



FY 2023 Service Charges Proposal

Charges Rollout #3 Meeting Material Binder

January 6, 2022

Greetings Member Partners!

Charges Rollout Meeting #3 is scheduled for January 6, 2022. This binder has been compiled to provide supporting material for the service charges presentation as well as the individual community proposed charge calculation worksheet that was distributed to you on January 4, 2022. As a follow-up to Charges Rollout Meeting #3, a schedule of meeting times will be distributed for Member Partners that would like a one-on-one meeting with their team and the Great Lakes Water Authority (GLWA) team during the week of January 10, 2022 to review the charges calculations – as well as to address any other questions. Charges Rollout #4 is scheduled for January 20, 2022. We hope that you find this additional time between meetings helpful to review the charge proposals.

Any questions should be directed to outreach@glwater.org and we will make sure that your request is directed to the appropriate GLWA team member for a prompt response.

Charges Rollout #3 Meeting Binder

1. One Pager Series - FY 2023 Budget Analysis - Proposed as of December 17, 2021
2. One Pager Series - Proposed FY 2023 Water & Sewer Service Charges as of December 15, 2021
3. Water System Charge Worksheet Introductory Memo from Interim Chief Executive Officer
4. Sewer System Charge Worksheet Introductory Memo from Interim Chief Executive Officer
5. Proposed FY 2023 Water and Sewer Charges Memo dated December 29, 2021
6. Proposed FY 2023 Service Charge Summary Memo dated December 29, 2021
7. FY 2023 Service Charges Recommendations Memo dated December 27, 2021
8. Charges Rollout Meeting #2 – Units of Service from November 16, 2021
9. Preliminary FY 2023 Water Units of Service Memo dated November 11, 2021

The GLWA “revenue requirement budget” is the basis for establishing the annual charges for services. Nearly 53% of the FY 2022 budget of \$843 million are legal commitments such as debt service (42%), lease payment (6%), Water Residential Assistance Program (WRAP) (0.5%) and legacy liabilities (4%). Capital funding reserve for replacement is 7.9% of the total budget. The Operations & Maintenance (O&M) expense represents \$332 million, or 39% of the total. This analysis focuses on O&M expense, as compared to the prior year, to provide insight into O&M expense increase of 2%, or \$6.7 million.

Staffing & Personnel The staffing plan (number of positions) is at 1,293 (increase of 54). Full-time Equivalents (FTE), which is the pro-rata hours that a position is budgeted is at 1,234.44 (increase of 18.19). Key changes are noted in this analysis.

Water Operations – increase of \$1.5 million Factors increasing the budget are mainly due to Personnel Costs (\$3.3 million) related to the staffing plan increase of 29 (24.25 FTEs), 25 positions are for the new Water Technician Apprenticeship Program, as well as increases in medical plan fringe benefits. Factors decreasing the budget include Contractual Services which decreased (\$1.7 million) due to the alum sludge removal, hauling, and disposal project for the Springwells, Northeast, and Southwest Water Treatment Plants.

Wastewater Operations – increase of \$2.8 million Factors increasing the budget are mainly due to Personnel Costs (\$1.8 million) which reflect an increase in base level wages for some classifications to recruit and retain personnel. Note that the staffing plan positions has increased by 2 but FTEs decreased by 9.56 due to the recruiting challenges. Increases

have also been recognized in the medical plan fringe benefits. Unallocated Reserves increased (\$1.1 million) to cover area of risk such as chemical price increases.

Centralized Services¹ – increase \$1.6 million Factors increasing the budget include the addition of 11 positions (6.25 FTEs) (\$1.9 million) in Planning Services primarily to support the Capital Improvement Plan with the completion of AECOM’s support in late FY 2023. Security is adding 3 security officers for (\$0.5 million) for expanded coverage. The Systems Operations Control support services contract increased (\$0.3 million); and Facility Operations increased (\$0.5 million) for a gate repair. Factors decreasing the budget are in the Planning Services Area in which project timelines adjusted for both the Linear System Integrity Program (LSIP) (\$1.2 million) and the Water Master Plan (\$0.4 million).

Administrative Services² – increase \$0.8 million Factors increasing are mainly due to Personnel Costs: Organizational Development is adding 5 positions (4 FTEs) to support onboarding and training (\$0.6 million); Procurement is adding 3 positions (1.5 FTEs) to manage increased workload (\$0.4 million); Financial Services, while decreasing 9 positions (9.75 FTE), has an overall increase to in costs due to the skill level for succession and in-sourcing as well as increases fringe benefits (\$0.6 million). Contractual Services increased (\$0.5 million) to support ERP implementation. Legal services contracts also increased (\$0.5 million). Factors decreasing are Unallocated Reserves (\$1.1 million) and Contractual services for the Board of Directors will be decreased (\$0.7 million) for a one-time project.

Questions? Contact the Office of the Chief Financial Officer at cfo@glwater.org

¹ Includes the Planning Services, Systems Control; Facility and Fleet Operations; Field Service Operations; Energy, Research & Innovation; Transformation; Information Technology; and Security & Integrity (includes HazMat).

² Includes the Board of Directors, Chief Executive Officer, Chief Administrative & Compliance Officer (includes Risk Management & Safety), General Counsel, Public Affairs, Organizational Development and Financial Services.

Proposed FY 2023 Service Charges Highlights

Proposed FY 2023 Water and Sewer Service Charges have been established and submitted to the Audit Committee for review. The GLWA Board of Directors will hold a Public Hearing in late February for the proposed schedule of charges for the fiscal year beginning July 1, 2022.

Charges are Based on Four Key Elements.

1) Budget: The costs for the daily operations and maintenance activities (such as the people, services, utilities, chemicals, and parts to operate plants and maintain the pipelines), the lease payment for the regional system, Water Residential Assistance Program (WRAP) funding, debt service, legacy pension, and capital project funding. The budget is also known as the “revenue requirement”.

2) Capital Improvement Plan (CIP): Annually the GLWA’s engineers evaluate the physical improvement needs of the regional systems. Those needs are funded by a combination of cash on hand and debt.

3) Units of Service (UOS): Quantifies each community’s service needs based on engineering studies, metering data, and other criteria. For the water system, this includes the amount of water purchased each year. For the sewer system, each member partner is assigned a percentage “share.”

4) Cost of Service Study (COS): The inputs from the three sources above are applied to an agreed upon charges methodology to allocate the revenue requirement (i.e., budget) by functional categories (such as purification for the water system or sludge disposal for the sewer system) and then allocated to each customer. The outcome is the charge calculation for each member partner.

Looking for More Information? Visit us online at www.glwater.org

Proposed FY 2023 Water System Charges

The average system charge adjustment for water is a 3.7 percent increase. This is the result of 1) a proposed Water budget increase of 3.5 percent; and 2) reduced baseline revenues related to decreased estimated sales volumes, which adds 0.2 percent to the needed charge increase. As a result of the 2018 Contract Alignment Process (CAP), the FY 2023 Units of Service changed for only 4 member partners. This has significantly improved charge stability among member partner communities. The proposed water charges reflect a uniform increase in wholesale revenue requirements of 3.6 percent, with a uniform average charge increase of 3.4 percent for the 84 member partners that did not have changes in contractual or estimated demands.

Approved FY 2023 Sewer System Charges

The average system charge adjustment for sewer is also a 3.7 percent increase. This is the result of 1) a proposed Sewer budget increase of 2.5 percent; and 2) reinstitution of a bad debt surcharge related to Highland Park which adds 1.2 percent to the charge increase. The recently updated Sewer Shares, which were collaboratively established through the Sewer Charges Workgroup, were included in the calculations for the FY 2022 charges. This update continues with the proposed FY 2023 charges resulting in a uniform impact of charge adjustments for all member partners.

Average System Charge Adjustments

Year	Water	Sewer
2018	1.8%	-0.7%
2019	1.8%	0.1%
2020	0.6%	0.8%
2021	3.2%	2.0%
2022	1.5%	-0.6%
2023 proposed	3.7%	3.7%
6-Year Average	2.1%	0.9%



**Office of the Interim
Chief Executive Officer**
735 Randolph Street, Suite 1900
Detroit, Michigan 48226

Delivered via Email

January 4, 2022

To Our Water Member Partners:

On behalf of the Great Lakes Water Authority (GLWA), we look forward to engaging with you at the upcoming Charges Rollout #3 Meeting via Zoom on Thursday, January 6, 2022.

Based your feedback we are continuing the reoriented agendas for annual rollout meetings #3 and #4. Earlier distribution of the charge calculation worksheets and revised agendas were piloted last year to allow for more time to better understand the proposed charges. Below is an outline of this year's charges rollout activities.

January 4, 2022 – Proposed FY 2023 charges worksheets are being emailed to your community's representatives. A report supporting the proposed charges has been posted on our [website](#).

January 6, 2022 – Charges Rollout Meeting #3 will provide budget highlights and a focus on charges. The [agenda](#) for Charges Rollout #3 has been distributed by the Member Partner Outreach team.

January 10, 2022 thru January 14, 2022 - One-on-one online appointments for your team to meet with GLWA representatives to discuss your specific community's charges in more detail. To sign-up for an appointment, please contact Outreach@glwater.org.

January 20, 2022 – Charges Rollout Meeting #4 will focus on general knowledge sharing based on the questions and answers from the one-on-one meetings as well as a recap of budget and financial plan highlights, charge calculation worksheets, and next steps in the charges rollout process.

February 23, 2022 – Public hearings will be held for the budget and charges at the beginning of the Board of Directors Meeting.

The charges rollout meetings will be held via Zoom. We hope that this will provide a convenient opportunity for more of your team members to participate.

Key Notes Related to the FY 2023 Budget and its impact on Charges

*Proposed FY 2023 **Budget***

- ✓ You may recall that the Memorandum of Understanding (MOU), signed in September 2014, which created GLWA, established a fundamental goal to limit annual budget¹ increases to no more than 4 percent for each of the first 10 years of the Authority's operation. This commitment was carried forward into the subsequent 40-year lease agreement (Lease) between the City of Detroit and GLWA. For the seventh consecutive year, the budget adjustment is less than the 4 percent commitment.
- ✓ For FY 2023, that proposed revenue requirement budget increase is 3.5 percent.
- ✓ Of the proposed budget increase of 3.5 percent, a relatively small amount (0.3 percent) is needed to fund increased operating expenses while the remaining 3.2 percent is due largely to increased debt service commitments for capital improvements.

¹ The annual budget (i.e. "revenue requirement") includes operation and maintenance expense, debt service, non-operating expenses and revenue financed capital.

*Proposed FY 2023 **Charges***

- ✓ In addition to the budgeted revenue requirement increase of 3.5 percent, the proposed wholesale charges reflect a 0.2 percent increase to recover lower revenues associated with decreased sales volumes based on the uniform forecasting model. Thus, the proposed *system wide* charges revenue increase is 3.7 percent.
 - A uniform 3.4 percent increase for the 84 model contract Member Partners that did not have a modification their units of service demands is proposed for FY 2023. This group is referred to as the “no mod” class.
 - The difference between the 3.7 percent system wide charge increase, compared to the 3.4 percent “no mod” charge adjustment, is primarily due to unique contract commitments which are fixed and not increasing for FY 2023.
- ✓ This simplified, equitable approach is similar to what has been employed in recent years due to the Contract Alignment Process (CAP) which was undertaken in 2019. The goal set, and met, was to provide charge stability among Member Partners. The result is that the FY 2023 Units of Service are only nominally changed from FY 2022, FY 2021, and FY 2020. In fact, only one model contract member partner has a max day and peak hour demand that impacts their proposed charges for FY 2023. Please note that the CAP reopener process, where all model contract Member Partners will have the opportunity to change their contracted demands, will occur during calendar year 2022. This will impact the charges for FY 2024.
- ✓ Attached is your community’s proposed service charges worksheet for FY 2023. GLWA staff is available to answer any questions by contacting us at Outreach@glwater.org. Please note that the proposed charges are subject to change after the public hearing tentatively scheduled for February 23, 2022, and subsequent deliberation by the GLWA Board.

