



# Muncie (Indiana) Sanitary District

## 2024 Cost of Service Study

September 18, 2024

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# Outline

- Overview of a Cost of Service Study
- The Objectives – Rate Setting
- The Projects and Financings
- Estimated Rate Impact
- Rate Comparison

# **Overview of a Cost of Service Study**

# Cost of Service Study (“COSS”)

- Purpose of a COSS
  - Allocate costs of operations to customer class based on usage characteristics
  - Develop rate structure to recover costs fair and equitable
  - Functional Cost Allocation Method (WEF Manual – *Financing and Charges for Wastewater Systems* No. 27)
- Steps to Complete a COSS
  - Consumer analysis
    - Detailed analysis of test year billings and usage by customer class (billing determinates)
      - Bills and usage (12 months ended 12/31/23)
      - Strength loadings (BOD, TSS)
      - Wholesale user/contract customer costs allocations (DCRWD and LRWD)
  - Develop revenue requirements (annual budget/cash needs)
    - How much money is required to operate the Utility
      - Operating expenses, debt payments, lease payments, debt service reserve funding and capital improvements
      - Phase-in requirements over 4 periods ~ (2025-2028) to decrease the burden on customers

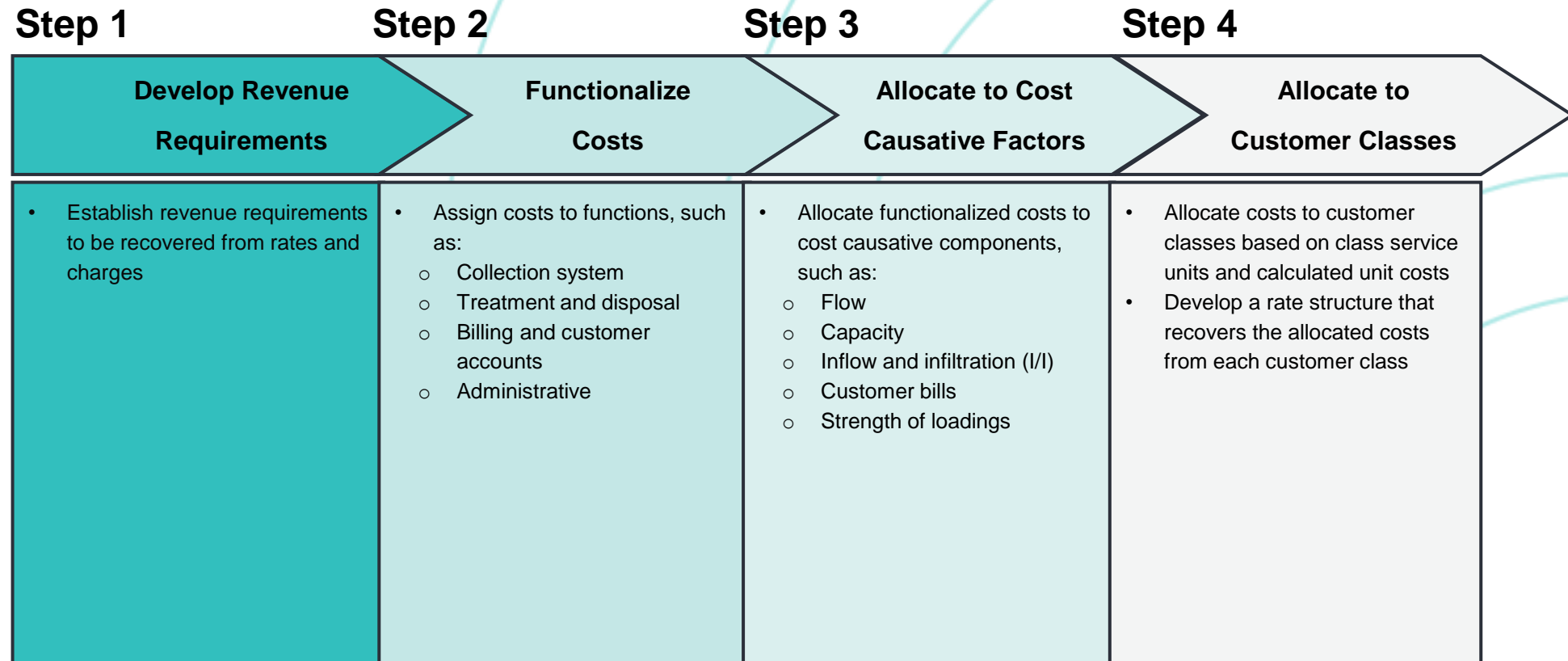



# Cost of Service Study (Cont'd)

- COSS development
  - Allocate total revenue requirements to cost causations factors (O&M/Capital and DS)
    - Collection system/pumping, treatment and disposal, billing and customer and admin.
  - Allocate costs by customer class and flow strengths
    - Residential, commercial, industrial, institutional, governmental, Delaware County Regional Waste District (DCRWD) and Liberty Regional Waste District (LRWD)
    - Domestic/Normal Flow, BOD and TSS
    - Allocate I/I (contributed wastewater volumes by class)
- Rate design
  - Determine how to recover the appropriate level of costs from each customer class
  - Ensure full cost recovery and fairness in allocation of total costs of service to different customer classes
  - Seeks to avoid interclass subsidies and provide accurate price signals
    - Current structure – flow rate by customer class, minimum charges, unmetered users, strength surcharges
    - Proposed structure differences – remove minimum charges and replace with monthly base charge by customer class to recover fixed costs such as salaries and insurance that do not fluctuate based on treated flow
