

Valparaiso City Utilities

*Public Presentation
Capital Infrastructure Projects
& Water and Sewer Rate Adjustments
Proposal*

2024

Agenda



Introduction



Challenges



**Operational
Culture &
Results**



**The Projects
Water &
Sewer**

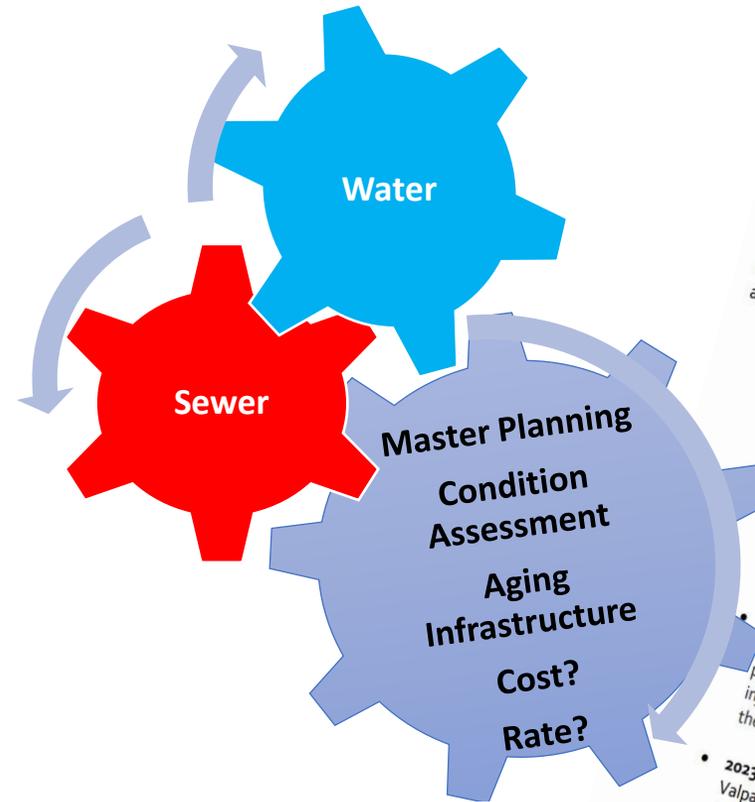


**Customer
Impacts**

Award Winning Utility that provides essential services 24/7 –

All night, all day, every day with Dedicated Staff.

- ✓ City Administration
- ✓ VCU Board of Directors
- ✓ Stantec Engineers
- ✓ Arcadis Engineers
- ✓ DLZ Engineers
- ✓ McMahon Engineers
- ✓ Bob Garmon – C&D Manager
- ✓ Matt Zurbriggen – Deputy Director
- ✓ Alina Hahn - CFO
- ✓ Shihua Chen – O&M Director
- ✓ Paul Scott – Wastewater Superintendent
- ✓ Nate McGinley – Project Management Director
- ✓ Jacob Chester/Dustin Johnson – Lab/Operations



**CITY SERVICES RECOGNIZED FOR EXCELLENCE
STATE AND NATIONAL MEMBER AGENCIES**

Valparaiso City Utilities has once again earned state and national recognition for operational excellence by industry leaders in water management. Valparaiso's Utility has been recognized with a *Peak Performance Award* for continued operational excellence by the National Association of Clean Water Agencies (NACWA) and awarded distinctions for laboratory excellence, safety and renewable green energy by AIM.

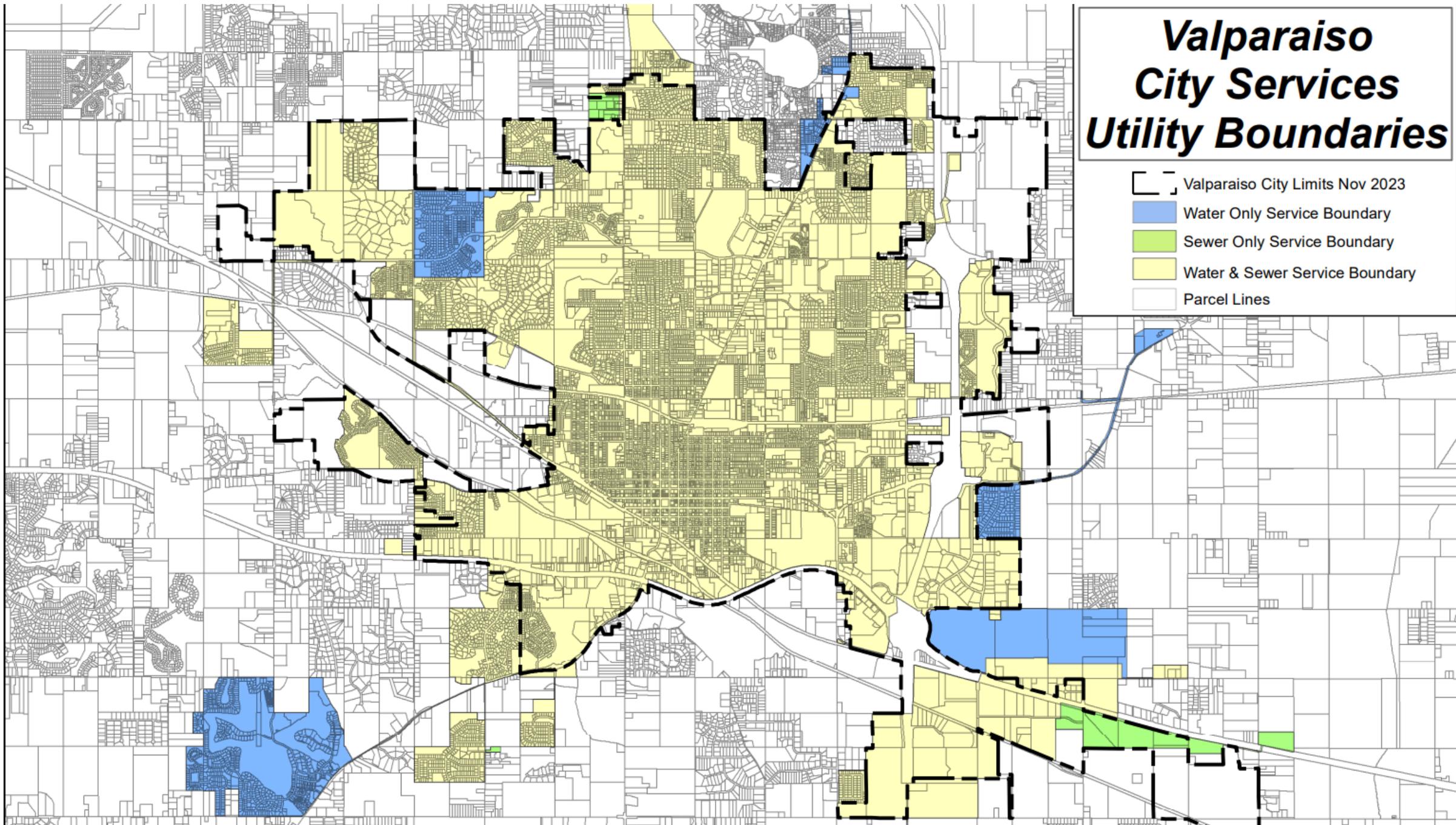
Presented in Washington, D.C. the **NACWA Peak Performance Award** was Valparaiso's 13th award recognition from NACWA, the nation's recognized leader on clean water issues, including water management, sustainability and ecosystem protection.



- Additionally, Valparaiso City Utilities was recently recognized at the state level by the IWEA & AIM with the following awards:
 - **2023 Laboratory Excellence Award** (for the 17th time)
Awarded for outstanding achievement in the implementation of laboratory technique and administration. To receive an excellence award, the laboratory must score 85% or higher in each category as well as an overall score of 90% or higher, based on a thorough lab audit. These audits, similar to those performed by Indiana Department of Environmental Management, are an excellent tool for hands-on consulting in the laboratory.
 - **2023 Safety Award** (for the 12th time)
Safety Awards recognize facilities for maintaining a low number of lost-time accidents and performance on an annual safety report. The VCS went 763 consecutive days without a work loss injury until this streak was ended in November of 2023. Our Safety and Security committee sets the structure and program for our success which reduces worker compensation insurance rates.
 - **2023 AIM Green Community of the Year** - Accelerate Indiana Municipalities (AIM) announced Valparaiso has been awarded an Aim Green Community of the Year for their solar power initiative. The city was honored with this award on Wednesday, August 23 during the Annual Awards Luncheon – presented by Baker Tilly Municipal Advisors, LLC, during the 2023 Aim Ideas Summit in French Lick.

Valparaiso City Services Utility Boundaries

-  Valparaiso City Limits Nov 2023
-  Water Only Service Boundary
-  Sewer Only Service Boundary
-  Water & Sewer Service Boundary
-  Parcel Lines



Timeline of Events

Condition Assessment
Wastewater Plant & Source Water Capacity Study

Selection of Design Engineers

- ✓ Stantec
- ✓ Arcadis
- ✓ DLZ

Guaranteed Savings Provider/Contractor

Application of State Revolving Fund Low Interest Financing

Tours of Water & Wastewater Facilities
City Council
VCU Board

Public Presentation Schedule

March 12, 2024

March 25, 2024

April 8, 2024 First Reading
April 22, 2024 - City Council Bond & Rate Adoption Vote

2021

2022

2023

2024

Condition Assessment Sessions with VCU Board of Directors

November 2022
VCU Board of Directors & City Council Public Presentations on Water Bond Ordinance #9-2023
\$23 Million
Phase II Bond Anticipation Notes
\$6 Million for 4 Wells

Completion of Phase II

Design Finalization for WW Plant; Phase III Water Upgrades & Sturdy Road Lift Station

Classroom Sessions with Board of Directors & City Council

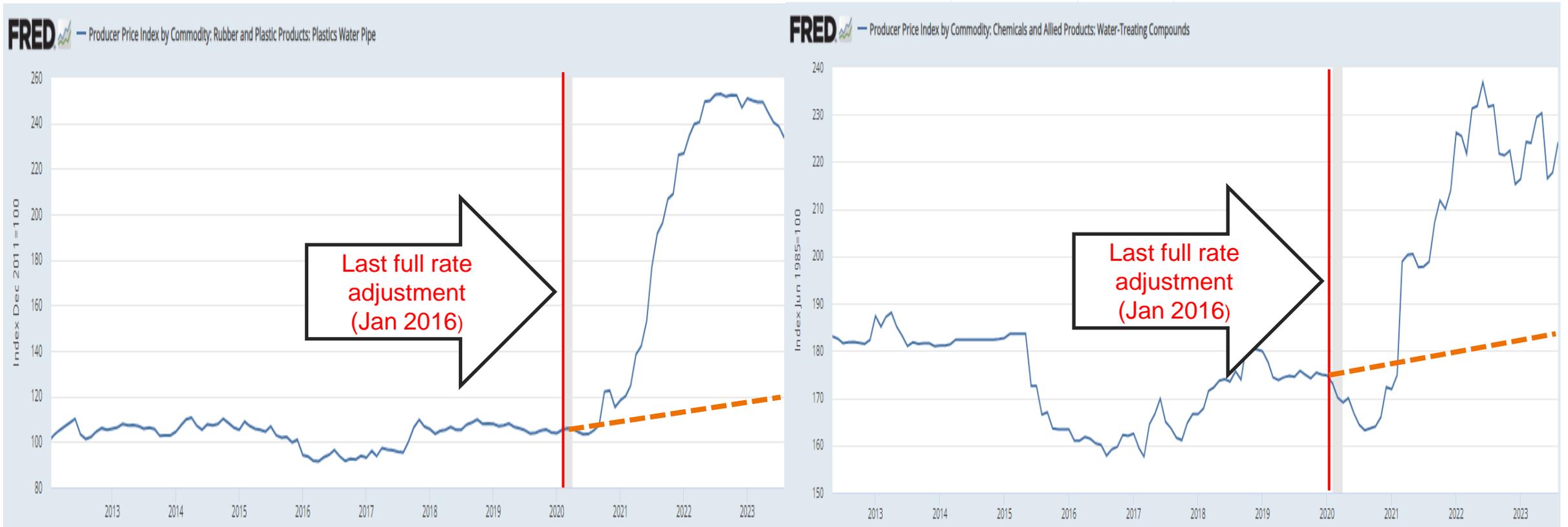
Implementation of Phase I Water Sewer Rate Adjustments
July 2024

Rate Adjustments are Driven By:

- **Upgrading Water & Wastewater Facilities**
- **Cumulative effects of inflation (power, fuel, chemicals, labor costs and benefits)**
- **Environmental Requirements**
- **Capital Improvement Plan (Pay as you go)**
- **Infrastructure Rehabilitation (Aging Infrastructure)**



Operations/Material Cost Inflation: 2020-2023



National Commodity Index – Plastic Water Pipe

- Up 132% from 2020 to 2023

National Water Treatment Chemical Index

- Up 31% from 2020 to 2023

VCS Examples of Rising Operational Costs 2020-2023

Chemicals

Since 2020, has
increased by 82%
\$223,729

Electricity & Natural Gas

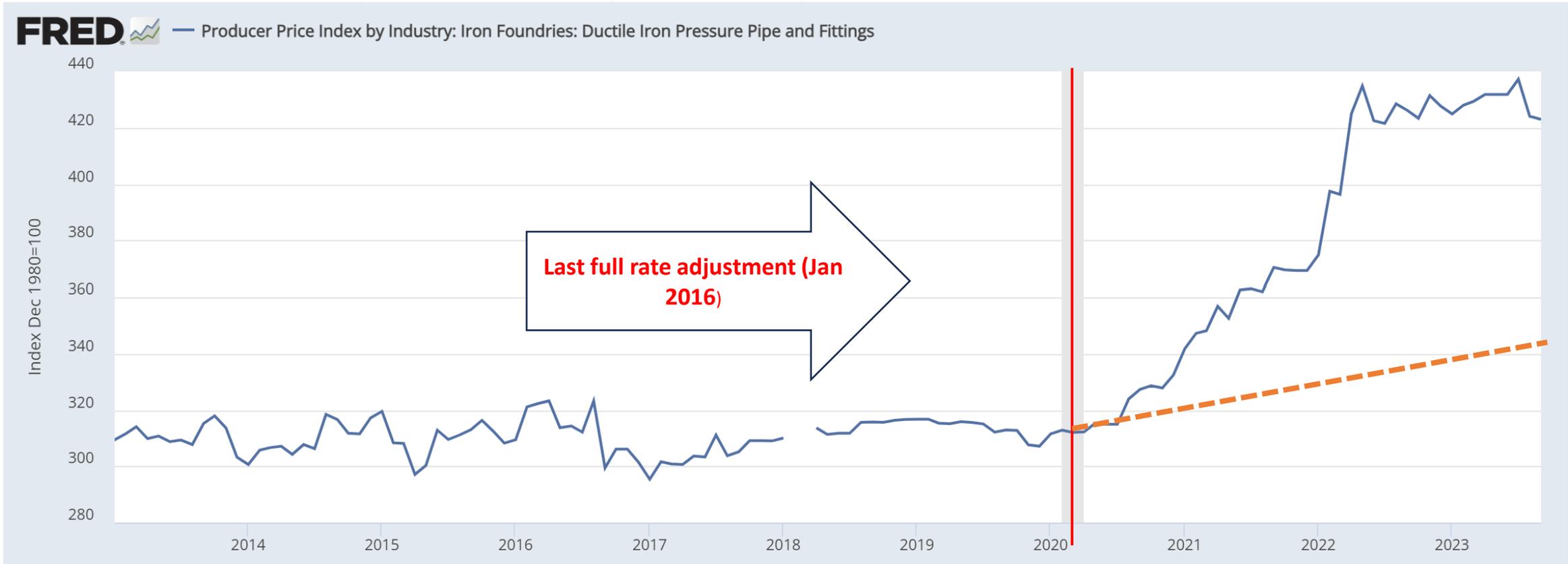
Since 2020 has
increased by 23%
\$206,874

Personnel

Since 2020 has
increase by 10%
\$557,157

**2023 to 2024
Increase \$355,000**

- **Material Cost Inflation: 2020-2023**



National Commodity Index – Ductile Water Pipe

- **Up 33% from 2020 to 2023**

Examples/Drivers of Increased Capital Costs

Cost Increases & Delays

- Generators for Phase II Wells - February 2023, estimated delivery in June 2024(not guaranteed)
- Pumps Ordered Sept 2022 – Delivered Damaged – Received October 2023

Vehicle Challenges

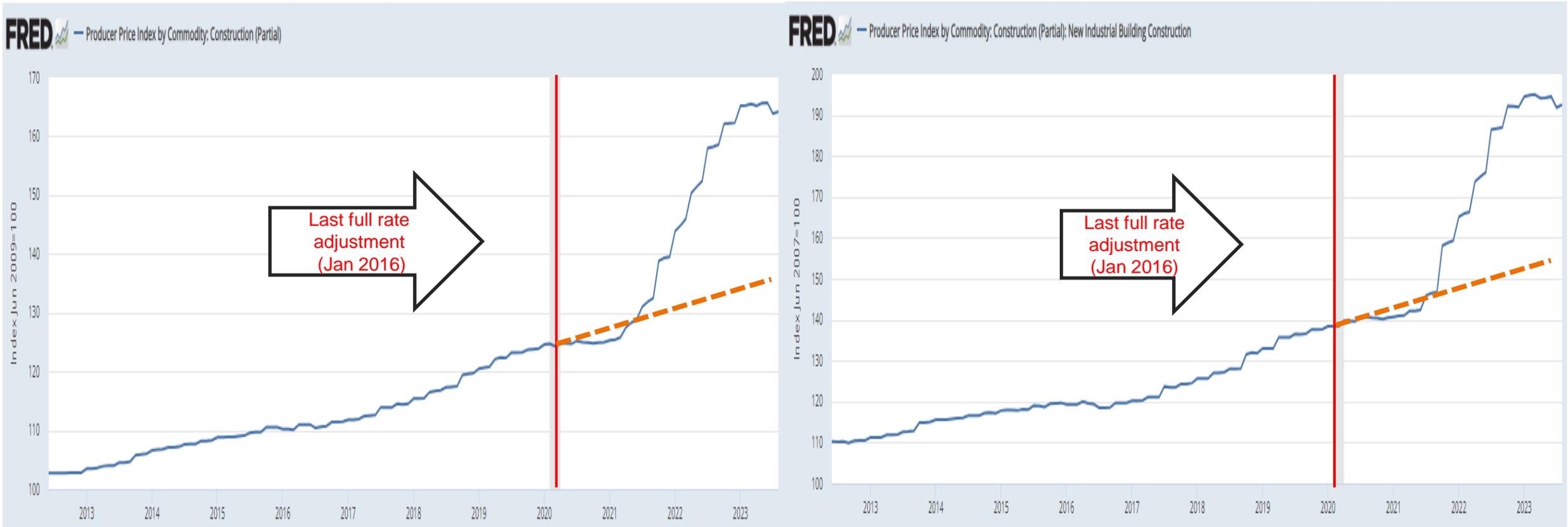
- A dump truck was ordered March 2021, was not delivered and order was cancelled in October 2023
- No guarantees on rolling stock/machinery
- ESTIMATES ONLY

Reduced Bidding & Costs

Sewer Repair

- Engineer Estimate \$960,875.50 with 30% Contingency
- Received only three (3) bids.
 - \$1,227,500.00
 - \$1,660,740.00
 - \$1,924,528.49
- **Cured in Place Pipe (CIPP) Lining**
- Year 2020 – 12” was \$33.80 per LFT
- Year 2023 – 12” was \$140.00 per LFT

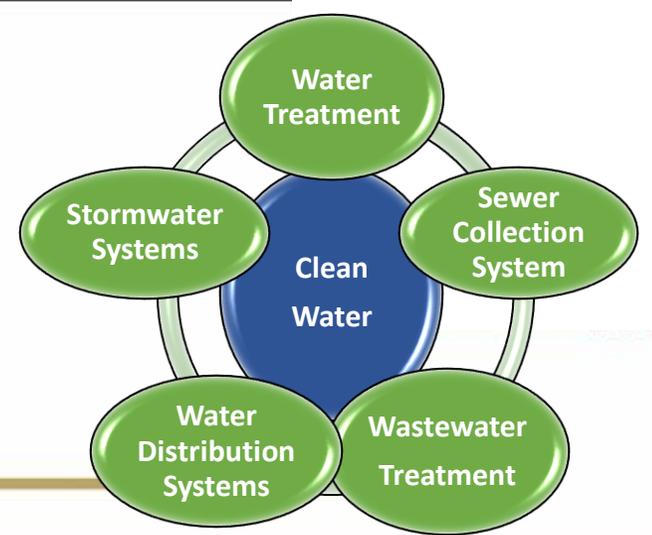
Construction Cost Inflation: 2020-2023



National Cost Index – Construction

- **General Construction - Up 33% from Jan 2020 to June 2023**
- **Industrial Construction - Up 40% from Jan 2020 to June 2023**

What do my rates pay for?



