



Lehigh County Authority

2023-2027  
Suburban Division and  
Administration Capital Plan

Preliminary Plan Board Presentation  
March 28, 2022

# 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**

# 2023-2027 Capital Plan Timeline:

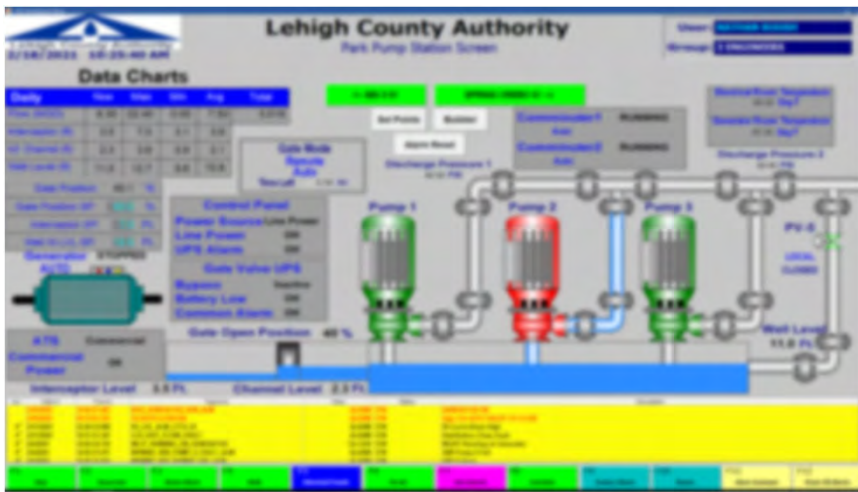
- Suburban Division – Draft Capital Plan Board presentation – 3/28/2022
- Allentown Division – Draft Capital Plan Board presentation – 4/11/2022
- Public comment period – 3/28/2022 to 5/11/2022
  - Lehigh Valley Planning Commission review
  - Lehigh County Commissioners review
- Final Board Review & Request for Approval – 5/23/2022

# Administration – 2022 and 5-Year Plan Projects

CP#	Project	Prior \$	2022 \$	2023-2027 \$	Responsibility
SD-A-1	SCADA Programming, Hardware & Software Upgrades	\$0	\$750,000	\$2,100,000	Moughan
CON-A-1 *	Computer System Hardware & Software Upgrades	\$100,000	\$50,000	\$225,000	Moughan
CON-A-2 *	Geographic Information System Upgrades & Application Dev.	\$100,000	\$75,000	\$275,000	Bowen
CON-A-3 *	Information Technology Master Plan Update	\$340,000	\$100,000	\$100,000	Moughan
CON-A-4 *	Document Management	\$25,000	\$75,000	\$10,000	Moughan
CON-A-5*	Disaster Recovery/Security Upgrades	\$25,000	\$25,000	\$125,000	German
CON-A-6*	CMMS Upgrades	\$50,000	\$25,000	\$175,000	Bowen
	<i>*project benefits both Suburban and City Divisions</i>				

# SCADA Programming, Hardware & Software Upgrades

*Consistent with Goals in the Strategic Plan*



## SCADA Programming, Hardware & Software Upgrades

- Project plan for all Suburban SCADA stations
- Improve communications reliability
- Programming and hardware
- Replace obsolete systems that create operating risk
- Reduce compliance risk (boil advisories, etc.)
- Staff training on updated systems

## Suburban Division Water – 2022 and 5-Year Projects

### Annual/Recurring projects

CP#	PROJECT	Prior \$	2022 \$	2023-2027 \$	Major Drivers	Responsibility
SD-W-A	ANNUAL PROJECTS <i>(breakdown of projects to follow)</i>	N/A	\$665,000	\$5,292,000	Required rehab; Asset management; Efficiency	Volk/Charvala
SD-W-12	WATER MAIN REPLACEMENT PROJECTS	N/A	\$2,400,000	\$12,700,000	Asset management	Peters

# Suburban Division Annual Water Projects

Distribution Mains – Development & Upsizing

Distribution System Improvements (3<sup>rd</sup> party)