Our primary objective continues to be one of providing our member partners with wholesale water and wastewater services of unquestionable quality at fair and equitable charges. We are committed to exceeding our member partners’ expectations.

We have also attached a summary of additional Hub Utility Services available at no additional cost.

We thank you for working collaboratively with GLWA in the member partner engagement process and look forward to seeing you at the Charges Rollout Meeting #3 on January 6, 2022.

Sincerely,



Suzanne R. Coffey, PE
Interim Chief Executive Officer



Member Partner Hub Utility Services January 2022

The Great Lakes Water Authority, as a hub utility, provides these services for its Member Partners at no additional cost.

Water Quality Tool

AURA, a GIS-based smart water platform developed by Aquasight. The platform has built-in visualization, data analytics and artificial intelligence. It merges pressures, flows, water quality data, GIS files, hydraulic models and smart meter data where available.

Quality Training Programs

Extensive training and development opportunities for your team members through the One Water Institute (OWI). Email training@glwater.org to learn more.

Leading Technology Knowledge

Technology Approval Group (TAG) which is a collaborative technology assessment and vetting program for Member Communities intended to streamline efforts to identify, evaluate, and implement technologies. A technology portal and workshops offer the opportunity to learn about new technologies, pilot programs, research, etc. that members have identified as areas of interest to them.

Local System Water Testing

Local system water testing to meet Michigan Department of Environment Great Lakes and Energy (EGLE) operational requirements for all Member Partners.

Public Communications

Public Communication materials related to the state of Michigan's new Lead and Copper Rule, educating the public about the perils of "flushable" wipes, and providing easy-to digest graphics regarding a range of emerging contaminants. These materials can be found at <https://www.glwater.org/members/member-partner-resources/>.

Community Education

The [Member Partner Resources](#) page on the GLWA website provides a resources library for information and materials created to share with your communities. Topics include charges, water quality, lead and copper information, environmental matters and many others.

Contact outreach@glwater.org for more info on any of the above programs.



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January 4, 2022

To Our Sewer Member Partners:

On behalf of the Great Lakes Water Authority (GLWA), we look forward to engaging with you at the upcoming Charges Rollout Meeting #3 via Zoom on Thursday, January 6, 2022.

Based your feedback we are continuing the reoriented agendas for annual rollout meetings #3 and #4. Earlier distribution of the charge calculation worksheets and revised agendas were piloted last year to allow for more time to better understand the proposed charges. Below is an outline of this year's charges rollout activities.

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Proposed FY 2023 Budget

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¹ The annual budget (i.e. "revenue requirement") includes operation and maintenance expense, debt service, non-operating expenses and revenue financed capital.

- ✓ For FY 2023, that proposed revenue requirement budget increase is 2.5 percent.
- ✓ Of the proposed budget increase of 2.5 percent, 1.2 percent is needed to fund increased operating expenses while the remaining 1.3 percent is due largely to increased funding for capital improvements.

*Proposed FY 2023 **Charges***

- ✓ In addition to the budgeted revenue requirement increase of 2.5 percent, the proposed wholesale charges reflect an additional 1.2 percent associated with Highland Park bad debt expense. This results in a proposed *system wide* charge increase of 3.7 percent.
 - For the *suburban wholesale customer class*, this net impact is a uniform 4.5 percent increase after adjustment for the Highland Park bad debt expense.
 - The *wholesale charge to Detroit* reflects a 2.5 percent increase as it does not reflect any adjustment for Highland Park bad debt expense.
- ✓ Attached is your community's proposed service charges worksheet for FY 2023. GLWA staff is available to answer any questions by contacting us at Outreach@glwater.org. Please note that the proposed charges are subject to change after the public hearing tentatively scheduled for February 23, 2022, and subsequent deliberation by the GLWA Board.
- ✓ The Industrial Waste Control and Industrial Surcharge rates will see a uniform 2.5 percent increase in alignment with the overall requested budget increase.

Our primary objective continues to be one of providing our member partners with wholesale water and wastewater services of unquestionable quality at fair and equitable charges.

We have also attached a summary of additional Hub Utility Services available at no additional cost.

We thank you for working collaboratively with GLWA in the wholesale member partner engagement process. We look forward to seeing you at the Charges Rollout Meeting #3 on January 6, 2022.

Sincerely,



Suzanne R. Coffey, PE
Interim Chief Executive Officer



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MEMORANDUM

Proposed FY 2023 Water and Sewer Charges **UPDATED**

December 29, 2021

To: Sue Coffey, Nicolette Bateson

From: Bart Foster

This memorandum is intended to introduce our recommended proposed Water and Sewer Charges for FY 2023. Herewith we provide an executive summary of our recommendations. We have prepared and provided additional material under separate cover which supports the analyses summarized in this document.

Executive Summary

1. Proposed FY 2023 Water and Sewer Charges reflect a simplified approach that does not require preparation of a FY 2023 Cost of Service Study.
 - *Supported by uniformity in units of service related to the upcoming Water Contract Alignment Process (CAP) and continuation of the FY 2022 Sewer SHAREs.*
 - *Cost of service analyses will still be completed to support ongoing review and initiatives.*
2. Proposed FY 2023 Water Charges reflect:
 - *Budgeted Revenue Requirement increase of 3.5%;*
 - *System Charge Adjustment equal to a 3.7% increase;*
 - ✓ *Uniform Charge Increase of 3.4% for almost all Member Partners;*
 - ✓ *Uniform Charge Increase of 2.6% for Non Master Metered Member Partners;*
 - ✓ *Slightly higher “net” increase for Detroit and Flint after recognizing specific contract requirements and credits.*
3. Proposed FY 2023 Sewer Charges reflect:
 - *Budgeted Revenue Requirement increase of 2.5%;*
 - *System Charge Adjustment equal to a 3.7% increase;*
 - ✓ *Uniform Charge Increase of 4.5% for suburban wholesale Member Partners relate to Highland Park Bad Debt;*
 - ✓ *Increase to Detroit is 2.5%*

Proposed FY 2023 Water Charges**Budgeted Revenue Requirements and System Charge Adjustment:**

- We are proposing a ***System Charge Adjustment*** of a 3.7% increase. As shown in the table below, this adjustment is the product of:
 - *3.5% to address a \$12.0 million revenue requirement increase;*
 - *Approximately 0.2% to reflect a decrease in budgeted water sales volumes, creating a \$0.5 million negative sales revenue forecast. (See Line 17)*

Revenue Requirement and Charge Adjustment Summary

	(1)	(2)	(3)	(4)
	Approved FY 2022	Recommended FY 2023	Variance	% Variance
	\$	\$	\$	
<u>Revenues</u>				
1 Revenues from Charges	342,808,200	354,946,100	12,137,900	3.5%
2 Other Operating Revenue	175,000	175,000	0	0.0%
3 Non-Operating Revenue	1,047,300	950,500	(96,800)	-9.2%
4 Total Revenues	344,030,500	356,071,600	12,041,100	3.5%
<u>Revenue Requirements</u>				
5 Operations & Maintenance (O&M) Expense	143,933,800	144,847,700	913,900	0.6%
6 General Retirement System Legacy Pension	6,048,000	6,048,000	0	0.0%
7 Debt Service - Regional System Allocation	135,481,000	150,337,100	14,856,100	11.0%
8 General Retirement System Accelerated Pension	6,268,300	6,268,300	0	0.0%
9 WRAP Contribution	1,705,500	1,770,500	65,000	3.8%
10 Lease Payment	22,500,000	22,500,000	0	0.0%
11 Deposit to Improvement & Extension (I&E) Fund	28,093,900	24,300,000	(3,793,900)	-13.5%
12 Total Revenue Requirements	344,030,500	356,071,600	12,041,100	3.5%
<u>Charge Adjustment Summary</u>				
13 Adjustment Index		3.50%		
14 Baseline Revenue		342,296,100		
15 Change in Annual Revenue Requirement			12,041,100	3.5%
16 Change Attributable to Non-Charge Revenue			96,800	0.0%
17 Change Attributable to Sales Revenue / Bad Debt			512,100	0.1%
18 System Charge Adjustment			12,650,000	3.7%

Totals may not foot due to rounding.

- The budgeted revenue variance is lower than that presented earlier in the charge planning process, including at the November 16 Charge Rollout meeting on proposed Units of Service. Subsequent to that meeting, we have:
 - *Made some minor adjustments to projected sales volumes for specific Member Partners based on review of specific data;*
 - *Adjusted the presumed decline in base month water sales from 2.5% annually to 1.0% annually, which is more indicative of recent activity - so the adjustment factor applied to the 3-year average base month sales is 98% instead of 95%.*
 - *This reduces the “negative budgeted revenue variance” from approximately \$2.0 million to approximately \$0.5 million and puts less pressure on the FY 2023 charges.*
- As a result, the proposed System Charge Adjustment is lower than what was indicated in originally presented material.

Specific Member Partner Charge Proposals:

As presented at the November 16 Charge Rollout meeting, there is only one Member Partner (St. Clair County DTE) whose contracted max day and peak hour demands will change for FY 2023. All Member Partners will have the opportunity to change their contracted demands during the re-opener process during 2022, and to impact their charges for FY 2024. We believe this dynamic supports a simplified approach to the proposed FY 2023 Water Charges, similar to what has been employed in recent years, to support the stability objectives embraced by the GLWA Charge Methodologies. Our recommended charges have been developed by:

- Using the FY 2022 Cost of Service Study as an appropriate mechanism to allocate the FY 2023 Revenue Requirements to Cost Pools, for purposes of establishing the allocation of Revenue Requirements to “Mod” customers introduced below.
- Treating St. Clair County DTE as a “Mod” customer and compute their proposed charges based on their specific demands.
 - *This will result in a significant charge increase for this Member Partner.*
- Treating the Non Master Metered Member Partners (Detroit, Dearborn, Highland Park) uniformly as a group of “Mod” customers and uniformly adjust their allocated wholesale revenue requirement.
 - *After adjusting for the “Mod” above, this results in a 3.1% uniform increase in the “wholesale” revenue requirement for this “Mod” class.*
 - *This approach continues recent charge calculations that allow the max day and peak hour demands to vary with variances in average day volumes year over year. The change in average volumes for these Member Partners from FY 2022 to FY 2023 is relatively uniform and we believe treating this group as a class is reasonable and embraces the simplified approach introduced herein.*
- Treating ALL other Member Partners as members of the “No Mod” customer class and uniformly adjust their allocated wholesale revenue requirement.
 - *After adjusting for the “Mods” above, this results in a 3.7% uniform increase in the “wholesale” revenue requirement for this “No Mod” class.*
- Apply the required contractual adjustments to the allocated wholesale revenue requirements.
 - *Since the Detroit Ownership Benefit and the KWA debt service credit are fixed¹, the uniform charge adjustment for all members of the “No Mod” customer class is 3.4%.*
 - *Proposed charge adjustments to Detroit and Flint (expressed on a “gross” pre credit basis) after reflecting contractual adjustments are 3.1% and 3.5%, respectively.*

¹ There is a minor reduction in the budgeted KWA debt service credit, which has the effect of moderately reducing the amount allocated to all other Member Partners.

