diameter Sewer Rehabilitation Program

PROJECT NUMBER: 2020-424-101-0, 2020-424-107-0, 2021-424-105-0, 2022-424-110-0, 2024-400-100-0, 2025-400-100-0, 2026-400-100-0, 2027-400-100-0

DSIC Eligible: No

PHASE:
Design / Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:
Proactive, trenchless rehabilitation of 36" diameter or greater sewer mains to restore structural integrity, reduce root intrusion, and reduce infiltration and inflow; including cleaning and pre and post construction CCTV inspections.

PROJECT JUSTIFICATION:
Provides the Authority with a means to address several moderate/major structural defects in pipe segments prior to complete failure. This trenchless pipe renewal method renews the asset, eliminates disruptive excavation, and is more cost effective than replacement.

RISK(S):
If moderate/major structural defects are not proactively addressed, complete failure will eventually occur and excavation will be required. Any complete failure that occurs will result in dramatically increased expenditures for repair.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability.

Program Year	<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
	\$12,774,486	\$2,997,238	\$4,266,000	\$4,897,000	\$4,957,000	\$29,891,724	
2020 Large Diameter Sewer Rehabilitation	\$623,290	\$0	\$0	\$0	\$0	\$623,290	Debt (Revenue Bonds) / DSIC – Wastewater
2021 Large Diameter Sewer Rehabilitation	\$7,136,911	\$0	\$0	\$0	\$0	\$7,136,911	
2022 Large Diameter Sewer Rehabilitation	\$4,536,190	\$522,000	\$0	\$0	\$0	\$5,058,190	
2023 Large Diameter Sewer Rehabilitation	\$478,095	\$1,935,238	\$0	\$0	\$0	\$2,413,333	
2024 Large Diameter Sewer Rehabilitation	\$0	\$540,000	\$3,706,000	\$414,000	\$0	\$4,660,000	
2025 Large Diameter Sewer Rehabilitation	\$0	\$0	\$560,000	\$3,903,000	\$437,000	\$4,900,000	
2026 Large Diameter Sewer Rehabilitation	\$0	\$0	\$0	\$580,000	\$4,100,000	\$4,680,000	
2027 Large Diameter Sewer Rehabilitation	\$0	\$0	\$0	\$0	\$420,000	\$420,000	

Wastewater System

M-29 Outfall Improvements

PROJECT NUMBER: 2018-424-103-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Regulatory Compliance, Quality of Service

PROJECT DESCRIPTION:
Modifying diversion chamber, rehabilitating culvert, constructing an endwall, and installing flapgate associated with the M-29 outfall structure.

PROJECT JUSTIFICATION:
The M-29 outfall structure is critical infrastructure that has been in jeopardy of failing for several years due to significant structural defects in the existing culvert.

RISK(S):
Project close-out phase. The M-29 outfall structure could have failed if not addressed through this project.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$250,000	\$0	\$0	\$0	\$0	\$250,000	

Wastewater System

Maytide Storm and Sanitary Sewer System Improvements

PROJECT NUMBER: 2017-424-109-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:

Reconstruction of storm infrastructure from Merritt Avenue to the storm interceptor on Ravilla Avenue and the realignment of the 10" sanitary sewer on Maytide (Sanderson to Valline).

PROJECT JUSTIFICATION:

Localized property and street flooding has been well-documented for several years at this location and the undeveloped right-of-way of Sanderson has significantly deteriorated. Additionally, an inspection of the 10" sanitary sewer on Maytide Street revealed structural and construction defects.

RISK(S):

Continual degradation to a steep slope could result in property damage and an increased cost to stabilize.

IMPACT ON OPERATIONS:

Increased operating reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$118,027	\$4,026,497	\$1,957,785	\$0	\$0	\$6,102,309	

Wastewater System

Queenston Sewer Improvements

PROJECT NUMBER: 2019-424-103-2

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Regulatory Compliance, Safety, Quality of Service

PROJECT DESCRIPTION:

Removal of a combined sewer diversion chamber and installation of new sewer infrastructure, which will result in the separation of the sewershed.

PROJECT JUSTIFICATION:

The existing sewer infrastructure (both storm and sanitary) have significant structural defects, which are located under a large structure in a paper street over 40 feet deep.

RISK(S):

The existing sewer infrastructure (both storm and sanitary) have significant structural defects, which if not mitigated, could result in property damage and increased costs.