General Water System Improvements

Mobile Equipment

New & Replacement Meter Installation

Other Equipment

Reservoir Rehabilitation & Maintenance

Water Company Acquisitions

Water Facility Asset Management Upgrades

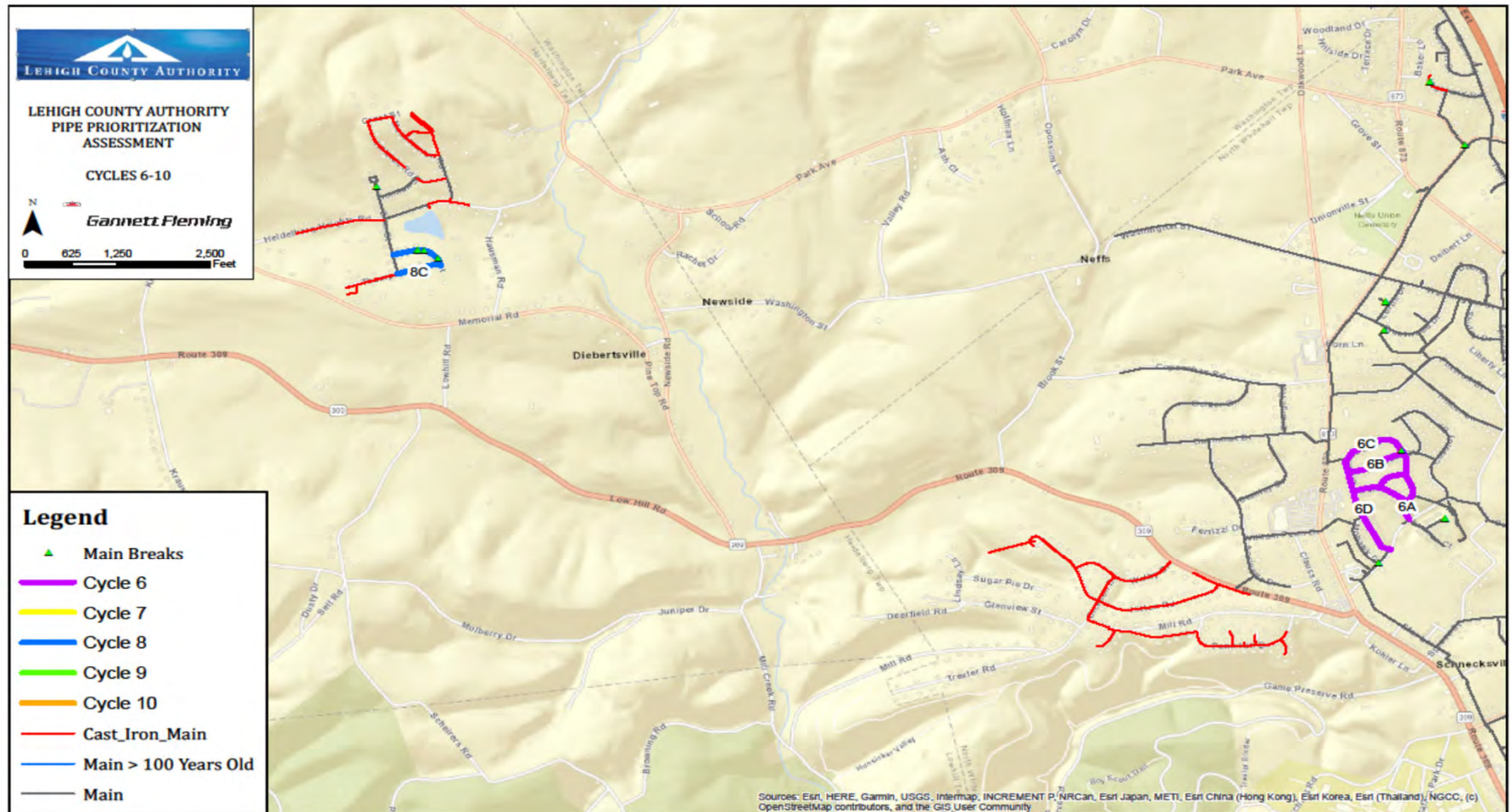
Capital Management

Main Office Improvements

Capital Works Miscellaneous Expenses (includes PennDOT permitting)