Proposed FY 2023 Sewer Charges**Budgeted Revenue Requirements and System Charge Adjustment:**

- We are proposing a ***System Charge Adjustment*** of a 3.7% increase. As shown in the table below, this adjustment is the product of:
 - *2.5% to address a \$11.9 million revenue requirement increase;*
 - *Approximately 1.2% to reflect inclusion of one year's worth of revenue requirements allocable to Highland Park as a bad debt expense allowance. (See Line 17). No such amounts were included in the approved FY 2022 Budget and Charges.*

Revenue Requirement and Charge Adjustment Summary

	(1)	(2)	(3)	(4)
	Approved	Recommended		
	<u>FY 2022</u>	<u>FY 2023</u>	<u>Variance</u>	<u>% Variance</u>
	\$	\$	\$	
<u>Revenues</u>				
1 Revenues from Charges	474,005,900	485,760,000	11,754,100	2.5%
2 Other Operating Revenue	400,000	400,000	0	0.0%
3 Non-Operating Revenue	1,023,300	1,154,900	131,600	12.9%
4 Total Revenues	475,429,200	487,314,900	11,885,700	2.5%
<u>Revenue Requirements</u>				
5 Operations & Maintenance (O&M) Expense	181,299,800	187,052,600	5,752,800	3.2%
6 General Retirement System Legacy Pension	10,824,000	10,824,000	0	0.0%
7 Debt Service - Regional System Allocation	207,209,500	205,638,100	(1,571,400)	-0.8%
8 General Retirement System Accelerated Pension	11,620,700	11,620,700	0	0.0%
9 WRAP Contribution	2,358,300	2,423,800	65,500	2.8%
10 Lease Payment	27,500,000	27,500,000	0	0.0%
11 Deposit to Improvement & Extension (I&E) Fund	34,616,900	42,255,700	7,638,800	22.1%
12 Total Revenue Requirements	475,429,200	487,314,900	11,885,700	2.5%
<u>Charge Adjustment Summary</u>				
13 Adjustment Index		2.50%		
14 Baseline Revenue		468,644,700		
15 Change in Annual Revenue Requirement			11,885,700	2.5%
16 Change Attributable to Non-Charge Revenue			(131,600)	0.0%
17 Change Attributable to Sales Revenue / Bad Debt			<u>5,486,700</u>	<u>1.2%</u>
18 System Charge Adjustment			17,240,800	3.7%

Totals may not foot due to rounding.

- As a result, the proposed System Charge Adjustment is higher than what was indicated in originally presented material.

Specific Member Partner Charge Proposals:

As presented at the November 16 Charge Rollout meeting, the existing SHARES established for the FY 2022 Charges will remain in effect for FY 2023 and FY 2024. Revenues collected via the SHARES process account for almost 97% of the revenues generated from charges, with Industrial Specific charges and contractual charges to OMID making up the remainder. We believe this dynamic supports a simplified approach to the proposed FY 2023 Sewer Charges

to support the stability objectives embraced by the GLWA Charge Methodologies. Our recommended charges have been developed by:

- Increase the “wholesale revenue requirements from charges” for ALL charge categories by 2.5% to align with the overall budgeted revenue requirement increase.
 - *This will effectively increase the Sewer Charges for ALL Member Partners (prior to adjustments related to the Agreements) by **2.5%**.*
- Allocate responsibility for the \$5.4 million expected bad debt expense allowance associated with Highland Park to Member Partners in the Suburban Wholesale customer class and compute a FY 2023 “surcharge” associated with this amount².
 - *This will effectively result in uniform charge increase of **4.5%** for members of this customer class.*
- Apply the required contractual adjustments related to the Detroit Ownership Benefit and the OMID Specific revenue requirements.
 - *Since the Detroit Ownership Benefit is fixed, the charge adjustment for Detroit is **2.6%** expressed on a “gross” pre-credit basis (Compared to the 2.5% budgeted revenue requirement increase).*
- Compute specific Industrial Waste Control and Industrial Surcharge rates for FY 2023 that align with the overall 2.5% increase in budgeted revenue requirements.

We believe that the simplified approaches recommended above are consistent with the goals and objectives set forth in the “One Water Charge Initiatives” that were (most recently) presented at the November 16 Charge Rollout meeting. We are prepared to prepare and provide specific Member Partner charge calculation sheets that embrace and follow these approaches.

We are prepared to present this material and to discuss this matter further at your convenience.

² We have provided commentary and analysis regarding specific details on the Highland Park bad debt expense and the impact on Sewer Charges under separate cover.

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MEMORANDUM

Proposed FY 2023 Service Charge Summary

December 29, 2021

To: Sue Coffey, Nicolette Bateson

From: Bart Foster

You have asked for a brief summary comparison of existing Water and Sewer Service Charges with those proposed for FY 2023. The recommended service charges have been prepared to execute the strategy laid out in my December 15 “Proposed FY 2023 Water and Sewer Charges” memorandum. The proposed charges are documented in a report submitted earlier this week, and individual service charge calculation sheets for each Member Partner have been prepared. This material will all be “published” early next week, in advance of the third FY 2023 Charge Rollout meeting on January 6, 2022.

The attached exhibits were taken from the report, and summarize the proposed service charges by individual Member Partner. I believe these exhibits provide a good summary of the charges for each Member Partner, and illustrate the remarkable uniformity regarding impact of the proposals. I believe this material is appropriate to provide to Board Members and key internal stakeholders in advance of publishing of the more detailed information.

I look forward to the opportunity to further discuss the proposed charges as the review process continues.

Table 7
Water Supply System
Calculation of FY 2023 Wholesale Water Service Charge Schedule

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
		Sales Volume <i>Mcf</i>	Existing Charges		Proforma Revenue	Allocated	Charge	% Charge	60%	Recover Via:		Proposed Charges		Projected	Revenue
			Fixed Mo	Commodity	Exist Charges	Revenue Req't	Adjustment	Adjustment	Fixed Mo	Commodity	Fixed Mo	Commodity	Revenue	Recovery	
			<i>\$/mo</i>	<i>\$/Mcf</i>	<i>\$</i>	<i>\$</i>	<i>\$</i>		<i>\$</i>	<i>\$</i>	<i>\$/mo</i>	<i>\$/Mcf</i>	<i>\$</i>		
			0		Table 2	Table 7	(5) - (4)	(6) / (4)	60% of (5)	(5) - (8)*12	(8) / 12 mos	(9) / (1)	'2*(10)+(1)*(11)	(12) / (5)	
1	Allen Park	145,600	126,400	7.82	2,655,400	2,745,400	90,000	3.39%	1,647,200	1,097,800	137,300	7.54	2,745,400	100.0%	
2	Almont Village	9,600	12,600	10.54	252,400	261,000	8,600	3.41%	156,600	103,800	13,100	10.81	261,000	100.0%	
3	Ash Township	42,200	43,900	8.27	875,800	905,400	29,600	3.38%	543,200	361,800	45,300	8.57	905,300	100.0%	
4	Belleville	15,300	16,600	9.74	348,200	359,900	11,700	3.36%	215,900	143,900	18,000	9.41	360,000	100.0%	
5	Berlin Township	27,100	38,400	11.54	773,500	799,800	26,300	3.40%	479,900	319,800	40,000	11.80	799,800	100.0%	
6	Brownstown Township	136,300	190,600	11.09	3,798,800	3,927,500	128,700	3.39%	2,356,500	1,570,700	196,400	11.52	3,927,000	100.0%	
7	Bruce Twp	2,640	16,700	61.19	361,900	374,200	12,300	3.40%	224,500	149,800	18,700	56.74	374,200	100.0%	
8	Canton Township	359,900	539,900	12.36	10,927,200	11,297,600	370,400	3.39%	6,778,600	4,518,800	564,900	12.56	11,299,100	100.0%	
9	Center Line	32,200	24,600	6.28	497,400	514,300	16,900	3.40%	308,600	205,900	25,700	6.39	514,200	100.0%	
10	Chesterfield Township	176,500	223,800	10.41	4,523,000	4,676,400	153,400	3.39%	2,805,800	1,870,800	233,800	10.60	4,676,500	100.0%	
11	Clinton Township	399,300	398,900	7.92	7,949,300	8,218,800	269,500	3.39%	4,931,300	3,288,000	410,900	8.23	8,217,000	100.0%	
12	Commerce Township	104,400	187,700	14.72	3,789,200	3,917,800	128,600	3.39%	2,350,700	1,567,000	195,900	15.01	3,917,800	100.0%	
13	Dearborn	588,500	538,500	7.22	10,711,000	11,011,700	300,700	2.81%	6,607,000	4,404,500	550,600	7.48	11,009,200	100.0%	
14	Dearborn Heights	197,300	193,300	7.84	3,866,400	3,997,300	130,900	3.39%	2,398,400	1,598,500	199,900	8.10	3,996,900	100.0%	
15	Eastpointe	104,300	82,000	6.31	1,642,100	1,697,600	55,500	3.38%	1,018,600	678,800	84,900	6.51	1,697,800	100.0%	
16	Ecorse	126,800	79,400	4.48	1,520,900	1,572,400	51,500	3.39%	943,400	629,200	78,600	4.96	1,572,100	100.0%	
17	Farmington	44,600	53,000	9.52	1,060,600	1,096,600	36,000	3.39%	658,000	439,000	54,800	9.84	1,096,500	100.0%	
18	Farmington Hills	349,500	465,600	10.57	9,281,400	9,596,000	314,600	3.39%	5,757,600	3,838,400	479,800	10.98	9,595,100	100.0%	
19	Ferndale	71,800	54,100	6.19	1,093,600	1,130,800	37,200	3.40%	678,500	452,800	56,500	6.31	1,131,100	100.0%	
20	Flat Rock	52,200	69,900	9.79	1,349,800	1,395,800	46,000	3.41%	837,500	558,200	69,800	10.69	1,395,600	100.0%	
21	Flint	469,200	10,000	9.43	4,544,600	4,932,300	387,700	8.53%	298,700	4,633,500	24,900	9.88	4,934,500	100.0%	
22	Fraser	58,100	64,300	8.72	1,278,200	1,321,500	43,300	3.39%	792,900	528,300	66,100	9.09	1,321,300	100.0%	
23	Garden City	78,300	88,100	8.71	1,739,200	1,798,100	58,900	3.39%	1,078,900	719,300	89,900	9.19	1,798,400	100.0%	
24	Gibraltar	16,400	17,500	8.61	351,200	363,200	12,000	3.42%	217,900	144,800	18,200	8.83	363,200	100.0%	
25	Grosse Ile Township	38,100	57,800	12.10	1,154,600	1,193,800	39,200	3.40%	716,300	477,400	59,700	12.53	1,193,800	100.0%	
26	Grosse Pt. Park	54,900	71,000	10.21	1,412,500	1,460,300	47,800	3.38%	876,200	584,300	73,000	10.64	1,460,100	100.0%	
27	Grosse Pt. Shores	19,200	34,800	13.75	681,600	704,700	23,100	3.39%	422,800	282,300	35,200	14.70	704,600	100.0%	
28	Grosse Pt. Woods	69,400	67,700	7.50	1,332,900	1,378,200	45,300	3.40%	826,900	551,400	68,900	7.95	1,378,500	100.0%	
29	Hamtramck	62,500	42,200	5.42	845,200	873,800	28,600	3.38%	524,300	349,400	43,700	5.59	873,800	100.0%	
30	Harper Woods	47,200	42,500	7.12	846,100	874,600	28,500	3.37%	524,800	350,200	43,700	7.42	874,600	100.0%	
31	Harrison Township	95,400	85,100	7.21	1,709,000	1,767,100	58,100	3.40%	1,060,300	706,300	88,400	7.40	1,766,800	100.0%	
32	Hazel Park	50,200	38,800	6.15	774,300	800,500	26,200	3.38%	480,300	320,500	40,000	6.38	800,300	100.0%	
33	Highland Park	105,500	61,200	4.63	1,222,900	1,257,300	34,400	2.81%	754,400	502,500	62,900	4.76	1,257,000	100.0%	
34	Huron Township	62,000	77,600	10.28	1,568,600	1,621,700	53,100	3.39%	973,000	648,500	81,100	10.46	1,621,700	100.0%	
35	Imlay City	46,200	77,200	13.50	1,550,100	1,602,500	52,400	3.38%	961,500	641,300	80,100	13.88	1,602,500	100.0%	

