

Valparaiso City Utilities

*Capital Infrastructure Projects
Water and Sewer Rate Adjustments*

1st Reading

*Water Rate Ordinance No. 8, 2024
Sewer Bond Ordinance No. 9, 2024
Sewer Rate Ordinance No. 10, 2024*

*Presented to the City Council of Valparaiso, Indiana
April 8, 2024*

Agenda



Introduction



Challenges



**Operational
Culture &
Results**



**The Projects
Water &
Sewer**

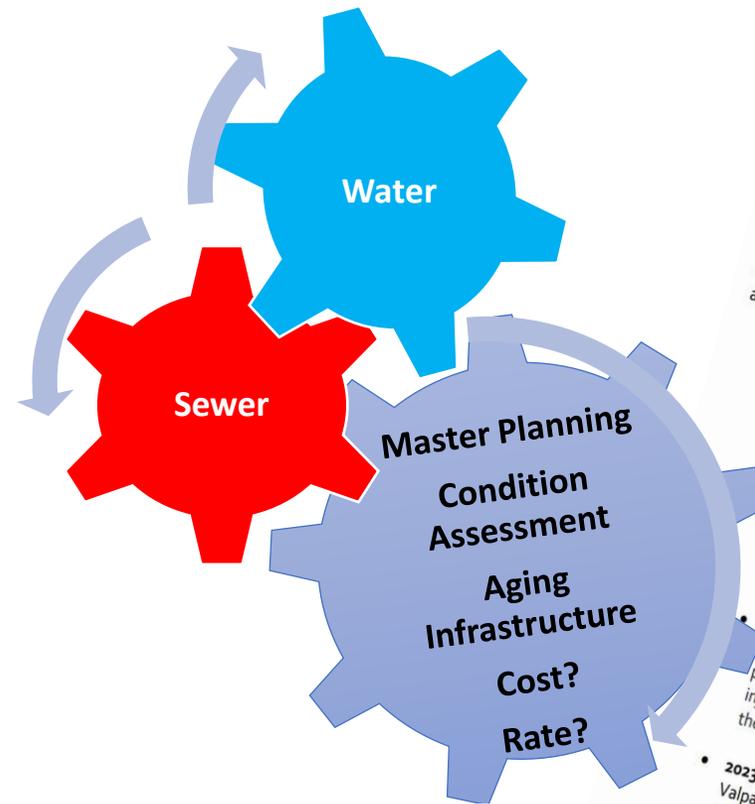


**Customer
Impacts**

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)

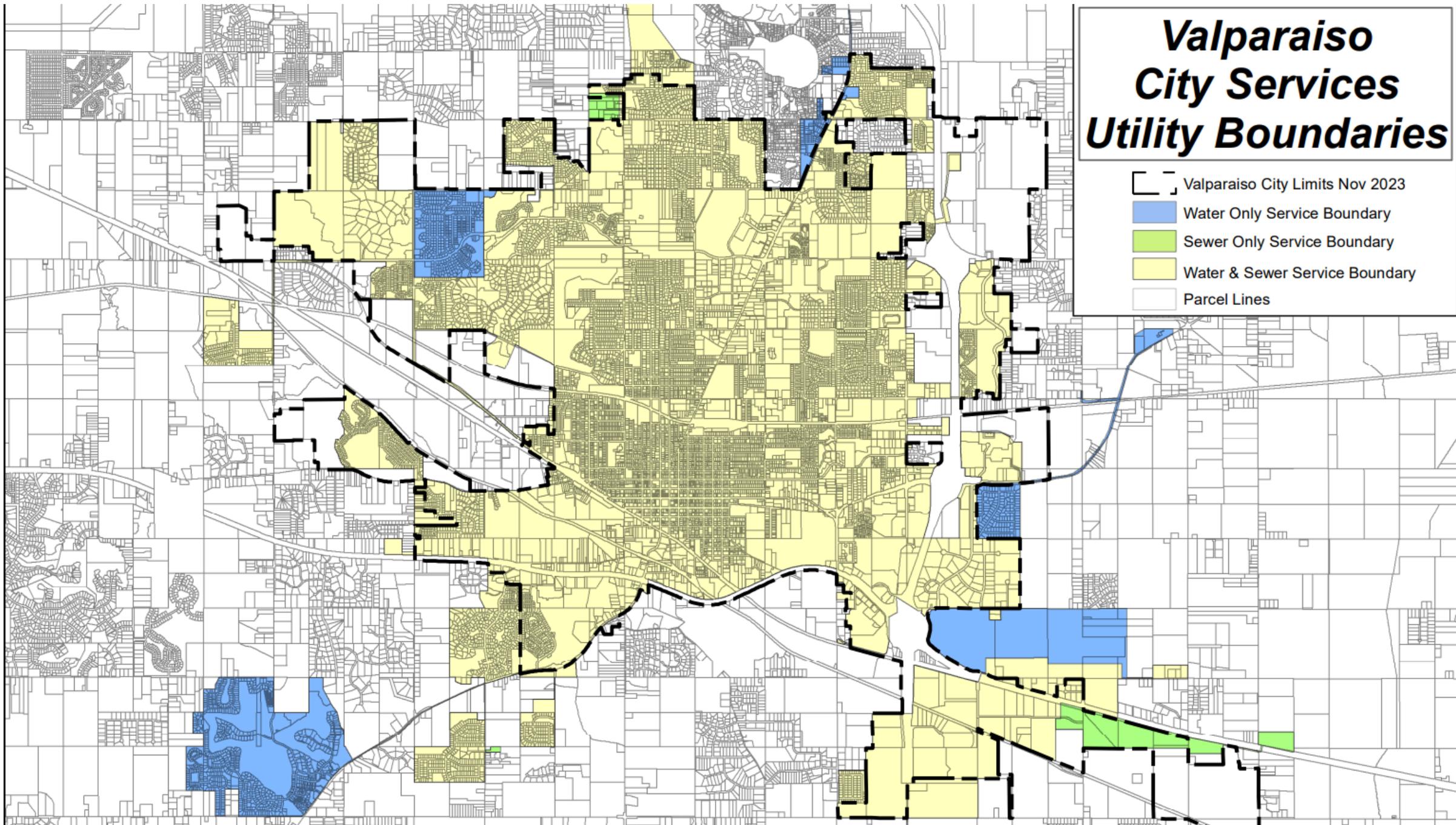
Safety Awards recognize facilities for maintaining a low number of lost-time accidents and performance on an annual safety report. The VCS went 763 consecutive days without a work loss injury until this streak was ended in November of 2023. Our Safety and Security committee sets the structure and program 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

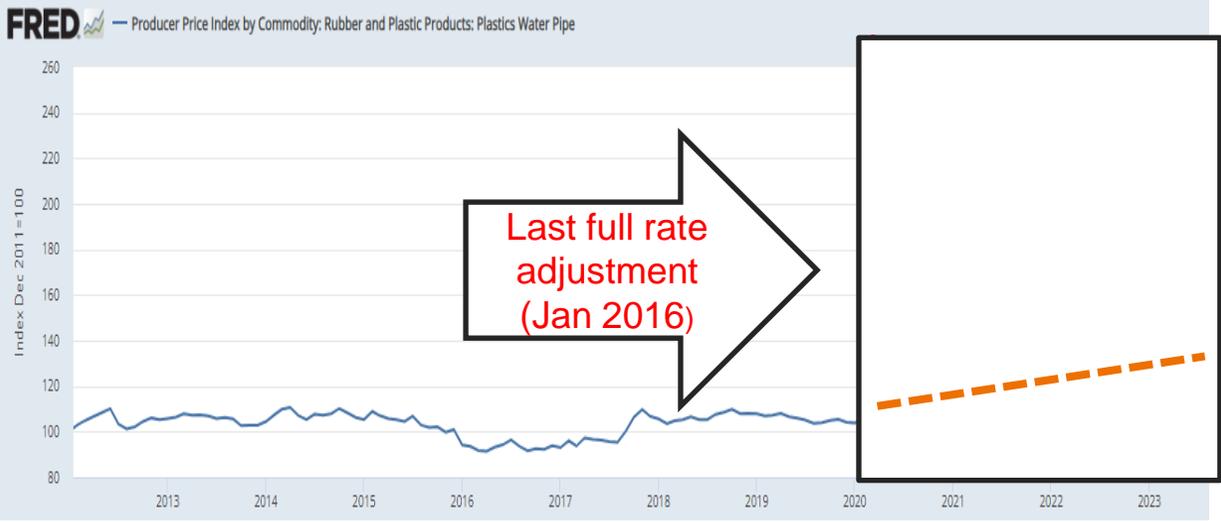
Classroom Sessions with Board of Directors & City Council

Implementation of Phase I Water Sewer Rate Adjustments
July 2024

Rate Adjustments are Driven By:

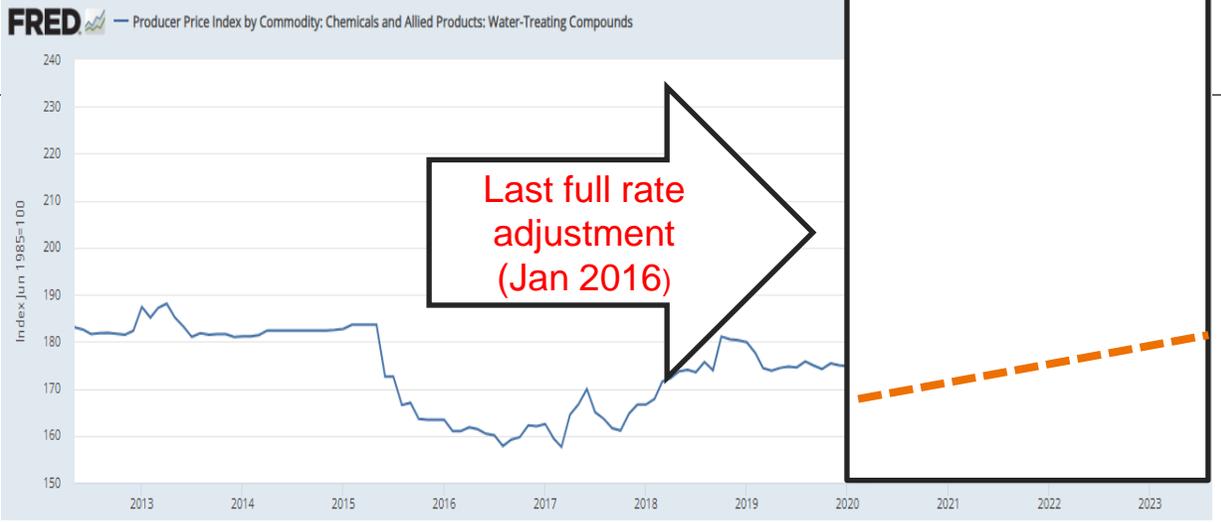
- **Upgrading Water & Wastewater Facilities**
- **Cumulative effects of inflation (power, fuel, chemicals, labor costs and benefits)**
- **Environmental Requirements**
- **Capital Improvement Plan (Pay as you go)**
- **Infrastructure Rehabilitation (Aging Infrastructure)**





