
Village of Mt Gilead WTP
Improvements Project
Phase 1
GPD GROUP

Agenda

1. Condition Assessment + Project Definition
2. Detailed Design + Construction Sequencing
3. Plant Tour At Covington, OH WTP
4. Funding + Overall Schedule
5. Next Steps

Condition Assessment + Project Definition

Project Scope

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Most Critical Issues Identified

- Filters & Softeners
  - Process Valves and Controls
    - Obsolete
    - Automation Has Failed
    - Plant Staff Must Work Overtime
    - Repairs Drain the Budget
  - Steel Vessels are Corroded and Form Pin Holes that require Welding Repairs
  - Filter Media Is Beginning to Fail
  - Iron and Mn Breakthrough Bogs Down the Softeners
  - Plumbing and Equipment in the Brine Room is Corroded and Hard to Move Around.
  - Risk of Imminent Failure
- Brine Tanks
  - FRP walls have had to be fortified.
  - Brine Dust is corroding the roof of the building.
- Inability to Isolate the Mudwell's Drainage
- Instrumentation
  - Flow Meters are Inconsistent
- Bulk Water
  - Demand for bulk water but the plant was banned from sale after hydrant use was discovered.

Scope of Work For Phase 1

- Replace Filters and Softeners + Controls
- New Bulk Brine Tanks
- Miscellaneous Mudwell Improvements
- Miscellaneous Instrumentation
- Bulk Water Filling Station

Detailed Design + Construction Sequencing

Basis of Design + Constructability

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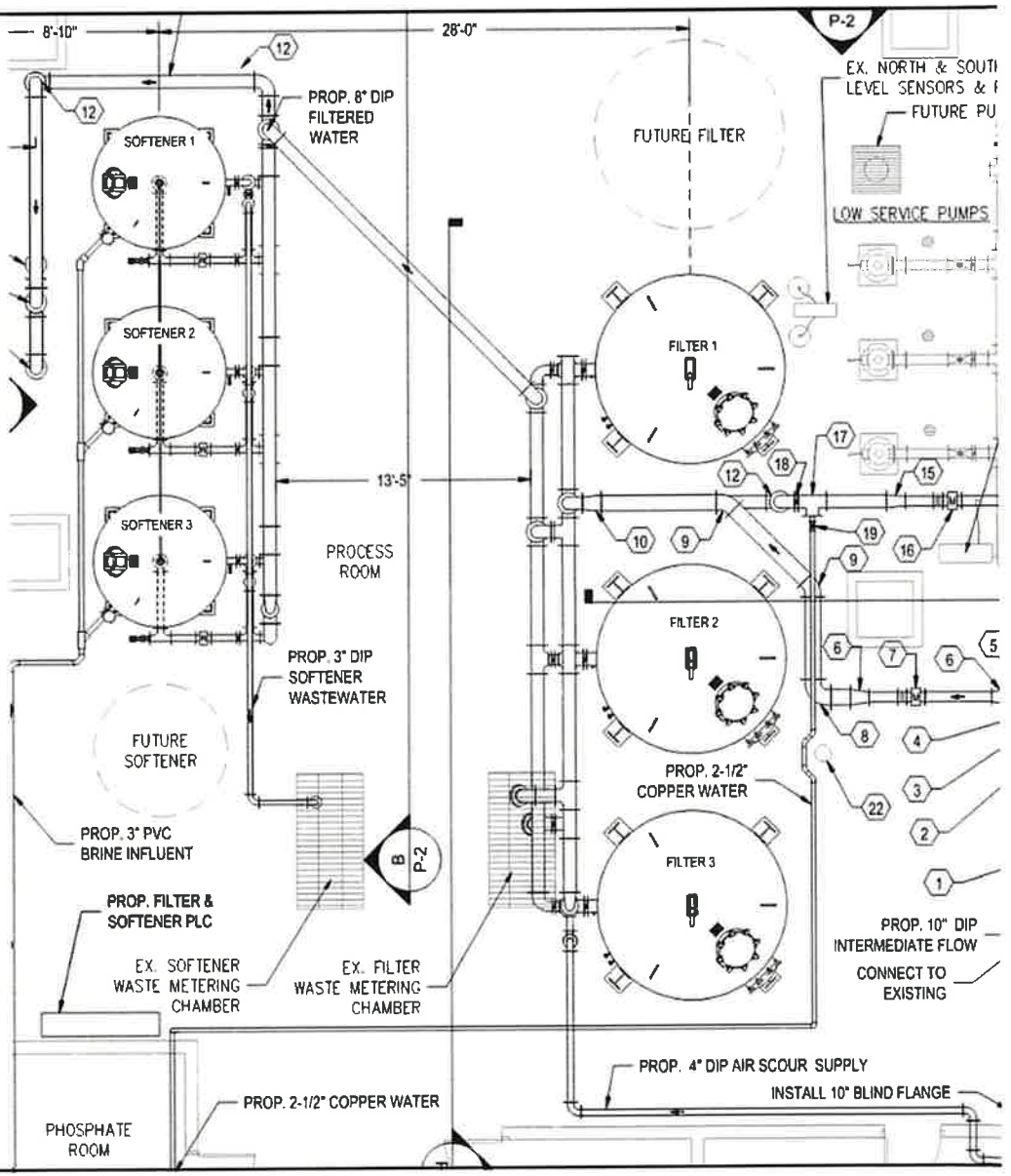
Filters, Softeners, & Controls