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Table 7
Water Supply System
Calculation of FY 2023 Wholesale Water Service Charge Schedule

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
	Sales	Existing Charges		Proforma Revenue	Allocated	Charge	% Charge	60%	Recover Via:		Proposed Charges		Projected	Revenue
	Volume	Fixed Mo	Commodity	Exist Charges	Revenue Req't	Adjustment	Adjustment	Fixed Mo	Commodity	Fixed Mo	Commodity	Revenue	Recovery	
	Mcf	\$/mo	\$/Mcf	\$	\$	\$		\$	\$	\$/mo	\$/Mcf	\$		
		0		Table 2	Table 7	(5) - (4)	(6) / (4)	60% of (5)	(5) - (8)*12	(8) / 12 mos	(9) / (1)	'2*(10)+(1)*(11)	(12) / (5)	
36	Imlay Twp	150	800	42.50	16,000	16,500	500	3.13%	9,900	6,900	800	46.00	16,500	100.0%
37	Inkster	101,300	65,100	5.56	1,344,400	1,389,900	45,500	3.38%	833,900	555,900	69,500	5.49	1,390,100	100.0%
38	Keego Harbor	10,000	15,700	12.74	315,800	326,600	10,800	3.42%	196,000	131,000	16,300	13.10	326,600	100.0%
39	Lapeer	52,900	80,600	12.39	1,622,600	1,677,600	55,000	3.39%	1,006,600	670,800	83,900	12.68	1,677,600	100.0%
40	Lenox Township	14,000	15,600	8.42	305,100	315,300	10,200	3.34%	189,200	125,700	15,800	8.98	315,300	100.0%
41	Lincoln Park	165,300	121,000	6.04	2,450,400	2,533,600	83,200	3.40%	1,520,200	1,013,200	126,700	6.13	2,533,700	100.0%
42	Livonia	471,000	607,100	10.11	12,047,000	12,455,100	408,100	3.39%	7,473,100	4,981,500	622,800	10.58	12,456,800	100.0%
43	Macomb Township	320,800	669,300	16.23	13,238,200	13,687,000	448,800	3.39%	8,212,200	5,474,200	684,400	17.06	13,685,600	100.0%
44	Madison Heights	105,100	98,000	7.35	1,948,500	2,014,600	66,100	3.39%	1,208,800	806,200	100,700	7.67	2,014,500	100.0%
45	Mayfield Twp	510	2,500	24.68	42,600	43,900	1,300	3.05%	26,300	17,500	2,200	34.31	43,900	100.0%
46	Melvindale	42,100	34,100	6.42	679,500	702,600	23,100	3.40%	421,600	281,400	35,100	6.68	702,400	100.0%
47	New Haven, Village of	18,400	22,200	6.94	394,100	407,400	13,300	3.37%	244,400	162,600	20,400	8.84	407,500	100.0%
48	N O C W A	876,100	1,168,100	10.41	23,137,400	23,921,800	784,400	3.39%	14,353,100	9,568,600	1,196,100	10.92	23,920,200	100.0%
49	Northville	31,100	40,600	10.48	813,100	840,600	27,500	3.38%	504,400	336,600	42,000	10.82	840,500	100.0%
50	Northville Township	138,200	299,300	17.00	5,941,000	6,142,400	201,400	3.39%	3,685,400	2,457,200	307,100	17.78	6,142,400	100.0%
51	Novi	292,600	476,200	13.03	9,527,000	9,849,800	322,800	3.39%	5,909,900	3,939,800	492,500	13.46	9,848,400	100.0%
52	Oak Park	94,900	73,700	6.08	1,461,400	1,511,000	49,600	3.39%	906,600	603,800	75,600	6.36	1,510,800	100.0%
53	Oakland Co. Drain Comm.	9,700	4,300	3.49	85,500	88,400	2,900	3.39%	53,000	35,600	4,400	3.67	88,400	100.0%
54	Plymouth	44,600	57,000	10.34	1,145,200	1,184,200	39,000	3.41%	710,500	473,800	59,200	10.62	1,184,100	100.0%
55	Plymouth Township	160,900	234,100	11.57	4,670,800	4,829,100	158,300	3.39%	2,897,500	1,931,100	241,500	12.00	4,828,800	100.0%
56	Redford Township	158,600	167,100	8.32	3,324,800	3,437,500	112,700	3.39%	2,062,500	1,374,700	171,900	8.67	3,437,900	100.0%
57	River Rouge	37,900	35,900	7.58	718,100	742,400	24,300	3.38%	445,400	297,200	37,100	7.84	742,300	100.0%
58	Riverview	48,000	46,900	7.73	933,800	965,300	31,500	3.37%	579,200	385,700	48,300	8.04	965,500	100.0%
59	Rockwood	9,800	14,700	11.79	291,900	301,800	9,900	3.39%	181,100	120,600	15,100	12.31	301,800	100.0%
60	Romeo	6,100	13,500	18.13	272,600	281,900	9,300	3.41%	169,100	112,700	14,100	18.48	281,900	100.0%
61	Romulus	223,500	224,200	8.21	4,525,300	4,678,800	153,500	3.39%	2,807,300	1,872,000	233,900	8.38	4,679,700	100.0%
62	Roseville	186,500	142,200	5.99	2,823,500	2,919,300	95,800	3.39%	1,751,600	1,167,300	146,000	6.26	2,919,500	100.0%
63	Royal Oak Township	10,300	10,400	7.65	203,600	210,500	6,900	3.39%	126,300	84,500	10,500	8.20	210,500	100.0%
64	S O C W A	1,230,500	1,215,400	7.75	24,121,200	24,938,900	817,700	3.39%	14,963,300	9,976,100	1,246,900	8.11	24,942,200	100.0%
65	Shelby Township	412,700	751,600	14.88	15,160,200	15,674,100	513,900	3.39%	9,404,500	6,269,700	783,700	15.19	15,673,300	100.0%
66	South Rockwood	4,600	6,100	10.17	120,000	124,200	4,200	3.50%	74,500	49,800	6,200	10.83	124,200	100.0%
67	Southgate	111,700	116,300	8.12	2,302,600	2,380,900	78,300	3.40%	1,428,500	952,900	119,000	8.53	2,380,800	100.0%
68	St. Clair County-Burchville Twp	8,400	17,700	18.19	365,200	377,600	12,400	3.40%	226,600	150,800	18,900	17.95	377,600	100.0%
69	St. Clair County BPW	25,100	49,400	19.18	1,074,200	1,433,300	359,100	33.43%	860,000	572,900	71,700	22.82	1,433,200	100.0%
70	St. Clair Shores	194,400	161,800	6.80	3,263,500	3,374,200	110,700	3.39%	2,024,500	1,349,800	168,700	6.94	3,373,500	100.0%
71	Sterling Heights	591,100	804,500	11.14	16,238,900	16,789,400	550,500	3.39%	10,073,600	6,715,400	839,500	11.36	16,788,900	100.0%

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Water Supply System
Calculation of FY 2023 Wholesale Water Service Charge Schedule

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
	Sales	Existing Charges		Proforma Revenue	Allocated	Charge	% Charge	60%	Recover Via:		Proposed Charges		Projected	Revenue
	Volume	Fixed Mo	Commodity	Exist Charges	Revenue Req't	Adjustment	Adjustment	Fixed Mo	Commodity	Fixed Mo	Commodity	Revenue	Recovery	
	Mcf	\$/mo	\$/Mcf	\$	\$	\$		\$	\$	\$/mo	\$/Mcf	\$		
		0		Table 2	Table 7	(5) - (4)	(6) / (4)	60% of (5)	(5) - (8)*12	(8) / 12 mos	(9) / (1)	'2*(10)+(1)*(11)	(12) / (5)	
72	Sumpter Township	30,300	35,600	9.67	720,200	744,500	24,300	3.37%	446,700	298,100	37,200	9.84	744,600	100.0%
73	Sylvan Lake	6,400	12,300	15.48	246,700	255,100	8,400	3.40%	153,100	101,500	12,800	15.86	255,100	100.0%
74	Taylor	258,900	244,700	7.46	4,867,800	5,032,800	165,000	3.39%	3,019,700	2,013,600	251,600	7.78	5,033,400	100.0%
75	Trenton	86,400	89,100	8.19	1,776,800	1,837,100	60,300	3.39%	1,102,300	734,300	91,900	8.50	1,837,200	100.0%
76	Troy	465,000	722,200	12.20	14,339,400	14,825,400	486,000	3.39%	8,895,200	5,929,800	741,300	12.75	14,824,400	100.0%
77	Utica	23,100	30,000	9.72	584,500	604,400	19,900	3.40%	362,600	242,000	30,200	10.48	604,500	100.0%
78	Van Buren Township	135,500	183,700	11.10	3,708,500	3,834,100	125,600	3.39%	2,300,500	1,533,700	191,700	11.32	3,834,300	100.0%
79	Walled Lake	29,900	42,200	10.98	834,700	862,900	28,200	3.38%	517,700	345,700	43,100	11.56	862,800	100.0%
80	Warren	618,100	545,200	6.94	10,832,000	11,199,200	367,200	3.39%	6,719,500	4,479,200	560,000	7.25	11,201,200	100.0%
81	Washington Township	81,800	121,700	12.37	2,472,300	2,556,100	83,800	3.39%	1,533,700	1,022,500	127,800	12.50	2,556,100	100.0%
82	Wayne	105,400	168,700	12.96	3,390,400	3,505,400	115,000	3.39%	2,103,200	1,401,800	175,300	13.30	3,505,400	100.0%
83	West Bloomfield Township	266,600	551,000	16.52	11,016,200	11,389,700	373,500	3.39%	6,833,800	4,555,700	569,500	17.09	11,390,200	100.0%
84	Westland	322,000	327,500	7.99	6,502,800	6,723,100	220,300	3.39%	4,033,900	2,688,700	336,200	8.35	6,723,100	100.0%
85	Wixom	75,300	130,500	13.95	2,616,400	2,704,900	88,500	3.38%	1,622,900	1,082,500	135,200	14.38	2,705,200	100.0%
86	Woodhaven	57,900	88,100	12.22	1,764,700	1,824,600	59,900	3.39%	1,094,800	730,200	91,200	12.61	1,824,500	100.0%
87	Ypsilanti Comm Util Auth	482,800	547,900	9.03	10,934,500	11,305,100	370,600	3.39%	6,783,100	4,521,500	565,300	9.37	11,307,400	100.0%
88	Total Suburban	13,512,900	15,895,100	9.70	321,821,800	333,217,800	11,396,000	3.54%	197,270,300	135,943,800	16,439,500	10.06	333,219,000	100.0%
89	Detroit (a)	4,169,200	1,808,100		21,697,300	22,985,900	1,288,600	5.94%	22,985,900		1,915,500		22,985,900	100.0%
90	GRAND TOTAL	17,682,100			343,519,100	356,203,700	12,684,600	3.69%	220,256,200	135,943,800			356,204,900	100.0%
91	less: Bad Debt Expense				(1,222,900)	(1,257,300)	(34,400)						(1,257,000)	
92	Net Wholesale Revenue				342,296,200	354,946,400	12,650,200	3.70%					354,947,900	100.0%
	(a) Flint / Detroit Adjustment Impacts													
93	Flint Gross	469,200	564,400	9.43	11,197,400	11,584,100	386,700	3.45%	6,950,500	4,633,700	579,200	9.88	11,586,100	100.0%
94	less: KWA Debt Svc Credit		(554,400)		(6,652,800)	(6,651,800)	1,000	-0.02%	(6,651,800)	(200)	(554,300)		(6,651,600)	100.0%
95	Flint Net for Line 21		10,000	9.43	4,544,600	4,932,300	387,700	8.53%	298,700	4,633,500	24,900	9.88	4,934,500	100.0%
96	Detroit Gross		3,533,100		42,397,300	43,685,900	1,288,600	3.04%	(42,397,300)	(84,794,600)	3,640,500		43,685,900	100.0%
97	less: Ownership Adj Credit		(1,725,000)		(20,700,000)	(20,700,000)	0	0.00%	20,700,000	41,400,000	(1,725,000)		(20,700,000)	100.0%
98	Detroit Net for Line 89		1,808,100		21,697,300	22,985,900	1,288,600	5.94%	(21,697,300)	(43,394,600)	1,915,500		22,985,900	100.0%
99	Modified Demands (1)	25,100			1,074,200	1,433,300	359,100	33.43%					1,433,200	100.0%
100	Non-Master Metered (3)	4,863,200			33,631,200	35,254,900	1,623,700	4.83%					35,252,100	100.0%
101	No Mods - All Others (84)	12,793,800			308,813,700	319,515,500	10,701,800	3.47%					319,519,600	100.0%
102	Total	17,682,100			343,519,100	356,203,700	12,684,600	3.69%					356,204,900	100.0%