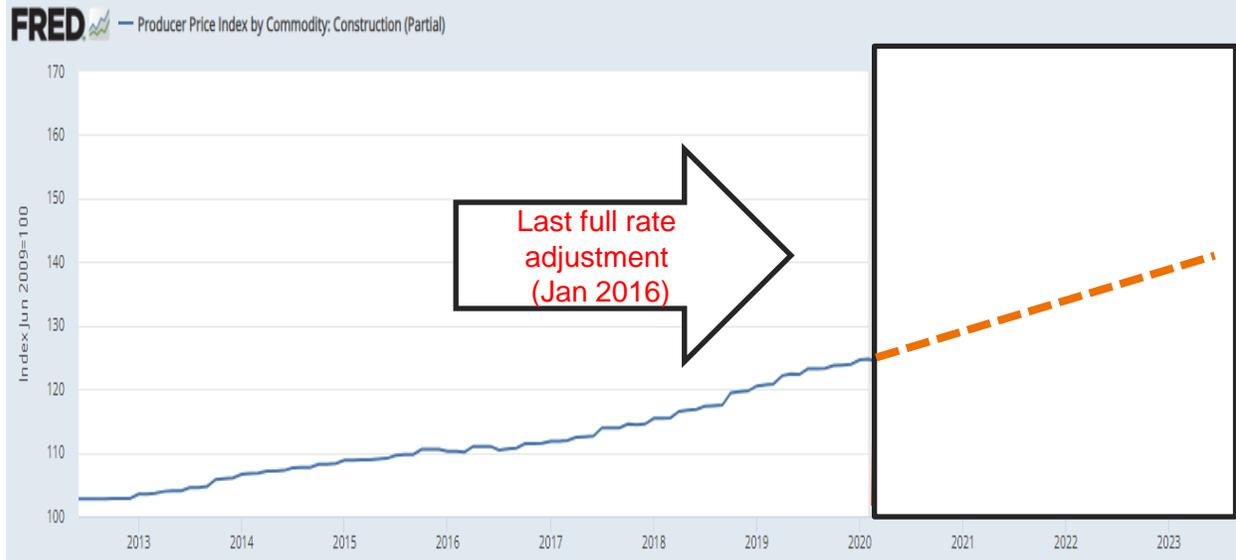
National Commodity Index – Plastic Water Pipe

- Up 132% from 2020 to 2023



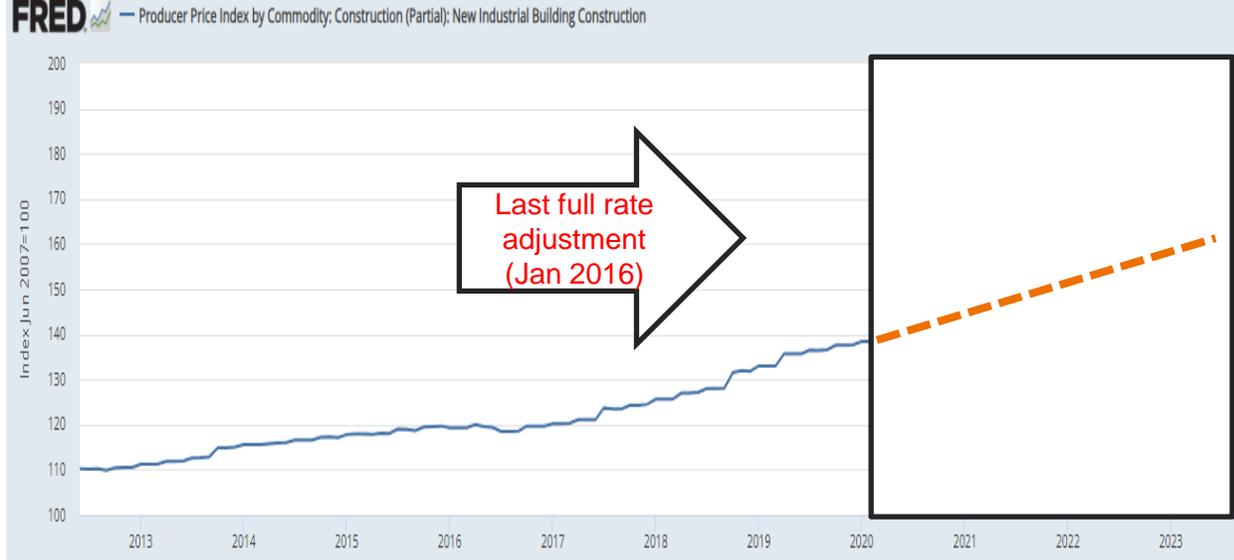
National Water Treatment Chemical Index

- Up 31% from 2020 to 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



VCS Rising Operational & Construction Costs 2020-2023

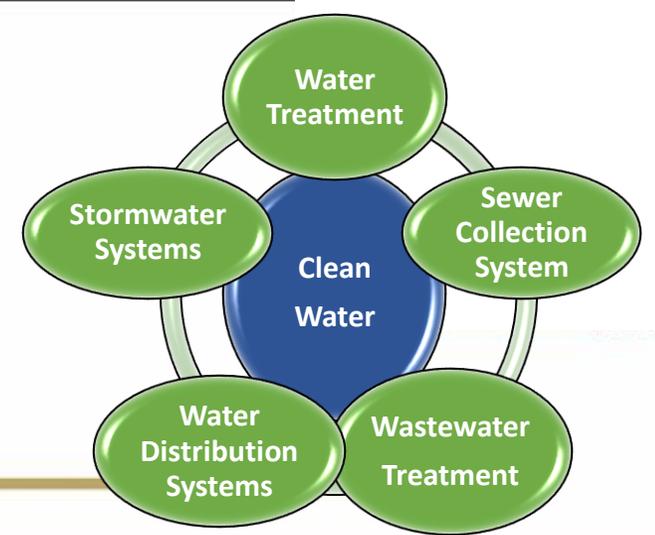
VCS Examples of Rising Operational Costs 2020-2023

Chemicals	Electricity & Natural Gas	Personnel
<p>Since 2020, has increased by 82% \$223,729</p>	<p>Since 2020 has increased by 23% \$206,874</p>	<p>Since 2020 has increase by 10% \$557,157</p> <p>2023 to 2024 Increase \$355,000</p>

Examples/Drivers of Increased Capital Costs

Cost Increases & Delays	Vehicle Challenges	Reduced Bidding & Costs
<ul style="list-style-type: none"> Generators for Phase II Wells - February 2023, estimated delivery in June 2024(not guaranteed) Pumps Ordered Sept 2022 – Delivered Damaged – Received October 2023 	<ul style="list-style-type: none"> 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 	<p>Sewer Repair</p> <ul style="list-style-type: none"> Engineer Estimate \$960,875.50 with 30% Contingency Received only three (3) bids. <ul style="list-style-type: none"> \$1,227,500.00 \$1,660,740.00 \$1,924,528.49 Cured in Place Pipe (CIPP) Lining <ul style="list-style-type: none"> Year 2020 – 12” was \$33.80 per LFT Year 2023 – 12” was \$140.00 per LFT

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

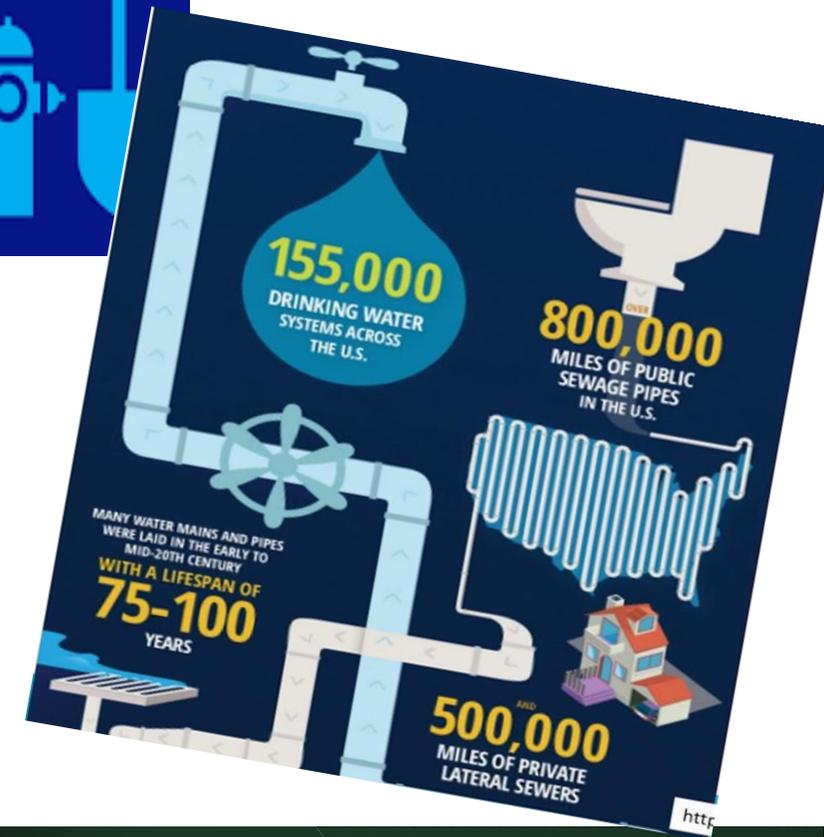
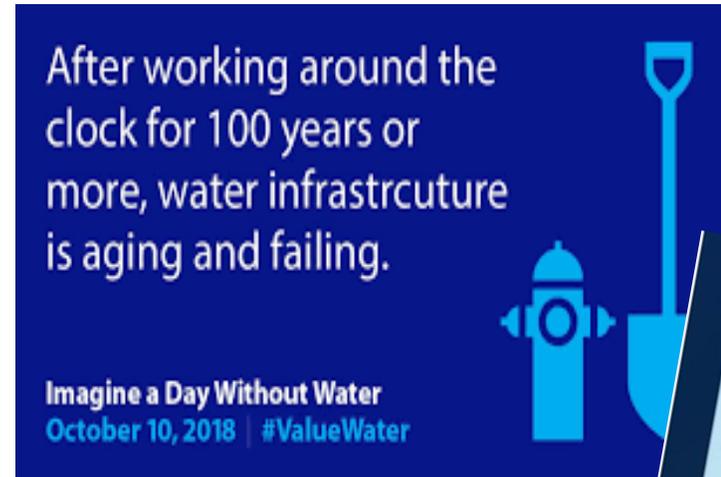
- 359 Miles of Pipe
- 38 Pump Stations
- 4500 Manholes
- 1 Major Wastewater Treatment Plant
- Land Application Program
- 1 Combined Sewer Treatment Facility
- 8417 Storm
- 2.1 Billion Gallons of Wastewater/Year

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

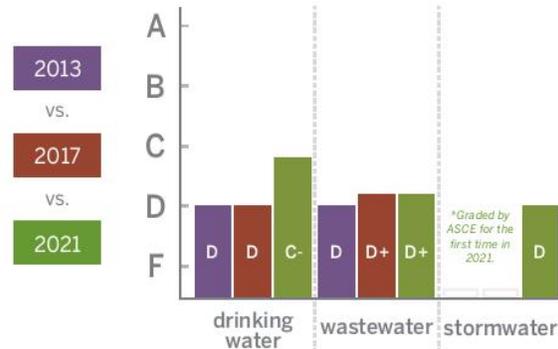


1 U.S. Water Infrastructure Earns D+ Grade

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

Aging Infrastructure Planning....

➤ **Asset Management Program**

- ✓ Formalized work management system to track all utility assets
- ✓ Tracks the age of the utility's assets, maintenance, location of water and sewer main failures, condition of the asset, videos via closed circuit televising, photographs, water loss estimates and past repair values.