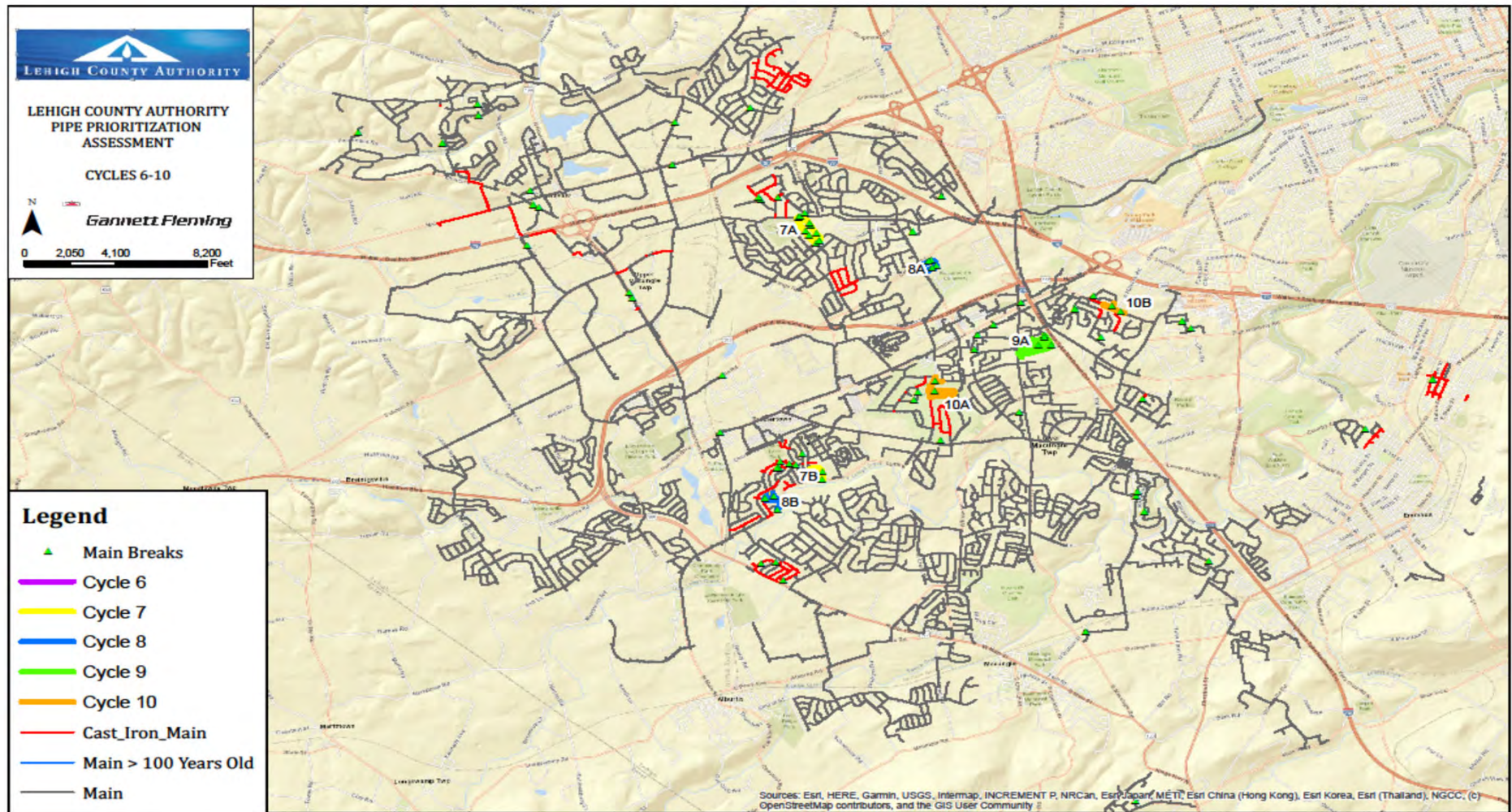


# SD Water Main Replacements – 2022





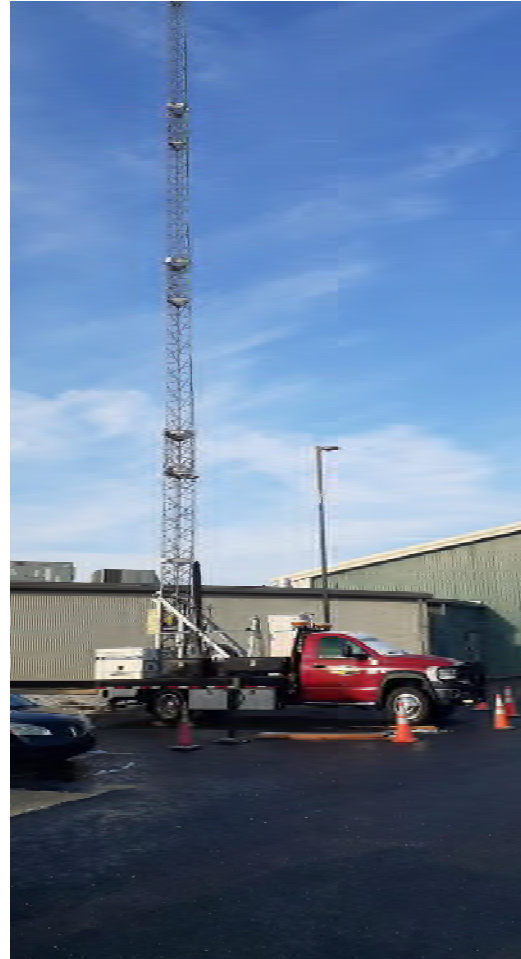
## SD Water Main Replacements – 5 year prioritization



## Suburban Division Water – 2022 and 5-Year Projects System Improvement Projects

CP#	PROJECT	Prior \$	2022 \$	2023-2027 \$	Major Drivers	Responsibility
SD-W-50	FIXED BASE METER READING SYSTEM	\$45,000	\$100,000	\$910,000	Meter reading efficiencies; Customer service improvements	Kunkel
SD-W-55	WATER SYSTEMS MASTER PLANNING	\$0	\$100,000	\$175,000	System resiliency; Future growth	Kunkel
SD-W-56	UPPER SYSTEM PUMP STATION & WATER MAIN EXTENSION	\$60,000	\$200,000	\$50,000	System resiliency; Future growth	Hoyle
SD-W-57	WATER METER REPLACEMENT PROGRAM	\$1,500,000	\$450,000	\$2,210,000	Improved revenue capture; Meter reading efficiency	Kunkel

# Meter Replacement and Fixed Base Metering Programs





## Completed/Discontinued Suburban Division Water Projects (removed from Capital Plan this year)

- Arcadia West Tank Replacement (*project to be closed out in 2022*)
- CLD Well Improvements Study (*project scope redefined and project retitled as “Water Systems Master Planning”*)
- CLD Distribution System Improvements Study (*project advanced into “Upper System Pump Station & Water Main Extension” in response to local development needs*)
- Additional (Redundant) Water Supply – Madison Park North Division (*project halted after well testing indicated impact on neighboring wells and unsatisfactory aquifer recovery per DEP*)
- North Whitehall Division Study (*hydraulic modeling work to be completed in 2022; further analysis is to be consolidated into “Water Systems Master Planning” project*)

## Suburban Water – Financial Analysis 2023-2027

SOURCES	
Cash from operations and reserves	\$18,767,000
New Borrowing	<u>\$3,225,000</u>
Total Sources	<u>\$21,992,000</u>
USES	
Capital project spending	<u>\$21,992,000</u>

- Cash from operations and reserves – \$18,767,000
  - Admin projects – \$1,320,000
  - Annual projects – \$4,627,000
  - Main replacement – \$10,200,000
  - Water meter replacement in 2024 onward – \$2,160,000
  - Fixed Base Meter Reading – \$460,000
- Volume – 2.0% increase per year
- Rates – 3.0% increase per year
- Borrowing – \$3,250,000 (being borrowed in Year 2022)
  - Main replacement 2023– \$2,500,000
  - System improvements – \$725,000