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Table 4
Sewage Disposal System
Comparison of Existing and Poposed Member Partner Service Charges

	(1)	(2)	(3)	(4)
	Existing FY 2022 <u>Charges</u> \$/mo	Proposed FY 2023 <u>Charges</u> \$/mo	Charge <u>Adjustment</u> \$/mo	% Charge <u>Adjustment</u>
<u>Suburban Wholesale</u>				
1 OMID Common *	5,692,200	5,946,400	254,200	4.5%
2 Rouge Valley	4,605,600	4,811,300	205,700	4.5%
3 Oakland GWK	3,819,000	3,989,600	170,600	4.5%
4 Evergreen Farmington	2,980,500	3,113,700	133,200	4.5%
5 SE Macomb San Dist	2,064,400	2,156,600	92,200	4.5%
6 Dearborn	1,671,500	1,746,200	74,700	4.5%
7 Grosse Pointe Farms	226,300	236,400	10,100	4.5%
8 Grosse Pointe Park	156,900	163,900	7,000	4.5%
9 Melvindale	129,500	135,300	5,800	4.5%
10 Farmington	98,700	103,100	4,400	4.5%
11 Center Line	85,800	89,700	3,900	4.5%
12 Allen Park	69,800	73,000	3,200	4.6%
13 Highland Park	446,400	466,300	19,900	4.5%
14 Hamtramck	332,800	347,700	14,900	4.5%
15 Grosse Pointe	74,100	77,500	3,400	4.6%
16 Harper Woods	18,000	18,800	800	4.4%
17 Redford Township	22,200	23,200	1,000	4.5%
18 Wayne County #3	4,300	4,500	200	4.7%
19 Subtotal Suburban Wholesale	22,498,000	23,503,200	1,005,200	4.5%
20 Detroit Customers (a)	15,721,900	16,124,000	402,100	2.6%
21 Subtotal Wholesale	38,219,900	39,627,200	1,407,300	3.7%
22 OMID Direct *	179,500	182,200	2,700	1.5%
23 Total Member Partner Chgs	38,399,400	39,809,400	1,410,000	3.7%
24 <i>OMID Total *</i>	<i>5,871,700</i>	<i>6,128,600</i>	<i>256,900</i>	<i>4.4%</i>
<u>(a) Detroit Revenue Req'ts</u>				
25 Gross Revenue Requirements	16,181,600	16,583,700	402,100	2.5%
26 Ownership Benefit	(459,700)	(459,700)	0	0.0%
27 Net Revenue Requirements	15,721,900	16,124,000	402,100	2.6%

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MEMORANDUM

FY 2023 Service Charge Recommendations

December 27, 2021

To: Sue Coffey, Nicolette Bateson

From: Bart Foster

This memorandum has been prepared to introduce the exhibits summarizing the recommended proposed Water and Sewer Service Charges for FY 2023. The materials presented herein provide calculations that are subject to review, change and modification by the Great Lakes Water Authority (“GLWA”) Board. The general approach towards calculating the proposed charges was introduced in our “Proposed FY 2023 Water and Sewer Charges” memorandum dated December 15, 2021 – which is included as Appendix A to this report.

The proposed FY 2023 Water and Sewer Service Charges will be initially presented to Member Partners at a meeting on January 6, 2022, and further discussed at a meeting on January 20, 2022. GLWA will be formally issuing notification of the proposed charges to Member Partners on January 21, 2022. A public hearing on the proposed Water and Sewer service charges for FY 2022 is scheduled for February 23, 2022.

This is the seventh water and sewer service charge study prepared for GLWA. This study only addresses the wholesale service costs of service (revenue requirements) that are GLWA’s direct responsibility, although where appropriate reference is made to certain retail elements that are solely allocable to the City of Detroit, and which are a part of the comprehensive presentation of the overall GLWA financial plan as dictated by the “Agreements” that GLWA must follow in its budget representations. The “Agreements” include the GLWA Master Bond Ordinance, Trust Indenture, the Lease(s), the Services Agreements with the City of Detroit, and the 2018 Memorandum of Understanding that establishes implementation plans for the other core aspects of the Agreements.

The material presented herein employs a similar presentation and format to that included in studies from prior years. However, as noted in our December 15 memorandum, the proposed FY 2023 Water and Sewer Charges reflect a simplified approach that does not require preparation of a FY

2023 Cost of Service Study¹. With respect to the proposed FY 2023 Water Charges, the “demand” units of service for FY 2023 only change for four of the 88 Member Partners. Since the SHAREs established for the FY 2022 Sewer Charges are scheduled to remain in effect until FY 2025, the major units of service for the FY 2023 Sewer Charges are completely unchanged from FY 2022. This remarkable stability provides an opportunity to implement a charge strategy that embraces recent approaches to simplicity, with even more focus on the hallmark GLWA objectives of stability and simplicity.

The proposed FY 2023 Water Charges reflect continued application of a simplified, uniform approach to charge adjustments for the 84 Member Partners whose demands did not change from FY 2022 to FY 2023. Proposed charges for these 84 Member Partners reflect an “across the board” uniform charge adjustment for the wholesale costs of service, with subsequent application of minor adjustments to reflect contractual requirements. The proposed FY 2023 Sewer Charges reflect an “across the board” uniform charge adjustment for the wholesale costs of service to ALL Member Partners, and also require subsequent application of minor adjustments to reflect contractual requirements.

The overall strategy for the FY 2023 Financial Plan and Service Charges has been communicated via the GLWA Customer Outreach Program and briefings to the GLWA Board of Directors in both full meetings and the committee structure. Materials delineating this strategy, and the implementation of it, are disclosed at glwater.org, and we encourage interested stakeholders to review that material, all of which is intended to be incorporated by reference to this concluding report. We have also included key documents as appendices to this report.

The analysis and calculations supporting these recommendations reflect some key assumptions introduced and summarized below. We elaborate on these (and other) assumptions as appropriate in the introduction of specific tables and calculations that follows this introduction.

1. The FY 2023 Budgeted Revenue Requirements depicted herein represents the “budget request” as developed by GLWA, which was originally presented to the Audit Committee on December 15, 2021. That presentation to the Audit Committee also included an updated ten-year financial forecast, which is included as Appendix B to this report.
 - *As further explained herein, the FY 2023 Budgeted Revenue Requirements included in these calculations reflects a 3.5% budgetary increase (for Water) and a 2.5% budgetary increase (for Sewer) compared to the originally approved FY 2022 Budgeted Revenue Requirements. This is LESS THAN the full implementation of the 4% Revenue Requirement Increase set forth the Agreements.*

¹ The intent is to complete a FY 2023 Cost of Service Study and publish it at a later date, principally to support ongoing discussion of potential future modifications to the GLWA Charge Methodologies.

- *It is our understanding that the final FY 2023 Budgeted Revenue Requirements may contain modifications to the current “budget request” version, as final review of specific items is completed, including coordination with the DWSD Budget for the Local Systems.*
 - *It is our further understanding that GLWA management has committed to delivering a final Budgeted Revenue Requirements that fits within the total “budget request” figures reflected in these calculations, and that these calculations reflect a reasonable depiction of the final Budgeted Revenue Requirements.*
2. The Capital Financing Plan reflects the preliminary updated plan set forth in the ten-year forecast update submitted to the Audit Committee on December 15, 2021.
 - *The capital revenue requirements (debt service, revenue financed capital, etc.) included in this analysis are identical to the budget request.*
 - *The GLWA financial policy includes a capital spend rate assumption. Capital financing plans are designed to generate capital funding sources equal to an amount of the total Capital Improvement Programs (“CIPs”) CIP with what can realistically be spent due to limitations beyond GLWA’s control and/or delayed for non-budgetary reasons financing.*
 - *For purposes of the FY 2023 Budgeted Revenue Requirements, the spend rate assumption is 80% for Water and 75% for Sewer.*
 3. These calculations reflect preliminary projections regarding DWSD Budget decisions as they relate to the items below. While these items do not directly impact the allocation of Wholesale Service Charges, they are important components to the overall FY 2023 Budgeted Revenue Requirements and financial plan, as dictated by the Agreements.
 - *O&M Budget for Local Facilities;*
 - *Capital Improvement Program Financing Requirements for Local Facilities;*
 - *Application of \$50 million Lease Payment;*
 - *Recovery of existing budget shortfalls from the Local System.*
 4. Application of suburban wholesale bad debt expense provisions in Sewer Service Agreement(s)
 - *The proposed FY 2023 Sewer charges reflect inclusion of one year’s worth of revenue requirements allocable to Highland Park as a bad debt expense allowance, which is only applicable to the suburban wholesale Member Partners. This matter is discussed at length in Appendix C to this report.*

These calculations follow the same cost allocation strategies, practices, and protocols that have been applied in these calculations without any major modifications from cost of service and service charge calculations for prior years. It is important to note that the existing FY 2022 Water service charges were determined via a uniform adjustment to all but eleven of the Member Partners. The FY 2020 Water service charges were the last charges determined via a detailed cost of service study that treated every Member Partner uniquely and individually.

Finally, as noted above these service charge calculations ***do not*** rely on an updated cost of service study of the FY 2023 Water and Sewer Revenue Requirements. Rather, we have applied the relative cost pool allocation factors from the FY 2022 Cost of Service Study to the proposed FY 2023 Revenue Requirements. Again, this approach is deemed reasonable to achieve stability objectives, given the continuation of the FY 2022 Sewer SHARES, the pending Water Contract Alignment Process (“CAP”) that will impact the FY 2024 Water Service Charges, and the absence of any known material changes in relative budgetary cost profiles.