➤ **Aging Infrastructure Committee**

- ✓ A committee of VCU professionals compiled and evaluated all of the available asset information.
- ✓ Build a Model to Validate Results



VALPARAISO
CITY SERVICES

**INFRASTRUCTURE
IMPROVEMENTS
2013 - 2023**

TOTAL PROJECT COSTS



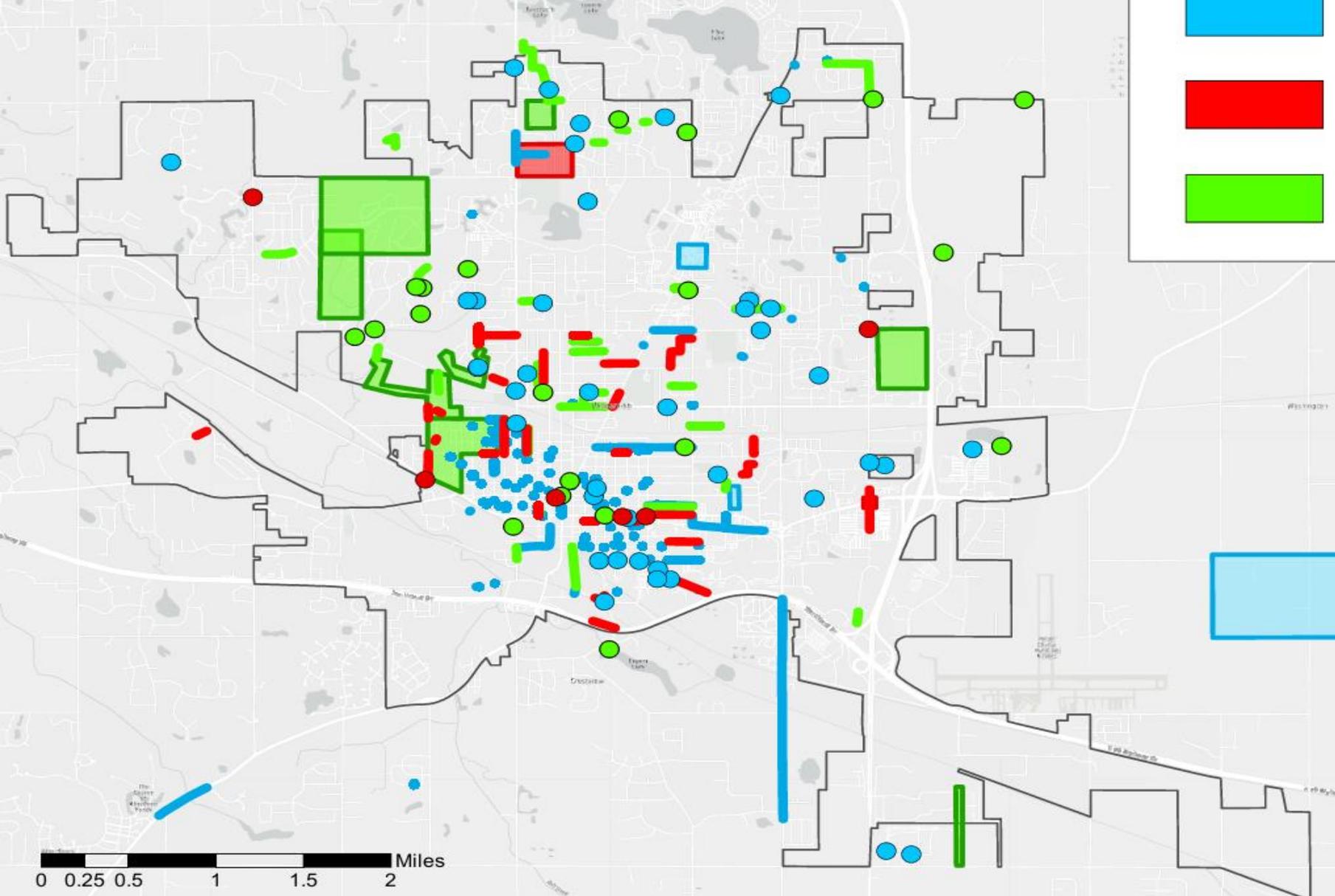
WATER \$ 8,395,282.92
210 Projects



SEWER \$ 4,616,776.78
39 Projects



STORM \$ 24,129,676
70 Projects



WATER MAIN REPLACEMENTS
\$ 7,889,669.28

SEWER MAIN REPLACEMENTS
\$ 4,526,589.78

STORM - SEWER SEPARATIONS
\$ 1,669,508



Deteriorating Pipes:

Build-up on bottom of pipe restricting flow

Interior wall surface peeling due to Hydrogen Sulfide gases

Eroding 24" Concrete Pipe



Cured in Place Pipe (CIPP) Lining



Project Assessment Process

A committee of VCU professionals compiled and evaluated all of the available asset information. Once the projects were identified, the committee determined that location, impact, environmental factors, project cost, the term or time the project has been known, the consequences of component failure and the probability of a failure within the next six (6) month as the factors to be used to accurately “score” a project.



VALPARAISO CITY SERVICES UTILITIES WATER AND SEWER AGING INFRASTRUCTURE PLAN ASSESSMENT

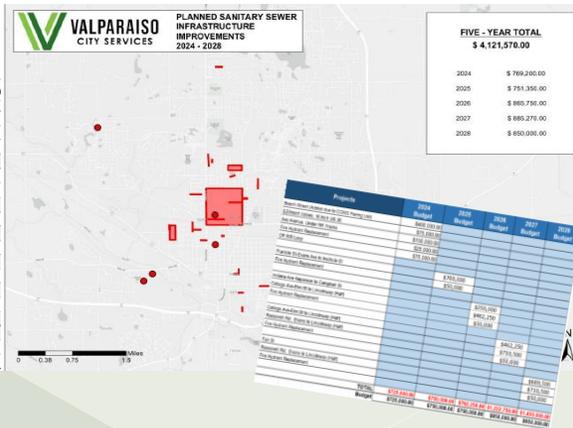


- Location (Scale 1-10)
- Impact
- Environment
- Cost
- Consequence of Failure
- Probability of Failure
- Term

Table A - Sewer Main Cured in Place Pipe Lining (CIPP)

Valparaiso City Utilities
 Sewer Aging Infrastructure Rating System

Project Description	Location C: 1-10	Impact			Consequence of Failure C: 1-10	Probability of Failure P: 1-10	Term	Risk Score/70	Cost (\$K)	Priority
		C: 1-10	E: 1-10	S: 1-10						
George Street - 10'	7	8	8	3	1	8	7	10	100,000	A
McDonald Street - 10'	7	8	8	3	1	8	7	10	100,000	A
Maplewood Ave - 10'	8	7	6	3	1	6	3	10	100,000	C
Department St - 10'	5	5	7	3	1	8	5	10	100,000	C
Department St - 10'	4	5	7	3	1	8	5	10	100,000	C
Ann Ave - 10'	7	8	8	3	1	8	7	10	100,000	C
Department St - 10'	6	5	6	3	1	6	5	10	100,000	C
Madison St - 10'	4	4	7	3	1	4	7	10	100,000	C
Department St - 10'	4	4	7	3	1	5	7	10	100,000	C
Department St - 10'	6	4	7	3	1	5	7	10	100,000	C
Madison St - 10'	6	4	7	3	1	5	7	10	100,000	C
Madison St - 10'	5	4	4	3	1	5	2	10	100,000	C
Madison St - 10'	4	4	5	3	1	5	5	10	100,000	C
Madison St - 10'	4	4	6	3	1	4	6	10	100,000	C
Madison St - 10'	3	3	4	3	1	3	5	10	100,000	C
Madison St - 10'	4	3	4	3	1	4	4	10	100,000	C
Madison St - 10'	3	3	4	3	1	3	5	10	100,000	C



Aging Infrastructure.....

Improving Valparaiso's quality of life through.....

Aging Infrastructure 2023

- **Rehabilitation of Billing Street Tower – 500,000 Gallons**
- **Outside and Inside of Tower**
- **\$475,000 – Funded by Rental Platform Revenues**
- **\$145,000 per year in Revenue**

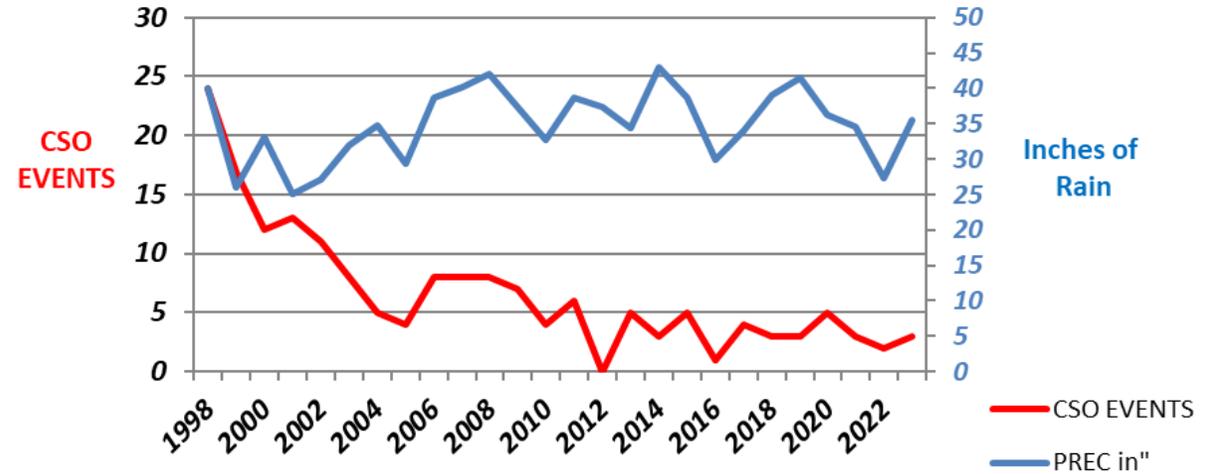


Making a difference:

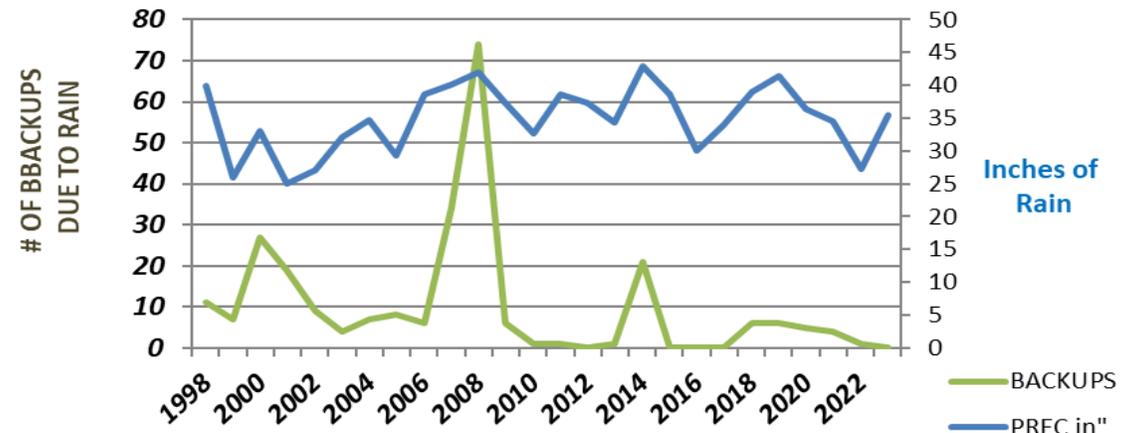
Improving Valparaiso's quality of life through.....

- **Reduction in CSO Events/Volume**
- **Reduction in Flooding & Basement Backups**
- **ISO Rating – 2**
- **Minimal Interruptions in Service**

Valparaiso City Utilities
Combined Sewer Overflow (CSO) Meter
Number of CSO Events vs. Precipitation
1998 - 2023



Valparaiso City Utilities
Combined Sewer Overflow (CSO) Meter
INCHES OF RAIN vs. BASEMENT BACKUPS
1998 - 2023



Softening Costs through Culture.....

Aging Infrastructure



Energy Initiatives



Asset Management/Work Mgmt



Refinancing of Debt



Water Audits

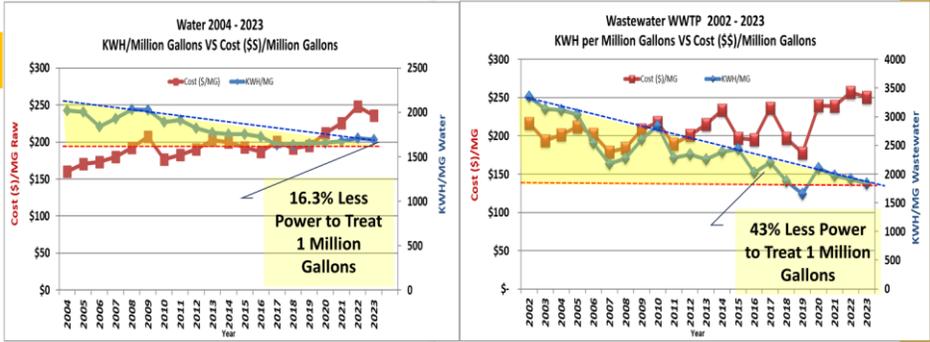


Labor Control-Work Force Flexibility
Credit Rating AA-
Bulk Fuel Purchasing
High Interest Banking Services
Proper Electric Rates



Softening Costs through Operational Culture Summary.....