    - Wholesale costs allocations remain consistent with current methodology and contracts for DCRWD and LRWD



# Cost of Service Process (Summary)



The background is a solid teal color with several overlapping, semi-transparent circles of varying shades of teal, creating a layered, abstract effect.

# **The Objectives – Rate Setting**

# Objectives When Setting Rates

- Revenue Stability
- Continuity in Rate Philosophy
- Fairness and Equity
- Cost-Based
- Ability to Pay
- Conservation
- Simplicity
- Feasibility
- Defendable
- Legal and Regulatory Constraints





# Muncie Sanitary District Objectives

## Operation and Maintenance

- Keep up with operating cost increases and other inflationary factors (last rate increase was effective 2019 and based on 2016 financial information)
- Maintain cash balances to at least the minimum required levels

## Annual Capital Improvements

- Build up cash reserves to fund necessary capital improvements of the District

## Long-Term Financing

- Proposed debt issuances to fund long-term combined sewer overflow (CSO) separation and other necessary projects as required by Long Term Control Plan Schedule with IDEM

## Re-evaluate Current Rate Structure

- Removal of minimum charges and replaced with a monthly base charge by customer class as a more universal way of recovering fixed costs
- A separate volumetric rate for each customer class based on operating costs to treat their flow

# **The Projects and Financings**

# Estimate of Project Costs

Item	2024 Bond Anticipation Note (BAN)	2027 Open Market Bond
Estimated Construction Costs:		
CSO 12, 15 and 37 (Kilgore Interceptor)	\$600,000	\$51,570,000
CSO 28 (Floatable Controls)	3,600,000	-
Plant Improvements	41,350,000	-
<b>Estimated Construction Costs, Contingencies and Engineering</b>	<b>45,550,000</b>	<b>51,570,000</b>
Estimated Non-Construction Costs:		
Capitalized Interest	3,374,875	-
Underwriter's Discount (1.5%)	748,100	1,561,600
2024 BAN Payoff	-	50,623,125
Allowance for Costs of Issuance	202,025	350,275
<b>Estimated Non-Construction Costs</b>	<b>4,325,000</b>	<b>52,535,000</b>
<b>Total Estimated Project Costs</b>	<b>\$49,875,000</b>	<b>\$104,105,000</b>



# Proposed Financings (Based on extended LTCP Schedule)

2024 BAN

(Open Market)

\$49,875,000 total par

6.00%

3 year maturity

2027 Bond

(Open Market)