IMPACT ON OPERATIONS:

Increased operating flexibility and reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$2,210,550	\$243,203	\$0	\$0	\$0	\$2,453,753	Debt (Revenue Bonds)

Wastewater System

Sewer Reconstruction Program

PROJECT NUMBER: 2022-424-100-0, 2023-400-100-0, 2024-400-101-0, 2025-400-101-0, 2026-400-101-0, 2027-400-101-0

DSIC Eligible: Yes

PHASE:
Construction / Not Started

PRIORITY:
Regulatory Compliance, Safety, Quality of Service

PROJECT DESCRIPTION:
Reconstruction of existing sewers, manholes, catch basins, and inlets due to emergency situations or pipe failures.

PROJECT JUSTIFICATION:
The existing sewer system is aging and immediate repairs are required.

RISK(S):
The Authority may be subject to related fines due to sewer overflows or for non-compliance as outlined in the Consent Order and Agreement.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability.

Program Year	<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
	\$2,691,769	\$1,810,000	\$1,810,000	\$1,886,458	\$2,701,330	\$10,899,557	
2021 Sewer Reconstruction	\$200,000	\$0	\$0	\$0	\$0	\$200,000	Debt (Revenue Bonds) / DSIC – Wastewater
2022 Sewer Reconstruction	\$1,456,849	\$0	\$0	\$0	\$0	\$1,456,849	
2023 Sewer Reconstruction	\$1,034,920	\$775,080	\$0	\$0	\$0	\$1,810,000	
2024 Sewer Reconstruction	\$0	\$1,034,920	\$775,080	\$0	\$0	\$1,810,000	
2025 Sewer Reconstruction	\$0	\$0	\$1,034,920	\$775,080	\$775,080	\$2,585,080	
2026 Sewer Reconstruction	\$0	\$0	\$0	\$1,111,378	\$833,622	\$1,945,000	
2027 Sewer Reconstruction	\$0	\$0	\$0	\$0	\$1,092,628	\$1,092,628	

Wastewater System

Sewers Under Structures Program

PROJECT NUMBER: 2017-424-110-0,

2020-424-104-0 / 1,

2022-424-107-0, 2023-400-101-0, 2024-400-102-0, 2025-400-102-0, 2026-400-102-0, 2027-400-102-0

DSIC eligible

No

PHASE:

Design / Not Started

PRIORITY:

Regulatory Compliance, Safety, Quality of Service

PROJECT DESCRIPTION:

Rehabilitation, relocation, and abandonment, if applicable, of existing sewer infrastructure located under or adjacent to buildings, bridges, or railroads or located on steep slopes.

PROJECT JUSTIFICATION:

In recent years, there has been an increasing rate of failure of this asset type due to limited accessibility and pipe age. By maintaining a proactive approach to asset management, efforts can be directed towards remedying assets before their failure, thus saving in overall replacement cost.

RISK(S):

Failure of this asset type could result in increased replacement cost, and increased service outages or bypass pumping.

IMPACT ON OPERATIONS:

Increased operating flexibility and reliability.

<u>Program Year</u>	<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
	\$6,786,030	\$2,373,663	\$2,422,730	\$3,530,383	\$3,386,507	\$18,499,314	
2018 Sewers Under Structures	\$1,030,897	\$1,300,707	\$0	\$0	\$0	\$2,331,604	Debt (Revenue Bonds) / DSIC – Wastewater
2020 Sewers Under Structures	\$5,480,280	\$672,368	\$0	\$0	\$0	\$6,152,648	
2022 Sewers Under Structures	\$226,103	\$117,647	\$2,028,730	\$831,270	\$0	\$3,203,750	
2023 Sewers Under Structures	\$48,750	\$234,191	\$111,059	\$2,303,238	\$672,762	\$3,370,000	
2024 Sewers Under Structures	\$0	\$48,750	\$234,191	\$111,059	\$2,303,238	\$2,697,238	
2025 Sewers Under Structures	\$0	\$0	\$48,750	\$234,191	\$111,059	\$394,000	
2026 Sewers Under Structures	\$0	\$0	\$0	\$50,625	\$243,199	\$293,824	
2027 Sewers Under Structures	\$0	\$0	\$0	\$0	\$56,250	\$56,250	

Wastewater System

Small Diameter Sewer Rehabilitation Program

PROJECT NUMBER: 2020-424-108-0, 2020-424-106-0 / 1 / 2, 2021-424-101-0 / 1/ 2, 2021-424-108-0/ 1/ 2/ 3, 2024-400-103-0, 2025-400-102-0, 2026-400-103-0, 2027-400-103-0, Unidentified

DSIC Eligible: Yes

PHASE:
Design, Construction, Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:
Proactive, trenchless rehabilitation of sewer mains (36" diameter and less) to restore structural integrity, reduce root intrusion, and reduce infiltration and inflow; including cleaning and pre and post construction CCTV inspections.