Utility rates fund operations, maintenance, repairs, debt payments, emergency reserves, and **forward-looking capital improvement projects.**

WATER

- 232 Miles of Pipe
- 7 Towers/Reservoirs
- 24 Production Wells
- 1500 Fire Hydrants
- 3600 Isolation Valves
- 2 Major Water Treatment Plants
- 1.8 Billion Gallons of Water/Year

SEWER

- 359 Miles of Pipe
- 38 Pump Stations
- 4500 Manholes
- 1 Major Wastewater Treatment Plant
- Land Application Program
- 1 Combined Sewer Treatment Facility
- 8417 Storm
- 2.1 Billion Gallons of Wastewater/Year

Softening Costs through Culture.....

Aging Infrastructure



Energy Initiatives



Asset Management/Work Mgmt



Refinancing of Debt



Water Audits



Labor Control-Work Force Flexibility
Credit Rating AA-
Bulk Fuel Purchasing
High Interest Banking Services
Proper Electric Rates



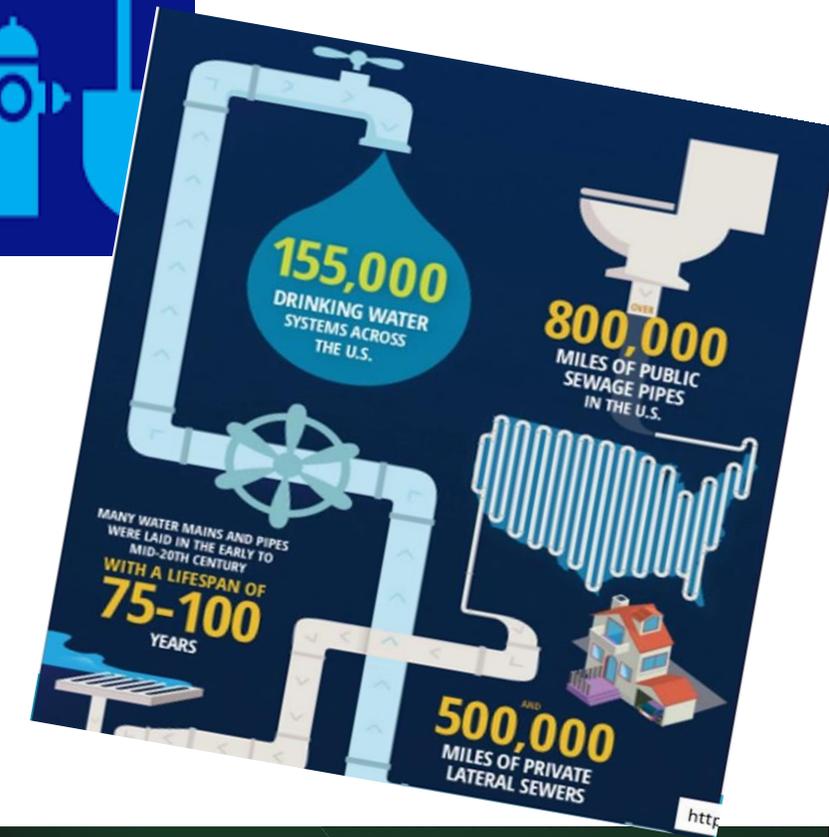
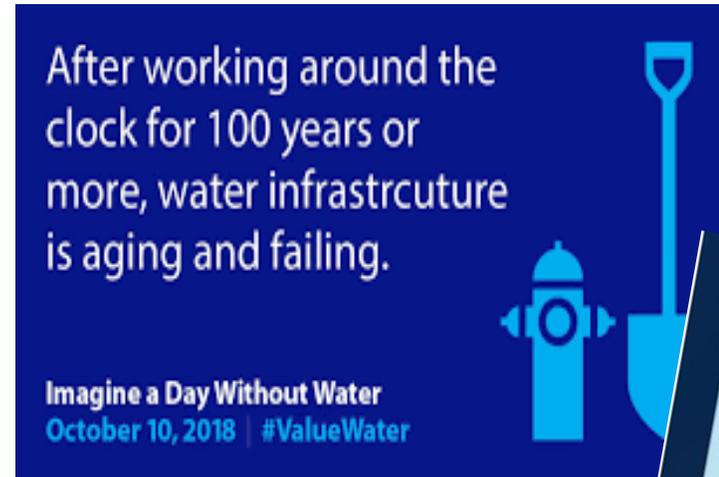
1. Product Quality
2. Customer Satisfaction
3. Employee & Leadership Development.
4. Operational Optimization
5. Financial Viability
6. Infrastructure Stability
7. Operational Resiliency
8. Community Sustainability
9. Water Resource Adequacy
10. Stakeholder Understanding & Support

Under-investment in water and wastewater infrastructure is a nationwide concern....

“Pipes are expensive, but invisible. Pipes are hearty, but ultimately mortal. Increased expenditures are needed. The bills are now coming due, and they loom large.”

American Water Works Association

May 2001



Federal Contribution has significantly decreased....

Federal Contribution to Total Infrastructure Spending

Water Utilities Highways Aviation All Transportation Infrastructure

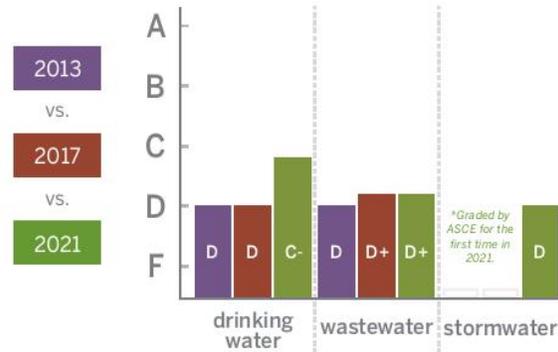


1 U.S. Water Infrastructure Earns D+ Grade

Every four years the American Society of Civil Engineers (ASCE) releases its *Infrastructure Report Card*. In 2021, U.S. infrastructure received a C- grade.

This is the first time our country's infrastructure as a whole has been above a D since the turn of the century. The collective progress is encouraging, but an important subset of our nation's infrastructure – water infrastructure – still falls in the D+ range.

ASCE INFRASTRUCTURE REPORT CARD



- Aging water and wastewater pipes and facilities that are nearing or past capacity
- Lagging operations and maintenance procedures, plans
- Expansive migration from metro areas to suburbs where water infrastructure is not yet equipped to handle an influx of residents and businesses
- Funding challenges; confusion around how to secure what's available
- Ever-evolving, complex regulations



VALPARAISO CITY SERVICES

INFRASTRUCTURE IMPROVEMENTS 2013 - 2023

TOTAL PROJECT COSTS



WATER

\$ 8,395,282.92

210 Projects



SEWER

\$ 4,616,776.78

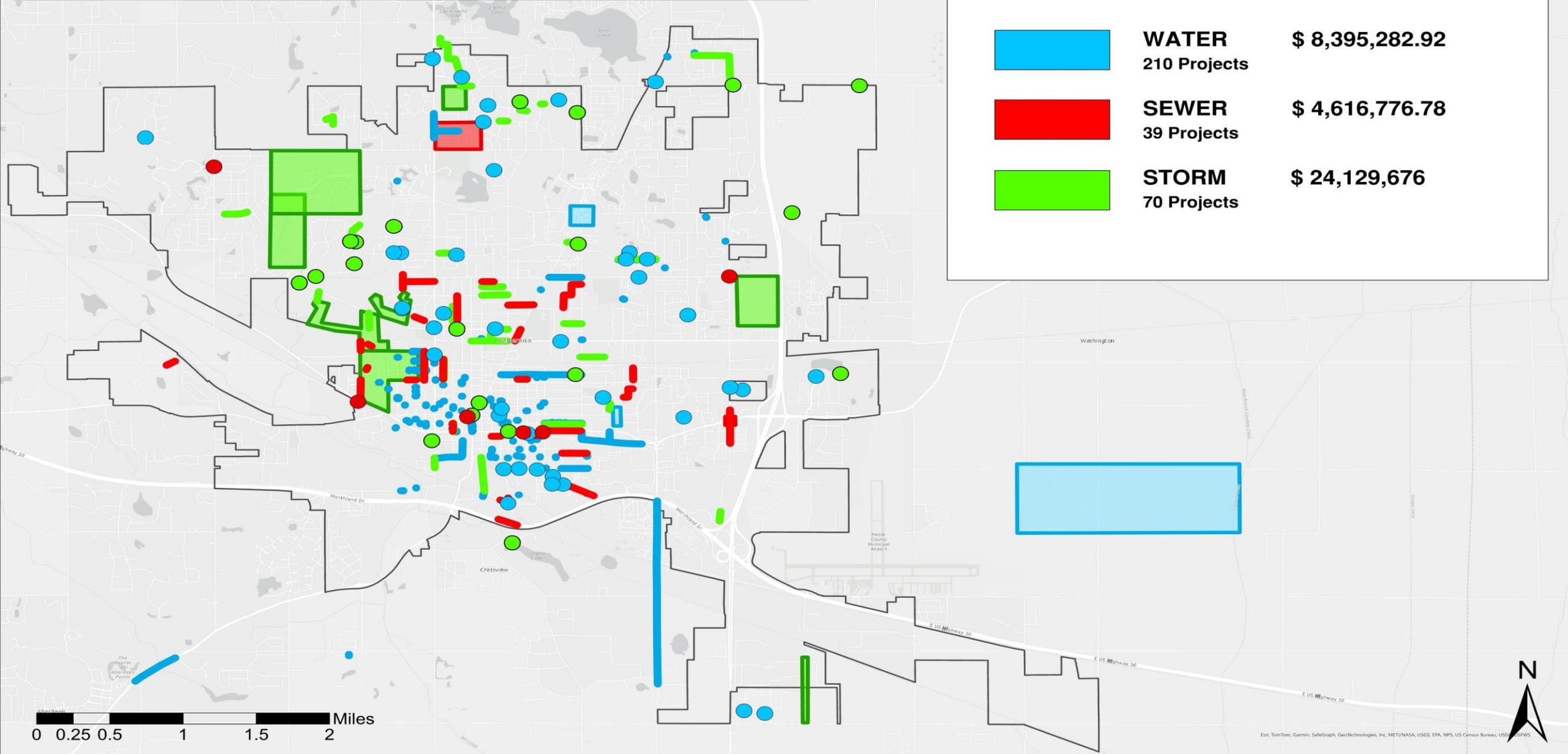
39 Projects



STORM

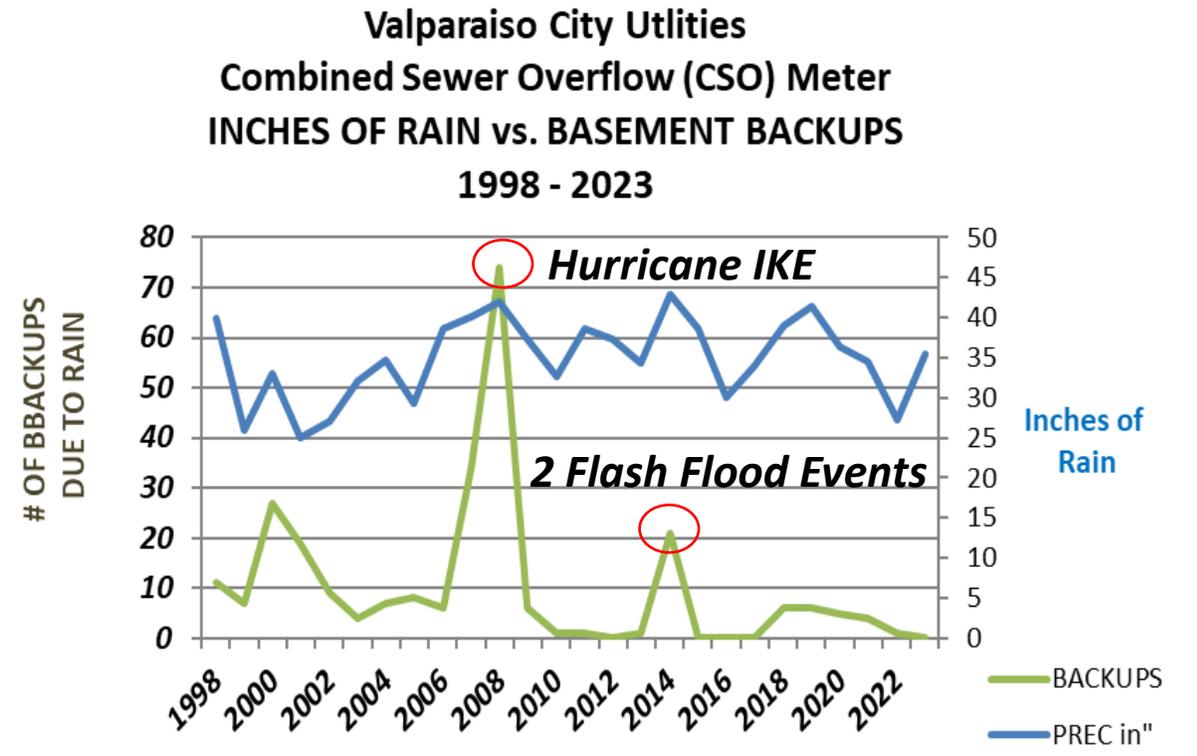
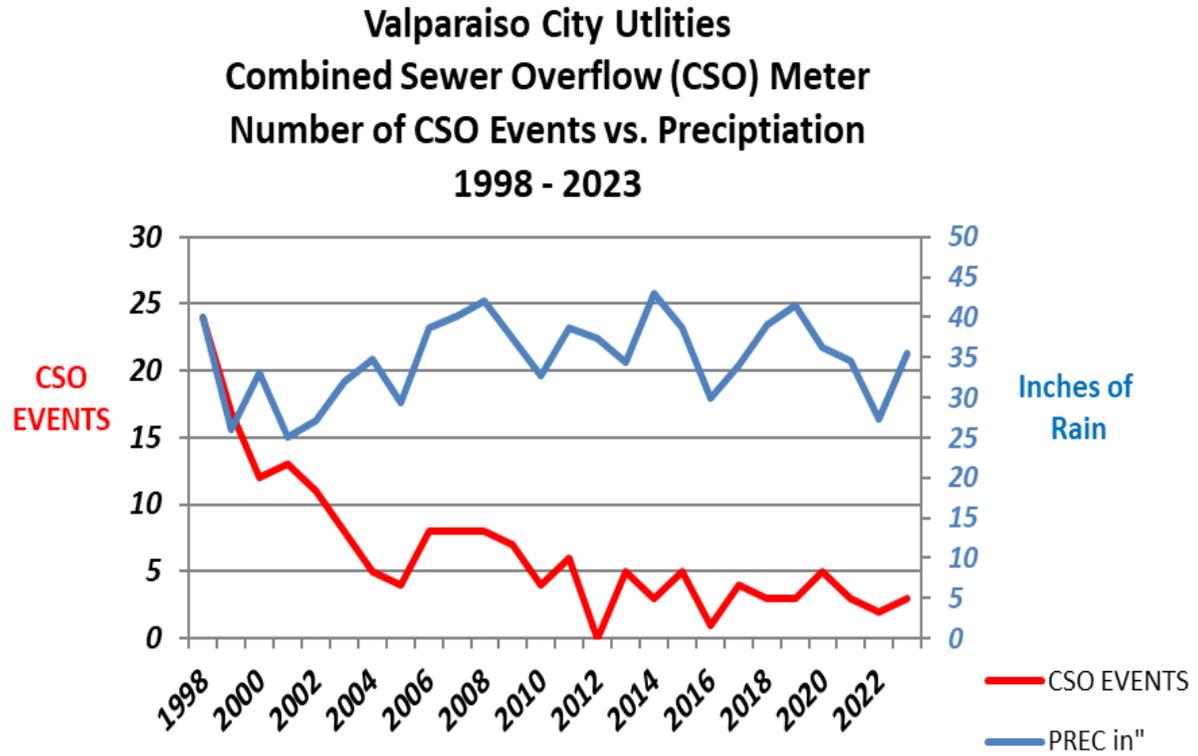
\$ 24,129,676

70 Projects



0 0.25 0.5 1 1.5 2 Miles

Combined Sewer Overflows AND Basement Backup Reports.....



- 2009 Stormwater Super 17 Projects
- 2017 Stormwater Amended Plan

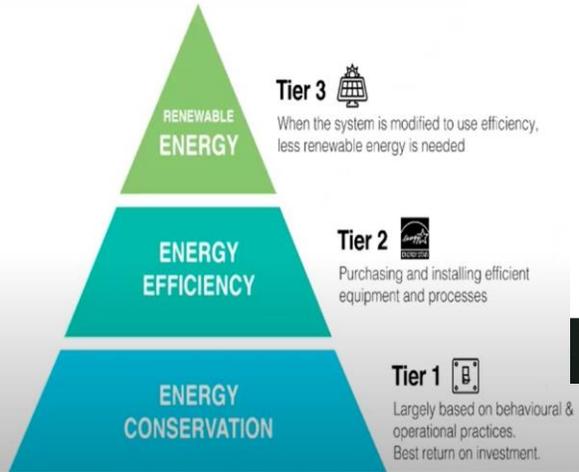
Energy Culture.....