\$104,105,000 total par

5.50%

20 year maturity

# **Estimated Rate Impact**

## ESTIMATED ANNUAL REVENUE REQUIREMENTS AND ANNUAL OPERATING REVENUES

	Phase I	Phase II	Phase III	Phase IV
Operating Expenses	\$15,530,800	\$15,996,800	\$16,476,700	\$16,971,000
Payment in Lieu of Taxes	300,000	300,000	300,000	300,000
Debt Service	10,421,500	13,409,800	13,343,900	17,114,200
Debt Service Reserve	-	-	1,335,800	1,335,800
Replacements and Improvements	<u>2,605,400</u>	<u>3,352,500</u>	<u>5,603,000</u>	<u>4,654,200</u>
<b>Total Annual Revenue Requirements</b>	<u>\$28,857,700</u>	<u>\$33,059,100</u>	<u>\$37,059,400</u>	<u>\$40,375,200</u>
<b>Total Annual Available Revenues</b>	<u>\$24,533,000</u>	<u>\$29,137,200</u>	<u>\$34,325,100</u>	<u>\$37,235,100</u>
<b>Additional Revenue Required</b>	<u>\$4,324,700</u>	<u>\$3,921,900</u>	<u>\$2,734,300</u>	<u>\$3,140,100</u>
<b>Approximate Across-the-Board Increase</b>	<u>COSS</u>	<u>17%</u>	<u>10%</u>	<u>10%</u>



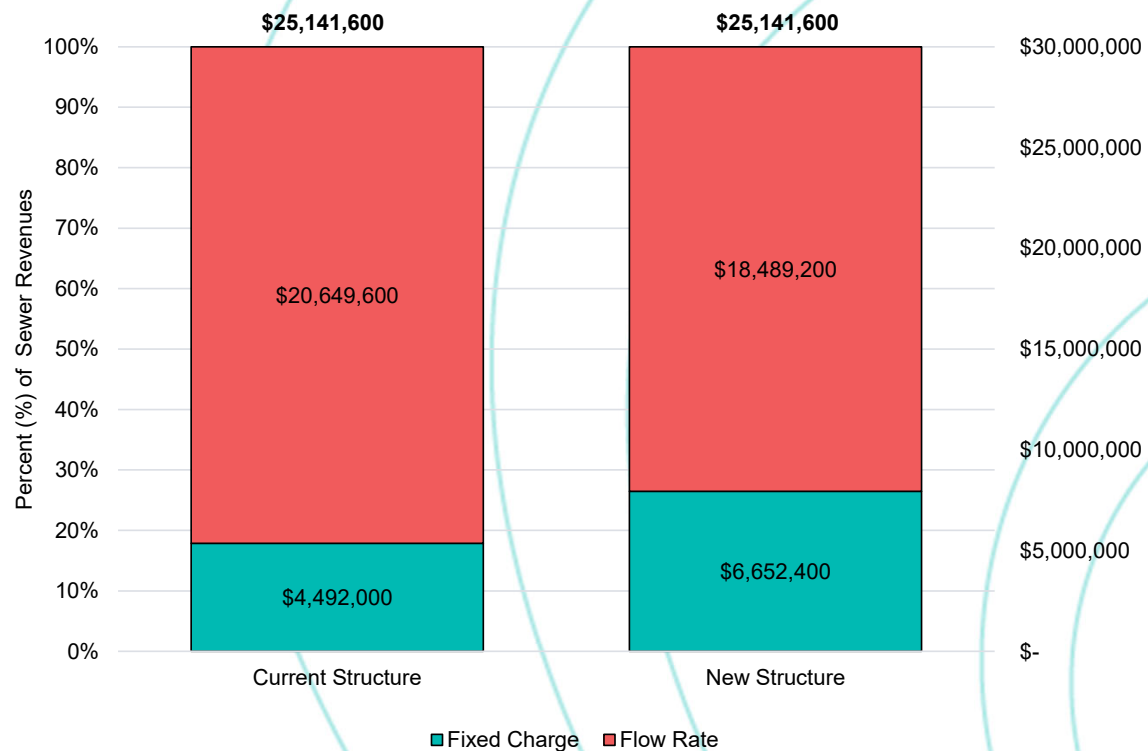
# Schedule of Present and Proposed Rates