- Three (3) New Iron Filters – 0.5 MGD EACH

- Three (3) New Softeners
  - ADDS A STANDBY
  - Softeners Backwash with Filtered Water which Decreases Finished Water Use. No Net Change to Demands on Intermediate Pumps.

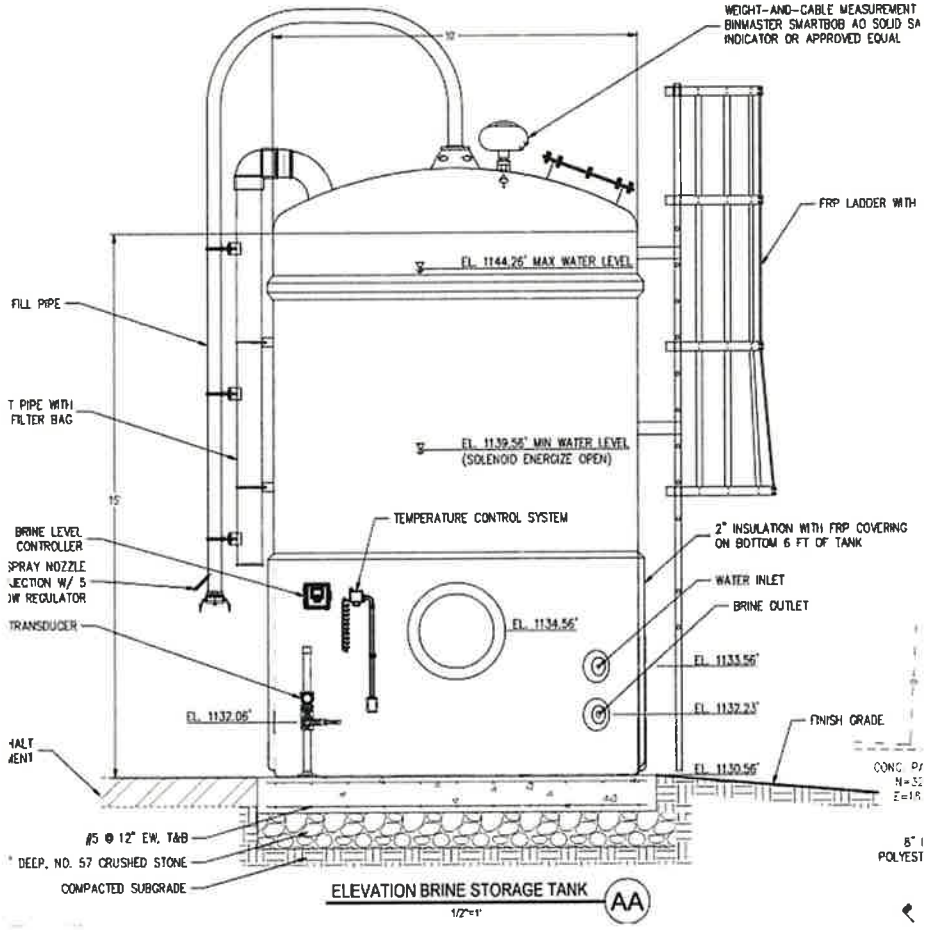
- Additional Isolation Valves

- New Filter & Softener PLC
  - Automate Filters, Softeners, and Brine Feed using **Electric** Valves, Differential Pressures, and Tonka Process Logic
  - Operates Brine Pumps
  - Operates Air Scour Blower during Filter Backwash
  - Stores Data from Raw, Intermediate, and Backwash Flow Meters
  - Regulates Cl2 and PO4 Dosing Off of Intermediate Flow
  - Remote Control of Mudwell Drain Valve
  - Remote Monitoring of Mudwell Level
  - Remote Monitoring of Bulk Brine Tank Levels
  - **Shows Alarms Locally and sends via Text or Email**
  - **Capable of Duplicating HMI on computer in Kit's office through ethernet connection.**
  - **Capable of Duplicating HMI on a remote tablet through a VNC (screen sharing) software. VPN REQUIRED.**
  - **New Office Laptop and Tablet furnished by project.**