Energy Initiative Results

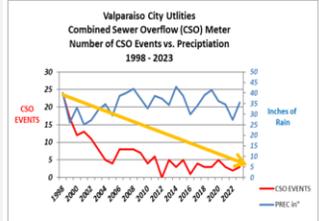
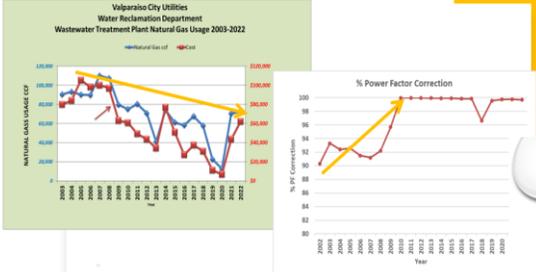


- Stable Cost (\$\$) per 1 million Gallons Treated (Water & Wastewater) - 5 Rate Increases by electrical provider since 2010.
- Estimated Savings since 2002 - 32 Million KWHs OR \$3 Million Dollars (Blended Rate Over 20 Years) –

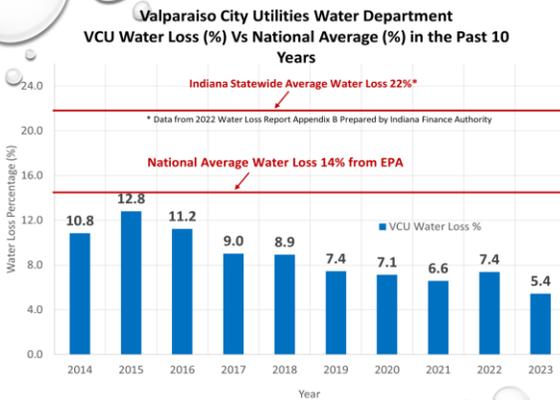
Product Quality – (Compliance & Customer Satisfaction)
Operational Optimization - Energy (Conservation – Efficiency – Renewables)
Infrastructure Stability - (Asset Mgmt. – Water Audits – Aging Infrastructure)
Reduction in Flooding/Combined Sewer Separations/Basement Backups
Financial Viability
AA – Credit Rating Standard & Poor
Computerized Work Management Systems
Employee & Leadership Development (Highly Trained and Capable Team)

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



= AVOIDS RATES BY CRISIS



- ✓ 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

Stormwater Management District			
Issue	Gross Savings	NPV Savings	Refunded Bonds
Refunding Revenue Bonds, Series 2019	\$204,338.15	\$197,222.59	2011A and B

Drinking Water			
Issue	Gross Savings	NPV Savings	Refunded Bonds
Waterworks Refunding Revenue Bonds, Series 2013	\$5173,774.34	\$466,652.31	2022 Bonds
Waterworks Refunding Revenue Bonds, Series 2018	102,332.81	88,427.81	2010 Bonds
Total Savings	\$616,107.15	\$555,080.12	

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



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

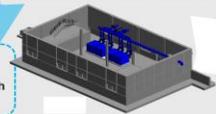
- Average Flow: 5.7 MGD (71 % Capacity)
- Design Flow: 8-MGD/ Proposed 10 MGD
- Max Capacity: 18-MGD/ Proposed 22.5 MGD
- Serves 34,000 people and discharges flow to Salt Creek – Lake Michigan

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



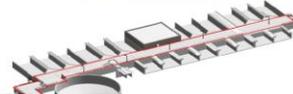
The Projects "Wastewater"

Biological Aeration Tank Operations (Removal of Carbon/Nitrogen)

Existing	Modification
<p>Risk: Compliance with Biochemical Oxygen Demand & Ammonia Nitrogen Requirements</p> <ul style="list-style-type: none"> • 6 North ATs, 8 South ATs • 2.74 MG Total Volume • 5340 Total ceramic diffusers 	<ul style="list-style-type: none"> • Membrane Diffusers <ul style="list-style-type: none"> • 2560 total • New air piping • Automated DO Control 
<ul style="list-style-type: none"> • Blower Building <ul style="list-style-type: none"> • 4 Multi-Stage Centrifugal Blowers • Two @ 8,000 SCFM (400 HP) • Two @ 4,000 SCFM (200 HP) 	<ul style="list-style-type: none"> • Hybrid Screw Blower <ul style="list-style-type: none"> • 768 SCFM Each • 125 HP 

Structural Modifications/Upgrades

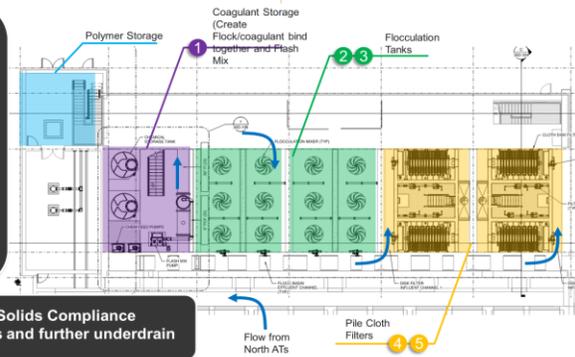
- East-West Pipe Gallery**
- Removal and replacement of existing East-West Pipe Gallery roof due to deterioration of existing concrete
 - New concrete roof will be sloped adequately to improve drainage and increase durability
 - New concrete roof will be coated with a pedestrian traffic rated waterproofing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



Filter Rehabilitation Design

Objective: Improve filter performance with respect to TSS and TP 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 during wet weather flows and further underdrain failure

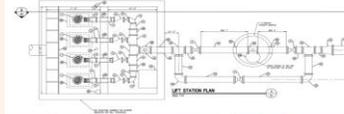
- Replace Aging Process Units 35-60+ Year of Age

- ✓ Failures
 - ✓ Corrosion
 - ✓ Inefficiency "Power"
 - ✓ Structural Issues
 - ✓ Instrumentation & Control
 - ✓ Electrical Systems
- Benefits**

- ✓ Environmental Stewardship
- ✓ Maintain Compliance IDEM/EPA
- ✓ Increase Capacity "Same Footprint"
- ✓ Redundancy
- ✓ Optimize Operations
 - ✓ Communications
 - ✓ Energy Savings

Sturdy Road Regional Lift Station Project Upgrades Include:

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



WAS Thickening – Existing & Modifications

Existing	Modification
<ul style="list-style-type: none"> • Equipment installed 40+ years ago • System lacks automation requiring frequent operator intervention • Existing tanks are corroded 	<ul style="list-style-type: none"> • Centrifuge thickening is the recommended technology • Design Condition • 2 units (1 Average; 2 Max Day) • Expected run times: <ul style="list-style-type: none"> • 4.75 hrs (Average) • 6.73 hrs (Max Day) • Produce 4-6% TS solids to digestion  <p>Improvements</p> <ul style="list-style-type: none"> ✓ Smaller Footprint ✓ Automation & Control ✓ Less Recycle Water ✓ Less Run Times ✓ Energy Savings
	<p>New Equipment</p> <ul style="list-style-type: none"> • 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

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

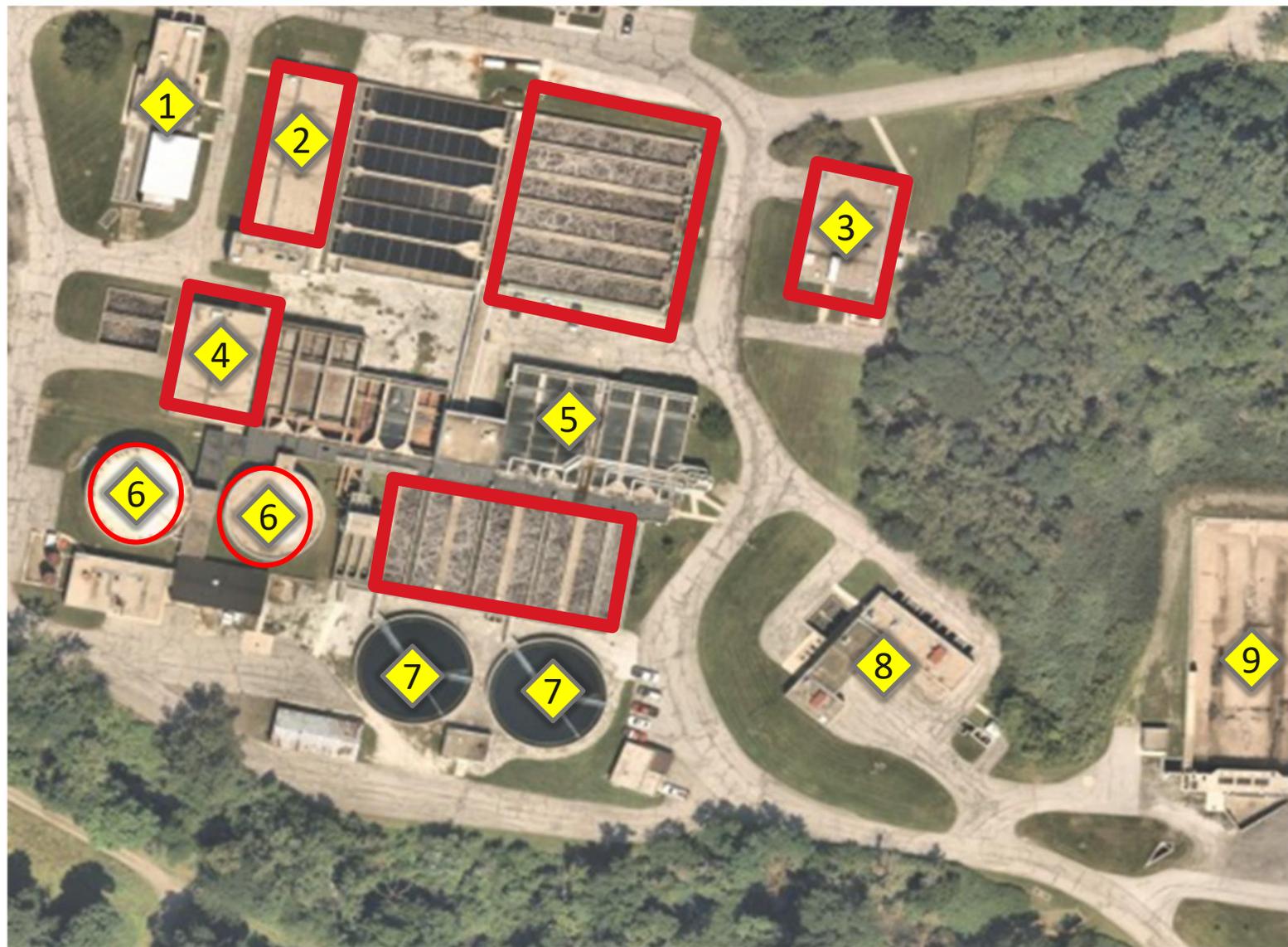
Modified and Replaced within Panels

- 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

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

March 1st , 2024

UPGRADE SUMMARY

Water Projects

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



Water Quality

2023 VALPARAISO WATER QUALITY REPORT



Drinking Water Summary

The VCU Water Department is proud of the high quality of its water supply, which meets or exceeds all state and federal drinking water quality requirements. The Department routinely monitors for more than 100 chemicals in the drinking water making sure the water is safe to drink. Out of those monitored chemicals, only a small portion are included in this report. The reported chemicals are those that are found in the water and also are the EPA regulated chemicals (chemicals subject to an MCL, MRDL, TT or AL) and unregulated chemicals for which EPA or Indiana Department of Environmental Management requires monitoring under 40 CFR 141.40. If you are interested in a complete list of chemicals that are tested in the drinking water, please contact Shihua Chen by phone at 462-6174 ext. 1341, by e-mail at schen@valpo.us or by mail at 205 Billings Street, Valparaiso, IN 46383.