	Present	Proposed			
		Phase I (2025)	Phase II (2026)	Phase III (2027)	Phase IV (2028)
<b>Metered Rates</b>					
Monthly minimum charge	\$23.28				
Quarterly minimum charge	69.84				
<b>Base Charge (Per Month)</b>					
Residential		\$12.75	\$14.92	\$16.41	\$18.05
Commercial		61.25	71.66	78.83	86.71
Institutional		195.90	229.20	252.12	277.33
Governmental		3,502.45	4,097.87	4,507.66	4,958.43
Industrial		206.40	241.49	265.64	292.20
<b>Volumetric Rate (Per 100 Cubic Feet)</b>					
Residential	\$7.76	\$7.04	\$8.24	\$9.06	\$9.97
Commercial	7.76	7.11	8.32	9.15	10.07
Institutional	7.76	7.75	8.44	9.28	10.21
Governmental	6.44	7.08	8.28	9.11	10.02
Industrial	6.44	8.10	9.48	10.43	11.47
Delaware County Regional Waste District	2.68	3.27	4.16	3.96	4.29
Liberty Regional Waste District	2.49	3.54	4.22	4.48	5.44
<b>Property Not Using Water (Per Month)</b>					
Unmetered user - 1-2 people (assumes 1,200 cu. ft. per quarter)	\$31.04	\$40.91	\$47.88	\$52.65	\$57.93
Unmetered user - >3 people (assumes 2,000 cu. ft. per quarter)	51.74	59.69	69.86	76.81	84.52
<b>Excessive Strength Surcharges</b>					
BOD (>250 mg/l)	\$0.660	\$0.660	\$0.660	\$0.660	\$0.660
SS (>250 mg/l)	0.660	0.660	0.660	0.660	0.660

Note: Phase I is calculated based on the results of the COSS. Phases II-IV assume across the board increases. DCRWD and LRWD assume separate rate calculations based on contract specifications for all phases shown.



# Comparison of Sewer Revenues with Current and Proposed Structures – Phase I



Note: Current structure includes a minimum charge and unmetered user charge as a way to recover fixed costs. The new structure implements a base charge as a more stable and easy to understand way to recover fixed costs.





# Comparison of Allocated Cost of Service with Revenue Under Adjusted Rates

Customer Class	Cost of Service	Revenue Under Existing Rates	Amount (\$) Increase	Revenue Under Adjusted Rates
Residential	\$13,644,800	\$13,636,000	\$8,800	\$13,715,900
Commercial	5,781,100	4,901,400	879,700	5,886,800
Institutional	3,028,500	2,331,100	697,400	3,243,700
Governmental	894,800	543,200	351,600	909,900
Industrial	787,400	423,500	363,900	670,500
DCRWD	577,700	457,000	120,700	557,600
LRWD	427,300	281,200	146,100	399,800
<b>Totals</b>	<b>\$25,141,600</b>	<b>\$22,573,400</b>	<b>\$2,568,200</b>	<b>\$25,384,200</b>



