

Lehigh County Authority 2022-2026 Allentown Division Capital Plan

Preliminary Plan: Board Presentation – March 8, 2021

Planning Process & Board Reviews / Approvals

- **Five-Year Capital Plan → Conceptual**
- **Annual Budget → One-year funding for upcoming projects**
- **Project Approval → Authorization to complete a specific project**
- **Financing → Funding for specific group of projects**

2022- 2026 Capital Plan Timeline:

- Suburban Division - Draft Capital Plan Board presentation – 2/22/2021
- Allentown Division - Draft Capital Plan Board presentation – 3/8/2021
- Public comment period – 3/8/2021 to 4/8/2021
 - Lehigh Valley Planning Commission review
 - Lehigh County Commissioners review
 - Website publication
- Final Board Review & Request for Approval – 4/12/2021

Allentown Division Water – 2021 and 5-Year Projects

Annual and recurring projects

CP#	Project	Prior \$	2021 \$	2022-2026 \$	Major Drivers	Responsibility
AD-W-A	ANNUAL PROJECTS <i>(breakdown of projects on following slide)</i>	N/A	\$1,590,000	\$7,876,750	Required rehab, Asset management, Efficiency	Carlson, Gruber, Volk
AD-W-1	INDENTURE IMPROVEMENTS	\$0	\$0	\$900,000	Required rehab, Asset Management	Carlson, Volk
AD-W-7	WATER MAIN REPLACEMENTS	N/A	\$1,900,000	\$14,483,650	Lease Requirement, Asset Management	Peters
AD-W-9	VARIOUS WATER SYSTEM RELATED STUDIES	\$150,000	\$0	\$150,000	Lease requirement	Carlson, Volk
AD-W-15	ITRON/AMR METER PROJECT <i>(City funded – tentative completion in 2021; to be removed from capital plan)</i>	N/A	\$85,000	\$0	Uncompleted work in Lease	City

Allentown Division Annual Water Projects

- Distribution Mains – Development & Upsizing
- WFP General Improvements (2022 and beyond work includes Schantz valve replacement in high service gallery, repairs to Little Lehigh intake, replace hydroxide and fluoride tanks)
- General Water System Improvements (D&C)
- Mobile Equipment
- New & Replacement Meter Installation
- Other Equipment
- Reservoir Rehabilitation & Maintenance
- PennDOT Relocations
- Capital Management
- Capital Works Miscellaneous

10 Year Capital Project Planning Prioritization Ranking - AD Water Projects

<u>Project Name</u>	<u>0-5 Yrs</u>	<u>5-10 Yrs</u>	<u>Expected Cost</u>	<u>Notes</u>	<u>LCA Rank</u>
High Lift VFDs/Pumps	X		\$2,000,000	Master Plan (w/ D'Huy Study)	1
Low Lift Painting	X		\$250,000	LCA, completed 2020	2
Little Lehigh Intake/Screen Upgrade	X		\$2,000,000	Master Plan (w/ Hazen Study)	3
Filter Upgrades	X	X	\$12,000,000	Master Plan	4
Water Main Replacements	X	X	\$49,000,000	2 miles/year @ \$2.4M per mile	5
Chemical Storage Tank Replacements	X		\$300,000	LCA	6
South Mountain Cleaning/Mixing	X		\$280,000	Master Plan/Indenture	7
Electrical Improvements/Pumps		X	\$7,000,000	Master Plan	8
System Service/Chapter 109	X		\$885,000	New PPL feed from Mack Substation	9
East Side Cleaning	X		\$120,000	Master Plan/Indenture	10
Huckleberry Ridge Cleaning	X		\$130,000	Master Plan/Indenture	11
Security Improvements		X	\$500,000	Master Plan	12
Pretreatment/Sedimentation		X	\$1,500,000	Master Plan	13
WFP Miscellaneous Concrete	X		\$800,000	Master Plan/Indenture	14
Big Lehigh Intake/Screen Upgrade		X	\$5,000,000	Master Plan	15
Lehigh River Carbon Feed System	X		\$500,000	Master Plan (w/ HDR study)	16
Roof Phase 3	X		\$500,000	Master Plan/Indenture	17
Watershed Control Plan	X		\$100,000	Master Plan	18
Badger Meter Replacements	X	X	\$650,000	5000 meters x \$130/meter	19