SUBSTANCE TESTED FOR AT THE TREATMENT PLANTS AND IN THE DISTRIBUTION SYSTEM									
SUBSTANCE	YEAR SAMPLED	UNITS OF MEASURE	MCL	MCLG	HIGHEST LEVEL DETECTED	AMOUNT RANGE	MCL VIOLATION	POTENTIAL HEALTH EFFECT	TYPICAL SOURCE
Barium	2022	ppm	2	2	0.059	0.039-0.059	NO	Increase in blood pressure	Erosion of natural deposits
Chlorine	2022	ppm	MRDL = 4.0	MRDLG = 4	1.4	0.2 - 1.4	NO	Eye/nose irritation, stomach discomfort	Water additive used to control microbes
Fluoride* (adjusted)	2021	ppm	4	4	0.7	0.5 - 0.7	NO	Bone disease; children may get mottled teeth	Erosion of natural deposits; Drinking water additive that promotes strong teeth
Nitrate	2022	ppm	10	10	0.11	0 - 0.11	NO	May cause shortness of breath and blue baby syndrome for infants	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Chromium (total)	2022	ppm	0.1	0.1	0.0027	0.0016-0.0027	NO	May cause allergic dermatitis if using water with chromium in excess of MCL over many years	Discharge from steel and pulp mills; erosion of natural deposits
Total Trihalomethanes	2022	ppb	80	NA	34	12 - 34	NO	Liver, kidney or central nervous system problems; increased risk of cancer	Byproduct of drinking water chlorination
Total Haloacetic Acids	2022	ppb	60	NA	11	3 - 11	NO	Increased risk of cancer	Byproduct of drinking water chlorination
Beta/Photo Emitters	2022	mrem/yr	4	NA	2.13	0 - 2.13	NO	Increased risk of cancer	Decay of natural and man-made deposits.
Gross Alpha	2022	pCi/L	15	0	8.5	0 - 8.5	NO	Increased risk of cancer	Erosion of natural deposits
SUBSTANCE TESTED FOR AT CUSTOMER'S TAP									
SUBSTANCE	YEAR SAMPLED	UNITS OF MEASURE	HOMES ABOVE ACTION LEVEL	ACTION LEVEL(AL)	90TH PERCENTILE	AMOUNT RANGE	AL VIOLATION	POTENTIAL HEALTH EFFECT	TYPICAL SOURCE
Copper	2020	ppm	0	1.3	0.5	0 - 0.6	NO	Gastrointestinal distress	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	2020	ppb	0	15	4	0 - 7	NO	Children: Delays in physical or mental development. Adults: Kidney problems	Corrosion of household plumbing systems; Erosion of natural deposits

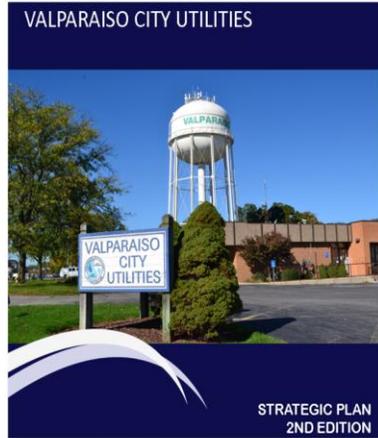
*Information on fluoride and preparation of infant formula can be found at <https://www.cdc.gov/fluoridation/faqs/infant-formula.html>

<https://valparaisoutilities.org/DocumentCenter/View/1401/2023--Water-Quality-Report>

The Projects “Water”

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 issue 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**



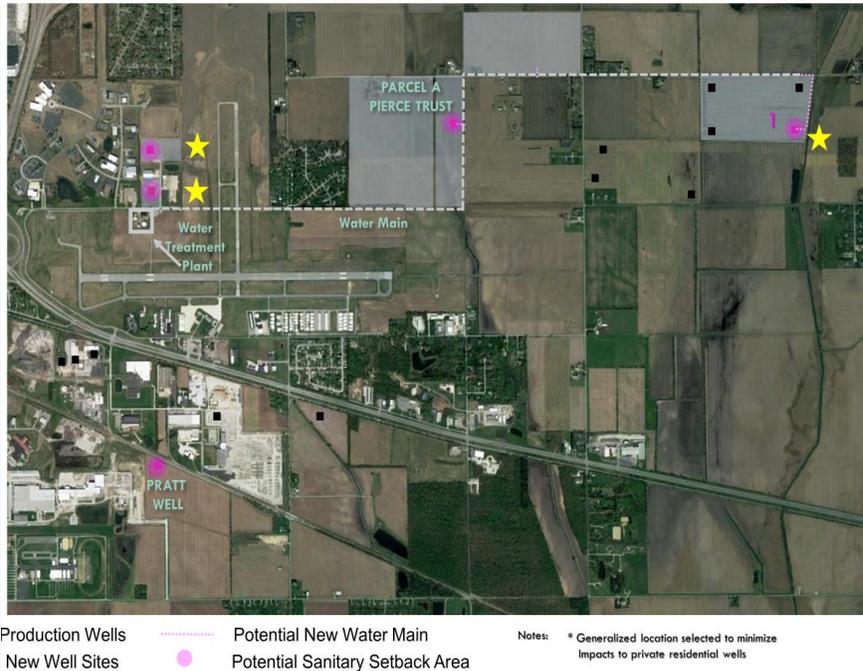
- Phase II & Phase III Improvements

- ✓ Phase II (4 Wells Complete)
- ✓ Phase III
 - ✓ Country Club Wells
 - ✓ SCADA Controls
 - ✓ Airport Filters

- Benefits

- ✓ Increase & Sustain Water Capacity
- ✓ Redundancy
- ✓ Filters (Aging – Water Quality)
- ✓ Upgrade Operational Communications

Phase II Installations & Future Installations



Phase II Installation & Flint Lake



Phase III Country Club Wells Replacement



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
- Filter 2 out of service, repair is not economically feasible

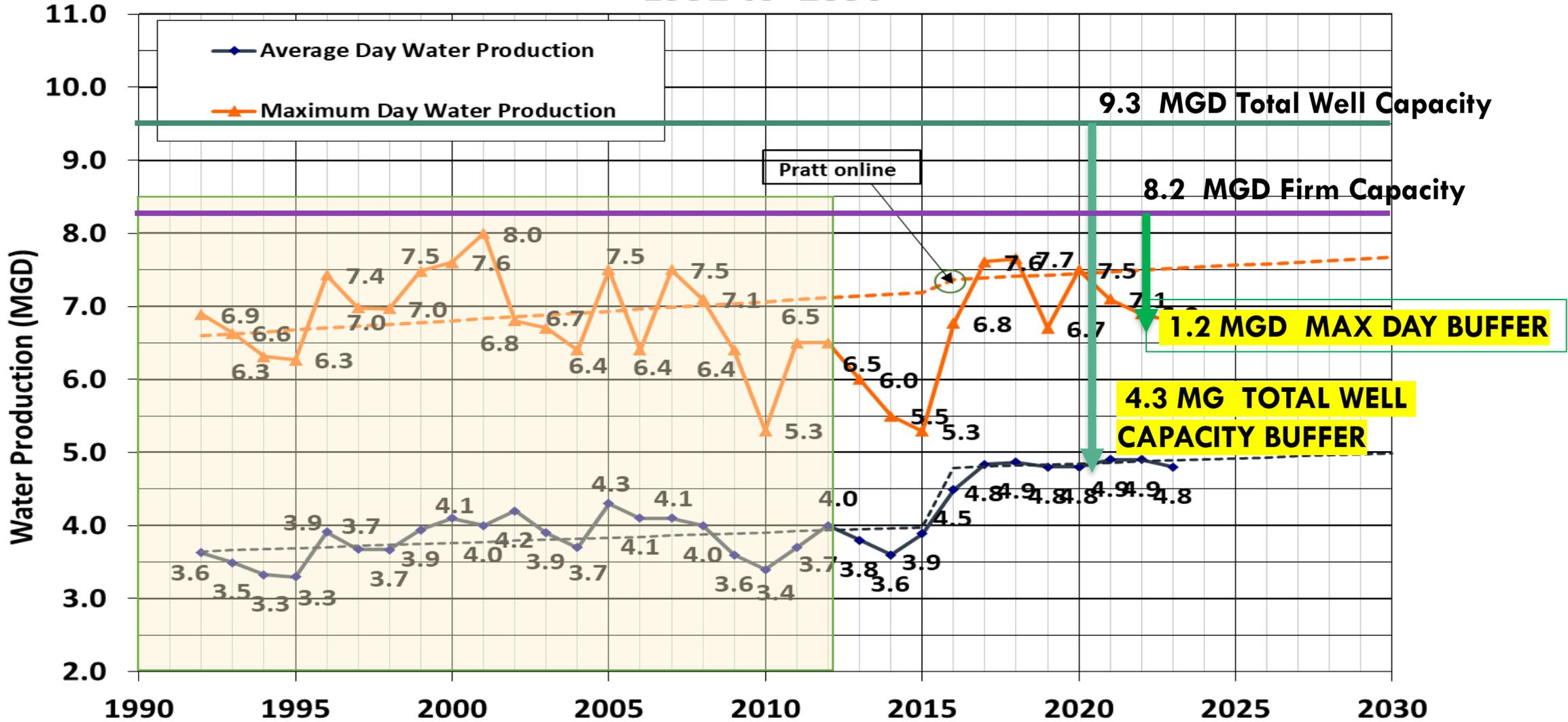
Solution

- 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		

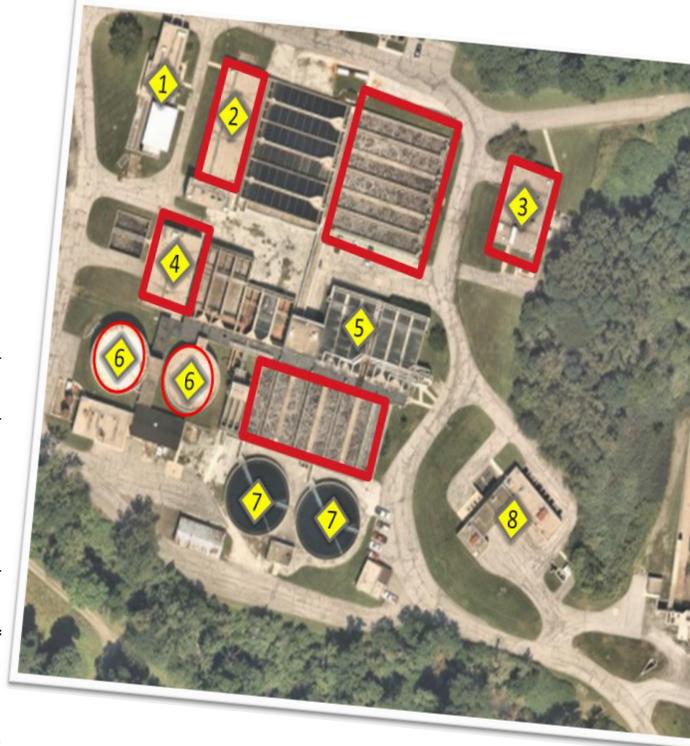
Total Estimated Project Costs \$65,393,142

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.