PROJECT JUSTIFICATION:
Provides the Authority with a means to address several moderate/major structural defects in pipe segments prior to complete failure. This trenchless pipe renewal method renews the asset, eliminates disruptive excavation, and is more cost effective than replacement.

RISK(S):
If moderate/major structural defects are not proactively addressed, complete failure will eventually occur and excavation will be required. Any complete failure that occurs will result in dramatically increased expenditures for repair.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability.

Program Year	CASH FLOW SUMMARY						FUNDING SOURCE(S)
	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total	
	\$24,363,045	\$17,657,219	\$14,629,597	\$27,990,468	\$36,426,240	\$121,066,569	
2020 Small Diameter Sewer Rehabilitation Contract 2 Defined Sites	\$731,123	\$0	\$0	\$0	\$0	\$731,123	Debt (Revenue Bonds) / PENNVEST
2021 Small Diameter Rehabilitation	\$1,928,755	\$0	\$0	\$0	\$0	\$1,928,755	
2022 Small Diameter Rehabilitation	\$7,469,189	\$0	\$0	\$0	\$0	\$7,469,189	
2023 Small Diameter Rehabilitation	\$11,723,978	\$5,736,816	\$0	\$0	\$0	\$17,460,794	
2024 Small Diameter Rehabilitation	\$2,510,000	\$11,920,403	\$9,339,597	\$0	\$0	\$23,770,000	
2025 Small Diameter Rehabilitation	\$0	\$0	\$2,590,000	\$12,236,474	\$9,583,526	\$24,410,000	
2026 Small Diameter Rehabilitation	\$0	\$0	\$2,700,000	\$12,813,994	\$10,046,006	\$25,560,000	
2027 Small Diameter Rehabilitation	\$0	\$0	\$0	\$2,940,000	\$13,796,708	\$16,736,708	
2028 Small Diameter Rehabilitation	\$0	\$0	\$0	\$0	\$3,000,000	\$3,000,000	

Wastewater System

Wastewater Contingency

PROJECT NUMBER: 2023-400-102-0

DSIC Eligible: No

PHASE:
Not Applicable

PRIORITY:
Not Applicable

PROJECT DESCRIPTION:
Wastewater contingency pass-through project.

PROJECT JUSTIFICATION:
Improved efficiency of capital improvement plan fund management.

RISK(S):
No identified risks.

IMPACT ON OPERATIONS:
Improved efficiency of capital improvement plan management.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$0	\$0	\$0	\$0	\$0	\$0	



Stormwater



Stormwater System

Braywood Stormwater Improvements

PROJECT NUMBER: 2022-424-105-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service,

PROJECT DESCRIPTION:

Stormwater detention system in the right-of-way in and around Braywood Way to increase stormwater control and mitigate flooding experienced by residents. Infrastructure could include permeable pavement, bioswales, subsurface detention, etc. depending on design determinations. This project is subject to a cost share between the Pittsburgh Water and Sewer Authority and City of Pittsburgh.

PROJECT JUSTIFICATION:

There's a low point on Braywood Way that experiences persistent, severe flooding. This system is undersized and deteriorating, keeping up with minor precipitation events but the majority cause flooding.

RISK(S):

Risks associated with not completing this project include poor level of service.

IMPACT ON OPERATIONS:

This project would decrease the need for persistent catch basin cleaning in this location.

CASH FLOW SUMMARY

**FUNDING
SOURCE(S)**

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$434,625	\$439,375	\$0	\$0	\$0	\$874,000	Debt (Revenue Bonds)

Stormwater System

Bus Rapid Transit Phase 2

PROJECT NUMBER: 2023-500-100-0

DSIC Eligible: No

PHASE:

Planning

PRIORITY:

Safety, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:

The betterments in phase 2 currently includes the stormwater/green infrastructure (GI) improvements in the Uptown Neighborhood.

PROJECT JUSTIFICATION:

The construction of the BRT Project requires that certain facilities owned and/or operated by PWSA be removed, replaced, and/or relocated.

RISK(S):

Could result in PWSA being 100% responsible for the removal, replacement, and/or relocation of certain facilities owned and/or operated by PWSA.