Allentown Division Water – Large Projects

CP#	Project	Prior \$	Budget Approved 2021 \$	2022-2026 \$	Major Drivers	Responsibility
AD-W-16	WATER METER REPLACEMENT PROGRAM <i>(2025 construction start)</i>	\$0	\$0	\$2,270,000	System Improvement, Efficiency	Kunkel
AD-W-21	FIXED BASE METER READING PROJECT <i>(2025 construction start)</i>	\$0	\$0	\$1,700,000	System Improvement, Efficiency	Kunkel
AD-W-22	FILTER UPGRADES <i>(2025 construction start)</i>	\$0	\$0	\$6,100,000	Asset Management, Master Plan	Volk
AD-W-23	INTAKE UPGRADES <i>(2023 construction start)</i>	\$0	\$0	\$1,900,000	Asset Management, Master Plan	Volk
AD-W-24	HIGH LIFT VFD/PUMP REPLACEMENTS <i>(2021 construction start)</i>	\$175,000	\$800,000	\$1,100,000	Asset Management, Master Plan	Volk
AD-W-25	TANK AND RESERVOIR REHABILITATION <i>(2022 construction start)</i>	\$0	\$0	\$1,500,000	Required rehab, Asset Management	Parsons, Carlson
AD-W-26	LARGE DIAMETER VALVE REPLACEMENT PROJECT – <i>new (2023 construction start)</i>	\$0	\$0	\$1,500,000	Asset Management, System improvement, Efficiency	Peters

High Service VFD Replacement Project

HSP #2 VFD



HSP #3 constant speed soft starter



Allentown Division Wastewater – 2021 and 5-Year Projects

Annual and City Funded Projects

CP#, e	Project	Prior \$	2021 \$	2022-2026 \$	Major Drivers	Responsibility
AD-S-A	ANNUAL PROJECTS	N/A	\$1,960,000	\$9,938,100	Required rehab, asset management, efficiency	Geissel, Gruber, Volk
AD-S-1	INDENTURE REPORT IMPROVEMENTS	\$0	\$0	\$1,700,000	Required rehab, Asset Management	Geissel
AD-S-9	VARIOUS WASTEWATER SYSTEM RELATED STUDIES	\$150,000	\$0	\$150,000	Lease requirement	Geissel, Volk
AD-S-11	REGIONAL FLOW MANAGEMENT STRATEGY <i>(City funded)</i>	\$0	\$775,000	\$1,640,000	Regulatory	DePoe
AD-S-12	FLOW CHARACTERIZATION STUDY <i>(City funded)</i>	\$0	\$1,250,000	\$850,000	Regulatory	DePoe

Allentown Division Annual Wastewater Projects

- Mobile Equipment
- Other Equipment
- Collection System - Development
- Capital Management
- Sanitary Sewer Main Replacements & Rehab
- WWTP General Improvements (2022 and beyond work includes Thickener Tank #3 mechanical rehab, Primary Digester #1 cleaning and mechanical rehab, twin primary sludge digester feed lines replacement, primary digester #2 cleaning and mechanical rehab)
- PennDOT relocations
- Capital Works Miscellaneous

10 Year Capital Project Planning

Prioritization Ranking - AD Wastewater Projects

<u>Project Name</u>	<u>0-5 Yrs</u>	<u>5-10 Yrs</u>	<u>Expected Cost</u>	<u>Notes</u>	<u>LCA Rank</u>
Sodium Hypochlorite Disinfection	X		\$900,000	Scheduled for 2020/2021	1
Substation 1/Primary Switchgear Replacement	X		\$3,250,000	Substantially complete design	2
Boiler Replacements	X		\$1,500,000	LCA	3
Main Pump Station Improvements	X		\$2,600,000	AO/Master Plan	4
480V MCC Replacements	X		\$3,250,000	Master Plan	5
Thickener Tank #3 Mechanism Replacement	X		\$400,000	Master Plan/Indenture, Annual Project	6
Final Clarifier 1-4 Mechanism Replacement	X		\$1,800,000	Master Plan	7
Auxiliary Pump Station Improvements		X	\$1,200,000	Master Plan	8
Twin Primary Sludge Line Replacements	X		\$700,000	Master Plan	9
OCU 24 Building Replacement	X		\$390,000	Master Plan, Annual Project	10
Replace 2nd Floor Dewatering	X		\$300,000	LCA/Indenture, Annual Project	11
PMTF Anchor Bolt Replacements	X		\$500,000	Master Plan/Indenture	12
PMTF Steel Rehabilitation		X	\$800,000	Master Plan/Indenture	13
HVAC Equipment Replacement		X	\$1,300,000	Master Plan	14
Digester Building Piping Replacements	X		\$300,000	Master Plan, Annual Project	15
Final Clarifier 1-4 Concrete Restoration	X		\$1,500,000	Indenture	16
Drainage Lift Station	X		\$700,000	Master Plan	17
Dewatering SCADA	X		\$500,000	LCA	18
PMTF Effluent Flushing Line Replacement	X		\$175,000	Master Plan/Indenture	19
Masonry Restoration		X	\$1,700,000	Master Plan/Indenture	20
Concrete Restoration		X	\$360,000	Master Plan/Indenture	21
Primary Clarifier Coating	X		\$635,000	Indenture	22
Locker Room Phase 2	X		\$400,000	LCA, Annual Project	23
Process Painting		X	\$2,300,000	Master Plan/Indenture	24