# Customer Bill Impacts – Phase I

	Current Rates	Phase I Rates	Change	% Change Over Prior Rates		Current Rates	Phase I Rates	Change	% Change Over Prior Rates
<b>Residential</b>									
200 Cubic Feet	\$23.28	\$26.83	\$3.55	15%					
300 Cubic Feet	23.28	33.87	10.59	45%					
400 Cubic Feet	31.04	40.91	9.87	32%					
500 Cubic Feet	38.80	47.95	9.15	24%					
600 Cubic Feet	46.56	54.99	8.43	18%					
1,000 Cubic Feet	77.60	83.15	5.55	7%					
<b>Commercial</b>									
500 Cubic Feet	\$38.80	\$96.80	\$58.00	149%					
1,000 Cubic Feet	77.60	132.35	54.75	71%					
1,500 Cubic Feet	116.40	167.90	51.50	44%					
2,000 Cubic Feet	155.20	203.45	48.25	31%					
3,000 Cubic Feet	232.80	274.55	41.75	18%					
5,000 Cubic Feet	388.00	416.75	28.75	7%					
<b>Institutional</b>									
5,000 Cubic Feet	\$388.00	\$583.40	\$195.40	50%					
7,000 Cubic Feet	543.20	738.40	195.20	36%					
10,000 Cubic Feet	776.00	970.90	194.90	25%					
15,000 Cubic Feet	1,164.00	1,358.40	194.40	17%					
20,000 Cubic Feet	1,552.00	1,745.90	193.90	12%					
100,000 Cubic Feet	7,760.00	7,945.90	185.90	2%					
500,000 Cubic Feet	38,800.00	38,945.90	145.90	0%					
1,000,000 Cubic Feet	77,600.00	77,695.90	95.90	0%					
					<b>Industrial</b>				
					10,000 Cubic Feet	\$644.00	\$1,016.40	\$372.40	58%
					15,000 Cubic Feet	966.00	1,421.40	455.40	47%
					20,000 Cubic Feet	1,288.00	1,826.40	538.40	42%
					30,000 Cubic Feet	1,932.00	2,636.40	704.40	36%
					40,000 Cubic Feet	2,576.00	3,446.40	870.40	34%
					50,000 Cubic Feet	3,220.00	4,256.40	1,036.40	32%
					60,000 Cubic Feet	3,864.00	5,066.40	1,202.40	31%
					100,000 Cubic Feet	6,440.00	8,306.40	1,866.40	29%
					200,000 Cubic Feet	12,880.00	16,406.40	3,526.40	27%
					300,000 Cubic Feet	19,320.00	24,506.40	5,186.40	27%
					400,000 Cubic Feet	25,760.00	32,606.40	6,846.40	27%
					<b>Governmental</b>				
					100,000 Cubic Feet	\$6,440.00	\$10,582.45	\$4,142.45	64%
					200,000 Cubic Feet	12,880.00	17,662.45	4,782.45	37%
					300,000 Cubic Feet	19,320.00	24,742.45	5,422.45	28%
					500,000 Cubic Feet	32,200.00	38,902.45	6,702.45	21%

This impact analysis shows that under the historical rate design Residential and Institutional customers had been subsidizing costs for Industrial and Governmental customers. The cost of service study and rate design shifts these costs to be proportionally allocated between the customer classes based on the impact their flow has to the system.




# Customer Bill Impacts – Large Users

<u>Customer</u>	<u>Customer Class</u>	<u>Average 2023 Monthly Usage (100s Cu. Ft.)</u>	<u>Current Rates</u>	<u>Phase I Rates</u>	<u>Change</u>	<u>% Change Over Prior Rates</u>
Ball State University	Institutional	14,800	\$114,848.00	\$114,895.90	\$47.90	0%
DCRWD	DCRWD	14,200	38,056.00	46,434.00	8,378.00	22%
Indiana American Water Co.	Governmental	1,300	8,372.00	12,706.45	4,334.45	52%
IU Health	Institutional	5,100	39,576.00	39,720.90	144.90	0%
IAW Farmington Utility	Governmental	5,700	36,708.00	43,858.45	7,150.45	19%
Canpack US	Industrial	3,300	21,252.00	26,936.40	5,684.40	27%
LRWD	LRWD	9,400	23,406.00	33,276.00	9,870.00	42%
Exide Corporation	Industrial	2,600	16,744.00	21,266.40	4,522.40	27%
Muncie Community Schools	Institutional	1,700	13,192.00	13,370.90	178.90	1%