IMPACT ON OPERATIONS:

Increased operating flexibility and reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$500,000	\$500,000	\$500,000	\$0	\$1,500,000	Debt (Revenue Bonds)

Stormwater System

Bus Rapid Transit Stormwater Infrastructure Improvements

PROJECT NUMBER: 2020-GI-100-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Safety, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:

A cost share with the City of Pittsburgh's Department of Mobility and Infrastructure on the redesign of Forbes Avenue and Fifth Avenue to accommodate bus rapid transit from downtown to Birmingham Bridge. This project will include the installation of permeable paving, underground storage, and bioretention plantings and is tributary to the M-05 and M-19 outfall.

PROJECT JUSTIFICATION:

This project will help slow or reduce runoff into the combined sewer system during wet weather events.

RISK(S):

Wet weather flow may continue to flow into the combined sewer system prior to the completion of the project, which could cause issues during wet weather events.

IMPACT ON OPERATIONS:

Increased system reliability and improved system management.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$71,382	\$785,634	\$703,638	\$0	\$0	\$1,560,654	Debt (Revenue Bonds)

Stormwater System

Catch Basin and Inlet Replacement Program

PROJECT NUMBER: 2020-424-107-0, 2020-424-106-0/ 1/ 2, 2021-424-107-0, 2022-424-106-0, 2024-500-100-0, 2025-500-100-0, 2026-500-100-0, 2027-500-100-0, Unidentified

DSIC Eligible: No

PHASE: Construction / Not Started
PRIORITY: Regulatory Compliance, Safety, Operating Efficiency, Quality of Service
PROJECT DESCRIPTION: Strategic replacement of catch basins and storm inlets throughout the system to replace failed units, stormwater control reliability, and minimize disturbance to the community.
PROJECT JUSTIFICATION: By maintaining a proactive approach to asset management, efforts can be directed towards remedying assets before their failure, thus saving in overall replacement cost.
RISK(S): Overland and street flooding could occur due to a defective or undersized catch basin or storm inlet, creating a public health and safety hazard during wet weather events.
IMPACT ON OPERATIONS: Increased operating reliability.

<u>Program</u> <u>Year</u>	<u>CASH FLOW SUMMARY</u>						<u>FUNDING</u> <u>SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
	\$11,539,877	\$16,007,303	\$14,436,109	\$14,867,221	\$15,308,750	\$72,159,260	PENNVEST /Debt (Revenue Bonds)
2022 Catch Basin and Inlet Replacement	\$2,803,513	\$0	\$0	\$0	\$0	\$2,803,513	
2023 Catch Basin and Inlet Replacement	\$8,736,364	\$4,963,636	\$0	\$0	\$0	\$13,700,000	
2024 Catch Basin and Inlet Replacement	\$0	\$11,043,667	\$3,067,333	\$0	\$0	\$14,111,000	
2025 Catch Basin and Inlet Replacement	\$0	\$0	\$11,368,776	\$3,165,554	\$0	\$14,534,330	
2026 Catch Basin and Inlet Replacement	\$0	\$0	\$0	\$11,701,667	\$3,248,333	\$14,950,000	
2027 Catch Basin and Inlet Replacement	\$0	\$0	\$0	\$0	\$12,060,417	\$12,060,417	

Stormwater System

Dragoon Way Stormwater Improvements

PROJECT NUMBER: 2020-424-103-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

This would involve upsizing stormwater infrastructure as well as road paving on Dragoon Way. This project is subject to a cost share between the Pittsburgh Water and Sewer Authority and City of Pittsburgh.

PROJECT JUSTIFICATION:

This area experiences significant roadway and property flooding. Runoff flows down Dragoon Way and through multiple Adelphia Street properties, flooding Adelphia Street. PWSA currently owns stormwater infrastructure on Adelphia Street that is undersized and deteriorating.

RISK(S):

Risks associated with not completing this project include poor level of service.

IMPACT ON OPERATIONS:

Reduced need for catch basin cleaning after significant precipitation events.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$983,000	\$95,625	\$0	\$0	\$0	\$1,078,625	Debt (Revenue Bonds)

Stormwater System

Fleury Way Stormwater Infrastructure Improvements

PROJECT NUMBER: 2021-424-102-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Construction of storm sewer infrastructure to address persistent and severe street flooding and roadway damage. Project will include installing approximately 500 ft of 18" storm sewers and 4 new catch basins as well as inverting the crown of the road and adding proper curbing for optimal drainage. This project is subject to a cost share between the Pittsburgh Water and Sewer Authority and City of Pittsburgh.