  - **Putting PLC on internet is OPTIONAL for the Village. Remote setup is not in the scope of this project.**



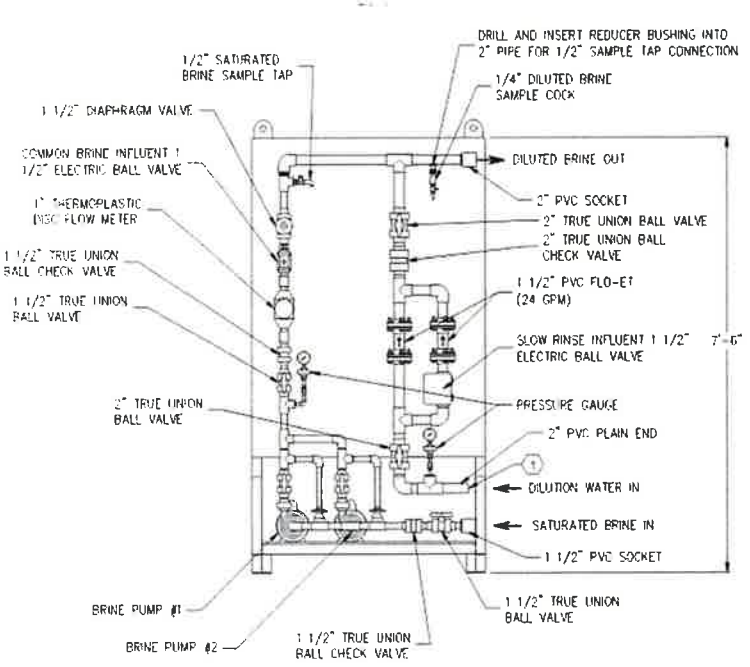
Bulk Brine Tanks

- Two (2) New 36-Ton FRP Bulk Brine Tanks
  - Tanks are being downsized
  - 36-Ton tank accepts a max 25-ton delivery
  - WTP gets one or two 25-ton deliveries/month
- Butt Weld HDPE water service and brine drain are being run from the Brine Room.
  - HDPE offers superior resistance to weather and brine dust and is overall more durable.
- Tanks Supplied By Local Vendor Plas Tank
  - Partnered with Tonka
  - Kit knows their support team
- Tanks to be moved away from the building
  - Anticipate a significant amount of grading to form the embankment.
- An FRP valve box is to be installed near the tanks to house the solenoids.
- Each Bulk Brine Tank Package Includes
  - Local Controller
  - Pressure Transducer (Liquid Level Detection)
  - Solenoid Valve (Contractor to Place on Water Service)
  - Solid Salt Level Chain and Cable Inventory Mgmt Device LOCAL ONLY
  - Additional Insulation & Temp Control System on Bottom 6' of Tank