✓ Tier 1 Energy Conservation

✓ Tier 2 Energy Efficiency

✓ Tier 3 Renewable Energy

STARTING WITH THE BASICS



The Journey of an Energy Consumer to Energy Producer
City of Valparaiso Indiana



[A bright day for Valpo: City unveils solar installation - NWI Times](#)

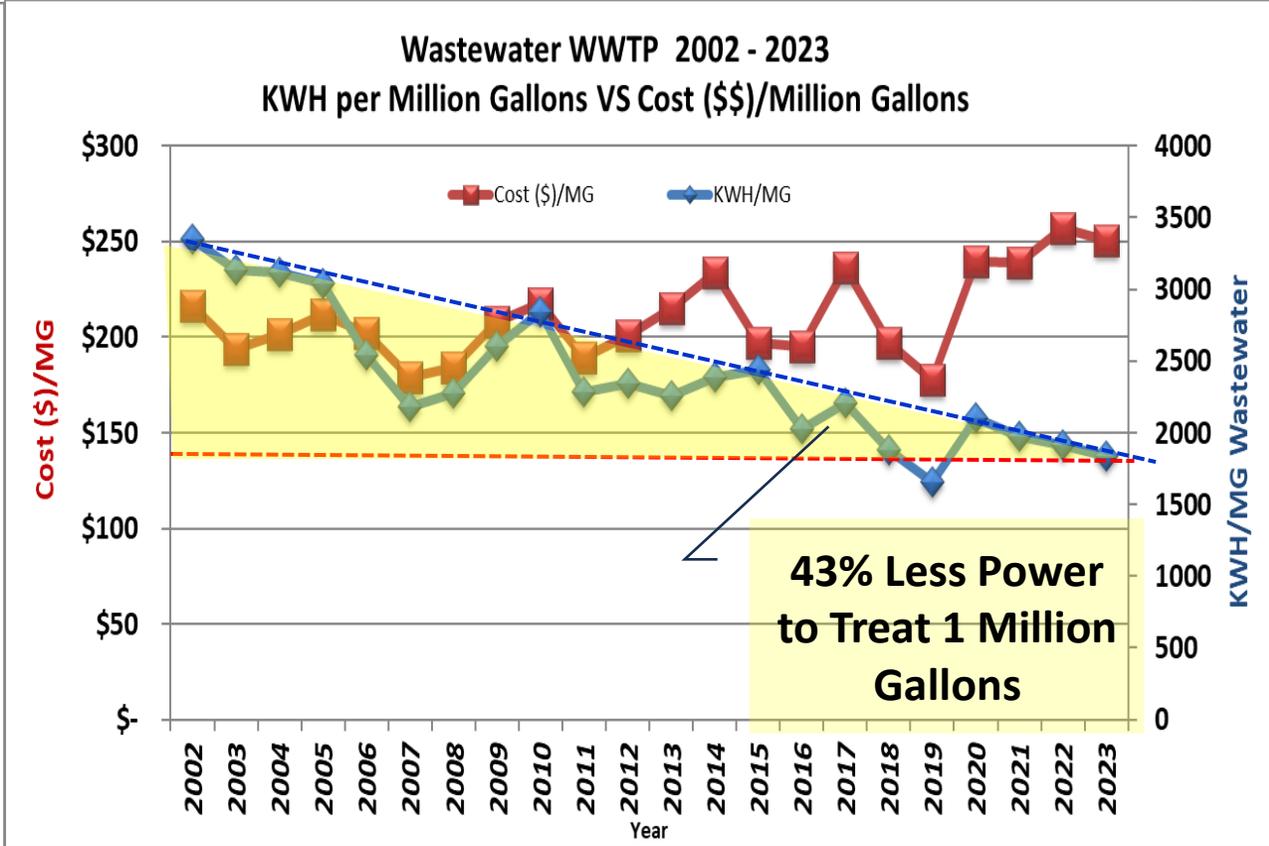
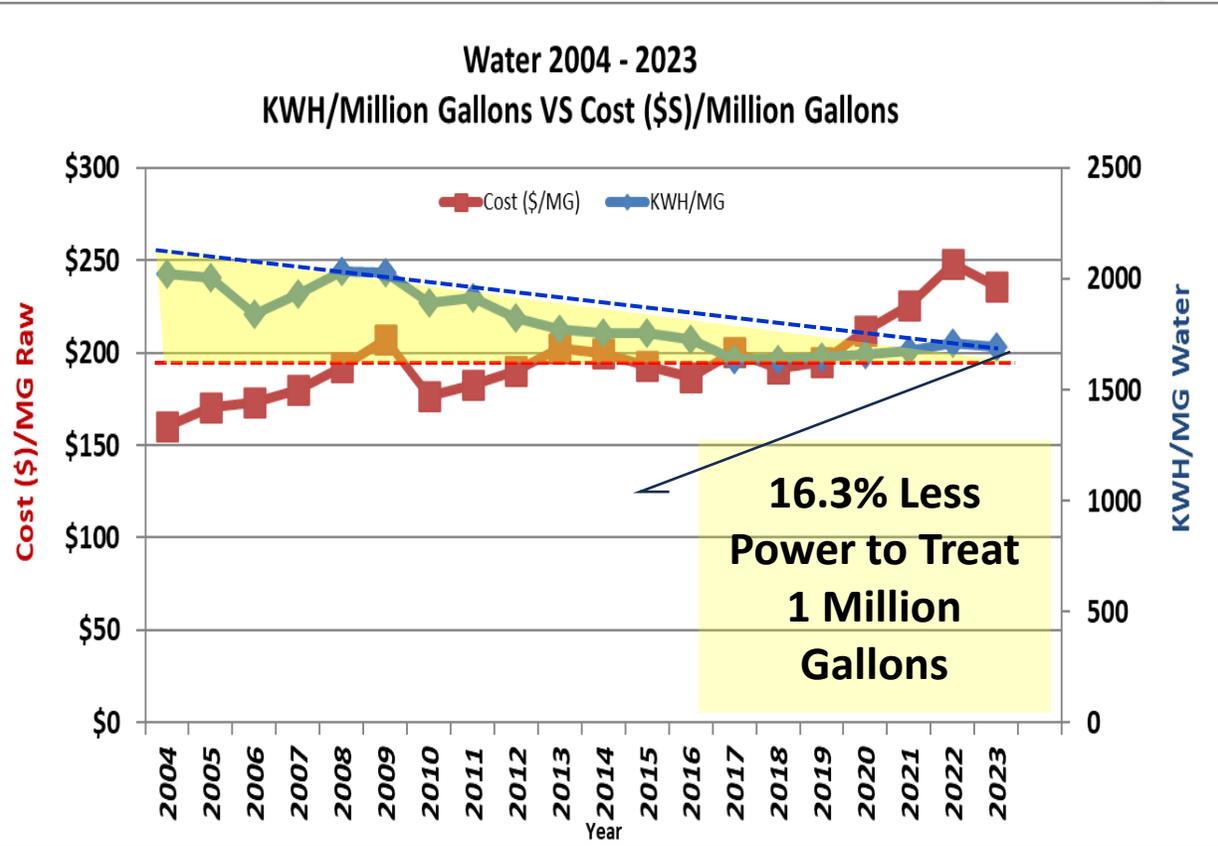


Valparaiso Solar Opportunity
Construction of Panels:

City Services Campus



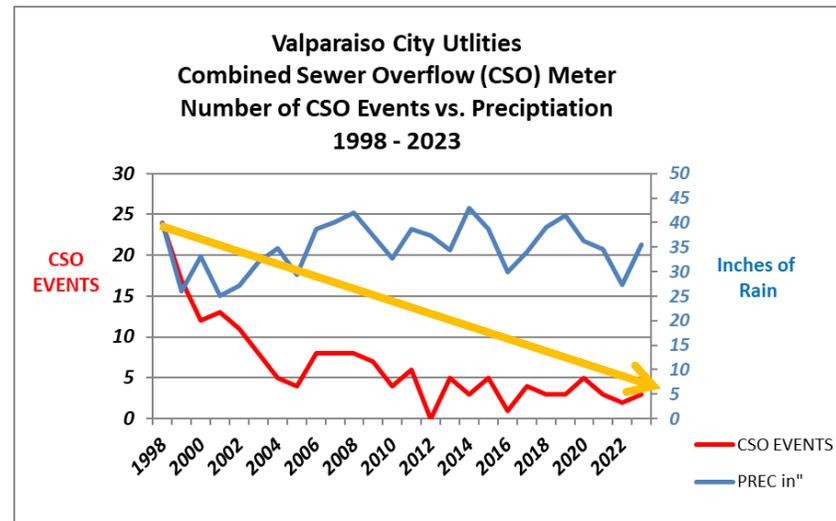
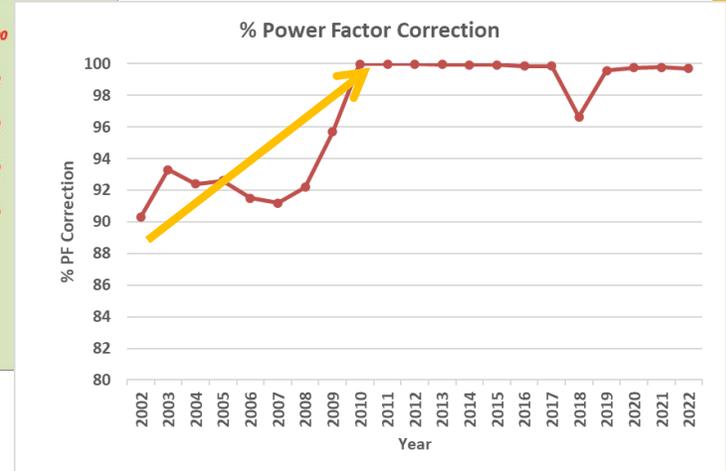
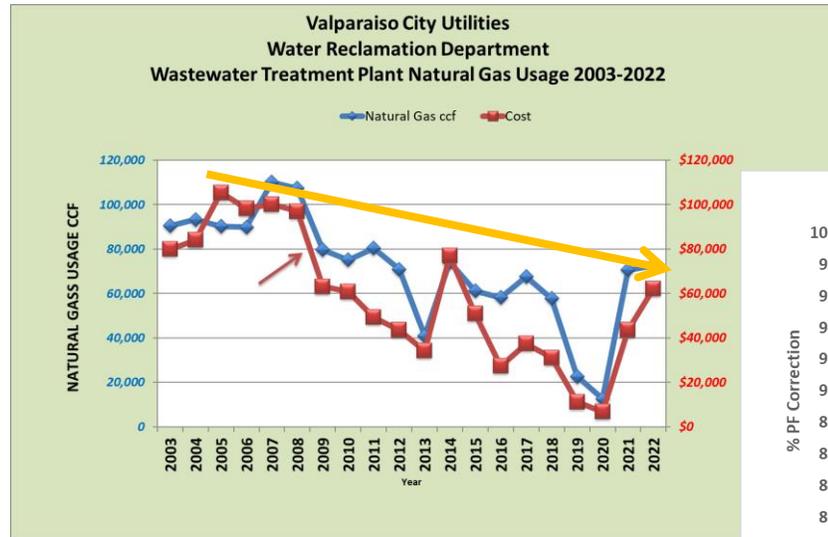
Energy Initiative Results



- **Stable Cost (\$\$) per 1 million Gallons Treated (Water & Wastewater) - 5 Rate Increases by electrical provider since 2010.**
- **Estimated Savings since 2002 - 32 Million KWHs OR \$3 Million Dollars (Blended Rate Over 20 Years) –**

Energy Initiatives Results:

- Reduced Lighting Costs
- Reuse of Methane Gas
- Natural Gas Usage (-25%)
- Power Factor (Discounted Demand Charges) – Anything above 90%
- Reduced CSO Events and Volume



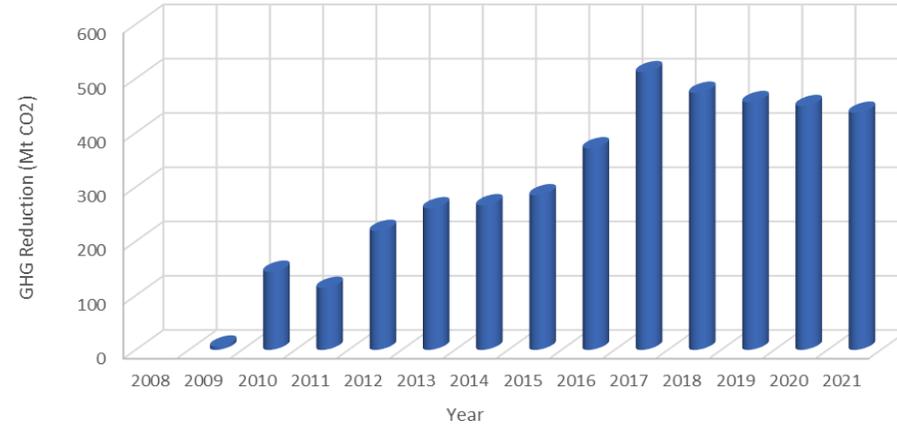
Green House Gases Avoided....

24,000 Metric Tons of CO₂

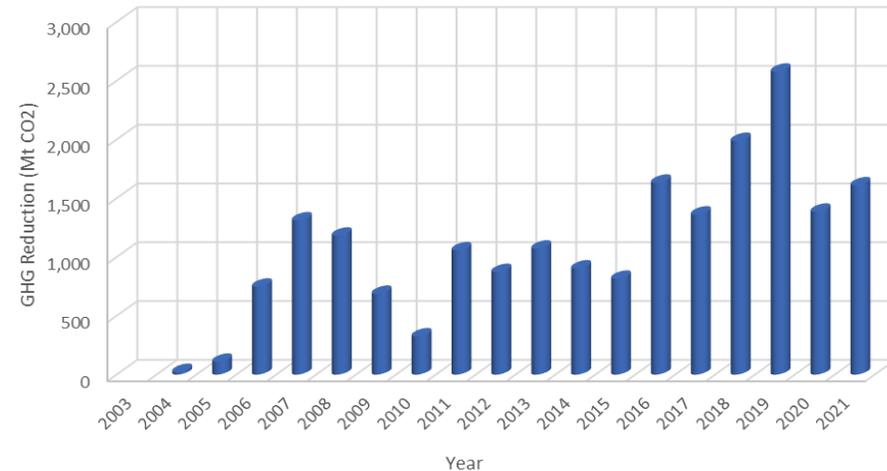
Per EPA Calculator –Equivalent to:

- ✓ 2,700,000 Gallons of Gas Consumed
- ✓ 2,357,000 Gallons of Diesel Gas Consumed
- ✓ 26,832,000 Pounds of Coal Burned
- ✓ 55,510 Barrels of Oil Consumed

Valparaíso City Utilities Water Plants
Greenhouse Gas (GHG) Avoided
Compared to 2008 Baseline

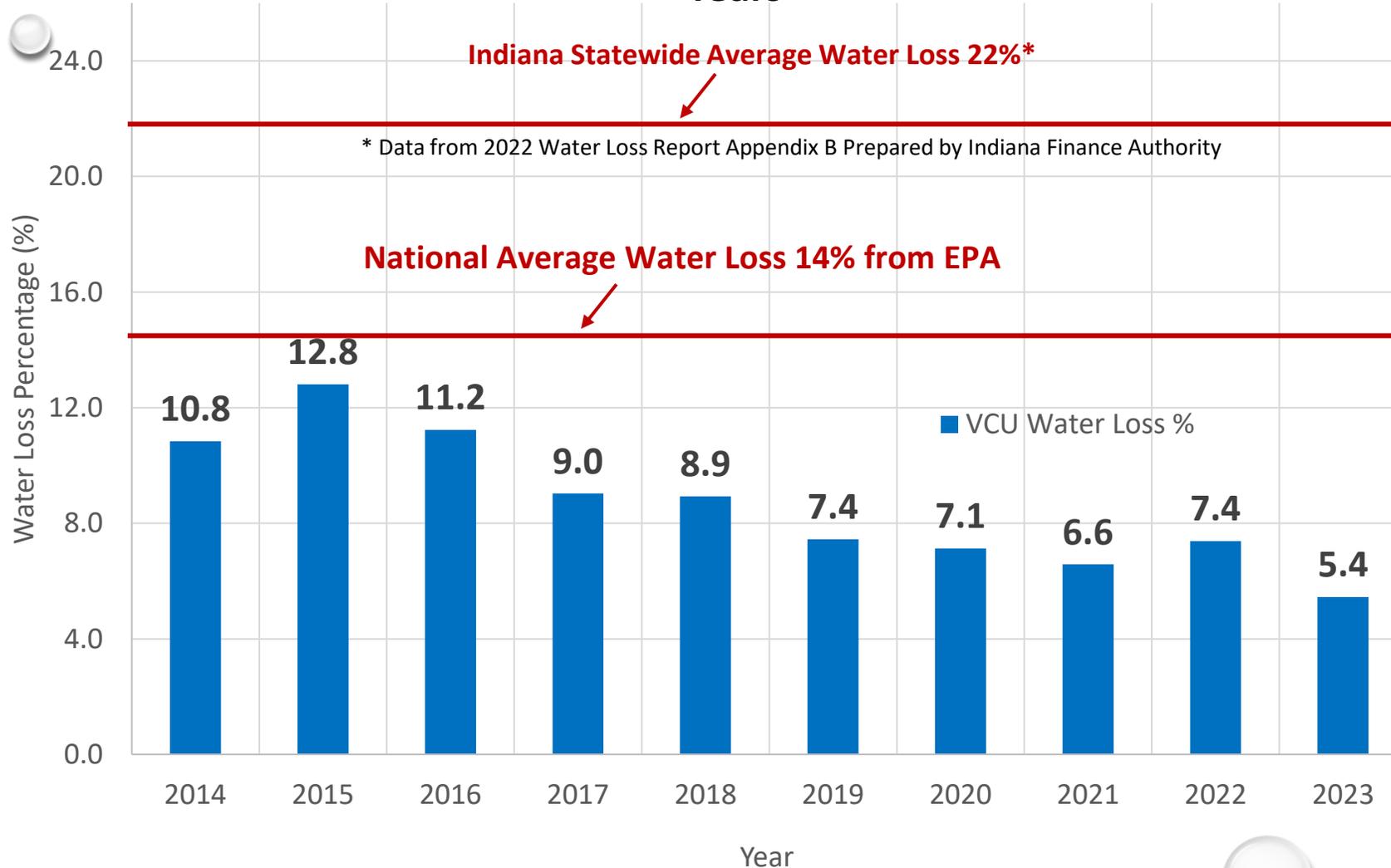


Valparaíso City Utilities Wastewater Plant
Greenhouse Gas (GHG) Avoided
Compared to 2003 Baseline



Valparaiso City Utilities Water Department

VCU Water Loss (%) Vs National Average (%) in the Past 10 Years



- ✓ Replaced water plant master meters with high accuracy
- ✓ **Monitored SCADA trendlines to identify large main breaks early**
- ✓ **Promptly repaired main breaks/leaks**
- ✓ Installed Pressure reducing valve (PRV) to reduce water pressures in certain areas
- ✓ **Dedicated capital funds to replace aging water mains**
- ✓ Actively tested a portion of customers' meters every year
- ✓ Read large meters weekly
- ✓ Checked consumptions for stopped meters and for possible meter tampering
- ✓ Performed billing audit periodically to find and correct accounts being billed incorrectly

City of Valparaiso (Indiana) Utilities

10 Years of Refunding Results \$2.8 Million in Ratepayer Savings

Stormwater Management District

<u>Issue</u>	<u>Gross Savings</u>	<u>NPV Savings</u>	<u>Refunded Bonds</u>
Refunding Revenue Bonds, Series 2019	\$204,338.15	\$197,222.59	2011A and B

Drinking Water

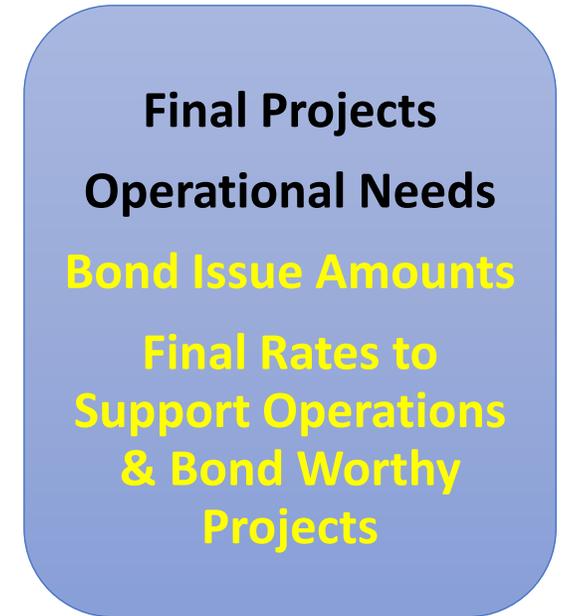
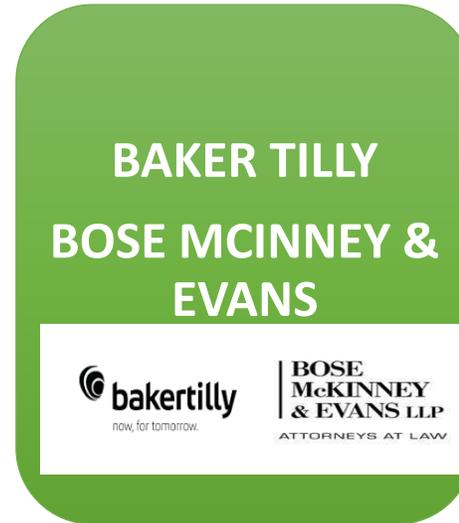
<u>Issue</u>	<u>Gross Savings</u>	<u>NPV Savings</u>	<u>Refunded Bonds</u>
Waterworks Refunding Revenue Bonds, Series 2013	\$513,774.34	\$466,652.31	2022 Bonds
Waterworks Refunding Revenue Bonds, Series 2018	<u>102,332.81</u>	<u>88,427.81</u>	2010 Bonds
Total Savings	<u>\$616,107.15</u>	<u>\$555,080.12</u>	

Water Pollution Control

<u>Issue</u>	<u>Gross Savings</u>	<u>NPV Savings</u>	<u>Refunded Bonds</u>
Sewage Works Refunding Revenue Bonds, Series 2013	\$460,614.00	\$426,206.00	2000 Bonds
Sewage Works Refunding Revenue Bonds, Series 2015	<u>1,569,861.47</u>	<u>1,321,217.01</u>	2007 Bonds
Total Savings	<u>\$2,030,475.47</u>	<u>\$1,747,423.01</u>	

THE PROCESS

*ENTER INTO AGREEMENTS WITH
ENGINEERING CONSULTANTS
DATA GATHERING, MEETINGS,
FINAL REPORT WITH OPINION OF
COSTS*



*INTITIAE MASTER PLAN
STUDIES BASED ON NEEDS
OPERATIONAL
REGULATORY
CAPITAL*

*BAKER TILLY PROVIDES
RATE ANALYSIS
& FINANCING RECOMMENDATIONS
BOND COUNSEL DEVELOPS FINAL BOND
RATE ORDINANCES*

Planned Improvements

The City must continually invest in our water and sewer systems to maintain safe reliable services. City Utilities has identified the following major projects:

WATER

- Replacement Wells
 - Phase II Complete
 - Phase III
- Airport Plant Filter Upgrades
- SCADA Control Upgrades

SEWER

- Filter Replacement
- Aeration System Upgrades
- WAS Thickening
- Digester Rehab
- Pipe Gallery Roof Repair
- MCC and Switchgear Replacement
- New SCADA System
- Sturdy Road Pump Station



March 1st, 2024



UPGRADE SUMMARY

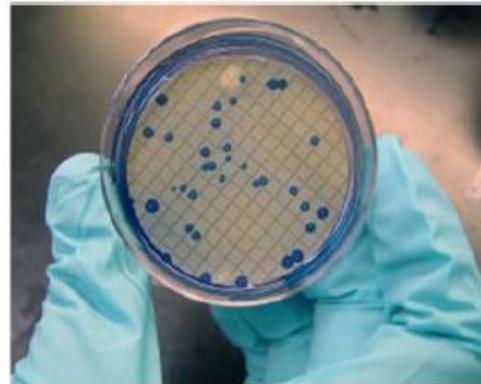
Wastewater Projects

Replace Aging Systems
Maintain Compliance & Environmental Stewardship
Improve Efficiency
Increase Capacity (Same Footprint)

Wastewater Project Background Information

Why Treat Wastewater?