PROJECT JUSTIFICATION:
After field assessment and review, the stormwater group ranked this issue as a "high priority" because of the severity of road degradation and persistent street flooding caused by lack of stormwater infrastructure and improper road design. This issue is located in the A-42 Green First sewershed.

RISK(S):
Continued road degradation and persistent flooding.

IMPACT ON OPERATIONS:
4 additional inlets, operations will need to be added to the cleaning schedule.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$476,212	\$0	\$0	\$0	\$0	\$476,212	

Stormwater System

Four Mile Run Stormwater Infrastructure Improvements

PROJECT NUMBER: 2018-GI-102-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Sewer separation, stream restoration, stream daylighting, bioretention, and underground storage to remove the existing stream base and wet weather flow currently discharging into the combined sewer located in M-29.

PROJECT JUSTIFICATION:
This project will separate wet weather flow being directly discharged into the Authority's combined sewer system.

RISK(S):
Wet weather flow may continue to flow into the combined sewer system prior to the completion of the project, which could create issues during wet weather events.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$645,557	\$4,500,108	\$8,723,924	\$6,171,203	\$0	\$20,040,792	

Stormwater System

Haverhill Street Improvements Project

PROJECT NUMBER: 2022-424-102-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

This project will capture and redirect an existing nuisance groundwater seep into retention/slow release subsurface infrastructure, either in the form of a perforated pipe and gravel bed or a retention tank. The project will also involve landslide stabilization to prevent current persistent sediment accumulation in the downstream sewer and green infrastructure as well as associated roadway restoration. This project is subject to a cost share between the Pittsburgh Water and Sewer Authority and City of Pittsburgh.

PROJECT JUSTIFICATION:

There is currently an unmanaged groundwater seep flowing down Haverhill Street, flooding properties, depositing significant amounts of sediment into PWSA's sewer system and a PWSA green infrastructure site (Oakwood and Batavia). This project would decrease private property flooding, reduce the amount of sediment entering the sewer system, save PWSA maintenance costs involved with removing sediment from nearby catch basins and green infrastructure and stop continued green infrastructure system degradation caused by this seep.

RISK(S):

Risk of persistent depositing of sediment into PWSA's sewer system.

IMPACT ON OPERATIONS:

This would decrease maintenance needs for both the green infrastructure maintenance contract as well as the catch basin cleaning contract.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$1,003,900	\$104,500	\$0	\$0	\$0	\$1,108,400	Debt (Revenue Bonds)

Stormwater System

Lawn and Ophelia

PROJECT NUMBER: 2017-424-104-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Safety, Regulatory Compliance, Organizational Goals

PROJECT DESCRIPTION:
Project is located in the South Oakland neighborhood in the City of Pittsburgh and is a tributary to the M-19B outfall. This project is intended to be a community gathering space combined with stormwater management features.

PROJECT JUSTIFICATION:
It is anticipated that 1.9 impervious acres from neighboring roads and roofs can be managed.

RISK(S):
Risk of service disruption.

IMPACT ON OPERATIONS:
Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$203,741	\$0	\$0	\$0	\$0	\$203,741	

Stormwater System

Martin Luther King Field Stormwater Infrastructure Improvements

PROJECT NUMBER: 2019-GI-104-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

Installation of regenerative bioswale and underground detention facilities to capture and detain impervious acres from the adjacent streets and upstream separate storm sewers, which currently discharges into the combined sewer located in M-19.

PROJECT JUSTIFICATION:

This project will help slow or reduce runoff into the combined sewer system during wet weather events.

RISK(S):

Wet weather flow may continue to flow into the combined sewer system prior to the completion of the project, which could cause issues during wet weather events.

IMPACT ON OPERATIONS:

Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$3,096,867	\$1,324,108	\$0	\$0	\$0	\$4,420,975	

Stormwater System

Maryland Avenue Stormwater Infrastructure Improvements

PROJECT NUMBER: 2017-424-101-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Permeable paver based GSI project to manage approximately 5.3 acres of impervious acres for 1.5" runoff event.

PROJECT JUSTIFICATION:
The project purpose is to reduce combined sewer overflows at the downstream A-22 outfall while also improving performance of the local combined sewer system that has experienced surcharge and flooding during intense rain events in downstream areas of Shadyside.

RISK(S):
Risk of flooding and service disruption.