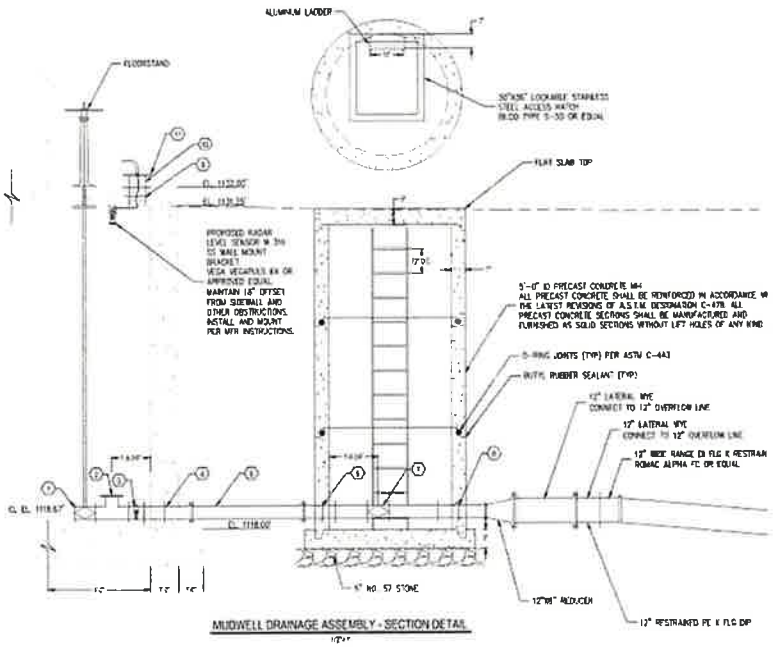
Brine Room

- New Brine Pumps are Flooded Suction with Saturated Brine
- Dilution Water Injected At the Skid On the Way to the Softeners
- No Bulk Brine Tank – Frees Up Space in the Brine Room



Mudwell

- New Valve Vault will House the Mudwell Drain Valve & Electric Actuator
  - No Confined Space Entry in Future to Work on Valve
- New Radar Level Sensor for the Mudwell
- Contingency (If Authorized) Allowances Provided for Mudwell Cleaning, Inspection, and Structural Repairs As Required.



MUDWELL DRAINAGE ASSEMBLY - SECTION DETAIL

New Instrumentation

- New Magnetic Flow Meters – Raw Water, Intermediate Flow, and Backwash Supply
- New Turbidimeter After the Filters with Local Display and Data Storage
- New Plant Pressure Transmitter After the Intermediate Pumps
- New Level Sensor at the Mudwell