## Suburban Water – Financial Analysis 2023-2027

<b>US DOLLARS</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
User Charges	16,046,604	16,848,934	17,691,381	18,575,950	19,504,748
Other Operating Revenues	38,724	38,724	38,724	38,724	38,724
Non-Operating Revenues	1,016,681	1,016,681	1,016,681	1,016,681	1,016,681
Operating expenses	(10,029,130)	(10,630,343)	(10,934,412)	(11,246,513)	(11,568,829)
Debt Service - Current Debt	(3,056,164)	(3,130,714)	(3,117,714)	(3,128,964)	(2,799,714)
Debt Service - NEW Debt	(292,457)	(292,457)	(292,457)	(292,457)	(292,457)
Investments Converting to Cash	-	-	-	-	-
Proceeds From NEW Debt	-	-	-	-	-
Capex	<u>(4,659,500)</u>	<u>(4,211,250)</u>	<u>(6,030,000)</u>	<u>(3,628,750)</u>	<u>(3,462,500)</u>
<b>NET FUND FLOWS</b>	<b><u>(935,242)</u></b>	<b><u>(360,425)</u></b>	<b><u>(1,627,797)</u></b>	<b><u>1,334,671</u></b>	<b><u>2,436,653</u></b>
Plan Volume Increase %	2.00%	2.00%	2.00%	2.00%	2.00%
User Charge Rate Increase %	3.00%	3.00%	3.00%	3.00%	3.00%
Total User Charge Revenue Increase	5.00%	5.00%	5.00%	5.00%	5.00%
Unrestricted Cash Balance	7,620,185	7,259,760	5,631,963	6,966,634	9,403,287
Unrestricted Investments	2,975,123	2,975,123	2,975,123	2,975,123	2,975,123
Total Unrestricted Balances	10,595,308	10,234,883	8,607,086	9,941,757	12,378,410
Days on Hand	277	249	188	226	297
DEBT SERVICE COVERAGE RATIO	2.11	2.12	2.29	2.45	2.91

NEW BORROWING OF \$6,550,000 IN YEAR 2022

## Suburban Division Wastewater – 2022 and 5-Year Projects Western Lehigh Interceptor/Little Lehigh Relief Interceptor

CP#	Project	Prior \$	2022 \$	2023-2027 \$	Major Drivers	Responsibility
SD-S-3	CENTRAL LEHIGH WW CAPACITY PLANNING & EXPANSION	\$600,000	\$400,000	\$1,300,000	Future growth; Regulatory	DePoe
SD-S-4	SPRING CREEK FORCE MAIN AIR RELEASE VALVE REPLACEMENTS	\$24,000	\$40,000	\$100,000	Required rehab	Kunkel
SD-S-9	SPRING CREEK PS FORCE MAIN CONDITION ASSESSMENT	\$0	\$0	\$350,000	Asset management	Kunkel
SD-S-24	SIGNATORY I/I INVESTIGATION & REMEDIATION	\$0	\$300,000	\$1,500,000	Required rehab; Regulatory	DePoe
SD-S-28	UPPER WESTERN LEHIGH INTERCEPTOR PUMP STATION & FORCE MAIN	\$0	\$100,000	\$4,950,000	Future growth; Regulatory	Kunkel
SD-S-7	WESTERN LEHIGH INTERCEPTOR REHABILITATION & REPAIRS ( <i>new</i> )	\$0	\$0	\$450,000	Regulatory; Asset management	Peters
SD-S-15	PARK PUMP STATION UPGRADE PHASE 2	\$4,000,000	\$400,000	\$2,000,000	System resiliency	Volk



## Western Lehigh Interceptor Challenges





# KLINE'S ISLAND SEWER SYSTEM

## Interim Act 537 Plan

SUBMITTED TO:

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUBMITTED BY:

KLINE'S ISLAND SEWER SYSTEM MUNICIPALITIES

Prepared by:

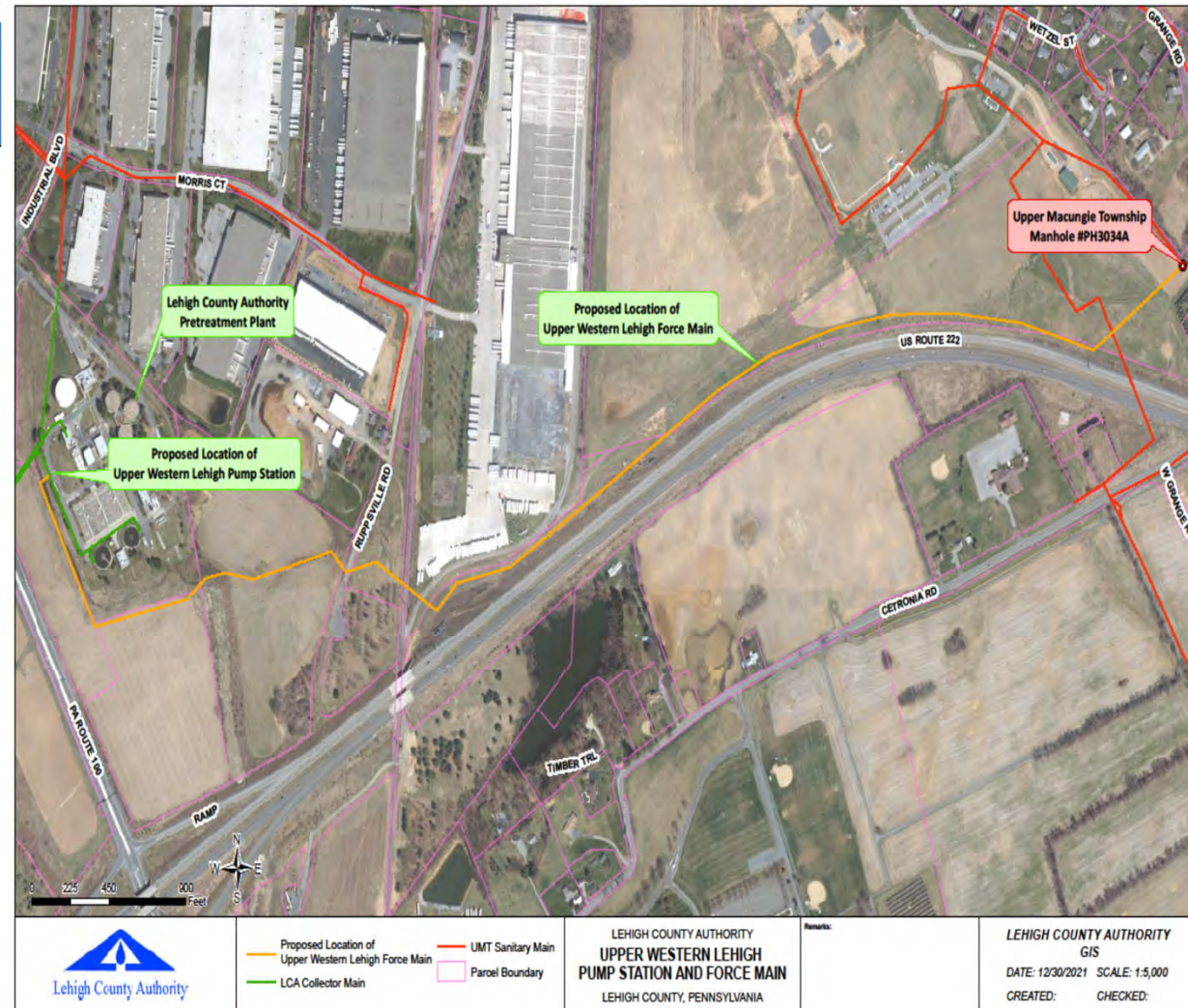
ARRO Consulting, Inc.

108 W. Airport Road

Lititz, PA 17543



FINAL - JULY 24, 2020 (REVISED MAY 12, 2021) (REVISED JUNE 18, 2021) ARRO No. 10784.17



## Suburban Division Wastewater – 2022 and 5-Year Projects Satellite Systems

CP#	Project	Prior \$	2022 \$	2023-2027 \$	Major Drivers	Responsibility
SD-S-6	WYNNEWOOD I/I INVESTIGATION & REMEDIATION	\$20,000	\$25,000	\$125,000	Required rehab	Peters
SD-S-8	WESTERN WEISENBERG MECHANICAL SCREEN (Arcadia West)	\$0	\$50,000	\$365,000	Required rehab	Volk
SD-S-10	WEISENBERG, LOWHILL, UPPER MILFORD TOWNSHIP SSES	\$0	\$25,000	\$75,000	Asset management; Regulatory	Peters
SD-S-17	HEIDELBERG HEIGHTS I&I INVESTIGATION & REMEDIATION	\$850,000	\$300,000	\$600,000	Required rehab; Regulatory	Volk/Peters
SD-S-18	HEIDELBERG HEIGHTS WWTP REHABILITATION	\$210,000	\$200,000	\$350,000	Required rehab	Volk
SD-S-25	LYNN TOWNSHIP WWTP UPGRADE & EXPANSION DESIGN	\$5,000	\$25,000	\$200,000	Future growth	Hoyle
SD-S-26	LYNN TOWNSHIP I/I INVESTIGATION & REMEDIATION	\$170,000	\$25,000	\$200,000	Required rehab; Regulatory	Peters