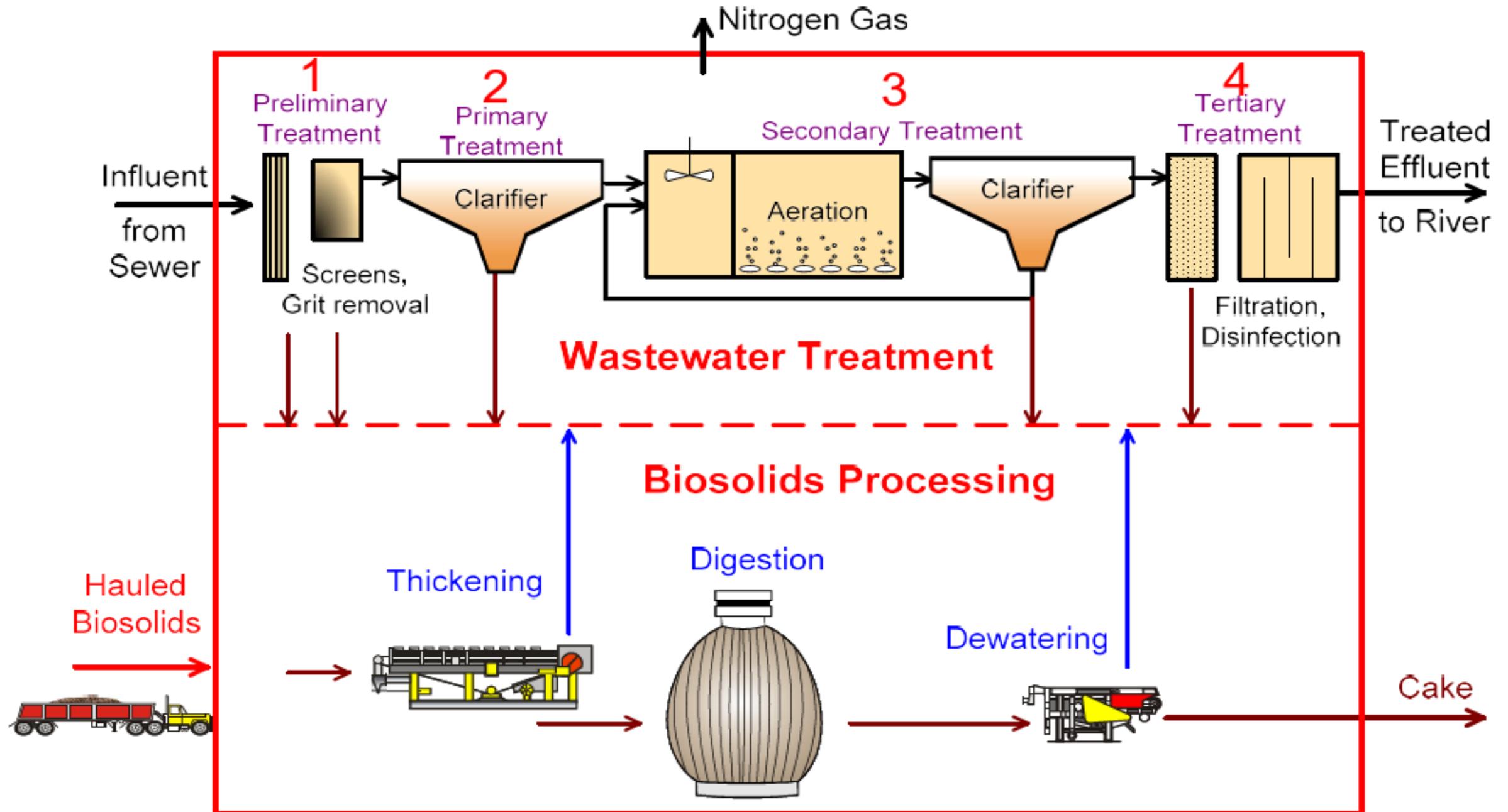
- Protect Human Health
- Protect the Environment
 - BOD – depletes oxygen
 - Ammonia - depletes oxygen and is toxic to aquatic life
 - Nutrients (N&P) – accelerates eutrophication



Protecting Human Health

- Pathogens
 - Bacteria
 - Protozoan Cysts
 - Viruses
 - Helminths
- Waterborne Diseases
 - Typhoid fever
 - Paratyphoid fever
 - Dysentery
 - Cholera

A Typical Wastewater Treatment Plant



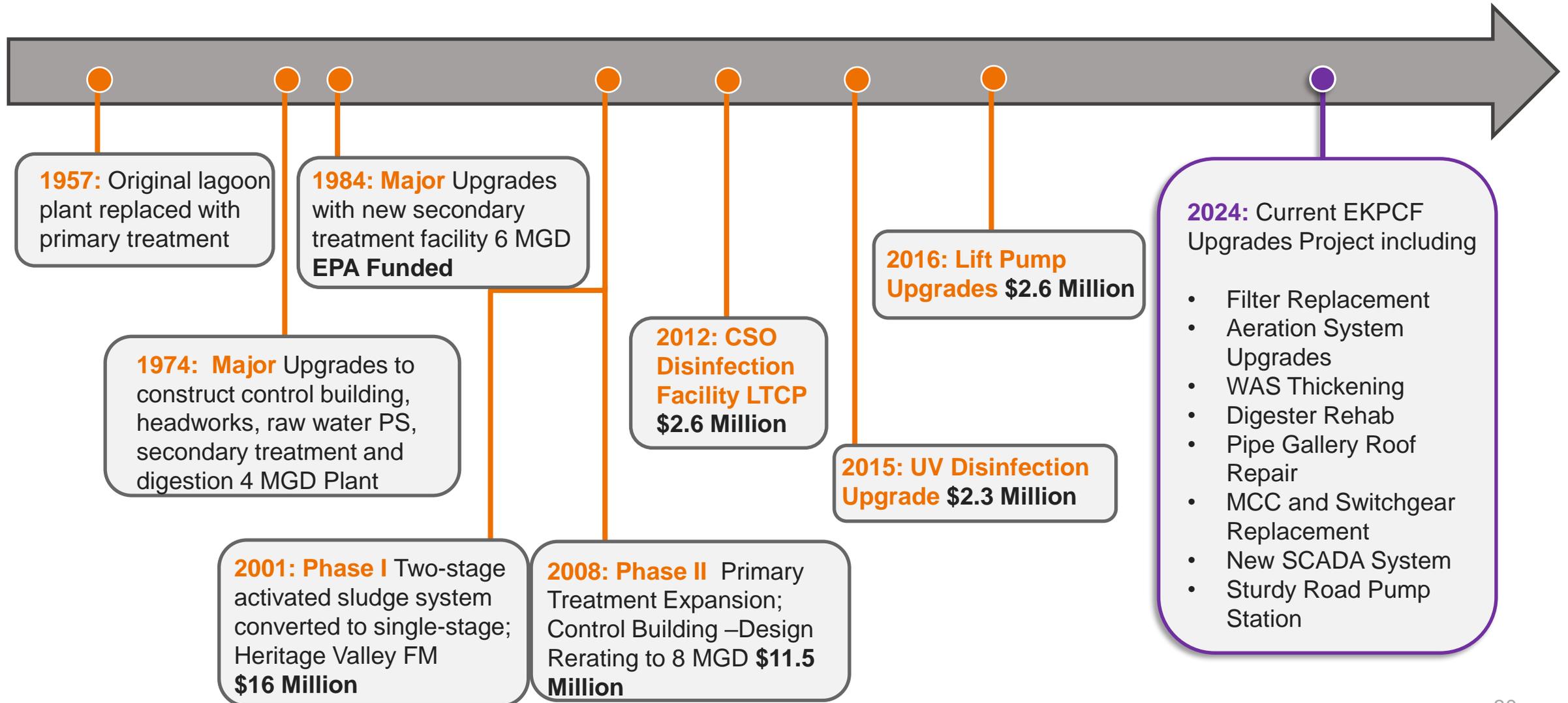
Wastewater Project Background Information

- Average Flow: 5.7 MGD (71 % Capacity)
- Design Flow: 8-MGD/ Proposed 10 MGD
- Max Capacity: 18-MGD/ Proposed 22.5 MGD
- Serves 34,000 people and discharges flow to Salt Creek – Lake Michigan

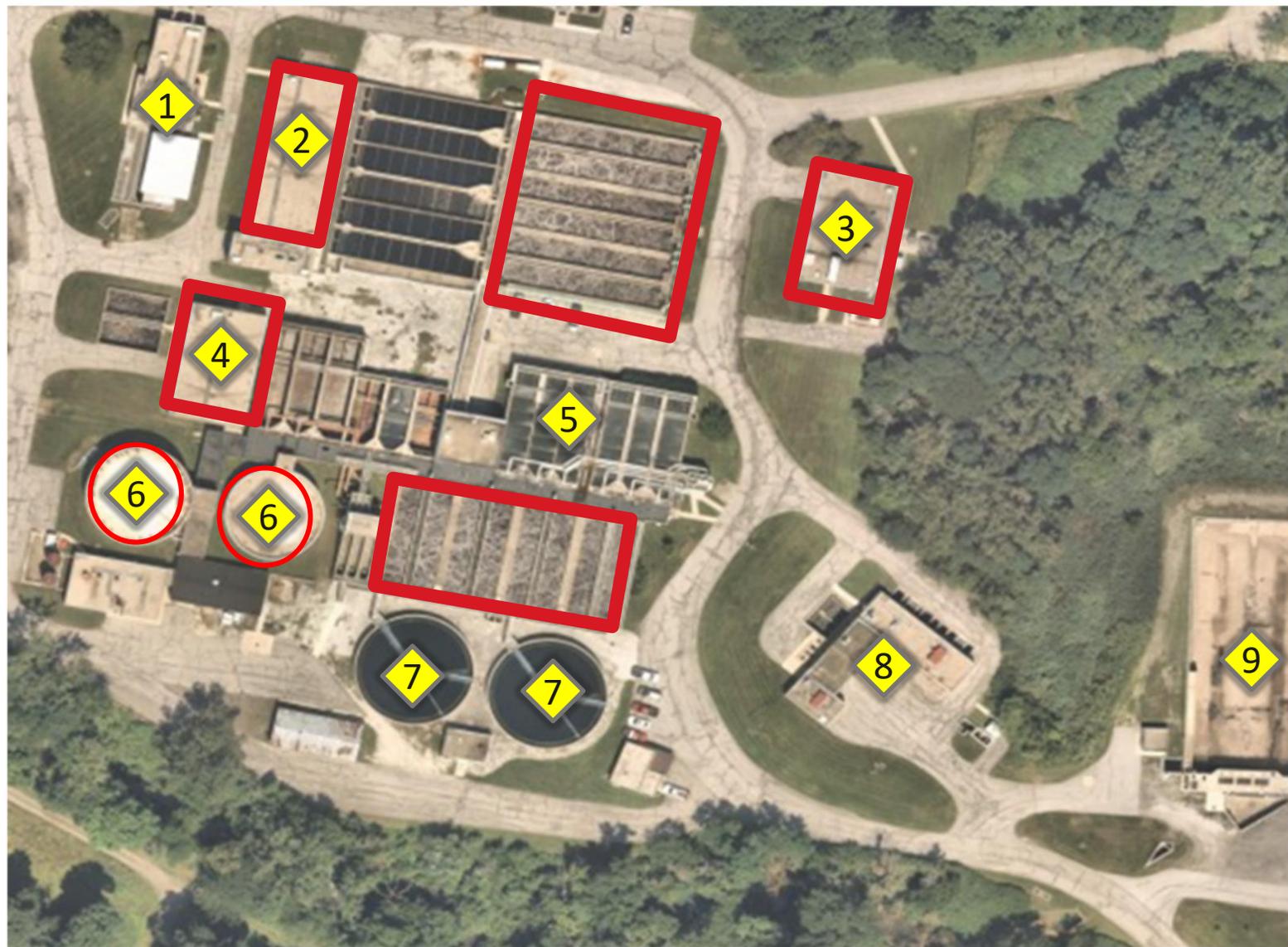
Project focused on improving the condition of aging assets and planning for future compliance & regulations



Wastewater Plant Capital Improvement History



Aerial Photo of Wastewater Treatment Plant Past Capital Projects



LEGEND

- 1. Construction of UV Disinfection 2001 Upgrades in 2015
- 2. Construction of Filter Building in 1985 Upgrades of Controls/Media in 2008
- 3. Construction of New Blower Building 1985; Upgrades in 2001 & 2012
- 4. Construction Sludge Thickening DAF 1985; Upgrades in 2001
- 5. Expansion and Rehabilitation of Primaries 2008 Phase II Project
- 6. Anaerobic Digesters Construction & 1950;1970 Upgrades in 2008
- 7. Secondary Clarifiers Expansion 2001
- 8. Headworks Facility Expansion & Upgrades (Screening; Grit Removal; Pump Station) 1985; 2001; 2015
- 9. Combined Sewer Overflow Facility – Construction & Upgrades 1985; 2008;2011

Blower Replacement and Mechanical Mixing Addition

Purpose of the Process

- Blowers provide air to tanks for mixing and the “bugs” can breathe so they may:
 - Promote microbial growth to treat and stabilize wastewater

Issue

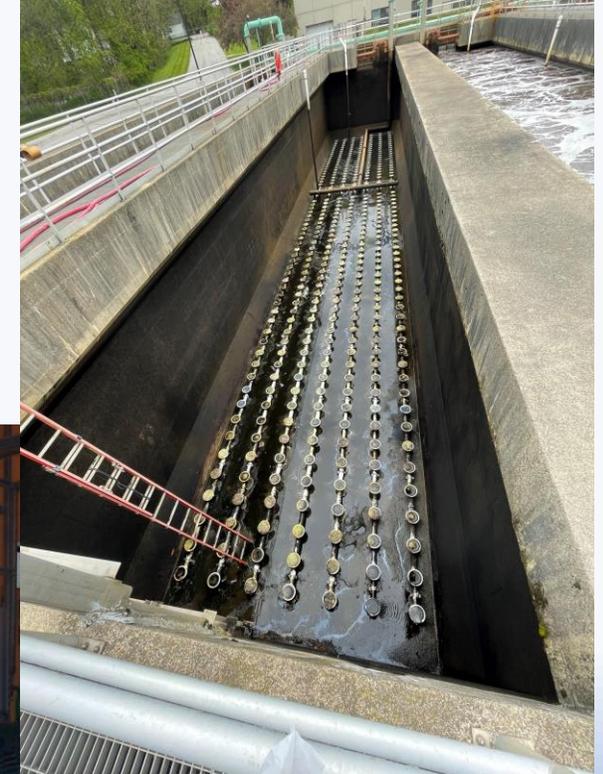
- Excessive power costs from oversized motors
- Current Piping & Mixing System Disks are failing due to age

Solution

- New system to include blowers, headers, sub-headers, diffusers, and controls.

Benefits (Environmental, Financial)

- Replaces a system in operation for 36 years
- Eliminates Hard-to-get replacement parts for existing VFDs
- Reduces electricity energy costs of blowers.
- Continues to meet environmental regulations.



Biological Aeration Tank Operations (Removal of Biochemical Oxygen Demand & Ammonia Nitrogen)

Existing

Modification

Risk: Compliance with Biochemical Oxygen Demand & Ammonia Nitrogen Requirements

Aeration Tanks

- 6 North ATs, 8 South ATs
- 2.74 MG Total Volume
- 5340 Total ceramic diffusers

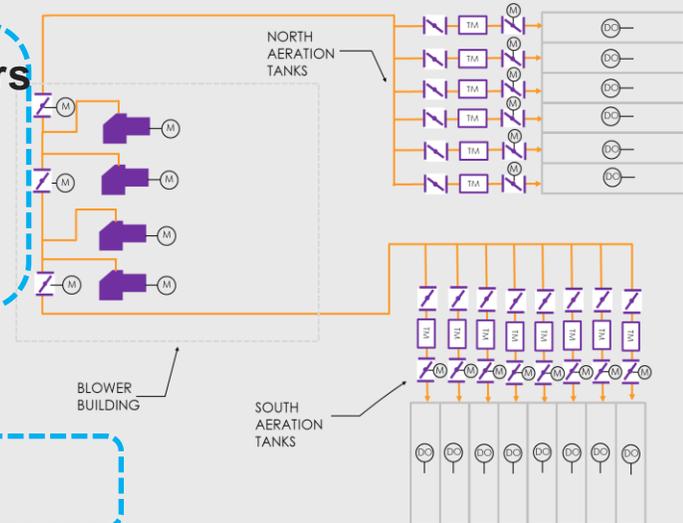


Blower Building

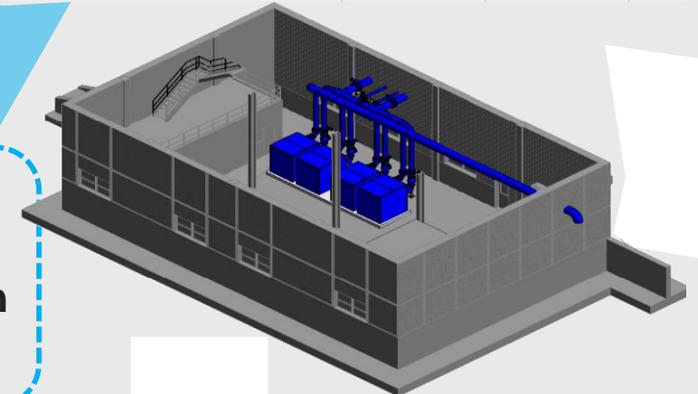
- 4 Multi-Stage Centrifugal Blowers
- Two @ 8,000 SCFM (400 HP)
- Two @ 4,000 SCFM (200 HP)



- **Membrane Diffusers**
- **2560 total**
- **New air piping**
- **Automated DO Control**



- **Hybrid Screw Blower**
- **768 SCFM Each**
- **125 HP**



Anerobic Digester Covers and Piping Rehab (1950s and 1970s)



Purpose of the Process

- Microorganisms break down organic matter in the absence of air “anaerobic”
- Biogas (methane) produced in digester, used to generate energy.

Issue

- Structural covers and coatings deteriorating (1950s & 1970s).
- Gas piping and parts deteriorated, not all replacement parts available.

Solution

- Replace covers, mixing units and repair coating.
- Replace and update gas piping and associated items.

Benefits (Operational, Structural, Safety)

- Avoid potential safety issues in working with methane gas from leaks or explosion hazards
- Alleviate potential of covers tipping, operational loss, NPDES permit violation as well as expense of resetting covers.
- Continue to meet environmental requirements.