Bulk Water Fill Station

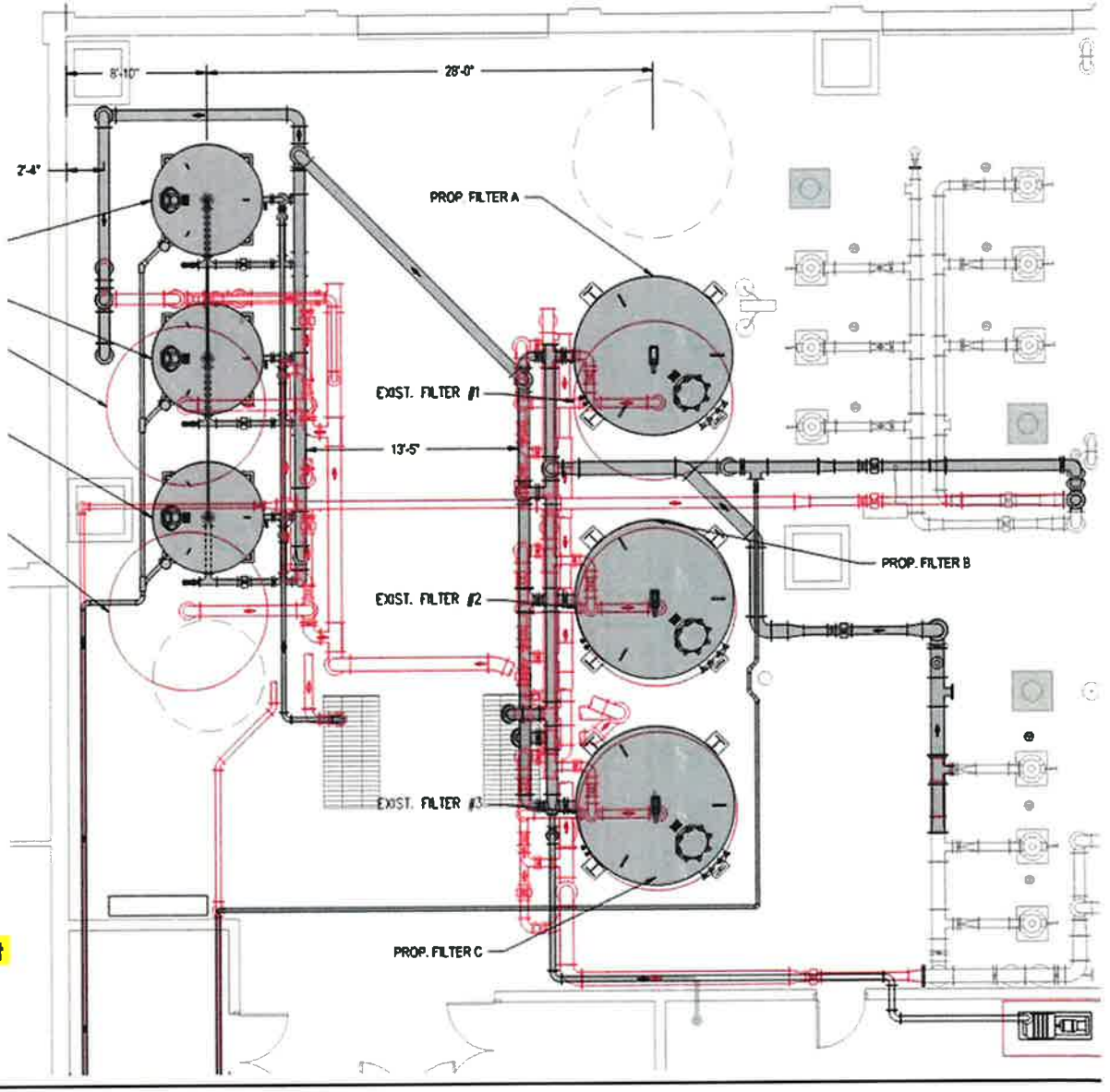
- Portalogic – Basis of Design
- Flow Point – Bid Alternate
- Heated enclosure with piping, electric valve assembly, flow meter, and backflow preventer.
- 3-inch steel overhead camlock fill line
- Key pad, receipt printer, digital display for logging on, inputting amount of water, and purchasing.

Conversion to Hypochlorite Disinfection

- GPD is adding to the design the conversion from chlorine gas to a completely new hypochlorite dosing system.
- This improvement will be broken out from the lump sum improvements and can be non-performed if the Village chooses.

Construction Sequencing

- Build New Bulk Brine Tanks
- Build New Backwash + Brine Dilution Water Supplies
- Install the First New Softener in the "Future" Space
- Demo and Renovate the Brine Room
  Use the Existing Bulk Brine Tanks and a Temporary Brine Feed Pump Skid for Operating the Existing Softeners While the Renovation Occurs
- Commission the New Softener and Brine Skid, on the new Bulk Brine Tank Supply.
- Demolish the Existing Softeners and Build the Other Two New Softeners down the Gallery.
- Cap off and Demo Filter 1. Construct Filter A and Its Connections
- Commission New Filter. Abandon Remaining Existing Filters and Construct New.
- **Multiple Temporary Lines Will Be Used Throughout this Sequence**
- **10' Diam. Filters will Fit through the Overhead Door After the 7' Diameter Softeners are installed.**
- **Contractor Will Be Responsible for Temporary Manual Operations but Will Require Guidance From Kit**
- **Contractor Has Option to Bring in a Temporary Plant if they cannot adhere to the suggested Construction Sequence.**