## Heidelberg Heights Annual Sanitary Sewer Rehabilitation





## Suburban Division Wastewater – 2022 and 5-Year Projects

### Annual/Recurring projects

CP#	Project	Prior \$	2022 \$	2023-2027 \$	Major Drivers	Responsibility
SD-S-A	ANNUAL PROJECTS <i>(breakdown of projects to follow)</i>	N/A	\$230,000	\$1,935,000	Required rehab; Asset management; Efficiency	Volk/Charvala
SD-S-22	PRETREATMENT PLANT IMPROVEMENTS	N/A	\$700,000	\$3,700,000	Required rehab; Asset management	Volk

# Suburban Division Annual Wastewater Projects

Mobile Equipment

Other Equipment

General Sewer System Improvements

Wastewater Facilities Asset Management Upgrades

Sewer Company Acquisitions

WLI Capital Management

WLI Collection System & Service Connections

LLRI Collection System & Service Connections

Upper Milford Township Collection System & Service Connections

Northern Lehigh Collection System & Service Connections

Weisenberg Township Collection System & Service Connections

Lynn Township Collection System & Service Connections

## Completed/Discontinued Suburban Division Sewer Projects (removed from Capital Plan this year)

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WLI Trexlertown Area Wastewater Capacity Solution  
Alternative *(project has been advanced into the Upper Western  
Lehigh Interceptor Pump Station & Force Main following submission of  
the Interim Act 537 Plan in 2021)*

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Park Pump Station Force Main Rehabilitation *(force main  
investigation results from 2021 indicated no near-term rehabilitation  
required)*



## Suburban Wastewater – Financial Analysis 2023-2027

SOURCES	
Cash from operations and reserves	\$19,670,000
New borrowing	<u>\$0</u>
Total sources	<u>\$19,670,000</u>
USES	
Capital project spending	<u>\$19,670,000</u>

- Cash from Operations – \$19,670,000
  - Admin projects – \$1,320,000
  - Annual projects – \$1,935,000
  - WWPTP – \$3,700,000
  - WLI – \$8,650,000
  - LLRI – \$2,000,000
  - Satellite Systems – \$2,065,000

## Suburban Wastewater – Financial Analysis 2023-2027

<b>Dollars</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
User Charges	19,033,749	19,292,998	19,560,024	19,835,061	20,118,349
Other Operating Revenues	-	-	-	-	-
Non-Operating Revenues	990,769	1,016,832	1,043,676	1,071,326	1,099,805
Operating expenses	(13,687,013)	(14,097,623)	(14,520,551)	(14,956,168)	(15,404,852)
Debt Service - Current Debt	(735,802)	(735,802)	(735,802)	(735,802)	(735,802)
Debt Service - NEW Debt	-	-	-	-	-
Investments Converting to Cash	-	-	-	-	-
Proceeds From NEW Debt	-	-	-	-	-
Capex	(5,544,500)	(5,523,250)	(4,442,000)	(2,040,750)	(2,119,500)
<b>NET FUND FLOWS</b>	<b>57,203</b>	<b>(46,845)</b>	<b>905,347</b>	<b>3,173,667</b>	<b>2,958,000</b>
User Charge Revenue Increase %	1.3%	1.4%	1.4%	1.4%	1.4%
Unrestricted Cash Balance	9,321,488	9,274,643	10,179,989	13,353,657	16,311,657
Unrestricted Investments	7,757,276	7,757,276	7,757,276	7,757,276	7,757,276
Total Unrestricted Balances	17,078,764	17,031,919	17,937,265	21,110,933	24,068,933
Unrestricted Cash - Days on Hand	249	240	256	326	386
DEBT SERVICE COVERAGE RATIO	8.61	8.44	8.27	8.09	7.90



# Discussion

Questions?