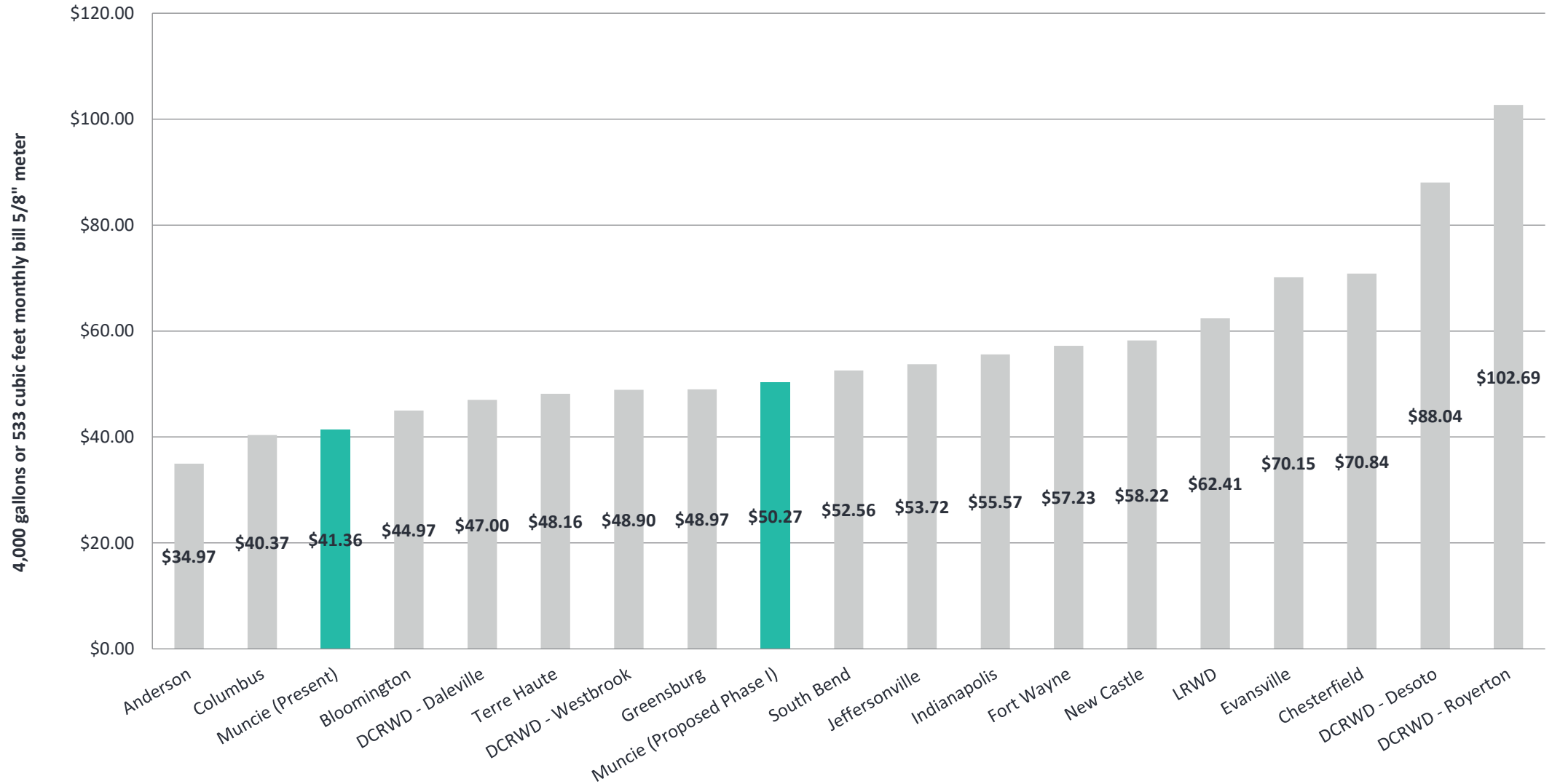
<u>Customer</u>	<u>Customer Class</u>	<u>Average 2023 Monthly Usage (100s Cu. Ft.)</u>	<u>Current Rates</u>	<u>Phase IV Rates</u>	<u>Change</u>	<u>% Change Over Prior Rates</u>
Ball State University	Institutional	14,800	\$114,848.00	\$151,385.33	\$36,537.33	32%
DCRWD	DCRWD	14,200	38,056.00	60,918.00	22,862.00	60%
Indiana American Water Co.	Governmental	1,300	8,372.00	17,984.43	9,612.43	115%
IU Health	Institutional	5,100	39,576.00	52,348.33	12,772.33	32%
IAW Farmington Utility	Governmental	5,700	36,708.00	62,072.43	25,364.43	69%
Canpack US	Industrial	3,300	21,252.00	38,143.20	16,891.20	79%
LRWD	LRWD	9,400	23,406.00	51,136.00	27,730.00	118%
Exide Corporation	Industrial	2,600	16,744.00	30,114.20	13,370.20	80%
Muncie Community Schools	Institutional	1,700	13,192.00	17,634.33	4,442.33	34%