Plant Tour at the Village of Covington, WTP

Touring with Tonka Water

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Plant Tour at Covington WTP with Tonka Water – May 22, 2025

- Covington WTP constructed 2006
- 833 gpm plant
- Greensand (higher maintenance media) plant.
- Issues with antiquated pressure cylinder valve actuators.
- Overall, still operating well for its age.

Tonka Water (Basis of Design) Partial Reference List

- Pressure Sand Filters

Location	State	Year	Equipment
Amanda	OH	2008	Dualator® VI
Attica	OH	2007	Unitized Treatment Systems
Baltic	OH	2010	Dualator® VI
Bremen	OH	2000	Dualator® VI
Burr Oak	OH	2011	Dualator® VI
Columbus Zoo	OH	2009	Dualator® VI
Columbus Zoo II	OH	2013	Dualator® VI
Commercial Point	OH	2004	Dualator® VI
Covington	OH	2006	Vertical Pressure Filter
Covington	OH	2006	Vertical Pressure Filter
Deer Creek	OH	1999	Vertical Pressure Filter
Flushing	OH	1996	Dualator® VI
Frankfort	OH	2003	Dualator® VI
Frazeysburg	OH	2005	Dualator® VI
Fredericktown	OH	1996	Vertical Pressure Filter
Hecla	OH	1997	Centralator
Hillsboro	OH	2004	Gravity Filter, Concrete
Jefferson Township	OH	2006	Dualator® VI
Jefferson Township	OH	2006	Refurbishment-Dualator® VI
Jefferson W&S V	OH	2007	Dualator® VI
Jefferson Water	OH	1999	Dualator® VI
Kelley's Island	OH	2002	Unitized Treatment Systems
Lakeview	OH	2011	Dualator® VI
Lebanon Correctional (Addition)	OH	2009	Vertical Pressure Filter
Lexington (Expansion 1)	OH	2008	Horizontal Pressure Filter
Licking County (Prescott Estates)	OH	2012	Vertical Pressure Filter
Lithopolis	OH	2004	Dualator® VI
Mantua	OH	1996	Vertical Pressure Filter
New Carlisle	OH	2006	Vertical Pressure Filter
New Concord II	OH	1994	Refurbishment
Pataskala III	OH	2006	Dualator® VI
Pickerington	OH	1994	Dualator® VI
Plain City	OH	2000	Dualator® VI
Pleasant City	OH	1996	Vertical Pressure Filter
Pomeroy	OH	2004	Dualator® VI
Racine	OH	2007	Dualator® VI
Rose Hill WTP – Scioto Water	OH	2013	Gravity Filter, Steel
South Lebanon	OH	1998	Dualator® VI
Spring Valley	OH	2005	Dualator® VI
Stryker	OH	2005	Dualator® VI
SW Licking	OH	2000	Dualator® VI
Timberlake	OH	2011	Vertical Pressure Filter
West Salem	OH	2010	Vertical Pressure Filter

Tonka Water is preselected as the basis of design vendor to obtain a premium product, but a bid alternate is allowable to keep costs competitive.