The exhibits to this memorandum contain executive summary material on:

- The determination of the Proposed FY 2023 Budgeted Revenue Requirements;
- The allocation of Proposed FY 2023 Revenue Requirements to cost pools *based on the FY 2022 Cost of Service Study*;
- The proposed allocation of these costs to individual Member Partners *based on the simplified approach introduced above*;
- Proposed wholesale service charge schedules for each Member Partner;

A brief introduction of each of the exhibits follows in this memorandum. We have also prepared individual service charge calculation sheets for each wholesale Member Partner, which includes a “one pager” illustration of the proposed charge calculations. As noted earlier, these individual calculation sheets will be distributed to Member Partners at a meeting on January 6, 2022, and GLWA is formally issuing notification of the proposed charges on January 21, 2022. We suggest publishing this memorandum to support review of the proposed charges. Additional material is being prepared to augment the proposals.

We are prepared to present this material and discuss this matter at your convenience.

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Water Service Charge Calculation Tables:

The FY 2023 Water Service Charges reflect simplified calculations, but still require an evaluation of units of service for the entire Member Partner group in order to isolate the impact on the four Member Partners whose max day and peak hour demands are changing for FY 2023. This approach categorizes the 88 Member Partners into three “customer groups” for purposes of determining the FY 2023 Water Service Charges.

1. Establishes the “Units of Service” for each Member Partner, and establishes the FY 2023 Water charge adjustment strategy for “Mod” and “No Mod” Member Partners. Table 1 is actually 4 distinct tables, starting from basic data input (from contracts, etc.) that define basic characteristics regarding each Member Partner’s use of the System. ***The preliminary basic units of service were originally presented to Member Partners at the second FY 2023 Charges Rollout Meeting on November 16, 2021. The final units of service reflect two modifications to original sales volume figures as noted below.***
 - The annual sales volumes in Column 1 of Table 1a continue to reflect a uniform forecasting approach. For FY 2023 the projected volume was determined by averaging annual sales for each Member Partner over the most recent 36 months from October 2017 through September 2020. Sales data for “base” months (October through March) were reduced by 2% to reflect demographic reduction in potable water use based on recent trends being experienced worldwide. ***The original units of service had continued a 5% base month reduction factor that had been applied in prior years. Subsequently we reduced the presumed decline in base month water sales from 2.5% annually to 1.0% annually, which is more indicative of recent activity - so the adjustment factor applied to the 3-year average base month sales is 98% instead of 95%.*** Sales data for “peak” months (April through September) were not adjusted. Peak monthly data for the three-year averaging period reflect for one very low demand year and two relatively average demand years.
 - ***The data for Dearborn and Detroit has been updated since the November 16 Units of Service Rollout meeting. An error in the reported historical data was corrected for Dearborn and Detroit’s local non-revenue water estimate was adjusted to reflect allocation of Transmission Mains to Distribution Mains.***
 - The max day and peak hour demand figures in Table 1a reflect figures from Exhibit B of the contract for all 85 Member Partners that are served via Master Meters, ***including St. Clair County BPW, which is now served via the model contract. The demands for this Member Partner are different from the assumptions used for the FY 2022 Charges. Max day and peak hour demands for all other Master Metered Member Partners are unchanged from FY 2022 due to the Contract Alignment Process (“CAP”).***
 - ***St. Clair County BPW is being treated uniquely in these calculations as a “one Member customer group” and is highlighted in yellow in the exhibits.***

- Dearborn, Highland Park, and Detroit are not served by master meters. Their units of service continue to be established via the phase 2 Units of Service (“UoS”) Study protocols initially established for the FY 2020 charges. ***These three Member Partners are treated uniformly as a customer group in these calculations and are highlighted in orange in the exhibits.***
 - ***The remaining 84 Member Partners will be treated as members of the “No Mod” Customer Class – the third and final customer group for the FY 2023 Water Charges. The proposed charge strategy applies a uniform charge adjustment for these Member Partners.*** Their information is not “highlighted” in the exhibits.
 - Tables 1b and 1c then combine these basic characteristics into consolidated units of service that align with Cost Pools for each Member Partner.
 - ***Table 1d then consolidates the units of service into the groups introduced above, illustrates how the calculation of units of service from basic input data to cost pool units, and computes individual Cost Pool “Shares” for each of the three “customer groups” that are being established for purposes of these calculations. This establishes the basis for the simplified approach applied in the proposed FY 2023 Water Charges, which is expanded upon in Table 5.***
2. Illustrates the calculation of proforma FY 2023 revenues under the existing FY 2022 service charge schedule.
 - Separates the proforma revenue projections into amounts related to:
 - “Wholesale” revenue requirements;
 - Implementation of the Detroit Ownership Adjustment;
 - Implementation of the KWA Debt Service Credit;
 - Adjustment to recover Highland Park bad debt expense
 - This is necessary to implement the charge adjustment strategy presented in Tables 5 and 6.
 3. Presents an executive summary of the comprehensive Water Supply System Budgeted Revenue Requirements for FY 2023 compared to the originally approved FY 2022 Revenue Requirements. This table was originally presented in the December 15, 2021 memorandum (*see Appendix A for additional discussion*). Of note:
 - The total Revenue Requirement increase is \$12.0 million, or 3.5%, as shown on Line 12 of the table.
 - The budgeted investment earnings and miscellaneous revenue for FY 2023 are not materially different than FY 2022 (*Line 16*).
 - Proforma wholesale Water revenues under existing charges reflect a moderate (\$0.5 million) decline compared to originally forecasted FY 2022 amounts, creating a negative budget variance.

- As a result, the “System Charge Adjustment” required from charges to Member Partners is 3.7%, designed to generate \$12.65 million more revenue than the existing charges.
 - ***The Water Service Charge calculations delineated herein allocate responsibility for the “Revenue Requirement from Charges” totaling \$354.9 million as shown on Line 1 of Column 2 of the table.***
 - *Charges will have to be further adjusted to cover the projected Highland Park debt expense.*
4. Allocates the FY 2023 Revenue Requirements from Table 3 to the Cost Pools necessary to assign costs to Member Partners and Customer classes. ***For purposes of the FY 2023 Charges, the total FY 2023 Revenue Requirements are allocated to Cost Pools proportionally based on the results of the FY 2022 Cost of Service Study.***
 5. Calculates the “Wholesale Charge Adjustment Factor” to be applied to each customer group for the FY 2023 Water Charges. The relative shares for each cost pool and from each customer group are brought over from Table 1d and show on Lines 1 through 9. On Lines 10 through 19 these relative shares are applied to the cost pool Revenue Requirements from Table 4. On Line 19, the FY 2023 total Wholesale Revenue Requirement of \$354.9 million is allocated to customer group. Comparing these figures from the “Wholesale Service” Revenue under the existing charges shown on Line 20 (from Table 2) indicates the amount by which wholesale service charges must be adjusted for each customer group, which is shown on Line 21, and produces the Wholesale Charge Adjustment Factors on Line 22.
 - ***The Total System figure of 3.70% matches that originally presented in Table 3.***
 - ***The adjustment factor for St. Clair County BPW is consistent with their new model contract and the max day and peak hour demands contained therein.***
 - ***The adjustment factor for the Non-Master Metered group is slightly lower than the Total System figure. The FY 2023 max day and peak hour demands for this group are moderately lower than FY 2022, as they are determined via peaking factors applied to lower projected sales volumes.***
 - ***The specific treatment of these two customer groups basically balances out, and the Wholesale Charge Adjustment Factor for all Other Member Partners is 3.70%, which matches the Total System Factor.***
 6. Applies the Wholesale Charge Adjustment Factors from Table 5 to the proforma Wholesale revenue under existing charges from Table 2 to determine FY 2023 Wholesale Revenue Requirement responsibility for each Member Partner. Then applies the adjustments necessary to reflect three special circumstances:

- The “Detroit capital ownership adjustment” of \$20.7 million annually, which is established in the Agreements must be recognized. This amount is reduced from Detroit and allocated to all other Member Partners in proportion to the allocation of Wholesale Revenue Requirements.
 - Similarly, the contractual credit to Flint related to KWA debt service must be recognized. Flint’s share of KWA debt service for FY 2023 is estimated to be \$6,651,800. This adjustment is accomplished similar to the Detroit Ownership adjustment. It is reduced from Flint’s allocated revenue requirement and allocated to all other Member Partners (including Detroit) in proportion to the allocation of CTA wholesale revenue requirements.
 - *Note: while every Member Partner is allocated a portion of the KWA credit as part of the contractual agreement between GLWA and Flint, it is important to recognize that each Member Partner is a “net beneficiary” of the agreement. All Member Partners receive lower revenue requirement allocation than they would absent the agreement, since the Water System experiences ~ \$4.9 million in annual revenues from Flint, which would not have been experienced without the agreement. The incremental costs of serving Flint under the agreement are not material, and incremental investments that may have been necessary to ensure water quality in the northern GLWA service area had the arrangement not been made are avoided.*
 - Finally, we make an adjustment to reflect the fact that Highland Park is not currently making any payments of wholesale water bills. While GLWA continues to pursue legal opportunities to remedy this performance, the FY 2023 Budget does not assume any collections. As such, we re-allocate the entirety of Highland Park’s revenue requirement to all other Member Partners (including Detroit) in proportion to the allocation of Wholesale Revenue Requirements. Note that we still include the entire amount in Highland Park’s revenue requirement for charges, which has the result of increasing the “Revenue Requirements for Charges” by \$1.257 million.
 - ***The total Detroit “Charge Revenue Requirement” becomes the proposed figure for the GLWA Authority Board to consider. The calculations herein do not produce specific charge proposals for the Detroit retail class.***
7. Calculates the proposed wholesale service charge structure for each Member Partner.
- The first four columns repeat the calculation of proforma revenues from Table 2.
 - Column 5 presents the total adjusted revenue requirement from Table 6.
 - Columns 6 and 7 indicate the charge adjustment necessary to meet allocated revenue requirements. The percentage charge adjustment figures in Column 7 for

the No Mod customer group are uniformly 3.4%, with minor rounding variances. *Note that this is lower than the Wholesale Charge Adjustment Factor of 3.7%, as the Detroit Ownership and KWA Debt Service Adjustments are fixed, and not subject to indexed increases.*

○ *Similarly, note that the pertinent percentage adjustment figures in Column 7 for Flint and Detroit are most appropriate reviewed on a “gross” basis at the bottom of the table, as their specific, fixed contractual adjustments reflect recovery of less than the Wholesale Revenue Requirements allocated to them.*

- The proposed FY 2023 Water Service Charge Schedule is calculated in Columns 8 through 11. The proposed service charge structure represents the same approach as the existing charge structure, which was originally implemented for the FY 2016 Service Charge Schedule. The fixed monthly charge for each Member Partner is designed to recover precisely 60% of the revenue requirements allocated to that Member Partner. Each Member Partner’s commodity charge is designed to recover the remaining 40% of the revenue requirements allocated to them.
- Column 12 calculates projected revenue under the proposed service charge schedule and Column 13 illustrates that the proposed charges recover the adjusted, allocated revenue requirements.

Sewer Service Charge Calculation Tables:

The FY 2023 Sewer Service Charges can be calculated without any recognition of “units of service”, as Member Partner SHAREs are unchanged and Industrial Charges are being adjusted at the average index required by the FY 2023 budgeted revenue requirements.

1. Presents an executive summary of the comprehensive Sewage Disposal System Budgeted Revenue Requirements for FY 2023 compared to the originally approved FY 2022 Revenue Requirements. This table was originally presented in the December 15, 2021 memorandum (*see Appendix A for additional discussion*). Of note:
 - The total Revenue Requirement increase is \$11.85 million, or 2.5%, as shown on Line 12 of the table.
 - The budgeted investment earnings and miscellaneous revenue for FY 2023 are not materially different than FY 2022 (Line 16).
 - The proposed FY 2023 Sewer Charges are designed to recover expected bad debt expense from Highland Park equivalent to approximately one year’s worth of service (~ \$5.4 million). *See Appendices A and C.*
 - This negative variance is slightly offset by a moderate increase in proforma Sewer revenues under existing charges from Industrial charges, resulting in the amounts shown on Line 17.