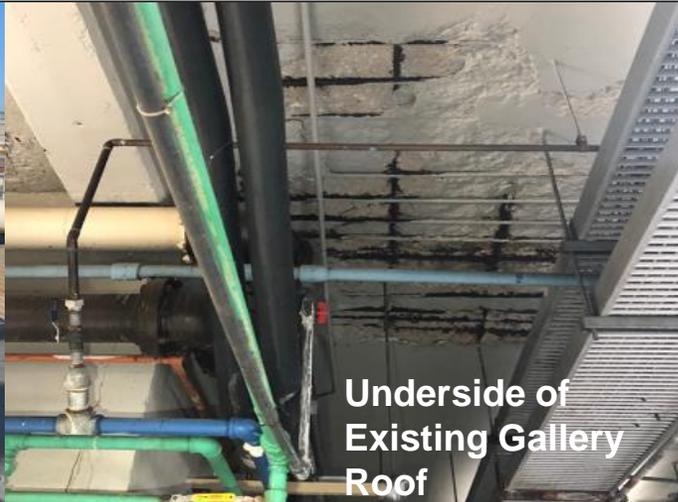
Structural Modifications/Upgrades

East-West Pipe Gallery

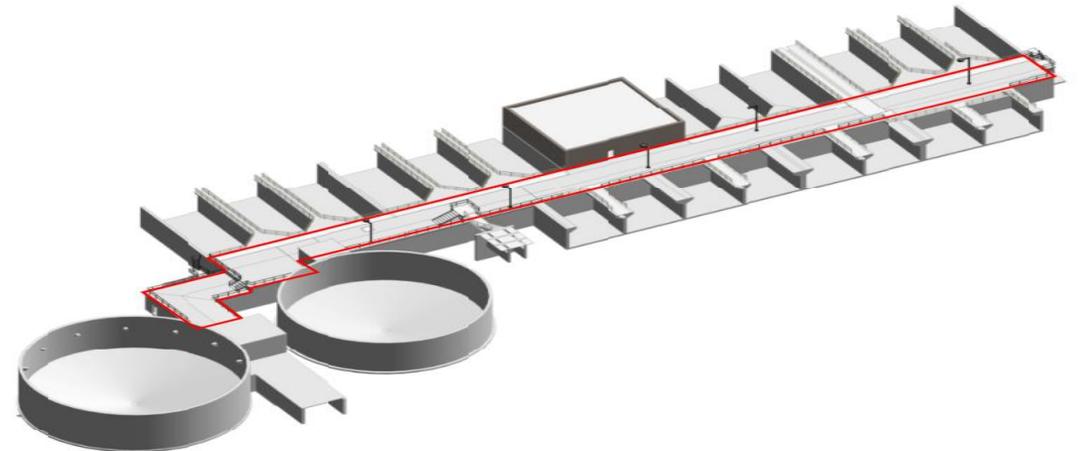
- Removal and replacement of existing East-West Pipe Gallery roof due to deterioration of existing concrete
- New concrete roof will be sloped adequately to improve drainage and increase durability
- New concrete roof will be coated with a pedestrian traffic rated waterproofing coating to prolong lifespan of roof
- Removal and replacement of existing stairs at east end due to deterioration



Top of Existing
Gallery Roof



Extents of Pipe Gallery
Roof Replacement



Waste Activated Sludge Thickening

Purpose of the Process

- Use air to remove solids.
- Thicken activated sludge before it moves to next process of anaerobic digestion.

Issue

- DAF system occupies a large footprint.
- DAF system is at the end of its useful life (36 years in service).
- Unit is corroding; Sandblasting and Coating are no longer effective

Solution

- Replace the existing DAF system with a new WAS thickening system

Benefits

- Existing building can be used for other functions (if a system with a smaller footprint is chosen)



WAS Thickening – Existing & Modifications

Existing

- Equipment installed 40+ years ago
- System lacks automation requiring frequent operator intervention
- Existing tanks are corroded



Modification

- **Centrifuge thickening** is the recommended technology
- Design Condition
- 2 units (1 Average; 2 Max Day)
- Expected run times:
 - 4.75 hrs (Average)
 - 6.73 hrs (Max Day)
- Produce 4-6% TS solids to digestion



New Equipment

- **Two (2) WAS feed pumps**
- **Centrifuge package**
- **Two (2) centrifuges**
- **Two (2) thickened sludge pumps**
- **Two (2) sludge hoppers gates**
- **Associated controls and monitoring equipment**
- **Polymer delivery system**

Improvements

- ✓ **Smaller Footprint**
- ✓ **Automation & Control**
- ✓ **Less Recycle Water**
- ✓ **Less Run Times**
- ✓ **Energy Savings**

Existing Filter Operations 1985

- Ten filter cells (operated in pairs)
- Sand and anthracite media with 5'-7' bed depth
- 240 SF each
- Two 125 HP vertical turbine backwash pumps
- Firm capacity of 13.5 MGD at 5 gpm/SF



Current Challenges:

- ✓ Underdrain System is Clogged
- ✓ No replacement parts for controls
- ✓ Limitations of flow during Rain Events
- ✓ Heavy Power User during Cell Cleaning Events

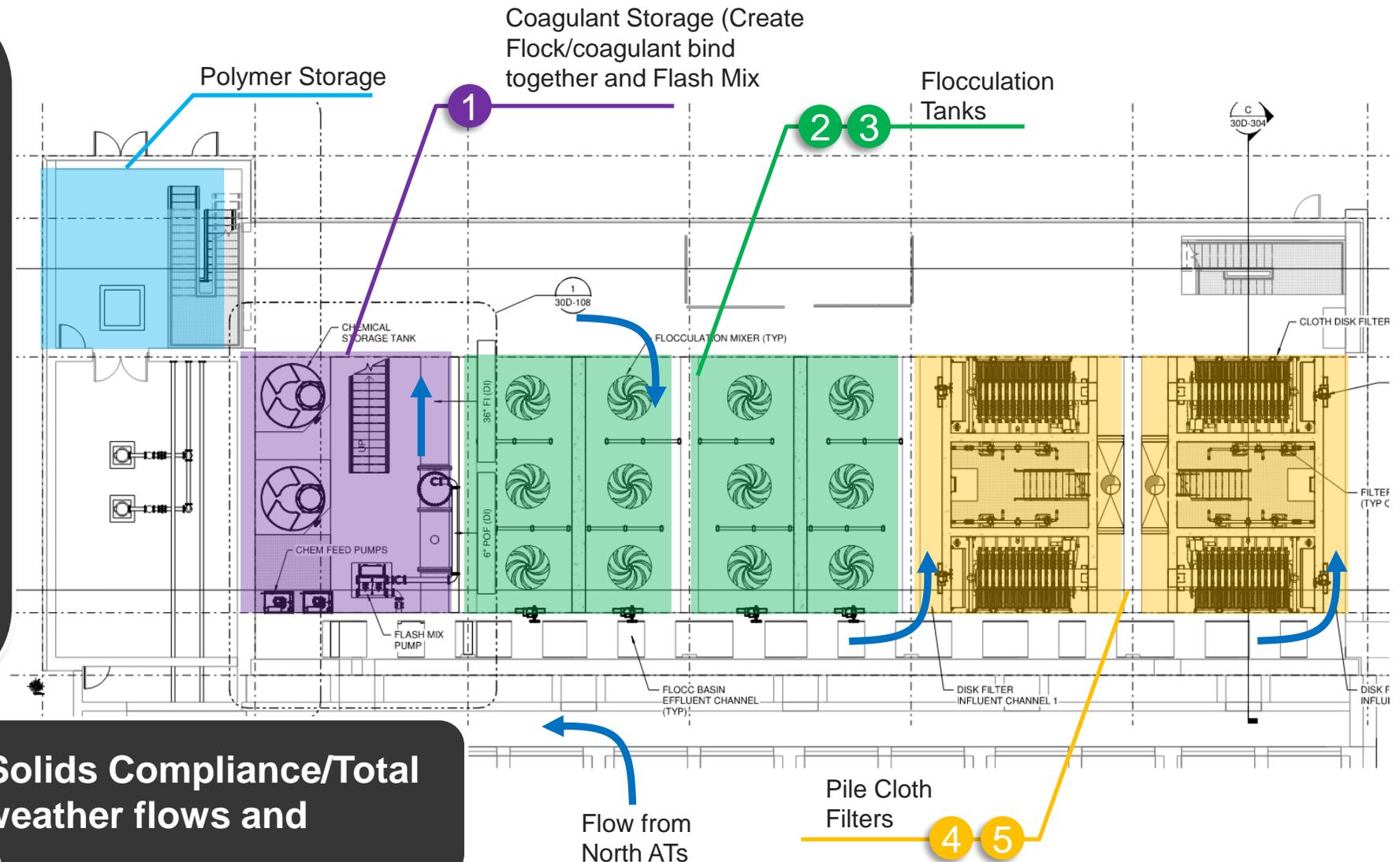
Filter Rehabilitation Design

Objective: Improve filter performance with respect to Total Suspended Solids and Total Phosphorus removal and increase component capacity.

Improvements

- ✓ Higher Solids & Phosphorus Removal
- ✓ Peak flow increased to 22.5 MGD from 13.5 MGD
- ✓ Less Power Used for Cleaning Cloth Filters
- ✓ Higher Treatment Capacity in Smaller Footprint
- ✓ Can expand to Future Cells within same footprint.

Risk: Totals Suspended Solids Compliance/Total Phosphorus during wet weather flows and further underdrain failure.



Instrumentation & Control Existing Utilities and Modifications

Remove in its entirety and Replaced/Relocated

CSO Storage PLC- Rack 1&2

Pipe Gallery (RAS) PLC

Effluent PLC

Boiler PLC

Filter Main Control Panel

Filter Consoles

Modified and Replaced within Panels

CSO Disinfection PLC

Screen and Press PLC

Clarifier PLC

Lift Station PLC

Blower Building PLC

UV main Control Panel

UV Building PLC

Control Building PLC



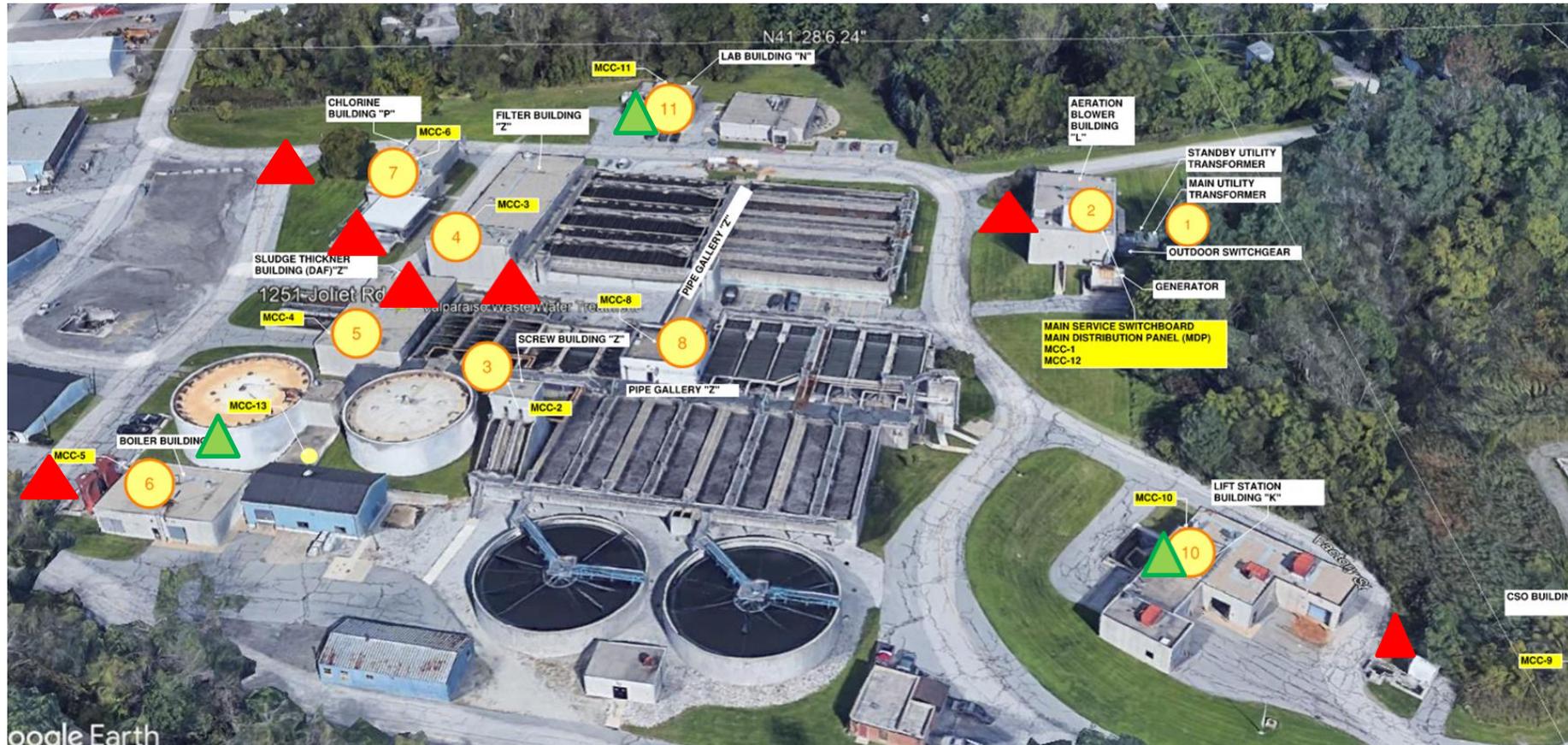
Overall Modifications

- New Process Control System redundant servers, network switches, and fiber optic loop
- New Operator computer workstations
- New Plant-wide PLC programming and software
- Upgraded iFix software (building on existing licensing) and programming
- Other new instruments and equipment; valving, flowmeters, gas detection

Electrical Equipment Assessment

Location of existing power equipment inspected at Elden Kuehl Pollution Control Facility

-  TO BE REPLACED
-  TO REMAIN



Sturdy Road Regional Lift Station Project Constructed in the 1980s (Tin Can Design)

Strategic Regional Pump Station

Useful Life Reached – 40 + Years

Force Main Failures – Piping

Limited Capacity

Confined Space Entry

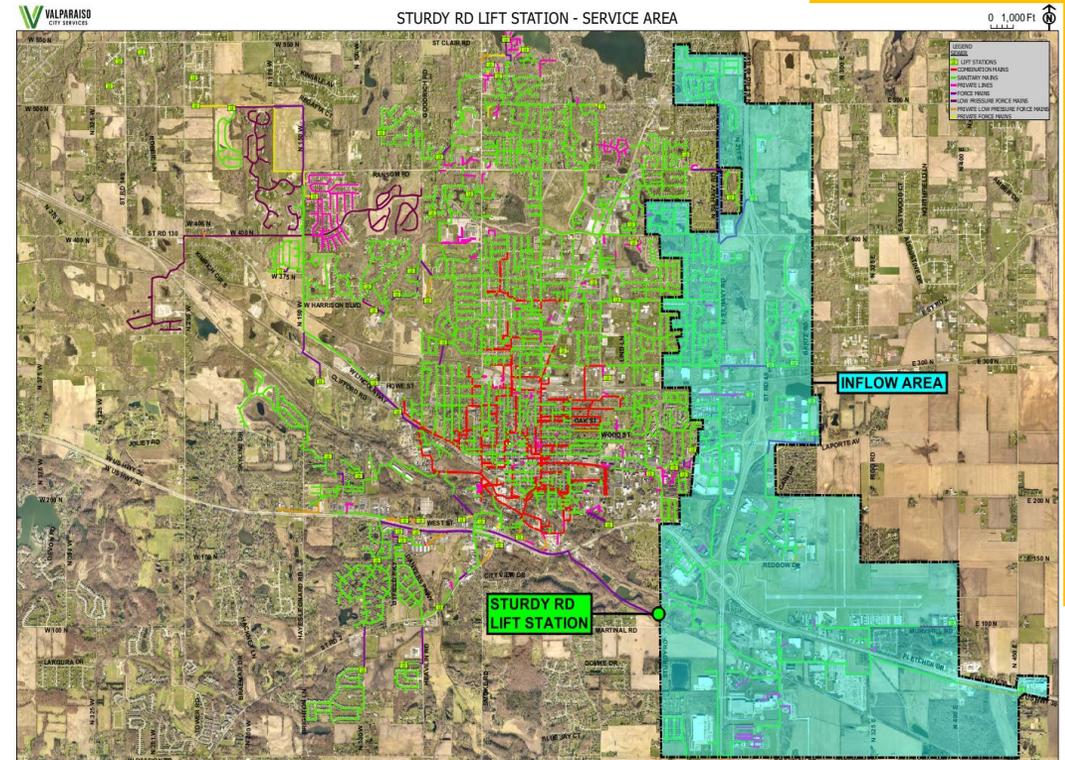
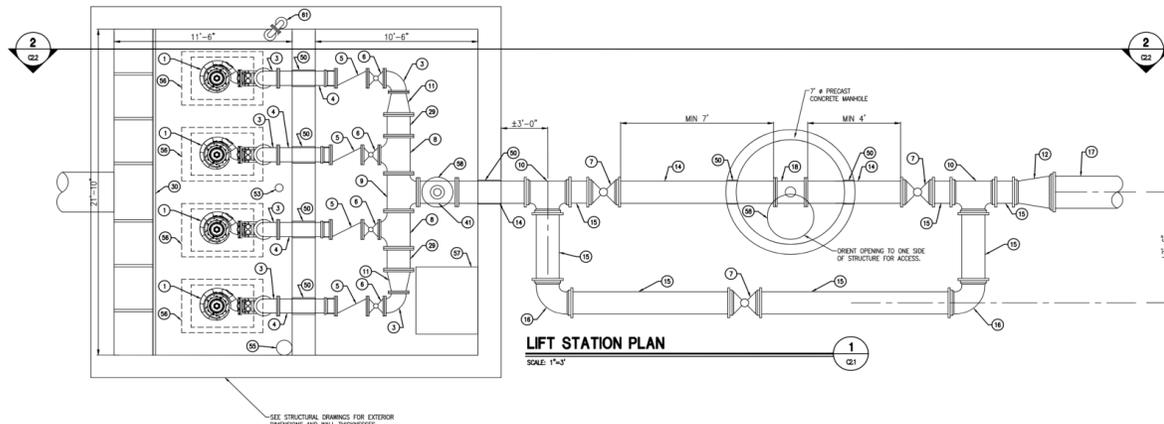
Pumps Plug Often

Continual Maintenance



Sturdy Road Regional Lift Station Project Upgrades Include:

- 4 Plex Pump Station w/Redundancy Increase – Capacity to 8.2 MGD
- 13,000 Feet of C900 Plastic (Thicker diameter)
- Provide Capacity to Horseprairie Pump Station
- Employee Safety (Confined Space)
- Willing Property Owner