IMPACT ON OPERATIONS:
Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$6,925	\$0	\$0	\$0	\$0	\$6,925	Debt (Revenue Bonds)

Stormwater System

MS4 Permit PRP Plan Sediment Reduction Project

PROJECT NUMBER: 2023-500-101-0

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
Pollutant Reduction Plan (PRP) project to reduce sediment and phosphate levels from entering designated impaired streams per the MS4 permit.

PROJECT JUSTIFICATION:
The MS4 permit requires a reduction of sediment and phosphate loading from baseline levels.

RISK(S):
Failure to meet future regulatory requirements.

IMPACT ON OPERATIONS:
Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	Debt (Revenue Bonds)
Annual Allocation	\$173,000	\$605,000	\$307,500	\$0	\$0	\$1,085,500	

Stormwater System

Saw Mill Run Municipal Separate Storm Sewer System Compliance

PROJECT NUMBER: 2025-500-101-0

DSIC Eligible: No

PHASE:

Planning

PRIORITY:

Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:

Identifying and completing projects related to Municipal Separate Storm Sewer System (MS4) compliance.

PROJECT JUSTIFICATION:

This project is necessary to become compliant with MS4 regulatory requirements.

RISK(S):

The timeline to complete the MS4 compliance projects could take longer than expected.

IMPACT ON OPERATIONS:

Increased system reliability and improved system management.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$0	\$500,000	\$1,500,000	\$1,500,000	\$3,500,000	Debt (Revenue Bonds)

Stormwater System

Saw Mill Run Watershed Improvements

PROJECT NUMBER: 2020-424-109-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

Implementation of stormwater treatment and reconnection of streams to vegetated floodplains to help mitigate stormwater peak flows and reduce sediment and other pollutant loads. This project will demonstrate the effectiveness of green infrastructure in reducing pollutants, controlling CSO/SSOs, and restoring the health of the aquatic ecosystems in the Saw Mill Run watershed to comply with regulatory obligations.

PROJECT JUSTIFICATION:

This project will help to comply with regulatory obligations by reducing pollutants and controlling CSO/SSOs.

RISK(S):

It may be difficult to comply with certain regulatory obligations prior to the completion of the project.

IMPACT ON OPERATIONS:

Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$850,000	\$150,000	\$0	\$0	\$0	\$1,000,000	

Stormwater System

Southside Flats Sewer Separation

PROJECT NUMBER: 2021-424-106-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

Separation of 17 acres of combined sewer through the construction of storm drain along Wharton Street to 18th Street.

PROJECT JUSTIFICATION:

This project will help slow or reduce runoff into the combined sewer system during wet weather events.

RISK(S):

Community members are concerned about disruptions during construction and potential rooftop disconnect costs.

IMPACT ON OPERATIONS:

Increased system reliability and improved system management.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$3,327,529	\$2,232,587	\$0	\$0	\$0	\$5,560,116	Debt (Revenue Bonds)

Stormwater System

Southside Stormwater Infrastructure Improvements

PROJECT NUMBER: 2019-GI-100-0

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

The Southside Green / Stormwater project is located in the M-16 sewershed, which discharges approximately 103MG of CSOs in a typical year as it is defined in the current system model. Additionally, there are 15 known surface streams/seeps within the park that appear to connect into the combined sewer system. The project will focus on stormwater management source control opportunities within Southside Park. The project will look at separating the stormwater runoff from the park and road right-of-way areas. It will connect through a new storm sewer discharge to be built under South 21st Street to the Monongahela River. The project will detain and slowly return the stormwater runoff to the combined sewer system.

PROJECT JUSTIFICATION:

This project will help comply with regulatory requirements by reducing CSOs.

RISK(S):

It may be difficult to comply with certain regulatory obligations prior to the completion of the project.

IMPACT ON OPERATIONS:

Increased system reliability and improved system management.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$2,029,140	\$2,703,667	\$0	\$0	\$0	\$4,732,807	Debt (Revenue Bonds)

Stormwater System

Stewart Avenue Stormwater Infrastructure Project

PROJECT NUMBER: 2022-424-1010

DSIC Eligible: No

PHASE:

Design

PRIORITY:

Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:

Overland stormwater runoff during larger precipitation events in the Stewart Avenue area contribute to downstream flooding along Saw Mill Run Blvd, flooding of nearby private properties, street flooding, and roadway damage. Catch basins and storm inlets once discharged to an open drainage channel along Stewart Avenue, however this is no longer operational as the road was recently paved and widened, eliminating the channel. Recognizing that the Saw Mill Run stream corridor is overwhelmed during relatively small rainfall events, PWSA desires to evaluate alternatives with an emphasis toward source control measures and other green strategies where peak flows from the Stewart Avenue runoff area can be possibly detained and mitigated. This project is subject to a cost share between the Pittsburgh Water and Sewer Authority and City of Pittsburgh.