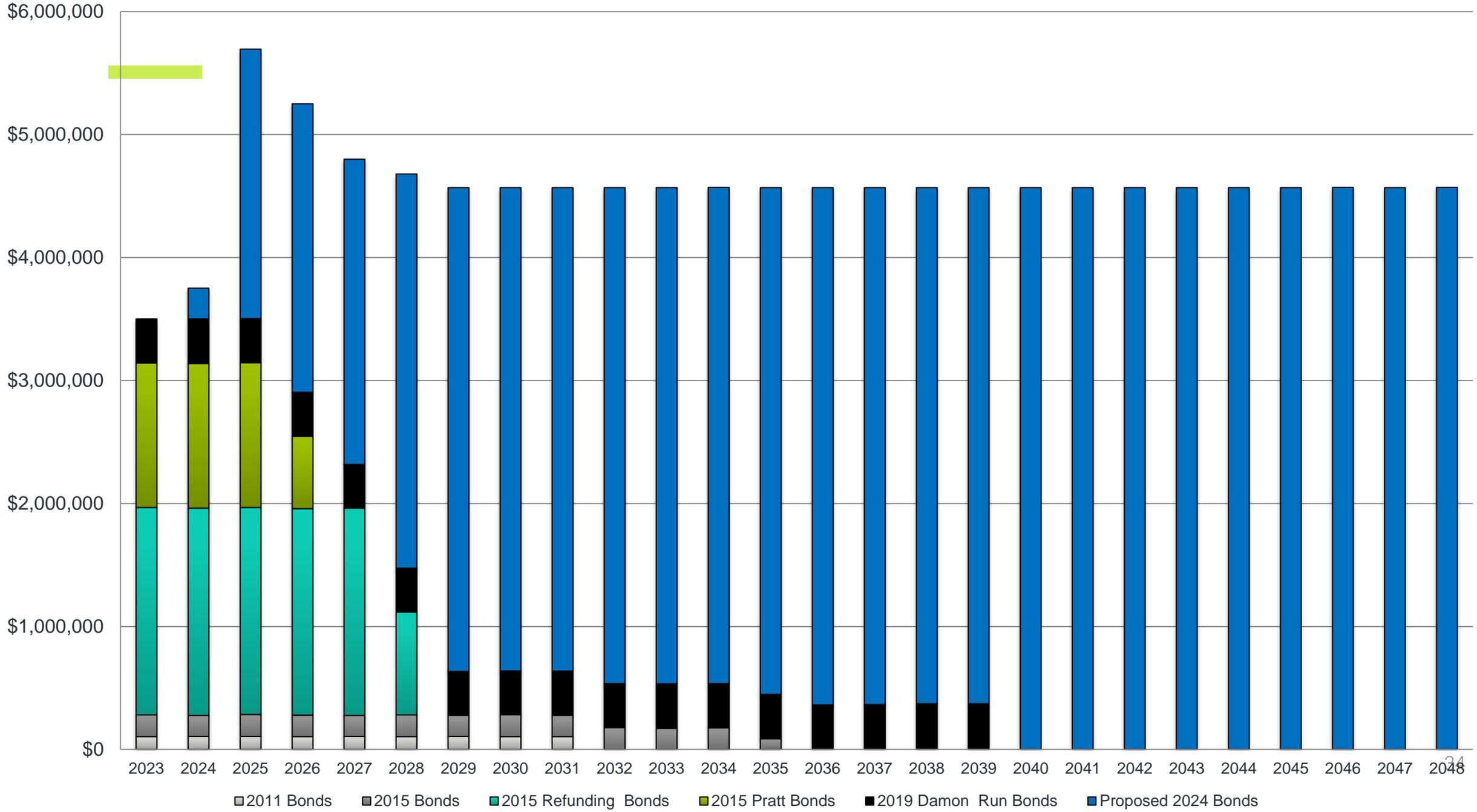


2024: Current EKPCF Upgrades Project including

- 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

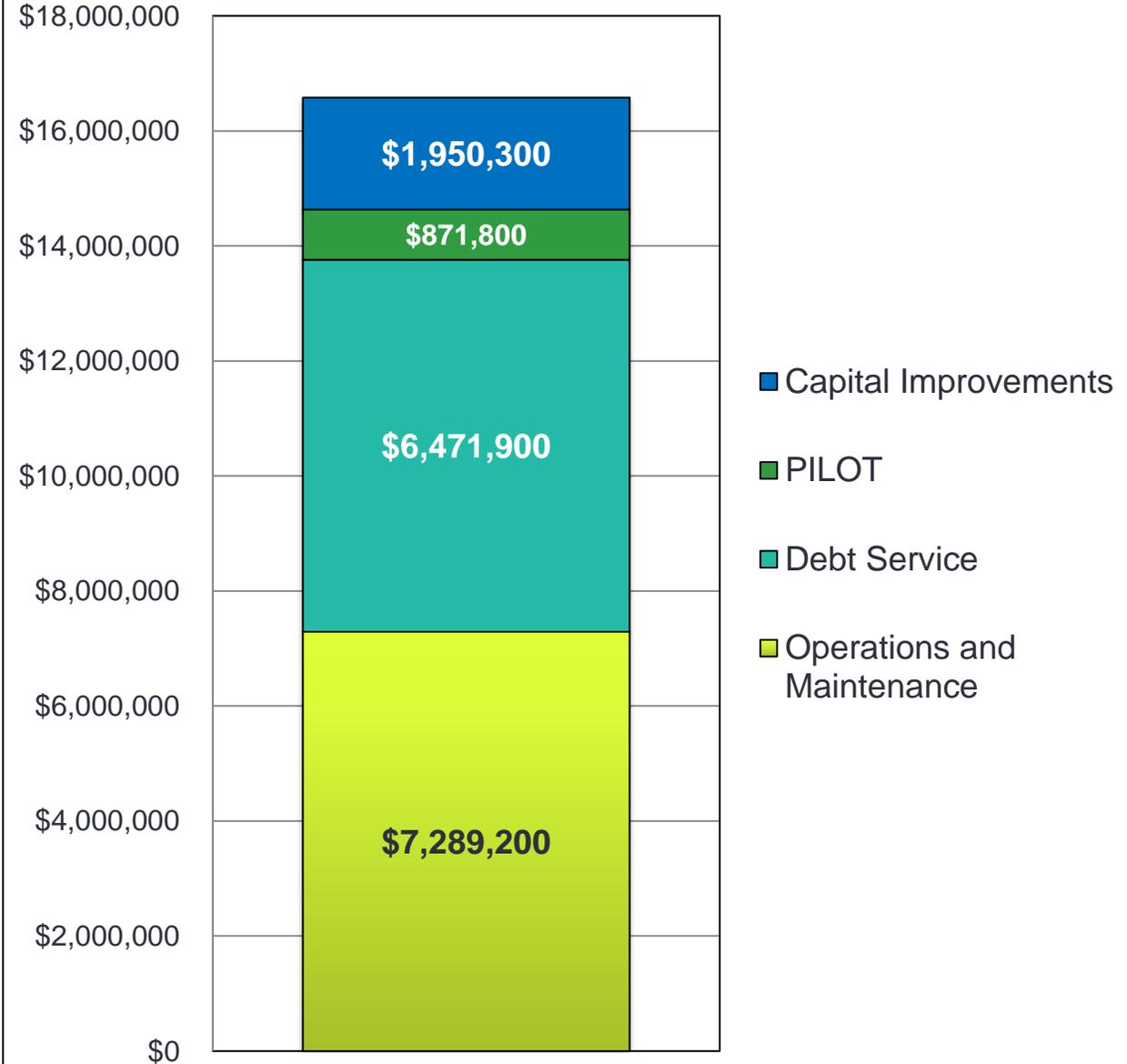


Composition of Proposed Rate Increase

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		(\$1,650,800)
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>
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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>
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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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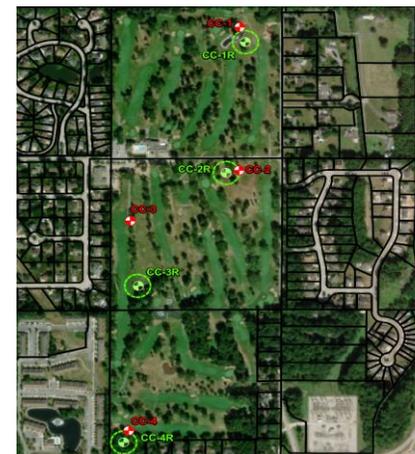
Proposed 2024 Bond – Pooled	4,447,000
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Cash on hand - BAN repayment	2,356,856
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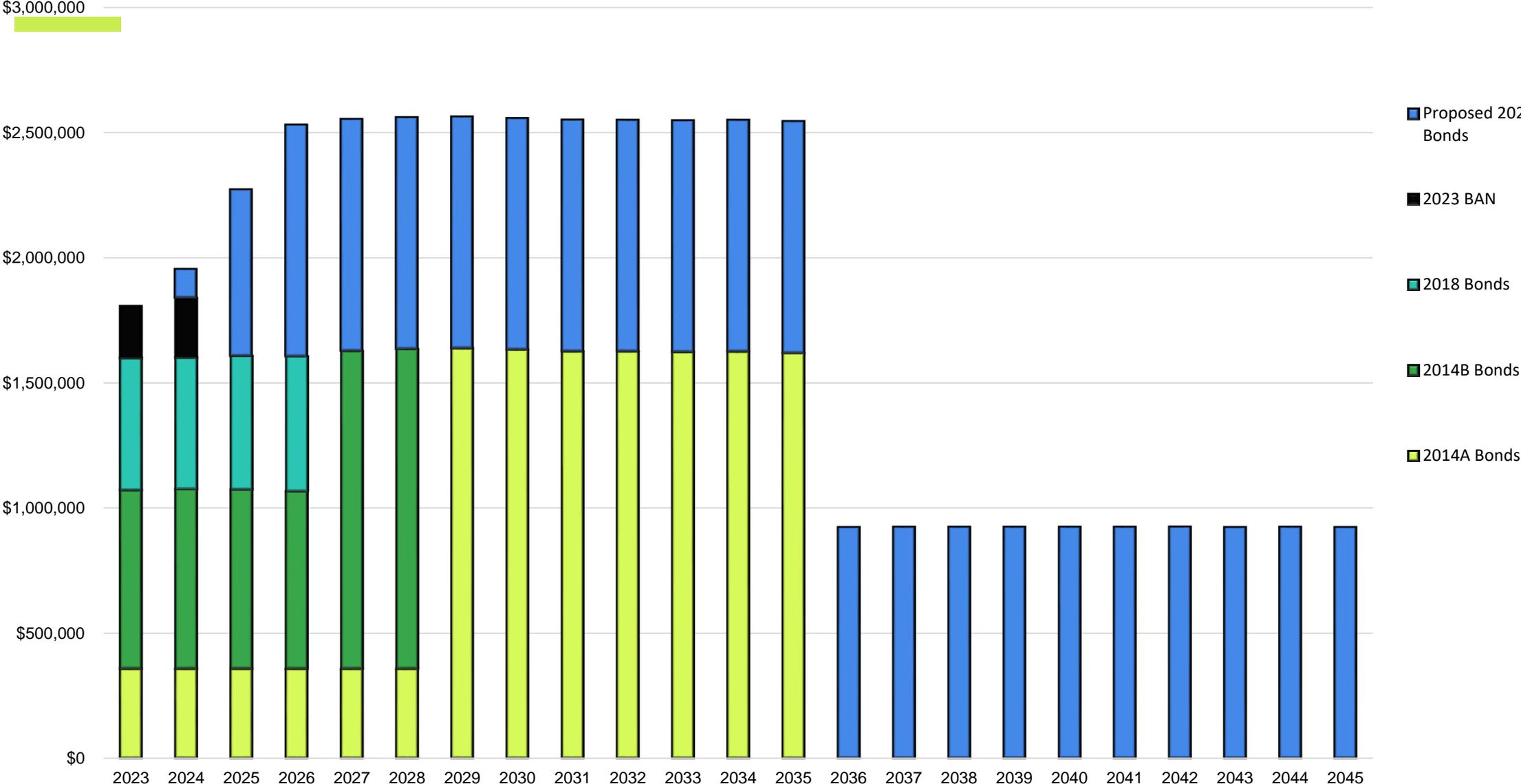
Cash on hand - Ineligible costs	<u>766,500</u>
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Total Estimated Project Funding	<u><u>\$17,570,356</u></u>
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* Accrued interest through June 20, 2024.