March 1st , 2024

UPGRADE SUMMARY

Water Projects

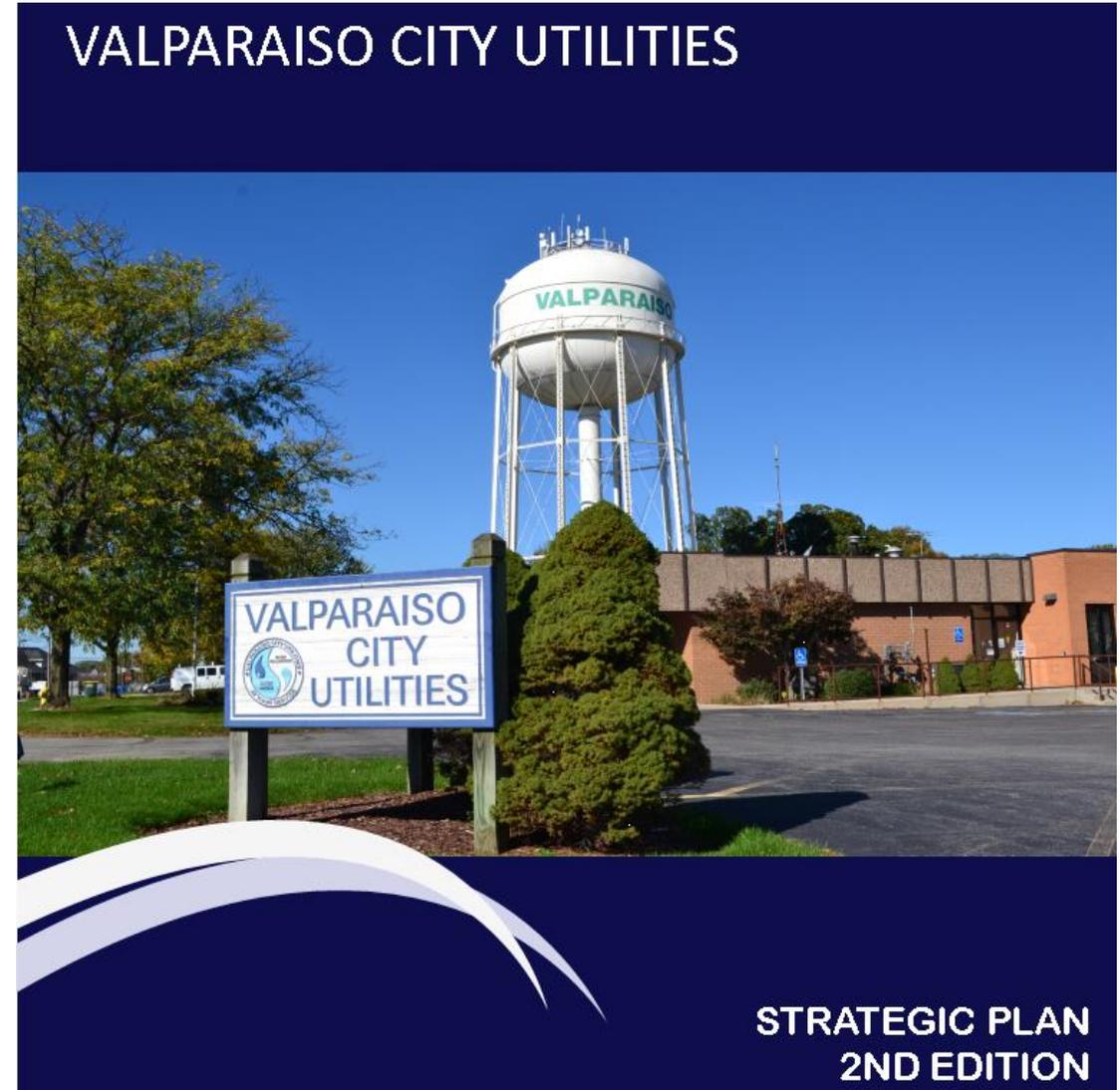
*Replace Aging Systems
(Aging Wells/Filters/Controls)*



PURPOSE OF ORDINANCE No. 29, 2022

- Engineering and construction of additions and improvements to the City's Waterworks.
- **\$23 Million financed through Bonds:**
 - Construction of up to 8 New Wells & Transmission Lines
 - ✓ Phase II – 4 Wells by 2023
 - ✓ Phase III
 - ✓ Additional Wells
 - ✓ Backwash Recycling System Flint Lake
 - ✓ 4 New Filters (Airport Plant)
 - ✓ Structural & Electrical Modification
- The ability to issues Bond Anticipation Notes (BANs) of not to exceed **\$6 Million**
 - Interim Financing for:
 - Engineering Phase II & III **\$2.3 Million**
 - Phase II Construction 4 Wells **\$5 Million**

VALPARAISO CITY UTILITIES



STRATEGIC PLAN
2ND EDITION

Phase II Installations & Future Installations



- Existing Production Wells
- Potential New Well Sites

- Potential New Water Main
- Potential Sanitary Setback Area

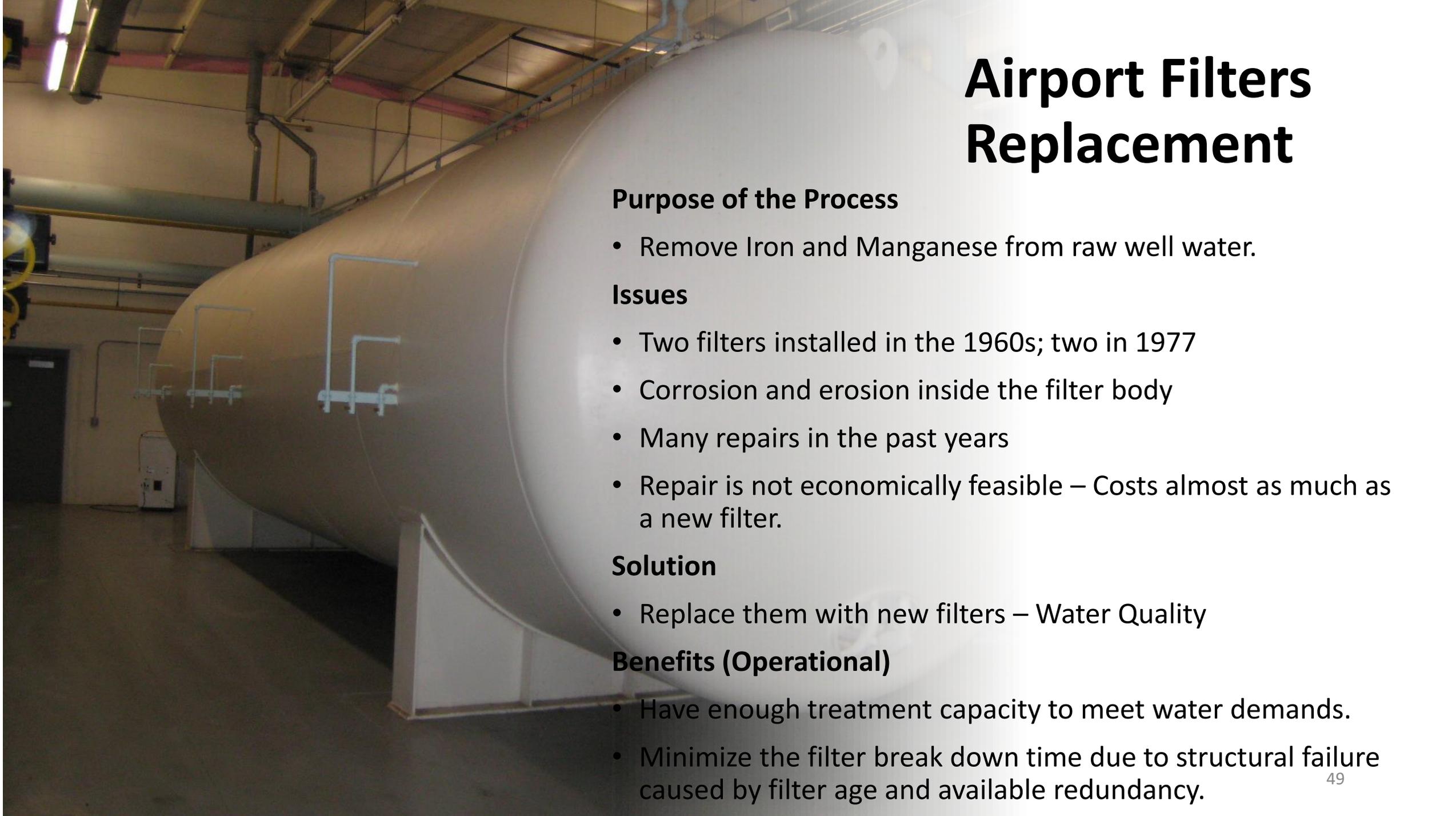
Notes: * Generalized location selected to minimize Impacts to private residential wells

Phase II Installation & Flint Lake



Phase III Country Club Wells Replacement



A large, cylindrical, light-colored industrial water filter tank is the central focus of the image. It is situated in a dimly lit industrial facility with visible pipes and structural elements in the background. The tank has several access points and valves on its side. The overall scene is industrial and functional.

Airport Filters Replacement

Purpose of the Process

- Remove Iron and Manganese from raw well water.

Issues

- Two filters installed in the 1960s; two in 1977
- Corrosion and erosion inside the filter body
- Many repairs in the past years
- Repair is not economically feasible – Costs almost as much as a new filter.

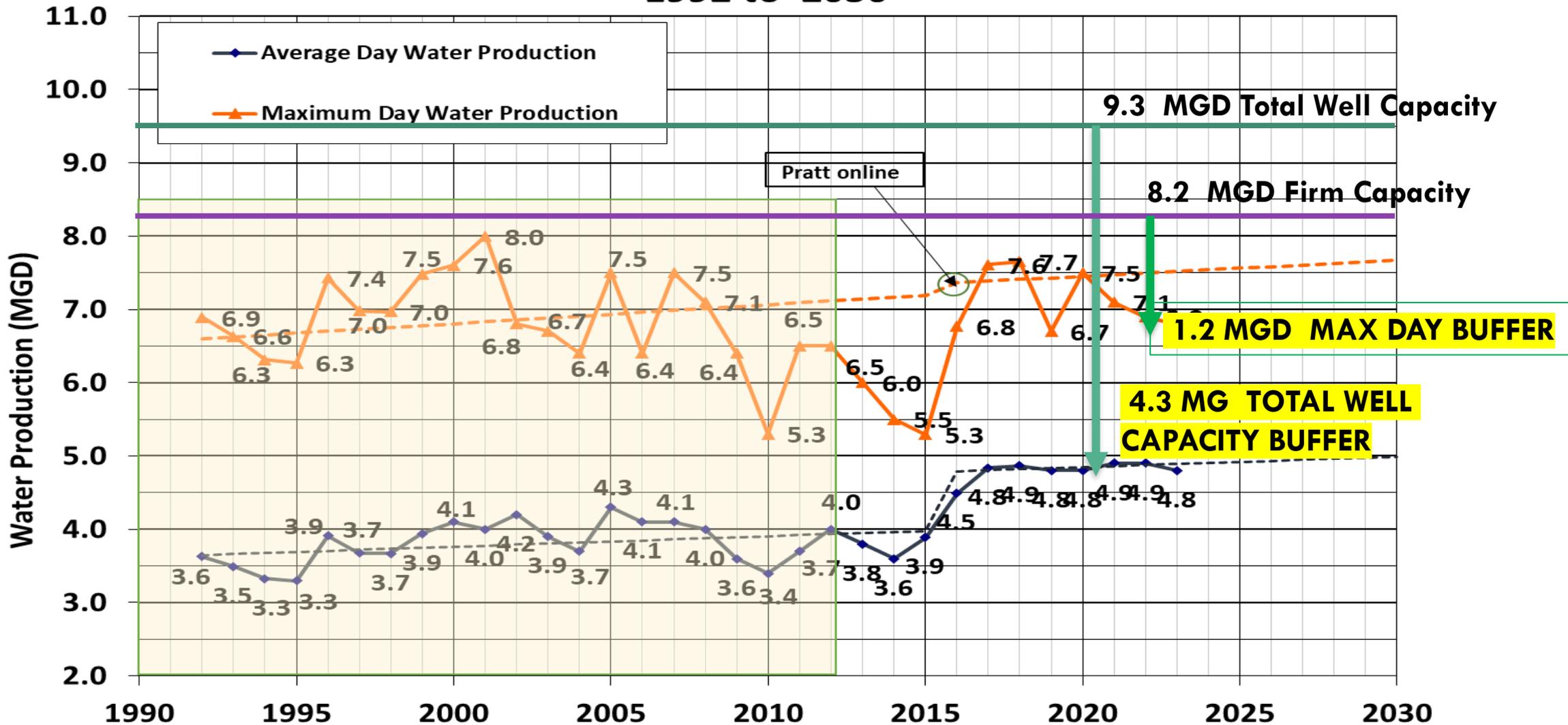
Solution

- Replace them with new filters – Water Quality

Benefits (Operational)

- Have enough treatment capacity to meet water demands.
- Minimize the filter break down time due to structural failure caused by filter age and available redundancy.

Water Production Records and Prediction 1992 to 2030



Rate Analysis



Primary Drivers of Rate Adjustments

- Last rate adjustment for both utilities were adopted in 2013, with the current phase effective 1/1/2016.
- Significant 5-year capital plans – Aging Infrastructure
- Plant Upgrades and Expansion
- Higher operating costs are expected to continue due to several factors beyond VCU's control.

Summary of Key Changes

- Total revenue requirement increases over the 5 year planning period estimated to be approximately 46% for Water Reclamation and 44% for Waterworks through 2028 with bond projects
- Requires combined average residential water and sewer bill increase of approximately \$32/month resulting in a combined average bill of ~\$104 per month.
- Phasing of rates is suggested and is included in the final few charts.

Rate Adjustment History

Valparaiso Sewer - Based on 535 CCF

	<u>Prior to 1998</u>	<u>2000 (1)</u>	<u>2010 (2)</u>	<u>2016 (3)</u>	<u>2028 (4)</u>
\$ Amount	\$19.29	\$25.58	\$31.65	\$41.98	\$61.40
% Increase		32.6%	23.7%	32.6%	46.3%

Valparaiso Water - Based on 535 CCF

	<u>1995</u>	<u>2002 (5)</u>	<u>2011 (6)</u>	<u>2016 (3)</u>	<u>2028 (4)</u>
\$ Amount	\$17.89	\$17.37	\$21.97	\$29.81	\$42.87
% Increase		-2.9%	26.5%	35.7%	43.8%

(1) Final phase of three phase rate increase with phases effective July 1998, January 1999, and January 2000

(2) Final phase of three phase rate increase with phases effective February 2007, July 2008, and January 2010.

(3) Final phase of three phase rate increase with phases effective January 2014, July 2014, and January 2016.

(4) Final phase of five phase rate increase with phases effective upon adoption, July 2025, July 2026, July 2027, and July 2028.

(5) Rates effective October 2002.

(6) Final phase of two*phase rate increase with phases effective January 2010 and January 2011.



Summary of Projects

ESTIMATED PROJECT COSTS

Estimated Construction Costs:

Phase I Elden Kuehl Pollution Control Facility Upgrade (GMP 01.11.24)		
Construction	\$40,556,032	
Provider/Contractor Fixed Fee	3,406,731	
Construction Contingency	2,028,108	
Sub-total		\$45,990,871

Sturdy Road Pipe (3.12.24 Bids)	7,700,000	
Sturdy Road Lift Station Replacement Project (GMP 02.19.24)	5,981,408	
Contingency (5%)	685,000	
Sub-total		14,366,408

Total Construction Costs \$60,357,279

Estimated Non-Construction Costs:

Stantec and DLZ Engineering & Design	4,500,000	
DLZ Construction Administration/RPR Services	360,000	
Cost of Issuance	175,863	

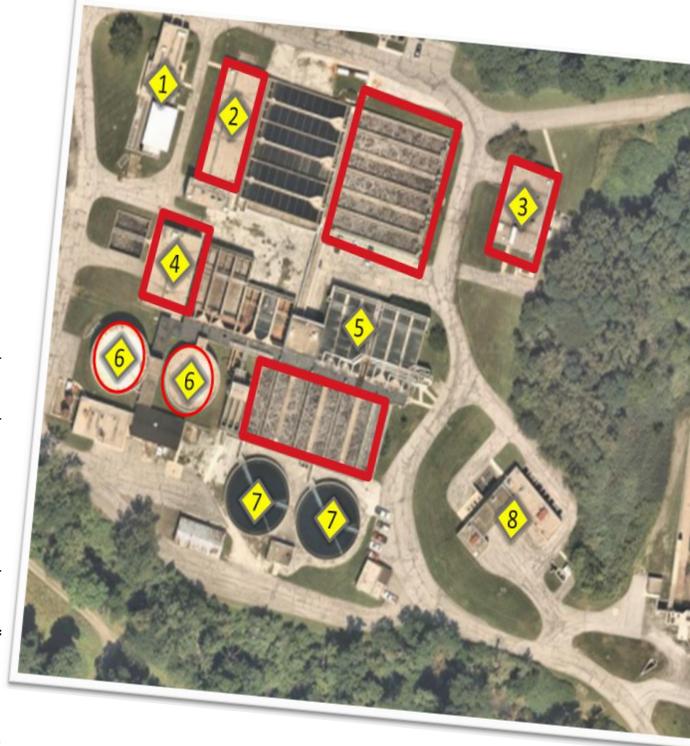
Total Estimated Project Costs \$65,393,142

ESTIMATED PROJECT FUNDING

Proposed 2024 Bond - Traditional	\$25,000,000
Proposed 2024 Bond - Pooled	37,049,000
Cash on hand (1)	3,344,142

Total Estimated Project Funding \$65,393,142

(1) Assumes \$3,344,142 of engineering is paid from cash on hand.

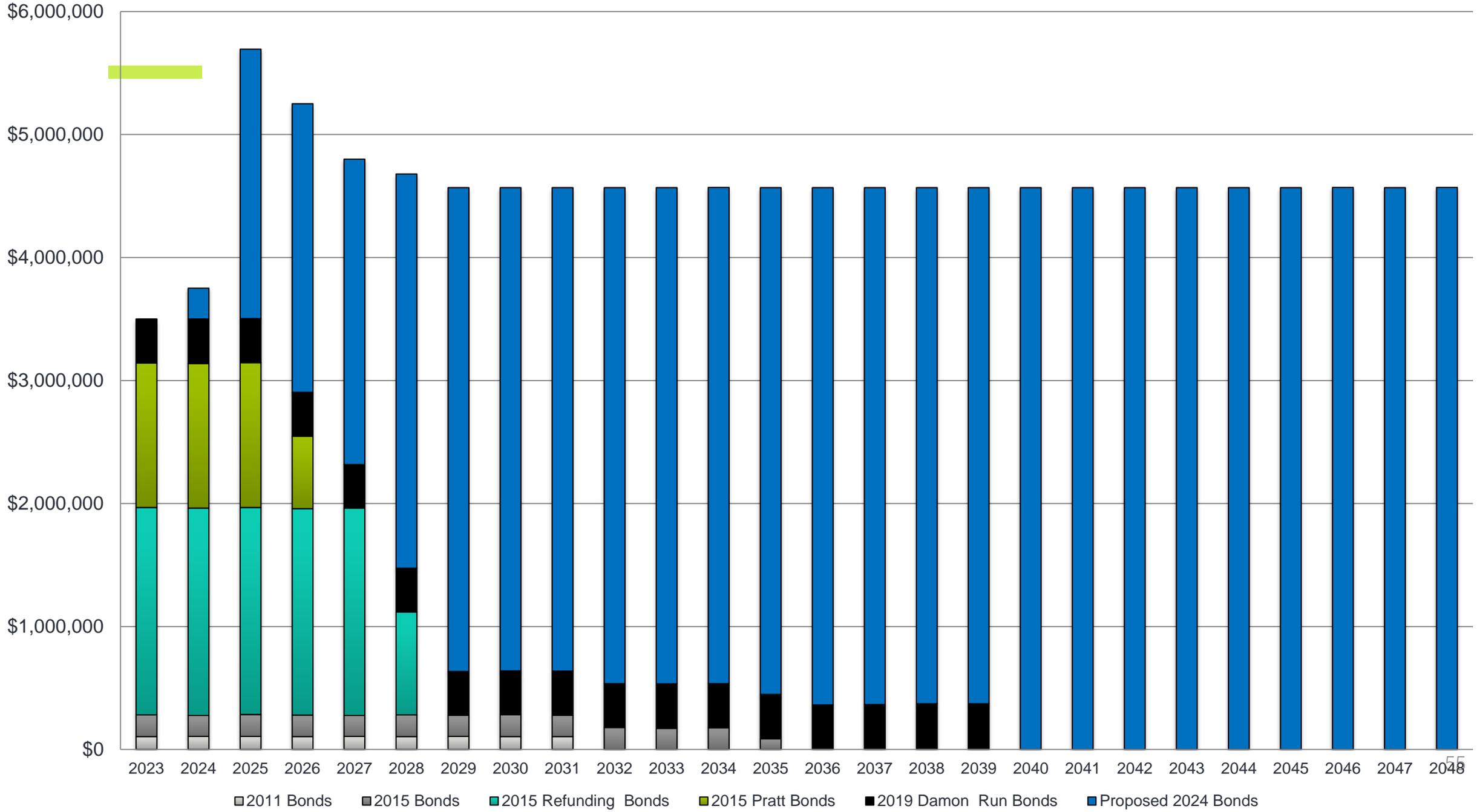


2024: Current EKPCF Upgrades Project including

- Filter Replacement
- Aeration System Upgrades
- WAS Thickening
- Digester Rehab
- Pipe Gallery Roof Repair
- MCC and Switchgear Replacement
- New SCADA System
- Sturdy Road Pump Station

- Note there are approximately \$15 million of other capital improvements needed as of 2030 that will be cash funded.
 - A \$1 million change in bond sizing results in an approximate 1% change in rate adjustments.