Allentown Division Wastewater – Large Projects

CP#	Project	Prior \$	Budget Approved 2021 \$	2022-2026 \$	Major Drivers	Responsibility
AD-S-5	WWTP ELECTRICAL SUBSTATION REPLACEMENTS PHASE 2 (2023 construction start)	\$2,450,000	\$0	\$3,250,000	System Resiliency, Required Rehab	Volk, Geissel
AD-S-19	WWTP MAIN PUMP STATION IMPROVEMENTS (2024 construction start)	\$0	\$0	\$2,600,000	Asset Management, System Resiliency	Geissel
AD-S-20	WWTP BOILER REPLACEMENT & SOLIDS PROCESS HVAC UPGRADES (2022 construction start)	\$40,000	\$200,000	\$2,200,000	Asset Management, Efficiency	Volk, Geissel
AD-S-21	WWTP 480V MCC REPLACEMENT (2025 construction start)	\$0	\$0	\$3,250,000	System Resiliency, Required Rehab	Volk, Geissel
AD-S-22	WWTP FINAL CLARIFIER 1-4 REHABILITATION (2026 construction start)	\$0	\$0	\$950,000	Asset Management, Required Rehab	Geissel

KIWWTP Boiler Replacement and Solids Process HVAC Upgrade Project

Main Digester Boilers



Solids Handling Building Boiler



City Division – Financial Analysis

SOURCES	
Cash from operations and reserves	\$68,046,000
New Borrowing	\$ <u>0</u>
Total Sources	<u>\$68,046,000</u>
USES	
Capital project spending	<u>\$68,046,000</u>

- No borrowing for this plan
- Projects all being funded out of operations and reserves:
 - Water – \$39,480,400
 - Wastewater – \$26,528,100
 - Allocated Admin – \$2,037,500
- Reimbursable by COA of \$2,490,000:
 - Flow characterization study – \$850,000
 - Regional flow management study - \$1,640,000

City Division– Financial Analysis

CONDENSED CASH FLOW - CITY DIVISION					
Dollars	2022	2023	2024	2025	2026
User Charges	46,332,169	48,278,254	51,671,202	53,621,007	55,733,907
Other Operating Revenues	349,166	349,166	349,166	349,166	349,166
Non-Operating Revenues	535,439	51,099	486,619	(52,003)	(161,665)
Operating expenses	(20,491,625)	(22,006,374)	(21,966,565)	(22,625,561)	(23,304,327)
Debt Service - Current Debt	(14,729,652)	(15,244,562)	(15,778,457)	(16,331,337)	(16,899,752)
Debt Service - NEW Debt	-	-	-	-	-
Investments Converting to Cash	-	-	-	-	-
Proceeds From NEW Debt	-	-	-	-	-
Capex - Admin Paygo	(550,000)	(525,000)	(512,500)	(362,500)	(87,500)
Capex - Paygo	(10,900,250)	(11,366,500)	(11,203,900)	(16,804,000)	(15,733,850)
Capex - NEW Borrowing	-	-	-	-	-
NET FUND FLOWS	545,247	(463,917)	3,045,565	(2,205,228)	(104,021)
User Charge Revenue Increase %	3.0%	3.0%	3.0%	3.0%	3.0%
Operating Cash Balance	10,105,459	10,852,458	10,832,826	11,157,811	11,492,545
Days on Hand	180	180	180	180	180
Project Reserve Balance	2,825,055	1,614,139	4,679,336	2,149,123	1,710,368
DEBT SERVICE COVERAGE RATIO	1.75	1.72	1.88	1.91	1.93

Discussion

Questions?