PROJECT JUSTIFICATION:

This project is necessary to increase stormwater service and control in the area, which is currently lacking adequate stormwater infrastructure.

RISK(S):

Failing to complete this project will lead to persistent private property and roadway flooding, chronic depreciation of roadway conditions, and continued worsening flooding and impairment of Saw Mill Run.

IMPACT ON OPERATIONS:

Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$1,400,000	\$1,515,389	\$894,444	\$0	\$0	\$3,809,833	

Stormwater System

Thomas and McPherson Stormwater Infrastructure Improvements

PROJECT NUMBER: 2018-GI-106-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Installation of roadside bioretention features to capture and detain impervious road runoff in the North Point Breeze neighborhood of the City of Pittsburgh, which is a tributary to the A-42 combined sewer outfall.

PROJECT JUSTIFICATION:
This project will help slow or reduce runoff into the combined sewer system during wet weather events.

RISK(S):
Wet weather flow may continue to flow into the combined sewer system prior to the completion of the project, which could in issues during wet weather events.

IMPACT ON OPERATIONS:
Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$854,905	\$0	\$0	\$0	\$0	\$854,905	

Stormwater System

Volunteer's Field Stormwater Infrastructure Improvements

PROJECT NUMBER: 2018-GI-104-0/ 1

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Project is located in the Carrick neighborhood of the City of Pittsburgh and is a tributary to Saw Mill Run. Installation of green infrastructure within the park to reduce sediment and other pollutant loads.

PROJECT JUSTIFICATION:
Required for compliance with the MS4 permit and EPA TMDL requirements. Project will also detain stormwater to reduce downstream flooding in Saw Mill Run.

RISK(S):
It may be difficult to comply with certain regulatory obligations prior to the completion of the project.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$413,125	\$0	\$0	\$0	\$0	\$413,125	

Stormwater System

Wet Weather Program Projects

PROJECT NUMBER: 2023-500-102-0

DSIC Eligible: No

PHASE:
Not Started

PRIORITY:
Regulatory Compliance, Safety, Operating Efficiency, Quality of Service, Organizational Goals, Social Impact

PROJECT DESCRIPTION:
This project is for improvements to the sewer system facilities to bring combined sewer overflows into compliance with the negotiated consent decree and to remediate sanitary sewer overflows.

PROJECT JUSTIFICATION:
This project is required to ensure PWSA meets regulatory requirements related to wet weather flow being directly discharged into the PWSA's combined sewer system.

RISK(S):
Failure to meet future regulatory requirements.

IMPACT ON OPERATIONS:
Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$500,000	\$2,500,000	\$10,000,000	\$10,000,000	\$10,000,000	\$33,000,000	

Stormwater System

Wightman Park Phase 2 Project

PROJECT NUMBER: 2017-424-105-0 / 1

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Safety, Operating Efficiency, Quality of Service, Social Impact

PROJECT DESCRIPTION:
Project is located in the Squirrel Hill neighborhood of the City of Pittsburgh and is a tributary to the M-29 outfall. Stormwater management within the park itself as well as the necessary piping or inlet work to direct up to 3.25 impervious acres from the adjacent streets into the park. The Wightman Park project along with future street bioswale projects are expected to increase the impervious acres captured as well as alleviate reported sewer basement backups in the neighborhood around Wightman Park.

PROJECT JUSTIFICATION:
2.24 million gallons of stormwater runoff will be managed through this project in a typical year, producing downstream CSO reduction. The project will also improve the performance of adjacent, downstream sewers through peak flow reduction.

RISK(S):
Risk of fines due to sewer overflows or for non-compliance as outlined in the Consent Order and Agreement.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$182,166	\$0	\$0	\$0	\$0	\$182,166	

Stormwater System

Woodland Road Stormwater Infrastructure Improvements

PROJECT NUMBER: 2018-GI-108-0

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
Bioretention based GSI project to manage approximately 7 acres of impervious acres for 1.5" runoff event. Project location is in A-22 sewershed on the campus of Chatham University adjacent to Woodland Road

PROJECT JUSTIFICATION:
The project purpose is to reduce combined sewer overflows at the downstream A-22 outfall while also improving performance of the local combined sewer system that has experienced surcharge and flooding during intense rain events in downstream areas of Shadyside.

RISK(S):
Risk of service disruption.