- As a result, the “System Charge Adjustment” required from charges to Member Partners is 3.65%, designed to generate \$17.1 million more revenue than the existing charges.
 - A small portion of the revenue requirement is recovered from the Oakland Macomb Interceptor District (“OMID”) on a fixed contractual basis, as shown on Line 20.
 - The remaining revenue must be recovered from wholesale charges (including industrial charges). This creates the need for all such charges (prior to the adjustment for bad debt expense) to be adjusted in total by 2.49% as indicated on Line 24 of Table 1.
 - ***The recommended simplified approach applies this 2.49% Wholesale Charge Adjustment to ALL existing wholesale charges (prior to adjustments) for purposes of calculating the proposed FY 2023 Sewer Charges.***
2. Allocates the FY 2023 Revenue Requirements to Member Partners and Industrial Customer Classes. This table presents the proforma revenue under the existing charges, applies the indexed adjustments noted above to allocate the FY 2023 Revenue Requirements, and compares the results.
- Each section of the table separates revenue requirements into amounts related to:
 - “Wholesale” revenue requirements;
 - Implementation of the Detroit Ownership Adjustment;
 - Adjustment to recover Highland Park bad debt expense.
 - The Proforma Wholesale Revenues shown in Column 1 reflect the results of the FY 2022 Cost of Service Study, prior to recognition of any adjustments related to the other items.
 - Column 2 shows the estimated portion of existing revenue that recognizes the \$5.5 million Detroit Ownership Adjustment², which is deducted from Detroit’s allocated wholesale revenue requirement and proportionally allocated to all Suburban Wholesale Member Partners.
 - ***As shown in Column 3, the FY 2022 Sewer Charges did not include any amounts related to Highland Park bad debt expense.***
 - The FY 2023 Wholesale Revenue Requirement is allocated to Member Partners and Industrial Customer Classes in Column 5 ***by applying the uniform 2.49% Wholesale Charge Adjustment Index*** computed in Table 1.
 - Since the wholesale revenue requirements are being uniformly adjusted for all Member Partners, the FY 2023 contractual ownership adjustments in Column 6 are identical to those in Column 2.

² As established by the Agreements

- In Column 7 the projected bad debt expense associated with Highland Park is allocated amongst Suburban Wholesale Member Partners in proportion to their Wholesale Revenue Requirements. None of this amount is assigned to the Detroit Customers nor the Industrial Customer Classes.
 - Columns 9 through 12 indicate the relative change in allocated Revenue Requirements for each element, and Columns 13 through 16 illustrate how those changes impact the charge adjustment for each Member Partner based on those changes.
 - ***The Proposed FY 2023 Sewer Charges reflect a uniform 2.5% increase for all Wholesale Service to ALL customer classes. Charges to Suburban Wholesale Member Partners are proposed to be increased an additional 2.0% due to the Highland Park Bad Debt Expense adjustment, resulting in a uniform 4.5% for these customers.***
3. Calculates the Proposed FY 2023 Wholesale Sewer Service Charges.
 - The proposed charges for Member Partners continue to consist entirely of fixed monthly charges are simply the amounts from Table 2 divided by 12. Table 3 illustrates the wholesale and adjusted portion of the charge, but the total figures in Column 7 are the charges to be considered by the Board.
 4. Compares the Proposed FY 2023 Wholesale Sewer Service Charges from Table 3 with the existing charges. The relative charge adjustments are the same as introduced in Table 2.
 5. Presents the Proposed FY 2022 Industrial Surcharges. These charges simply represent application of the 2.49% uniform Wholesale charge index to the existing charges.

Table 1a
Water Supply System
FY 2023 Units of Service Data

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Units of Service Input Data									
		<u>Volume</u>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Distance</u>	<u>Elevation</u>	<u>Eq Mtrs</u>	<u>Avg Day Use</u>	<u>Dist x Sales</u>	<u>Allo NRW</u>	<u>Avg Day Prod</u>
		<i>mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>miles</i>	<i>feet</i>	<i>5/8" proxies</i>	<i>mcf/day</i>	<i>mcf</i>	<i>mcf/day</i>	<i>mcf/day</i>
								<i>(1) / 365</i>	<i>(1) * (4)</i>	<i>~ (8)</i>	<i>(7) + (9)</i>
1	Allen Park	145,600	5.70	7.90	21.0	602	928	398.9	3,057,600	49.9	448.8
2	Almont Village	9,600	0.40	0.44	37.9	802	115	26.3	363,800	6.0	32.3
3	Ash Township	42,200	1.44	2.19	29.9	635	160	115.6	1,261,800	20.6	136.2
4	Belleville	15,300	0.50	0.75	32.5	676	115	41.9	497,300	8.2	50.1
5	Berlin Township	27,100	1.20	1.90	34.6	598	211	74.2	937,700	15.4	89.6
6	Brownstown Township	136,300	6.80	11.00	28.5	601	523	373.4	3,884,600	63.6	437.0
7	Bruce Twp	2,640	0.526	0.875	32.8	767	115	7.2	86,600	1.4	8.6
8	Canton Township	359,900	22.50	23.50	32.2	742	1,770	986.0	11,588,800	189.3	1,175.3
9	Center Line	32,200	1.13	1.60	18.4	623	155	88.2	592,500	9.6	97.8
10	Chesterfield Township	176,500	8.75	12.00	28.3	617	725	483.6	4,995,000	81.6	565.2
11	Clinton Township	399,300	19.70	22.90	22.8	607	1,218	1,094.0	9,104,000	148.7	1,242.7
12	Commerce Township	104,400	6.54	7.58	31.4	967	520	286.0	3,278,200	53.5	339.5
13	Dearborn	588,500	24.90	34.49	20.1	597	0	1,612.3	11,828,900	193.2	1,805.5
14	Dearborn Heights	197,300	8.00	12.00	22.4	624	617	540.5	4,419,500	72.4	612.9
15	Eastpointe	104,300	3.70	5.50	18.1	612	1,013	285.8	1,887,800	30.9	316.7
16	Ecorse	126,800	3.80	4.40	20.1	591	285	347.4	2,548,700	41.6	389.0
17	Farmington	44,600	2.25	2.45	27.1	765	315	122.2	1,208,700	19.7	141.9
18	Farmington Hills	349,500	20.00	21.30	27.4	784	2,754	957.5	9,576,300	156.5	1,114.0
19	Ferndale	71,800	2.80	3.10	18.2	643	568	196.7	1,306,800	21.4	218.1
20	Flat Rock	52,200	2.63	3.83	30.1	601	235	143.0	1,571,200	25.8	168.8
21	Flint	469,200	14.50	14.50	52.0	866	3,600	1,285.5	24,398,400	398.6	1,684.1
22	Fraser	58,100	2.77	4.28	21.0	617	296	159.2	1,220,100	20.0	179.2
23	Garden City	78,300	3.30	5.21	25.0	638	491	214.5	1,957,500	32.1	246.6
24	Gibraltar	16,400	0.65	0.86	30.9	588	176	44.9	506,800	8.3	53.2
25	Grosse Ile Township	38,100	2.01	3.51	27.0	584	400	104.4	1,028,700	16.7	121.1
26	Grosse Pt. Park	54,900	3.23	5.31	18.0	583	291	150.4	988,200	16.2	166.6
27	Grosse Pt. Shores	19,200	1.43	2.67	18.9	587	283	52.6	362,900	6.0	58.6
28	Grosse Pt. Woods	69,400	3.36	4.29	18.9	587	461	190.1	1,311,700	21.4	211.5
29	Hamtramck	62,500	1.77	2.74	16.7	633	658	171.2	1,043,800	17.0	188.2
30	Harper Woods	47,200	2.09	2.99	18.4	598	357	129.3	868,500	14.3	143.6
31	Harrison Township	95,400	3.70	4.75	24.0	587	440	261.4	2,289,600	37.5	298.9
32	Hazel Park	50,200	1.70	2.44	18.1	639	538	137.5	908,600	14.8	152.3
33	Highland Park	105,500	3.33	3.40	17.3	639	0	289.0	1,825,200	29.9	318.9
34	Huron Township	62,000	3.10	3.91	29.9	635	278	169.9	1,853,800	30.4	200.3
35	Imlay City	46,200	2.22	2.35	45.9	908	155	126.6	2,120,600	34.5	161.1

Table 1a
Water Supply System
FY 2023 Units of Service Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Units of Service Input Data										
	<u>Volume</u>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Distance</u>	<u>Elevation</u>	<u>Eq Mtrs</u>	<u>Avg Day Use</u>	<u>Dist x Sales</u>	<u>Allo NRW</u>	<u>Avg Day Prod</u>	
	<i>mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>miles</i>	<i>feet</i>	<i>5/8" proxies</i>	<i>mcf/day</i>	<i>mcf</i>	<i>mcf/day</i>	<i>mcf/day</i>	
							<i>(1) / 365</i>	<i>(1) * (4)</i>	<i>~ (8)</i>	<i>(7) + (9)</i>	
36	Imlay Twp	150	0.012	0.024	42.7	825	80	0.4	6,400	0.0	0.4
37	Inkster	101,300	2.44	3.34	24.4	638	443	277.5	2,471,700	40.3	317.8
38	Keego Harbor	10,000	0.45	0.67	29.1	934	123	27.4	291,000	4.7	32.1
39	Lapeer	52,900	1.72	2.50	49.1	850	400	144.9	2,597,400	42.5	187.4
40	Lenox Township	14,000	0.51	0.70	30.5	619	400	38.4	427,000	6.8	45.2
41	Lincoln Park	165,300	5.50	7.00	20.4	594	813	452.9	3,372,100	55.0	507.9
42	Livonia	471,000	23.00	33.00	26.2	687	2,386	1,290.4	12,340,200	201.7	1,492.1
43	Macomb Township	320,800	24.60	41.70	26.8	622	1,015	878.9	8,597,400	140.6	1,019.5
44	Madison Heights	105,100	4.75	6.50	19.4	629	755	287.9	2,038,900	33.5	321.4
45	Mayfield Twp	510	0.04	0.07	48.3	839	155	1.4	24,600	0.3	1.7
46	Melvindale	42,100	1.50	2.10	19.9	594	525	115.3	837,800	13.7	129.0
47	New Haven, Village of	18,400	0.79	1.10	29.8	613	80	50.4	548,300	9.1	59.5
48	N O C W A	876,100	45.10	49.10	27.7	895	5,173	2,400.3	24,268,000	396.4	2,796.7
49	Northville	31,100	1.55	1.65	31.1	836	211	85.2	967,200	15.9	101.1
50	Northville Township	138,200	10.00	13.80	30.5	855	521	378.6	4,215,100	68.8	447.4
51	Novi	292,600	17.00	19.00	31.4	936	1,836	801.6	9,187,600	150.2	951.8
52	Oak Park	94,900	3.90	3.90	19.7	669	285	260.0	1,869,500	30.4	290.4
53	Oakland Co. Drain Comm.	9,700	0.184	0.184	20.4	617	115	26.6	197,900	3.3	29.9
54	Plymouth	44,600	1.81	2.62	30.8	750	203	122.2	1,373,700	22.5	144.7
55	Plymouth Township	160,900	10.00	10.00	31.3	793	315	440.8	5,036,200	82.2	523.0
56	Redford Township	158,600	7.20	10.00	22.6	638	1,271	434.5	3,584,400	58.7	493.2
57	River Rouge	37,900	1.78	2.26	19.4	585	431	103.8	735,300	12.1	115.9
58	Riverview	48,000	1.68	2.67	25.3	594	130	131.5	1,214,400	19.7	151.2
59	Rockwood	9,800	0.56	0.72	32.7	592	88	26.8	320,500	5.3	32.1
60	Romeo	6,100	0.42	0.60	32.2	789	155	16.7	196,400	3.3	20.0
61	Romulus	223,500	8.92	11.00	27.3	651	919	612.3	6,101,600	99.8	712.1
62	Roseville	186,500	6.39	9.06	19.0	620	885	511.0	3,543,500	57.8	568.8
63	Royal Oak Township	10,300	0.473	0.649	19.2	665	146	28.2	197,800	3.3	31.5
64	S O C W A	1,230,500	60.50	60.50	22.2	732	4,998	3,371.2	27,317,100	446.3	3,817.5
65	Shelby Township	412,700	24.79	45.44	26.4	694	1,246	1,130.7	10,895,300	178.1	1,308.8
66	South Rockwood	4,600	0.176	0.297	33.4	586	88	12.6	153,600	2.5	15.1
67	Southgate	111,700	5.00	7.00	23.7	601	361	306.0	2,647,300	43.3	349.3
68	St. Clair County-Burtchville Twp	8,400	0.48	0.68	47.2	620	105	23.0	396,500	6.6	29.6
69	St. Clair County BPW	25,100	2.53	2.53	45.4	774	413	68.8	1,139,500	18.6	87.4
70	St. Clair Shores	194,400	7.50	10.00	20.2	594	1,239	532.6	3,926,900	64.1	596.7
71	Sterling Heights	591,100	33.00	52.50	22.3	632	3,175	1,619.5	13,181,500	215.3	1,834.8