Department of Water Works Proposed Total Debt Service

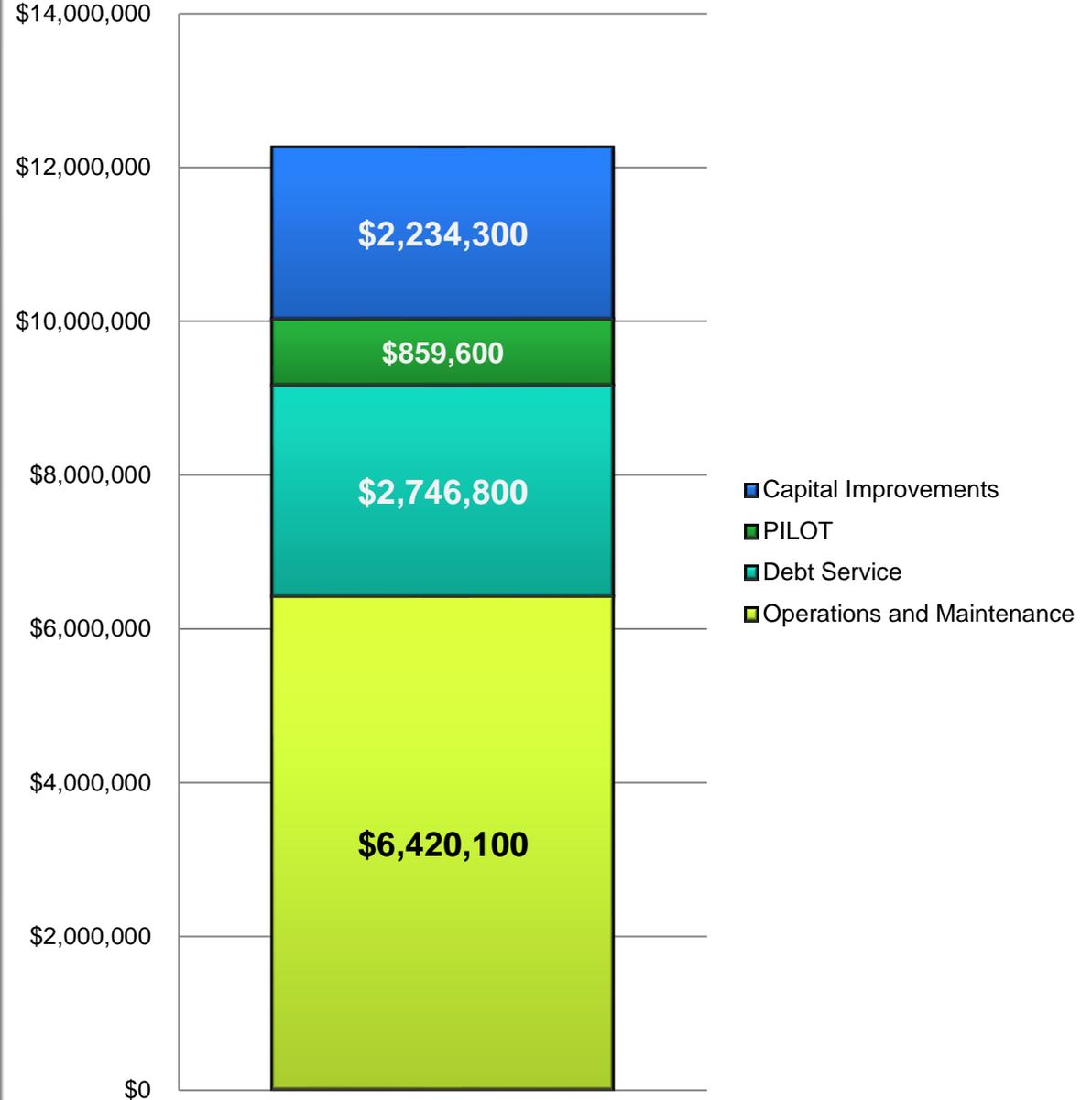


Composition of Proposed Rate Increase

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.

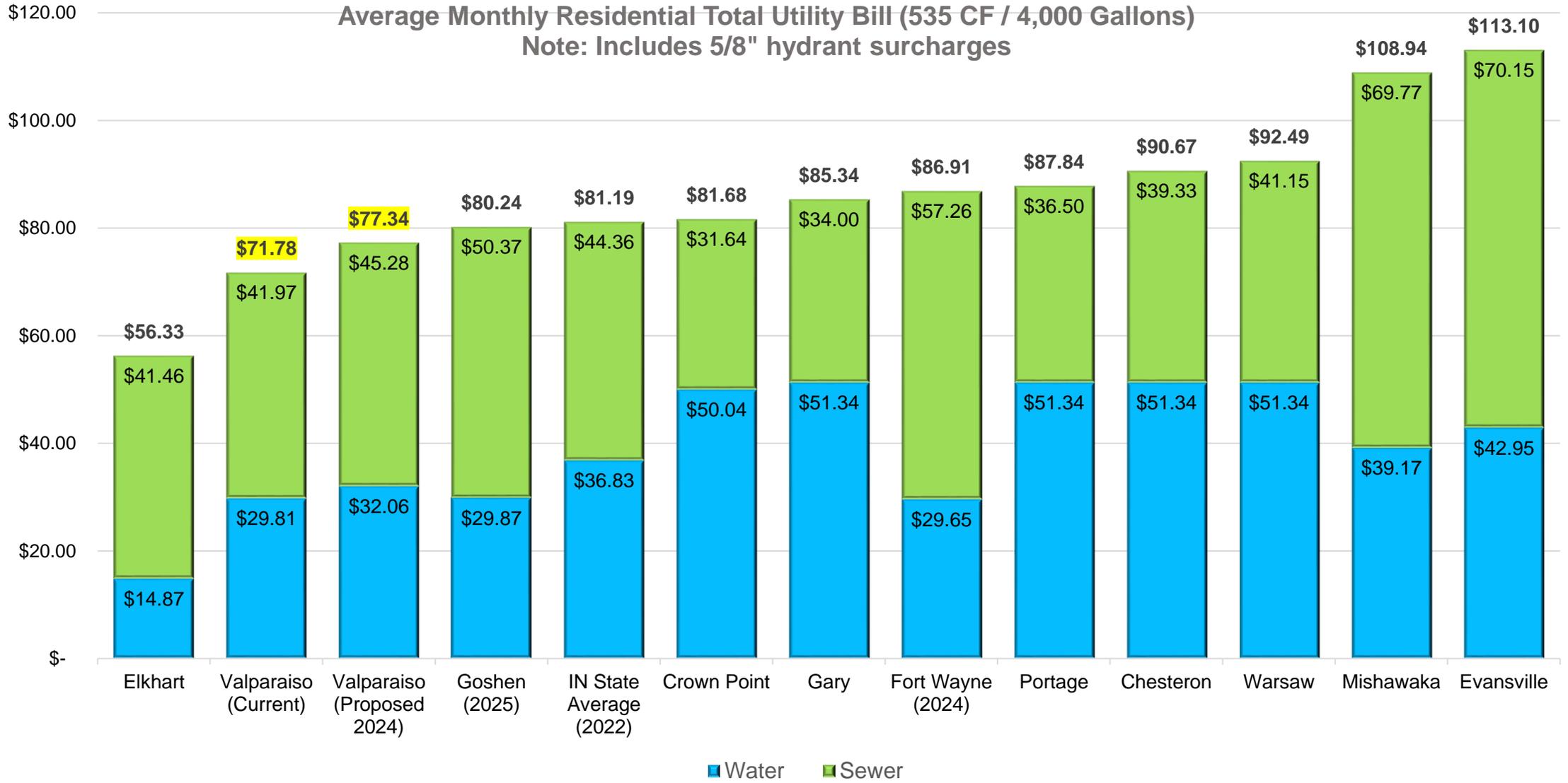
(1) Based on previous year receipts plus 14.9% outside customer surcharge and recommended rate increase shown.

(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.

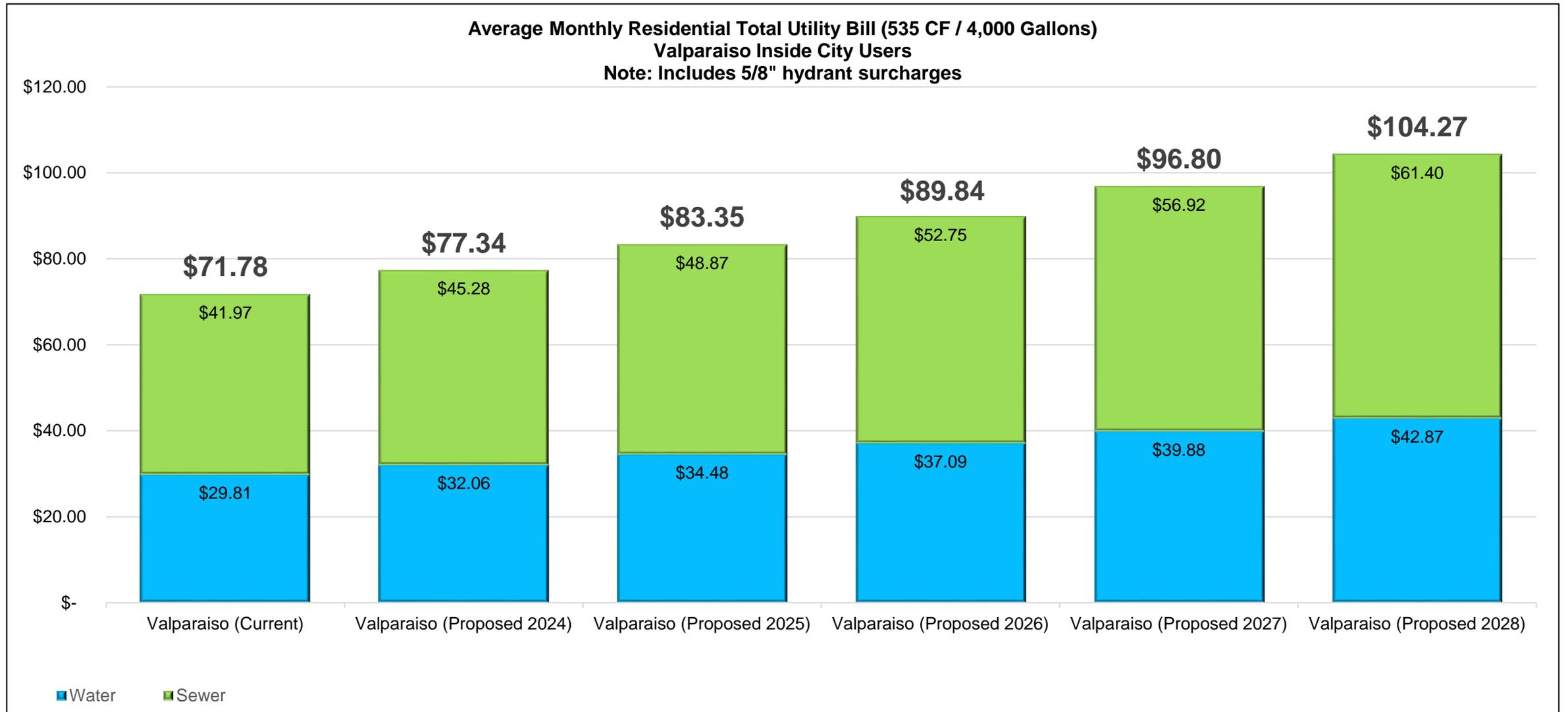
(4) Reflects the maximum annual debt service to ensure that there is sufficient revenues and coverage.