- Ion Exchange Systems

Location	State	Year	Plant Capacity (gpm)
Amanda	OH	2008	280
Archbold	OH	2013	2085
Baltimore	OH	2016	500
Burr Oak	OH	2011	2800
Canal Winchester	OH	2007	1400
Columbus (Dublin Road)	OH	2017	18,060
Commercial Point	OH	1996	200
Commercial Point	OH	2004	200
Covington	OH	2006	833
Deer Creek	OH	1999	
Fort Loramie	OH	2011	235
Frankfort	OH	2003	300
Franklin Furnace – Scioto Water	OH	2014	780
Frazeysburg	OH	2005	350
Greenfield Township	OH	2007	200
Groveport	OH	2015	400
Indian Hill III	OH	2000	
Indian Hill (Plant 1 Refurb)	OH	2008	750
Jefferson Township	OH	In Process	
Jefferson Water	OH	1999	300
Lakeview	OH	2011	260
Le-Ax	OH	1996	
Lithopolis	OH	2004	350
Malta	OH	2000	
Nevada	OH	1999	138
New Carlisle	OH	2006	1040
Pataskala II	OH	2000	300
Pataskala III	OH	2006	600
Pemberville	OH	2008	180
Pemberville (Improvements)	OH	2017	350
Pickerington	OH	1994	
Plain City	OH	2000	800
Pleasantville	OH	1997	85
Pomeroy	OH	2004	450
Racine	OH	2007	250
Ripley	OH	2007	750
Rockford	OH	2010	292
Russia	OH	2009	235
Southwest Licking	OH	2000	600
Southwest Licking	OH	2003	600
Thurston	OH	2014	100
Vanlue	OH	2010	85
West Salem	OH	2015	300

Funding

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Funding – Phase I

- **Engineer's Estimate of Probable Construction Cost - $6.25M**
- **This includes $400k in a contingency fund that may not be utilized.**
- **Construction Management, Observation, & Technical Assistance – $450,000**

- March 2025 – the Village nominated the project for the Ohio EPA Water Supply Revolving Loan Account (WSRLA) loan
- Project is on the State 2026 Program Management Plan (PMP)
- The PMP shows that the loan is eligible for a reduced interest rate due to Mt Gilead's population.
- Because water rates have recently increased and there is no debt in the Water Fund, the Village can afford to carry the 20-year loan. Adjustments can be made to ensure continued affordability.

- GPD funding specialist Heidi Shaffer is preparing the Village loan application.
- **GPD plans to submit the loan application by September 1st. A December loan award is anticipated.**
- **Bid package will be posted in mid September and bids will be opened in November.**
- Council needs to approve applying for the loan in a resolution, that states who will accept and sign for the loan.

Funding – Phase II

- Ohio Pulic Works Commission (OPWC) offers competitive grants and no-interest loans typically less than $1 Million combined.
- For grants there is typically a long wait between application, award, and access to funding.
- Planning and timing are key, as well as fit with the grant's qualifications. When there is a timeline for Phase II, we can update the Funding Plan with these elements in mind.
- Grants at the State and Federal level are becoming harder to find, but we will continue to watch and be ready for opportunities.
- Mount Gilead can explore requesting Principal Forgiveness (PF) for the next Ohio EPA loan.
- PF is a kind of grant award which can be up to $4 million per project. Mount Gilead did not qualify for PF for Phase I.
- Eligibility depends on income factors, population, human health impacts, and water & sewer rate costs that exceed state benchmarks. Readiness-to-proceed is a key scoring factor. These factors can change from year-to-year.
- State RLF loans are key to getting grants. A loan can provide matching funds or leverage and can provide a back-up source of funding if grants fall through.

Next Steps

Project Schedule

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Next Steps

- **Schedule**
- Bid Package Advertised: Friday, September 19th, 2025
- Bid Opening: Wednesday, November 12th, 2025
- Loan Award: Late December
- Construction: 18 Months – January, 2026 to July, 2027

- **Start Thinking About Phase 2**
- New MCC
  - Many Plant Processes and alarms are being changed over from the Main Control Panel to the new Plant PLC (aka SCADA Panel).
  - Remaining: Low and High Service Pumps + Their Flow Meters, Well Pumps, Plant Pumps, Tower Levels, Clear Well and Detention Tank Levels. We recommend moving these over after the MCC is replaced.
  - These pumps run off of detention tank, clear well, and tower level.
- New Generator
- New HVAC & miscellaneous domestic plumbing
- New Aerator

Q&A

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