Water Reclamation Total Proposed Debt Service

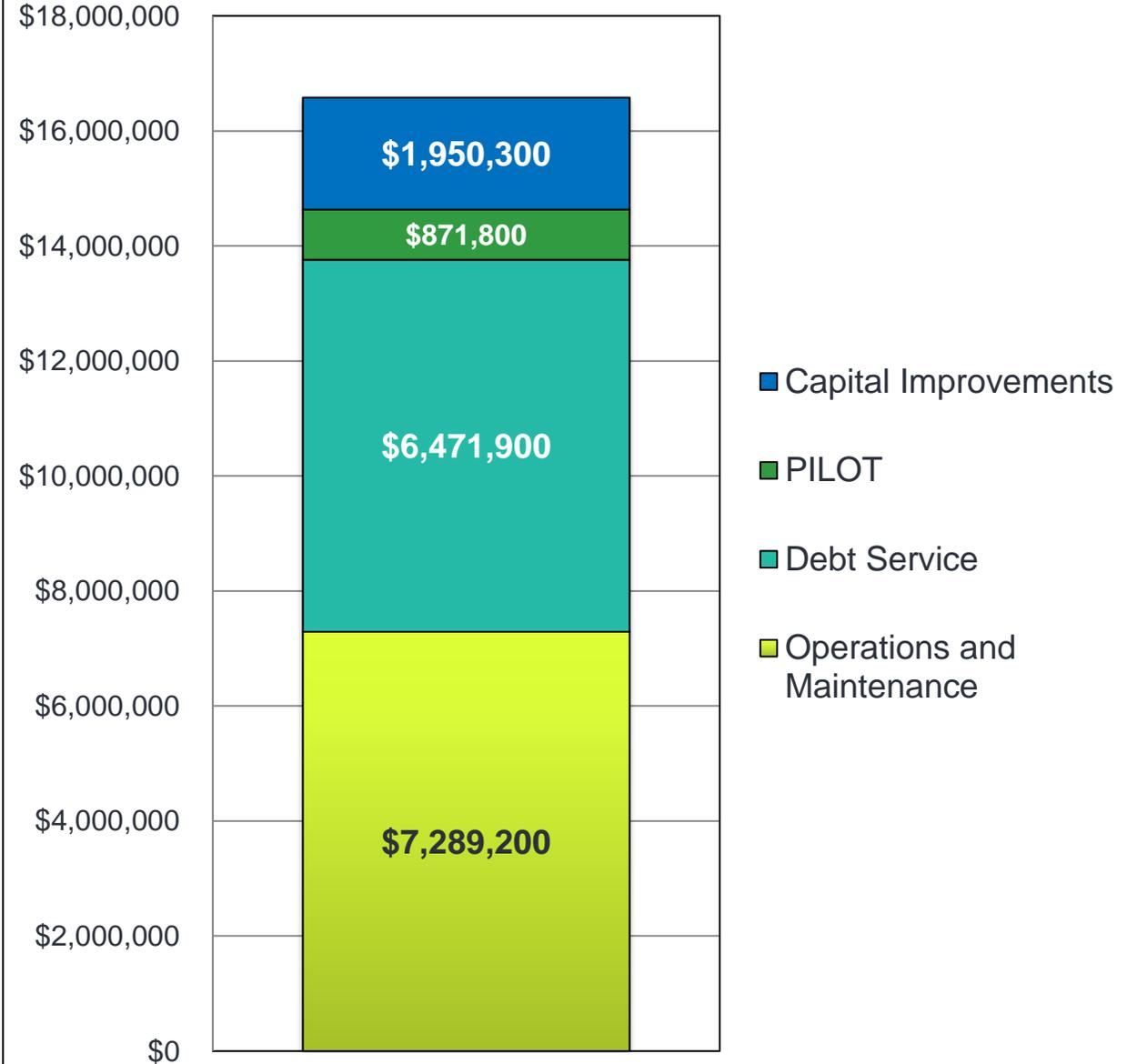


Composition of Proposed Rate Increase

29% - Proposed Debt Service

17% - Additions to Capital and Operations Cost

Water Reclamation Department Revenue Requirement Comparison



VALPARAISO (INDIANA) WATER RECLAMATION DEPARTMENT

ESTIMATED RECEIPTS AND DISBURSEMENTS

(Amounts rounded to the nearest \$100)

	<u>2024</u>	**	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>
Proposed Rate Increase	7.90%		7.90%	7.90%	7.90%	7.90%
Annual operating receipts (1)	\$10,890,500		\$12,096,400	\$13,052,100	\$14,083,100	\$15,195,700
Plus: Total annual receipts not subject to rate increase	1,371,100		1,371,100	1,371,100	1,371,100	1,371,100
Less: Annual operating disbursements (2)	<u>(6,798,400)</u>		<u>(7,002,400)</u>	<u>(7,212,500)</u>	<u>(7,428,900)</u>	<u>(7,651,800)</u>
Net operating receipts	5,463,200		6,465,100	7,210,700	8,025,300	8,915,000
Less: Capital improvements (3)	(1,545,900)		(2,173,000)	(1,680,000)	(2,402,500)	(1,950,300)
Plus: Pratt Surcharge (4)	1,174,800		1,177,900	589,700	-	-
Less: Payment in Lieu of Property Taxes (3)	(871,800)		(871,800)	(871,800)	(871,800)	(871,800)
Less: DSR Reserve	(412,100)		(494,500)	(494,500)	(494,500)	(494,500)
Less: Debt Service (page 4)	<u>(3,750,400)</u>		<u>(5,693,500)</u>	<u>(5,250,000)</u>	<u>(4,799,500)</u>	<u>(4,678,300)</u>
Estimated increase (decrease) in unrestricted cash	<u><u>\$57,800</u></u>		<u><u>(\$1,589,800)</u></u>	<u><u>(\$495,900)</u></u>	<u><u>(\$543,000)</u></u>	<u><u>\$920,100</u></u>
				Total Unrestricted Cash Flow		<u><u>(\$1,650,800)</u></u>
Debt service coverage	<u><u>177%</u></u>		<u><u>134%</u></u>	<u><u>149%</u></u>	<u><u>167%</u></u>	<u><u>191%</u></u>
Resulting Approximate Average Residential						
Monthly Bill (Presently \$41.97 for 4,000 gallons/535 cubic feet)	<u><u>\$45.28</u></u>		<u><u>\$48.87</u></u>	<u><u>\$52.75</u></u>	<u><u>\$56.92</u></u>	<u><u>\$61.40</u></u>

* The \$1M Pratt Bond reserve will be used to pay the final payment and part of the 2025 payment.

** Assumes 8 months at 2024 rates.

(1) Based on calendar year 2023 information normalized for estimated Pratt decrease, decrease to 3 months of sprinkler credits (from 5) and recommended rate increases shown. Assumes outside user surcharge of 14.9% implemented in 2024.

(2) 2024 based on budget information and adjustments per Utility Management. Future years assume operating costs increase 3% per year.

(3) Per September 22, 2023 rate presentation.

(4) Assumed equal to annual payment on Pratt Bonds.

ESTIMATED PROJECT COSTS:

Estimated Construction Costs:

Phase 3:

Country club well and raw water main installation (GMP 1.22.24)	
Construction	\$946,712
Provider/Contractor fixed fee	79,524
Construction contingency	47,334

Sub-total	<u>1,073,570</u>
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Airport water treatment plant upgrades (GMP 02.21.24)	<u>5,614,188</u>
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Construction of 1 well (Pratt - assumes long transmission line)	<u>1,000,000</u>
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Additional phase 3 items:

SCADA panel & Instrumentation for new wells	74,825
SCADA system upgrade	537,000
Well drilling services	300,000
Pumping equipment	150,000
As needed engineering, well site surveys	20,000
Test wells	150,000
Pierce farm parcel	615,000

Sub-total	<u>1,846,825</u>
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Bowen and Wunderlich phase II invoices remaining to be paid	<u>421,328</u>
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Total Construction Costs	<u>9,955,911</u>
--------------------------	------------------

Estimated Non-Construction Costs

Phase III design (Arcadis)	1,471,000
Less amount paid by BAN through 2/27/24	(233,900)
Repayment of BAN principal and accrued interest*	6,237,075
Cost of issuance and rounding	140,270

Total Non-Construction Costs	<u>7,614,445</u>
------------------------------	------------------

Total Estimated Project Costs	<u><u>\$17,570,356</u></u>
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ESTIMATED PROJECT FUNDING:

Proposed 2024 Bond - Traditional	\$10,000,000
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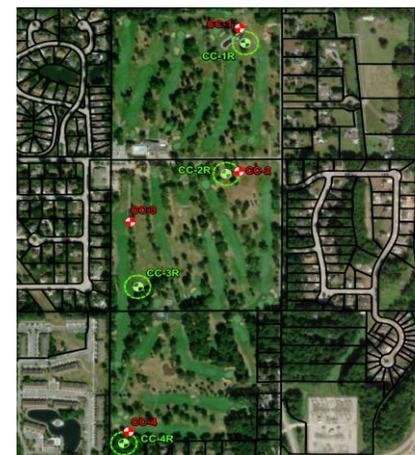
Proposed 2024 Bond – Pooled	4,447,000
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Cash on hand - BAN repayment	2,356,856
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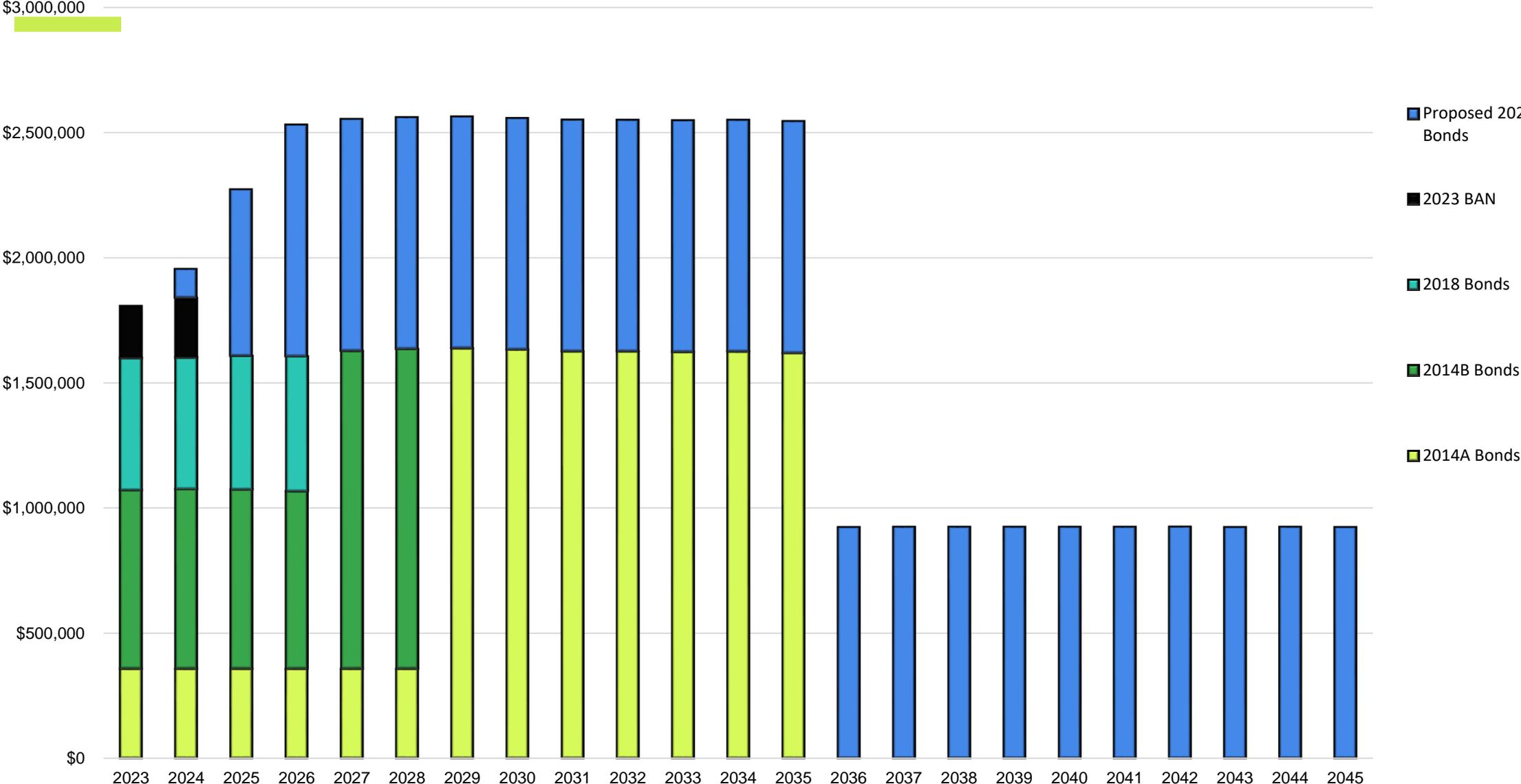
Cash on hand - Ineligible costs	<u>766,500</u>
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Total Estimated Project Funding	<u><u>\$17,570,356</u></u>
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* Accrued interest through June 20, 2024.



Department of Water Works Proposed Total Debt Service

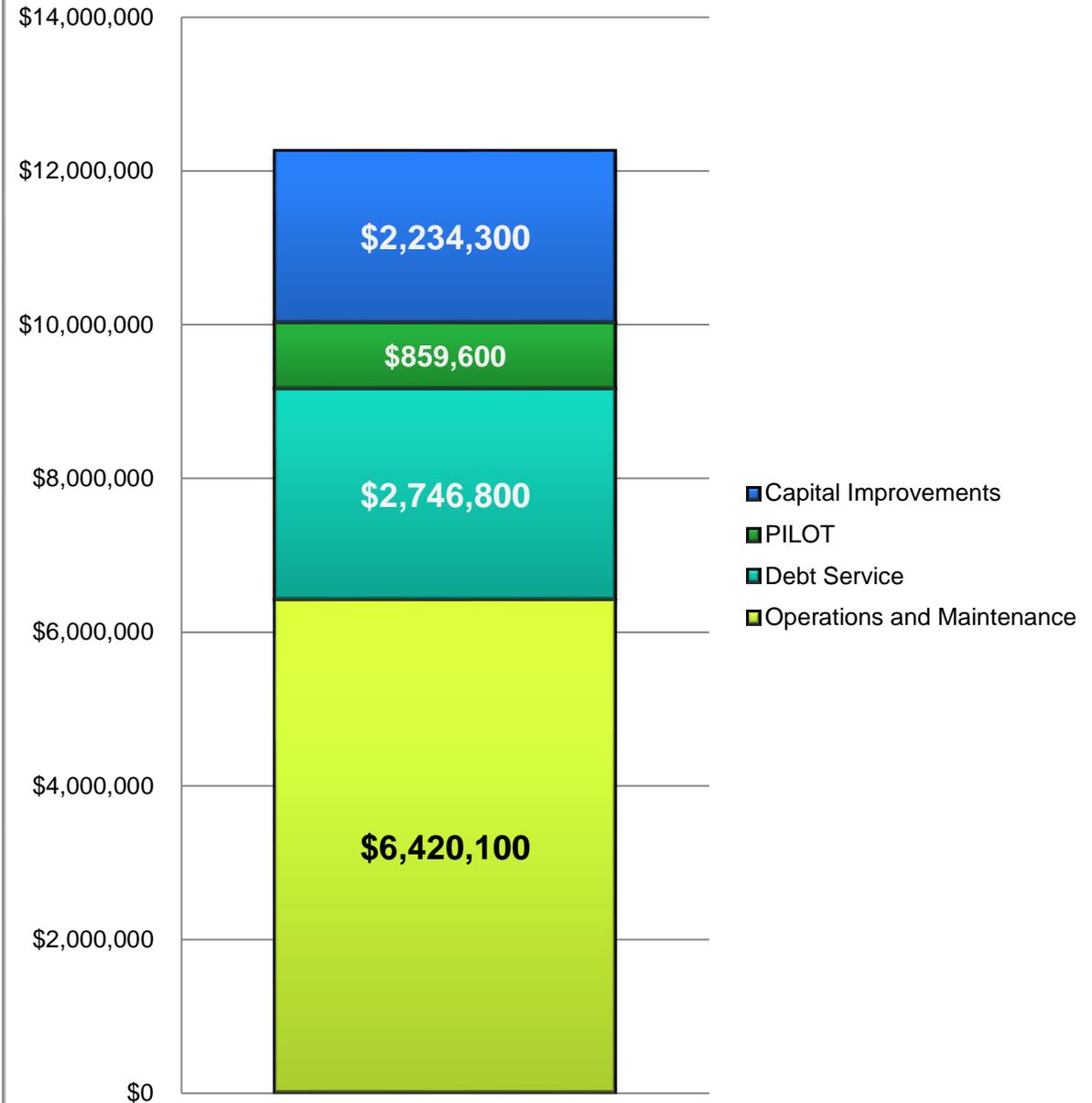


Composition of Proposed Rate Increase

23% - Proposed Debt Service

21% - Additions to Capital and Operations Cost

Department of Water Works Revenue Requirement Comparison



VALPARAISO (INDIANA) DEPARTMENT OF WATERWORKS

ESTIMATED RECEIPTS AND DISBURSEMENTS

(Amounts rounded to the nearest \$100)

	<u>2024</u> *	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>
Proposed Rate Increase	7.50%	7.50%	7.50%	7.50%	7.50%
Annual operating receipts (1)	\$9,078,200	\$10,061,300	\$10,815,900	\$11,627,100	\$12,499,100
Plus: Annual receipts not subject to rate increase	1,571,300	1,571,300	1,571,300	1,571,300	1,571,300
Less: Annual operating disbursements (2)	<u>(6,467,500)</u>	<u>(6,661,500)</u>	<u>(6,861,300)</u>	<u>(7,067,100)</u>	<u>(7,279,100)</u>
Net operating receipts	4,182,000	4,971,100	5,525,900	6,131,300	6,791,300
Less: Capital improvements (3)	(1,548,100)	(1,951,900)	(1,895,000)	(2,462,500)	(2,522,500)
Less: Payment in Lieu of Property Taxes (3)	(859,600)	(859,600)	(859,600)	(859,600)	(859,600)
Less: Debt service reserve	(154,100)	(184,900)	(184,900)	(184,900)	(184,900)
Less: Debt Service (page 8)	<u>(1,954,700)</u>	<u>(2,271,700)</u>	<u>(2,530,200)</u>	<u>(2,552,500)</u>	<u>(2,561,900)</u> (4)
Estimated increase (decrease) in unrestricted cash	<u>(\$334,500)</u>	<u>(\$297,000)</u>	<u>\$56,200</u>	<u>\$71,800</u>	<u>\$662,400</u>
				Total Unrestricted Cash Flow	\$158,900
Debt service coverage	<u>214%</u>	<u>219%</u>	<u>218%</u>	<u>240%</u>	<u>265%</u>
Resulting Approximate Average Residential Monthly Bill (Presently \$29.81 for 4,000 gallons/535 cubic feet)	<u>\$32.06</u>	<u>\$34.48</u>	<u>\$37.09</u>	<u>\$39.88</u>	<u>\$42.87</u>

* Assumes 8 months at 2024 rates.