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



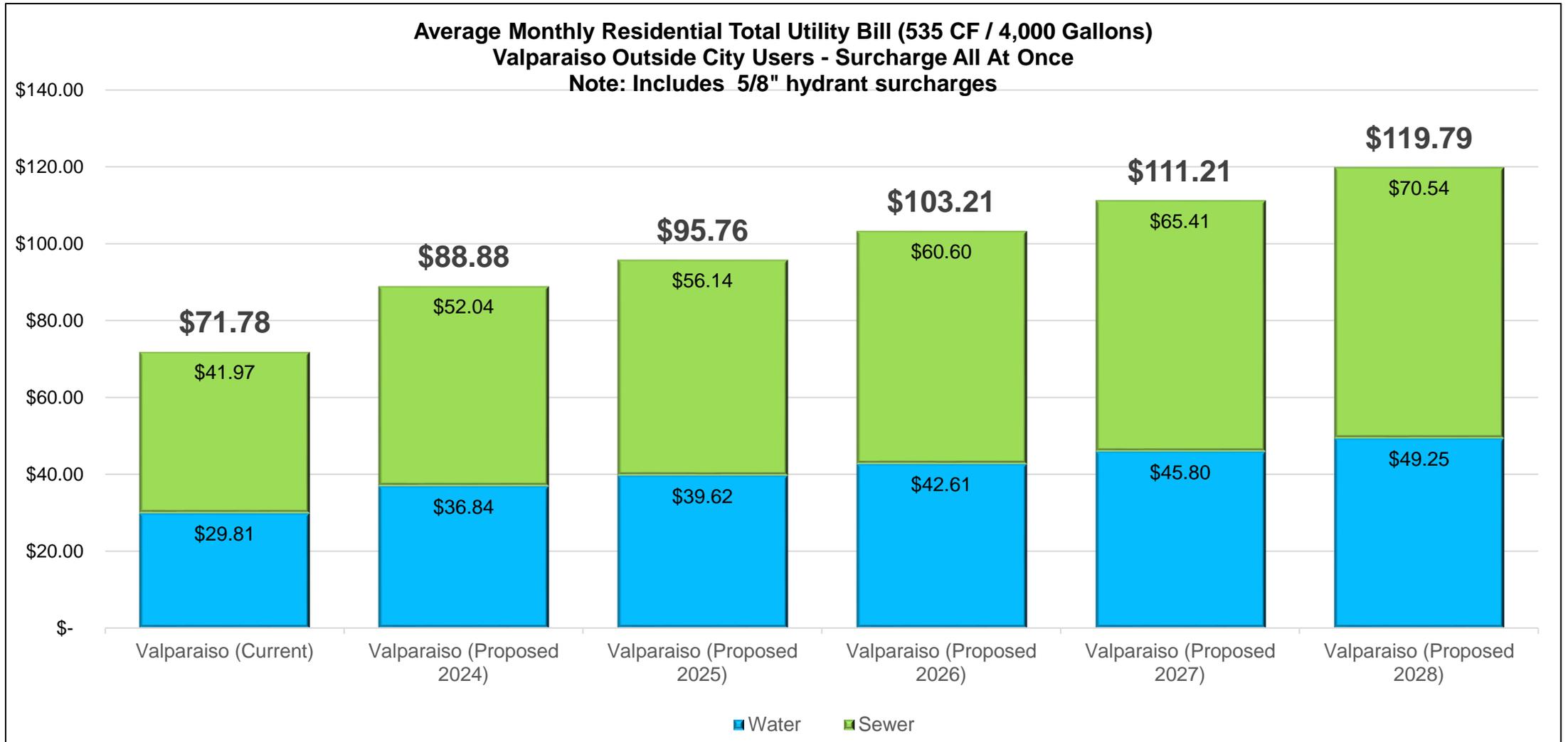
8% increase for Phase 1 sewer and water rates from current rates

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

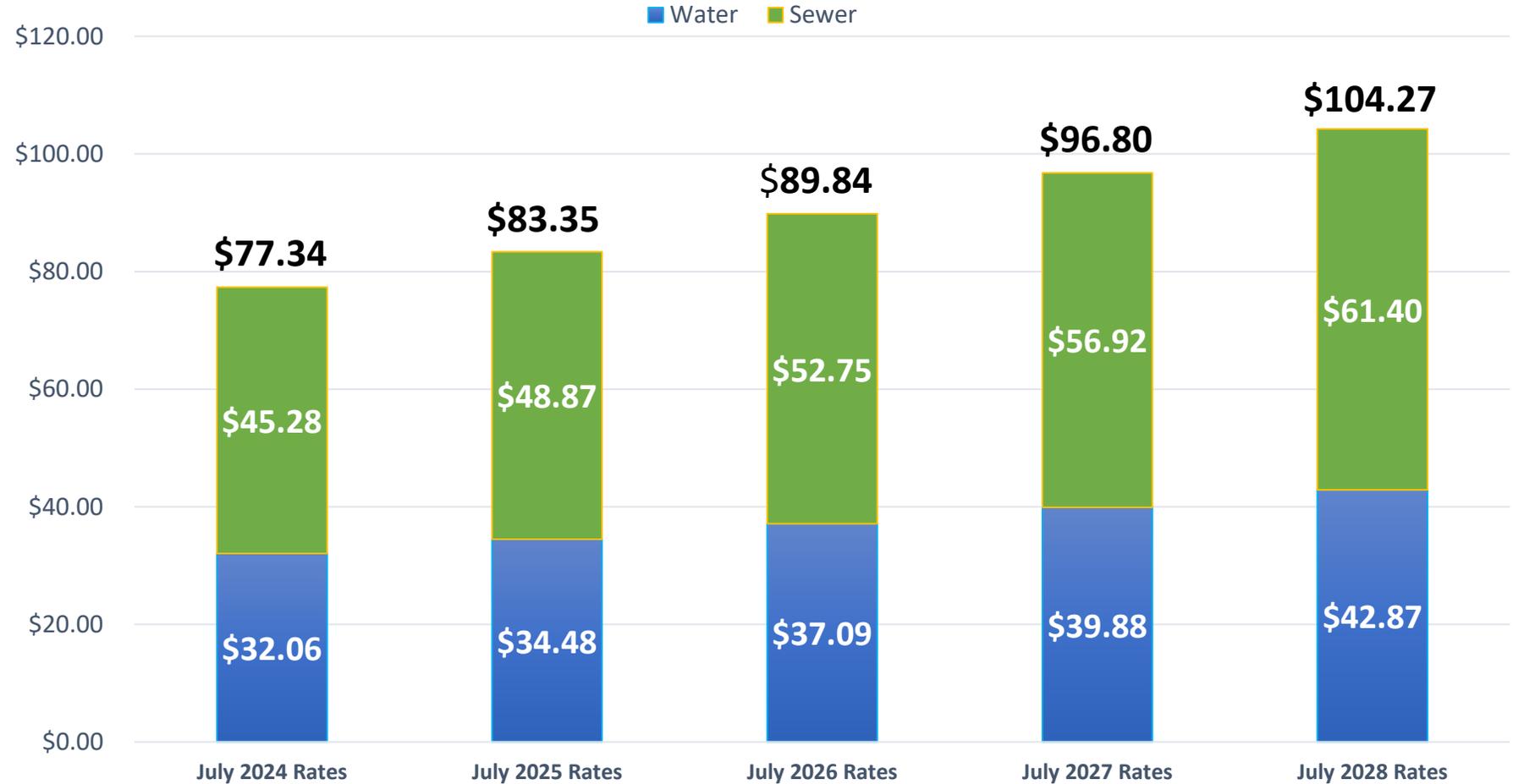
Typical Monthly Bill with Current Rates

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



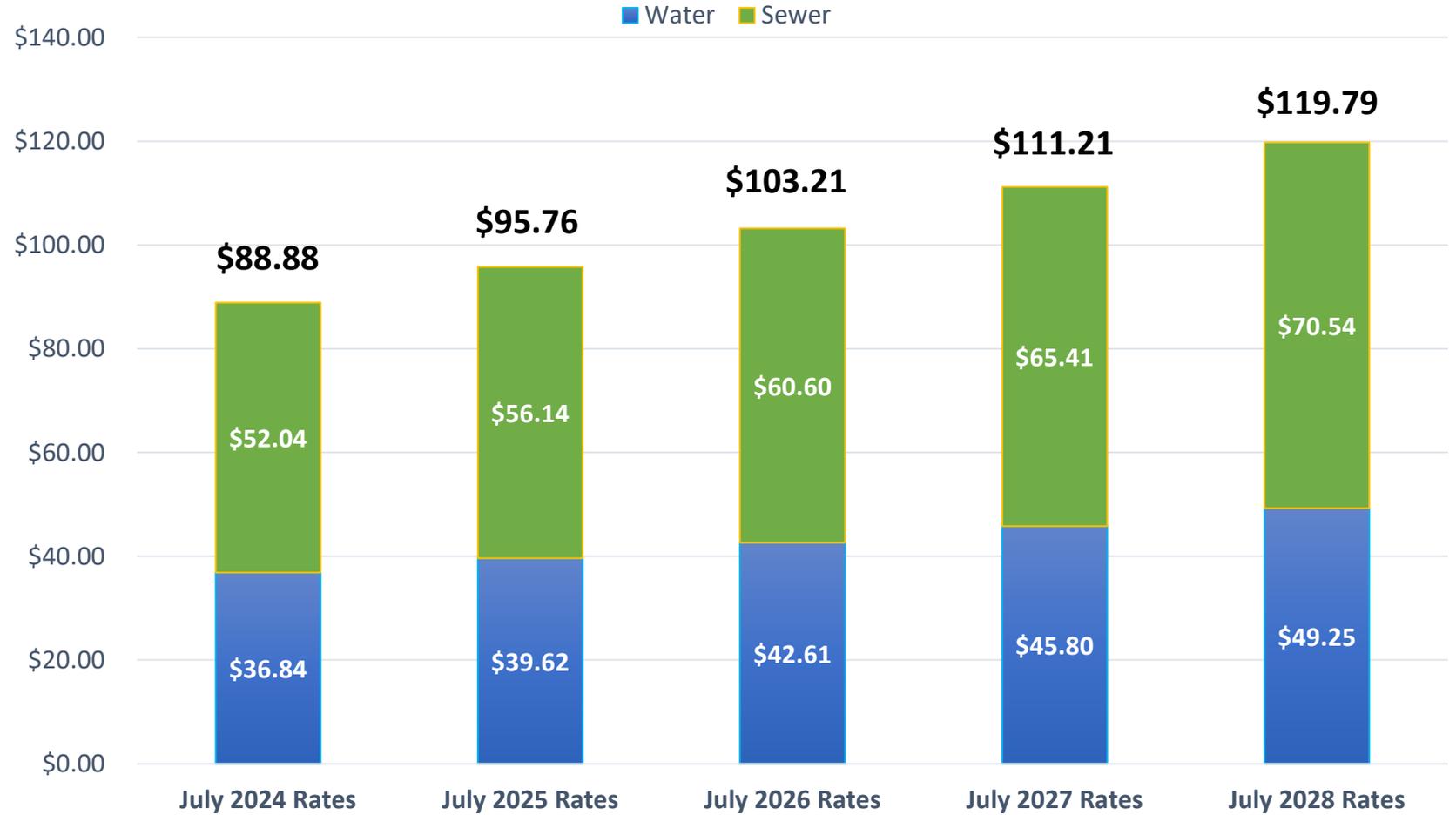
Typical Bill with Current 2024 Rates

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 22, 2024 – Summary; Public Hearing & Final Vote*

Rate Case Document Center
www.valparaisoutilities.org

Email Questions to:
cityservices@valpo.us