IMPACT ON OPERATIONS:
Increased system reliability and improved system management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$245,256	\$0	\$0	\$0	\$0	\$245,256	Debt (Revenue Bonds)

Stormwater System

Woods Run Stream Removal Stormwater Infrastructure Improvements

PROJECT NUMBER: 2017-424-108-0 / 1

DSIC Eligible: No

PHASE:
Construction

PRIORITY:
Safety, Operating Efficiency, Quality of Service

PROJECT DESCRIPTION:
This project will redirect an existing stream inflow location into a detain and slow release subsurface storage facility. The stream base and wet weather flow currently discharge directly into a 36" diameter combined sewer on Mairdale Avenue.

PROJECT JUSTIFICATION:
This project will separate wet weather flow being directly discharged into the PWSA's combined sewer system.

RISK(S):
Wet weather flow may continue to flow into the combined sewer system prior to the completion of the project, which could in issues during wet weather events.

IMPACT ON OPERATIONS:
Increased operating flexibility and reliability.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Annual Allocation	\$1,385,725	\$1,364,127	\$819,206	\$0	\$0	\$3,569,058	

Stormwater System

Stormwater Contingency

PROJECT NUMBER: 2023-500-103-0

DSIC Eligible: No

PHASE:
Not Applicable

PRIORITY:
Not Applicable

PROJECT DESCRIPTION:
Stormwater contingency pass-through project.

PROJECT JUSTIFICATION:
Improved efficiency of capital improvement plan fund management.

RISK(S):
No identified risks.

IMPACT ON OPERATIONS:
Improved efficiency of capital improvement plan management.

<u>CASH FLOW SUMMARY</u>							<u>FUNDING SOURCE(S)</u>
	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$0	\$0	\$0	\$0	\$0	Debt (Revenue Bonds)



Miscellaneous



Miscellaneous

2023 Capital Project Reclassification

PROJECT NUMBER: 2023-600-100-0

DSIC Eligible: No

PHASE: Not Applicable
PRIORITY: Operating Efficiency, Organizational Goals
PROJECT DESCRIPTION: Annual capital project reclassification project.
PROJECT JUSTIFICATION: This project is required to reclassify operating costs related to urgent water replacements, urgent sewer replacements, and manhole and point repairs.
RISK(S): Failure to fully capitalize PWSA assets.
IMPACT ON OPERATIONS: Increased operating flexibility and reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$8,639,316	\$0	\$0	\$0	\$0	\$8,639,316	Debt (Revenue Bonds)

Miscellaneous

New Headquarters and Operations Facility

PROJECT NUMBER: 2023-600-101-0

DSIC Eligible: No

PHASE: Planning
PRIORITY: Operating Efficiency, Quality of Service, Organizational Goals
PROJECT DESCRIPTION: PWSA is searching for an area to build a new headquarters location that would also include a space for the operations division.
PROJECT JUSTIFICATION: A new location would provide additional space that is needed as a result of increased operations.
RISK(S): Increased operational challenges.
IMPACT ON OPERATIONS: Increased operating flexibility and reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$2,500,000	\$15,000,000	\$15,000,000	\$32,500,000	\$0	\$50,000,000	Debt (Revenue Bonds)

Miscellaneous

Utility Cost Shares

PROJECT NUMBER: 2023-600-102-0

DSIC Eligible: No

PHASE: Not Started
PRIORITY: Operating Efficiency, Quality of Service, Organizational Goals
PROJECT DESCRIPTION: This project will fund future cost sharing projects.
PROJECT JUSTIFICATION: Cost sharing projects can provide a savings to the Authority.
RISK(S): Cost sharing projects have the potential to be delayed due to coordination issues.
IMPACT ON OPERATIONS: Increased operating flexibility and reliability.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$300,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,300,000	Debt (Revenue Bonds)

Miscellaneous

Miscellaneous Contingency

PROJECT NUMBER: 2023-600-103-0

DSIC Eligible: No

PHASE: Not Applicable
PRIORITY: Not Applicable
PROJECT DESCRIPTION: Miscellaneous contingency pass-through project.
PROJECT JUSTIFICATION: Improved efficiency of capital improvement plan fund management.
RISK(S): No identified risks.
IMPACT ON OPERATIONS: Improved efficiency of capital improvement plan management.

CASH FLOW SUMMARY

FUNDING SOURCE(S)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Total</u>	
Annual Allocation	\$0	\$0	\$0	\$0	\$0	\$0	Debt (Revenue Bonds)