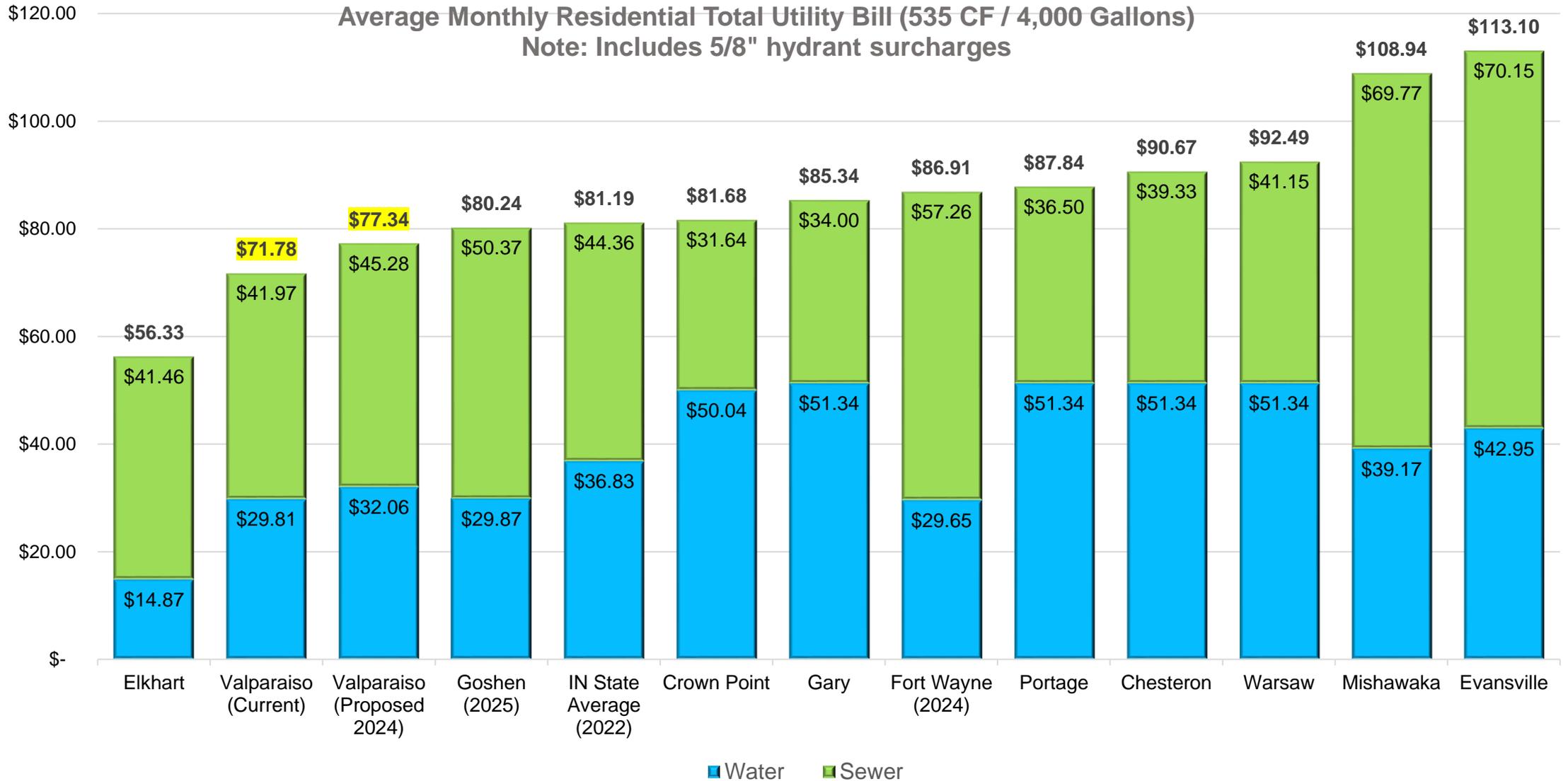
(1) Based on previous year receipts plus 14.9% outside customer surcharge and recommended rate increase shown.

(2) 2023 based on budget information per Utility Management. Future years assume operating costs increase 3% per year.

(3) Per September 22, 2023 rate presentation.

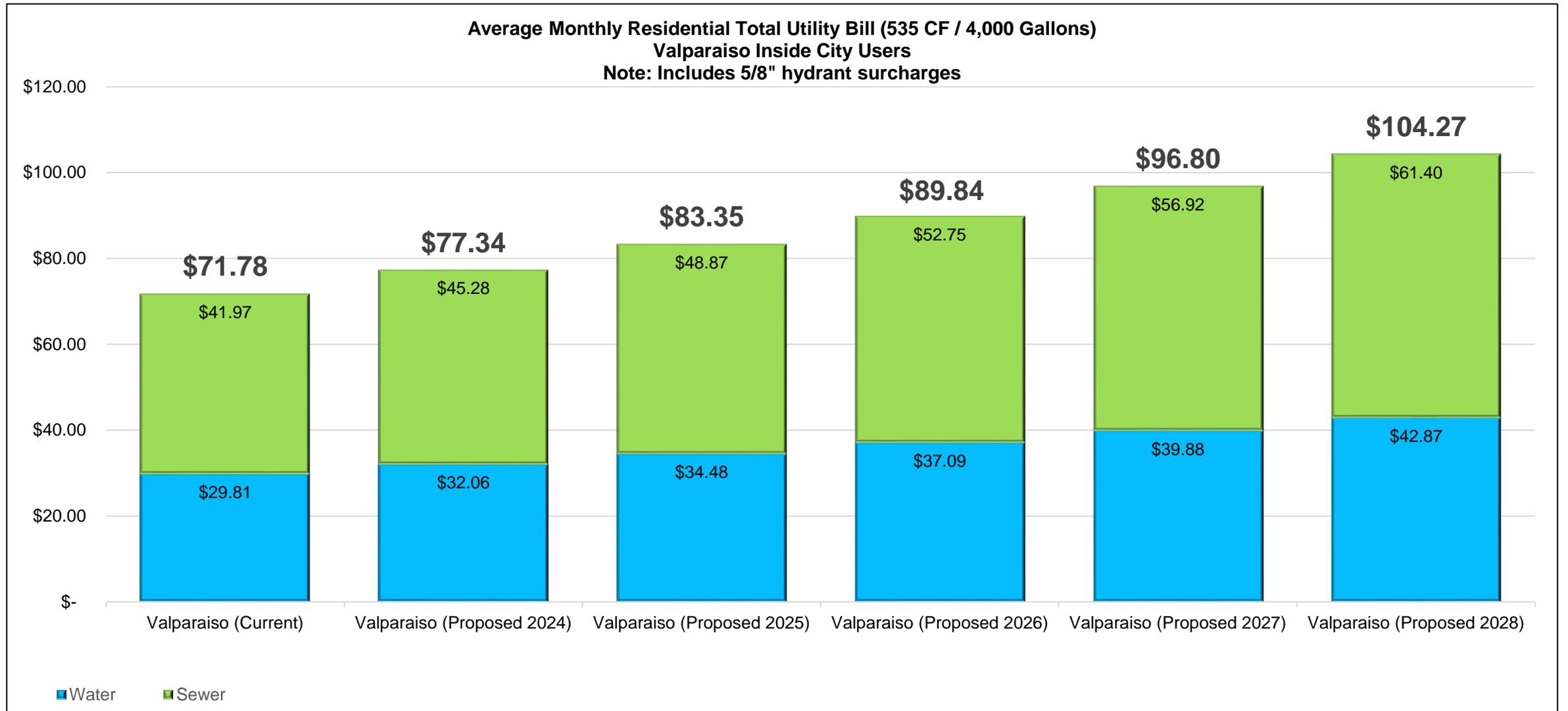
(4) Reflects the maximum annual debt service to ensure that there is sufficient revenues and coverage.

Valparaiso "Inside" City Water & Sewer Rates Compared to our Neighbors



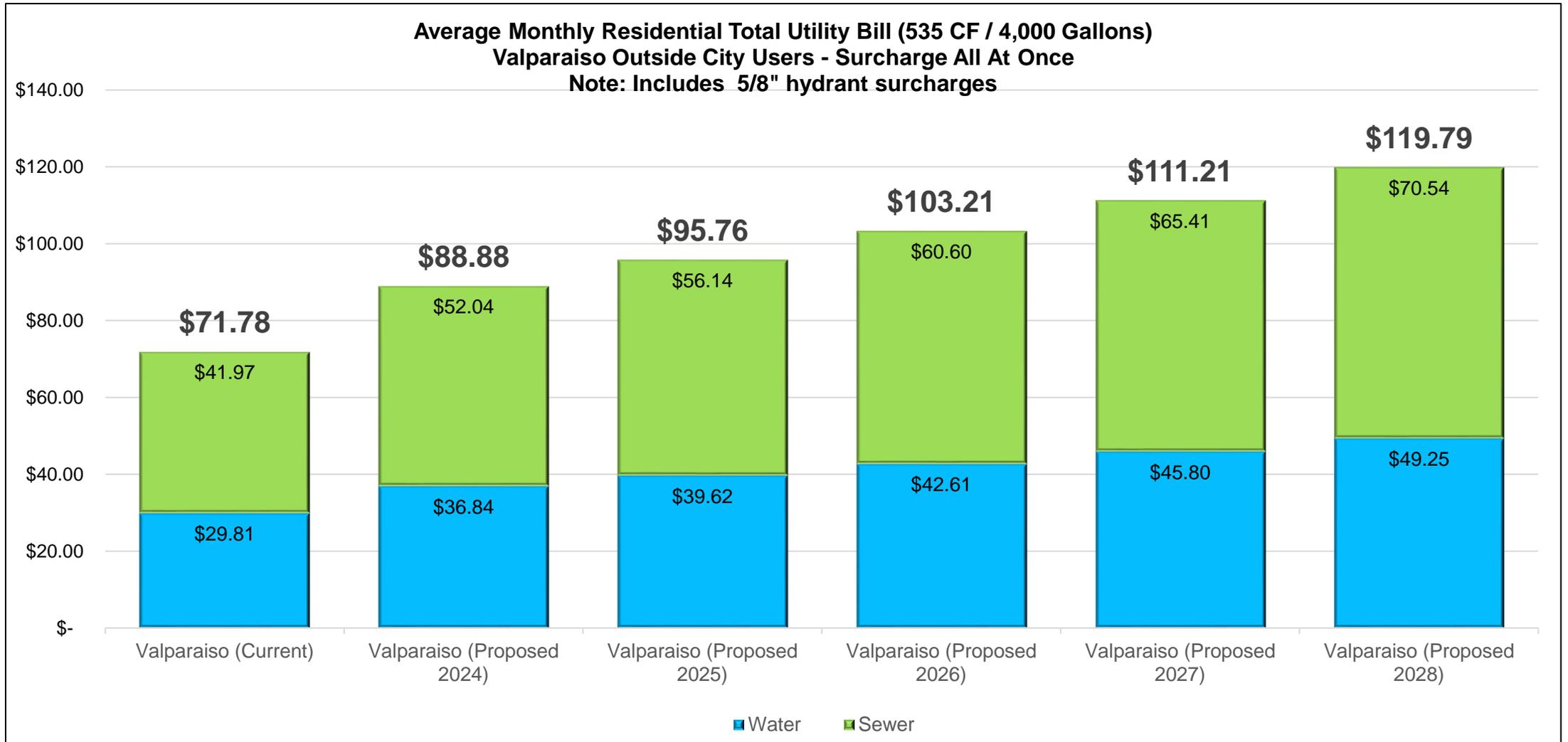
8% increase for Phase 1 sewer and water rates from current rates

Rate Comparisons – Inside Users (Future Phases)



- 45% overall increase from current rates to 2028 rates

Rate Comparisons – Outside Users (Future Phases)



- 67% overall increase from current rates to 2028 rates

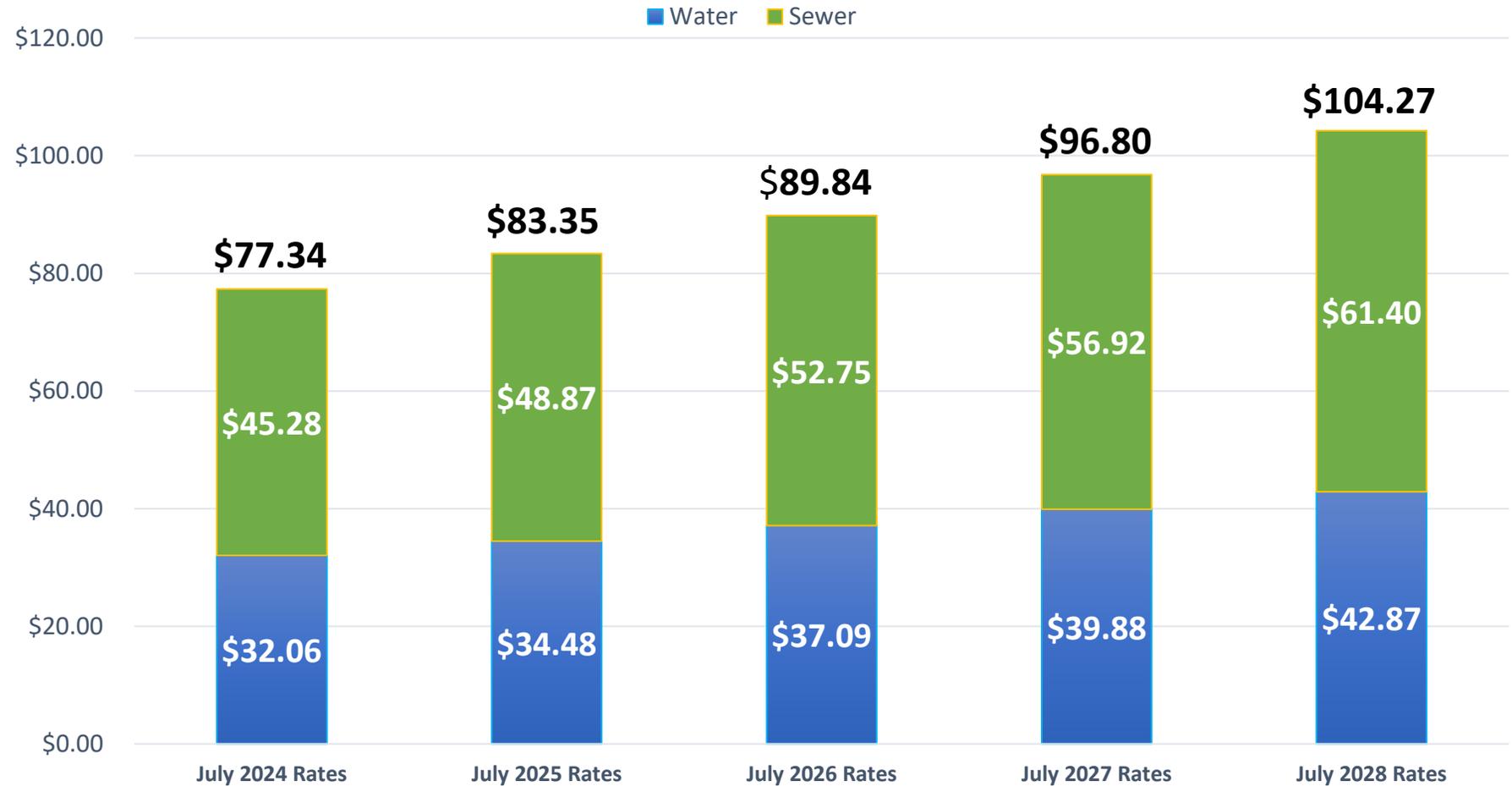
Typical Monthly Bill with Current Rates

Billing Details

Water	\$29.81
Sewage	\$41.97
Tax	\$ 1.19
Stormwater	\$12.50
Trash	\$19.50



Proposed “**Inside City**” Adjustment Impact on Water/Sewer Portion of Monthly Bill @ 4000 gal/month



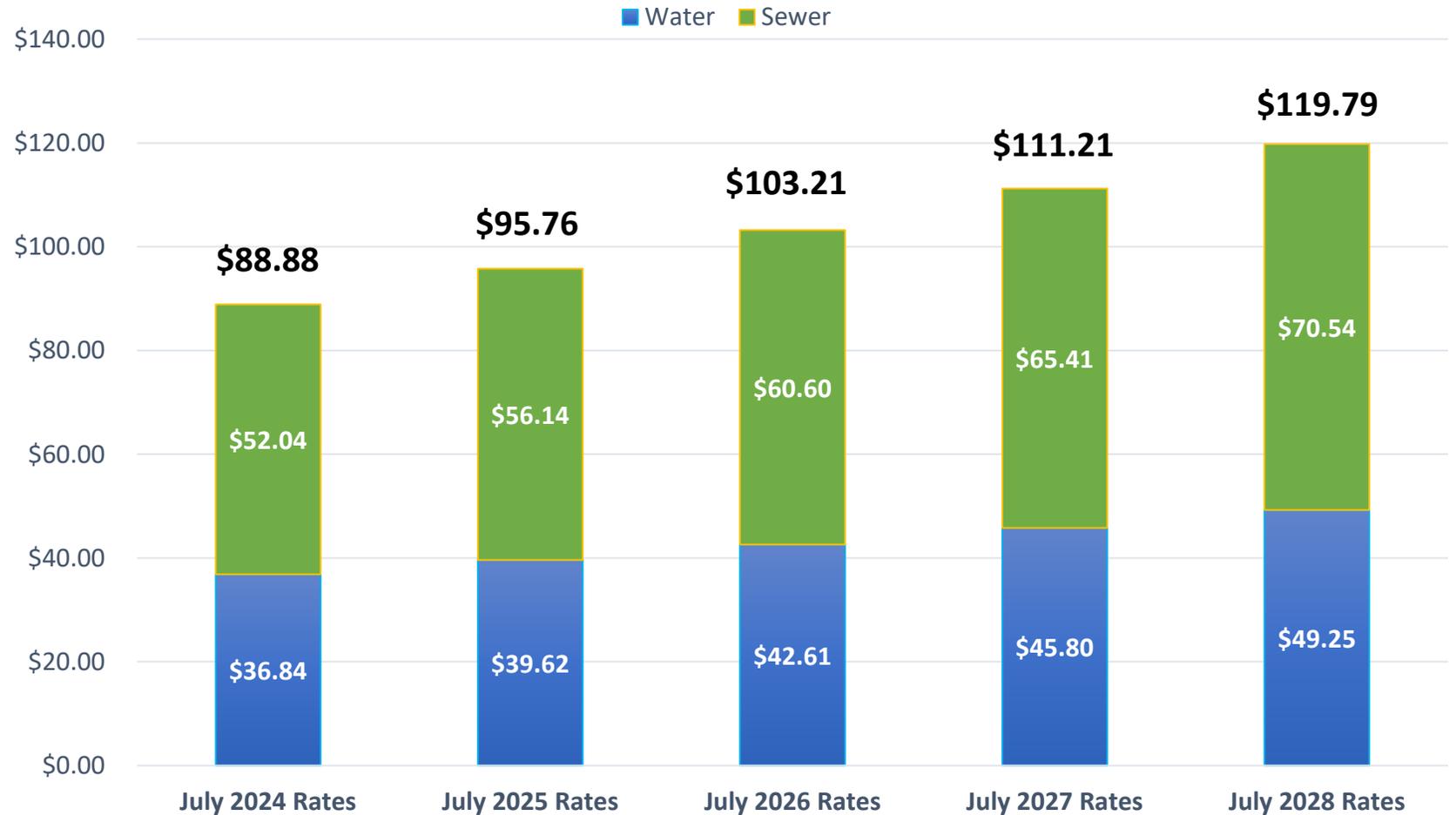
Typical Bill with Current 2024 Rates

Billing Details

Water	\$29.81
Sewage	\$41.97
Tax	\$ 1.19
Stormwater	\$12.50
Trash	\$19.50



Proposed "Outside City" Adjustment Impact on Water/Sewer Portion of Monthly Bill @ 4000 gal/month



Water Financial Summary

- **Proposed rates include:**
 - **Low Interest Rate Funding (\$10 Million of Project)**
 - **Sprinkling Average Amendment – Water Conservation**
 - **Outside User Rate Surcharge 14.9% - 2024**
 - **Proposed debt service for upgrades**
 - **Inflationary Adjustments for O&M**
 - **Annual Pay As you Go Funding & Aging Infrastructure**
 - **5 Year Phase Increase (2024 – 2028)**

Wastewater Financial Summary

- **Proposed rates include:**
 - **Low Interest Rate Funding (\$25 Million of Project)**
 - **Sprinkling Average Amendment – (5 Months to 3 Months)**
 - **Outside User Rate Surcharge 14.9% - 2024**
 - **Proposed debt service for upgrades**
 - **Inflationary Adjustments for O&M**
 - **Annual Pay As you Go Funding & Aging Infrastructure**
 - **5 Year Phase Increase (2024 – 2028)**

Remaining Schedule

- ✓ *April 8, 2024 - First Reading Bond & Rate Ordinances*
- ✓ *April 22, 2024 – Summary; Public Hearing & Final Vote*

Rate Case Document Center
www.valparaisoutilities.org

Email Questions to:
cityservices@valpo.us