# **Rate Comparison**

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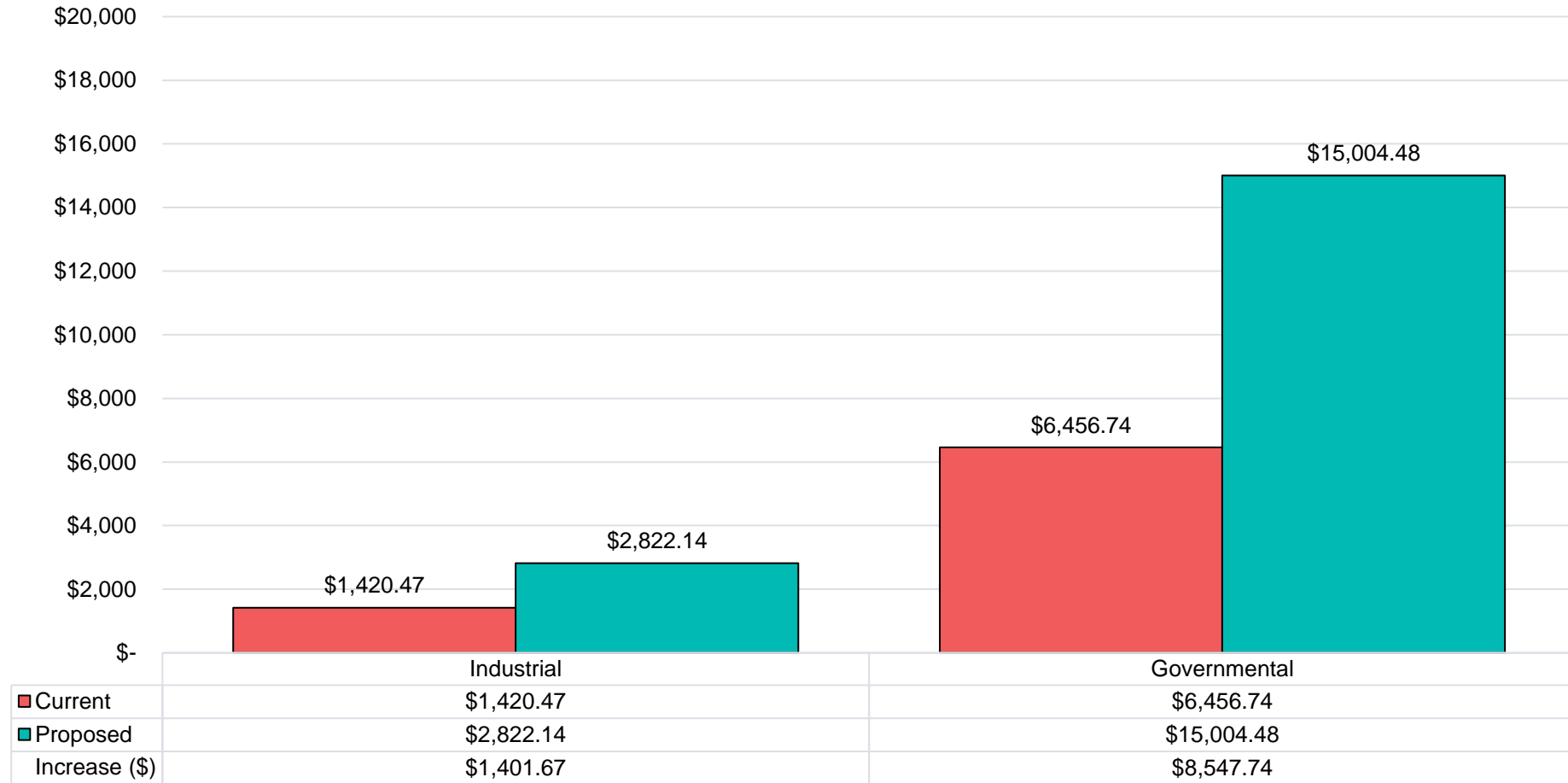
# COMPARISON OF MONTHLY RESIDENTIAL BILLS WITH OTHER INDIANA COMMUNITIES



# Average Monthly Bill (Current Rate vs. Final Phase)



# Average Monthly Bill (Current Rate vs. Final Phase)



■ Current ■ Proposed Increase (\$)



THANK YOU

**Comments /  
questions?**

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