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THE FOSTER GROUP

Table 1a
Water Supply System
FY 2023 Units of Service Data

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Units of Service Input Data									
		<u>Volume</u>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Distance</u>	<u>Elevation</u>	<u>Eq Mtrs</u>	<u>Avg Day Use</u>	<u>Dist x Sales</u>	<u>Allo NRW</u>	<u>Avg Day Prod</u>
		<i>mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>miles</i>	<i>feet</i>	<i>5/8" proxies</i>	<i>mcf/day</i>	<i>mcf</i>	<i>mcf/day</i>	<i>mcf/day</i>
								<i>(1) / 365</i>	<i>(1) * (4)</i>	<i>~ (8)</i>	<i>(7) + (9)</i>
72	Sumpter Township	30,300	1.08	1.67	32.9	663	155	83.0	996,900	16.2	99.2
73	Sylvan Lake	6,400	0.35	0.55	29.1	938	80	17.5	186,200	3.0	20.5
74	Taylor	258,900	11.20	14.00	23.5	616	1,078	709.3	6,084,200	99.5	808.8
75	Trenton	86,400	3.30	4.92	25.8	596	1,185	236.7	2,229,100	36.5	273.2
76	Troy	465,000	27.00	40.00	24.2	756	2,548	1,274.0	11,253,000	183.8	1,457.8
77	Utica	23,100	1.20	1.75	24.4	660	155	63.3	563,600	9.3	72.6
78	Van Buren Township	135,500	6.90	8.17	32.5	676	1,090	371.2	4,403,800	72.1	443.3
79	Walled Lake	29,900	1.16	1.67	31.7	959	115	81.9	947,800	15.6	97.5
80	Warren	618,100	27.00	35.00	18.4	623	1,509	1,693.4	11,373,000	185.8	1,879.2
81	Washington Township	81,800	5.40	5.40	29.6	754	278	224.1	2,421,300	39.5	263.6
82	Wayne	105,400	8.28	8.28	25.9	646	600	288.8	2,729,900	44.6	333.4
83	West Bloomfield Township	266,600	15.50	26.00	28.7	912	1,960	730.4	7,651,400	124.9	855.3
84	Westland	322,000	12.50	17.50	26.0	653	1,925	882.2	8,372,000	136.7	1,018.9
85	Wixom	75,300	4.33	5.10	33.9	944	155	206.3	2,552,700	41.6	247.9
86	Woodhaven	57,900	3.24	5.12	28.5	596	195	158.6	1,650,200	26.9	185.5
87	Ypsilanti Comm Util Auth	482,800	21.00	21.00	35.8	726	1,880	1,322.7	17,284,200	282.5	1,605.2
88	Subtotal Wholesale	13,512,900	658.11	853.91			67,158	37,020.9	353,599,100	5,778.2	42,799.1
89	Detroit	4,169,200	114.57	135.53	16.8	629		11,422.5	70,042,600	1,142.1	12,564.6
90	Grand Total	17,682,100	772.68	989.45			67,158	48,443.4	423,641,700	6,920.3	55,363.7
91	Modified Demands (1)	25,100	2.53	2.53	1		413	68.8	1,139,500	18.6	87.4
92	Non-Master Metered (3)	4,863,200	142.80	173.43	3		0	13,323.8	83,696,700	1,365.2	14,689.0
93	No Mods - All Others (84)	12,793,800	627.36	813.49	84		66,745	35,050.8	338,805,500	5,536.5	40,587.3
94	Total	17,682,100	772.68	989.45	88		67,158	48,443.4	423,641,700	6,920.3	55,363.7

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THE FOSTER GROUP

Table 1a
Water Supply System
FY 2023 Units of Service Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Units of Service Input Data									
	<u>Volume</u>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Distance</u>	<u>Elevation</u>	<u>Eq Mtrs</u>	<u>Avg Day Use</u>	<u>Dist x Sales</u>	<u>Allo NRW</u>	<u>Avg Day Prod</u>
	<i>mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>miles</i>	<i>feet</i>	<i>5/8" proxies</i>	<i>mcf/day</i>	<i>mcf</i>	<i>mcf/day</i>	<i>mcf/day</i>
							<i>(1) / 365</i>	<i>(1) * (4)</i>	<i>~ (8)</i>	<i>(7) + (9)</i>
1 Allen Park	145,600	5.70	7.90	21.0	602	928	398.9	3,057,600	49.9	448.8
2 Almont Village	9,600	0.40	0.44	37.9	802	115	26.3	363,800	6.0	32.3
3 Ash Township	42,200	1.44	2.19	29.9	635	160	115.6	1,261,800	20.6	136.2
4 Belleville	15,300	0.50	0.75	32.5	676	115	41.9	497,300	8.2	50.1
5 Berlin Township	27,100	1.20	1.90	34.6	598	211	74.2	937,700	15.4	89.6
6 Brownstown Township	136,300	6.80	11.00	28.5	601	523	373.4	3,884,600	63.6	437.0
7 Bruce Twp	2,640	0.526	0.875	32.8	767	115	7.2	86,600	1.4	8.6
8 Canton Township	359,900	22.50	23.50	32.2	742	1,770	986.0	11,588,800	189.3	1,175.3
9 Center Line	32,200	1.13	1.60	18.4	623	155	88.2	592,500	9.6	97.8
10 Chesterfield Township	176,500	8.75	12.00	28.3	617	725	483.6	4,995,000	81.6	565.2
11 Clinton Township	399,300	19.70	22.90	22.8	607	1,218	1,094.0	9,104,000	148.7	1,242.7
12 Commerce Township	104,400	6.54	7.58	31.4	967	520	286.0	3,278,200	53.5	339.5
13 Dearborn	588,500	24.90	34.49	20.1	597	0	1,612.3	11,828,900	193.2	1,805.5
14 Dearborn Heights	197,300	8.00	12.00	22.4	624	617	540.5	4,419,500	72.4	612.9
15 Eastpointe	104,300	3.70	5.50	18.1	612	1,013	285.8	1,887,800	30.9	316.7
16 Ecorse	126,800	3.80	4.40	20.1	591	285	347.4	2,548,700	41.6	389.0
17 Farmington	44,600	2.25	2.45	27.1	765	315	122.2	1,208,700	19.7	141.9
18 Farmington Hills	349,500	20.00	21.30	27.4	784	2,754	957.5	9,576,300	156.5	1,114.0
19 Ferndale	71,800	2.80	3.10	18.2	643	568	196.7	1,306,800	21.4	218.1
20 Flat Rock	52,200	2.63	3.83	30.1	601	235	143.0	1,571,200	25.8	168.8
21 Flint	469,200	14.50	14.50	52.0	866	3,600	1,285.5	24,398,400	398.6	1,684.1
22 Fraser	58,100	2.77	4.28	21.0	617	296	159.2	1,220,100	20.0	179.2
23 Garden City	78,300	3.30	5.21	25.0	638	491	214.5	1,957,500	32.1	246.6
24 Gibraltar	16,400	0.65	0.86	30.9	588	176	44.9	506,800	8.3	53.2
25 Grosse Ile Township	38,100	2.01	3.51	27.0	584	400	104.4	1,028,700	16.7	121.1
26 Grosse Pt. Park	54,900	3.23	5.31	18.0	583	291	150.4	988,200	16.2	166.6
27 Grosse Pt. Shores	19,200	1.43	2.67	18.9	587	283	52.6	362,900	6.0	58.6
28 Grosse Pt. Woods	69,400	3.36	4.29	18.9	587	461	190.1	1,311,700	21.4	211.5
29 Hamtramck	62,500	1.77	2.74	16.7	633	658	171.2	1,043,800	17.0	188.2
30 Harper Woods	47,200	2.09	2.99	18.4	598	357	129.3	868,500	14.3	143.6
31 Harrison Township	95,400	3.70	4.75	24.0	587	440	261.4	2,289,600	37.5	298.9
32 Hazel Park	50,200	1.70	2.44	18.1	639	538	137.5	908,600	14.8	152.3
33 Highland Park	105,500	3.33	3.40	17.3	639	0	289.0	1,825,200	29.9	318.9
34 Huron Township	62,000	3.10	3.91	29.9	635	278	169.9	1,853,800	30.4	200.3
35 Imlay City	46,200	2.22	2.35	45.9	908	155	126.6	2,120,600	34.5	161.1

Table 1a
Water Supply System
FY 2023 Units of Service Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Units of Service Input Data									
	<u>Volume</u>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Distance</u>	<u>Elevation</u>	<u>Eq Mtrs</u>	<u>Avg Day Use</u>	<u>Dist x Sales</u>	<u>Allo NRW</u>	<u>Avg Day Prod</u>
	<i>mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>miles</i>	<i>feet</i>	<i>5/8" proxies</i>	<i>mcf/day</i>	<i>mcf</i>	<i>mcf/day</i>	<i>mcf/day</i>
							<i>(1) / 365</i>	<i>(1) * (4)</i>	<i>~ (8)</i>	<i>(7) + (9)</i>
36 Imlay Twp	150	0.012	0.024	42.7	825	80	0.4	6,400	0.0	0.4
37 Inkster	101,300	2.44	3.34	24.4	638	443	277.5	2,471,700	40.3	317.8
38 Keego Harbor	10,000	0.45	0.67	29.1	934	123	27.4	291,000	4.7	32.1
39 Lapeer	52,900	1.72	2.50	49.1	850	400	144.9	2,597,400	42.5	187.4
40 Lenox Township	14,000	0.51	0.70	30.5	619	400	38.4	427,000	6.8	45.2
41 Lincoln Park	165,300	5.50	7.00	20.4	594	813	452.9	3,372,100	55.0	507.9
42 Livonia	471,000	23.00	33.00	26.2	687	2,386	1,290.4	12,340,200	201.7	1,492.1
43 Macomb Township	320,800	24.60	41.70	26.8	622	1,015	878.9	8,597,400	140.6	1,019.5
44 Madison Heights	105,100	4.75	6.50	19.4	629	755	287.9	2,038,900	33.5	321.4
45 Mayfield Twp	510	0.04	0.07	48.3	839	155	1.4	24,600	0.3	1.7
46 Melvindale	42,100	1.50	2.10	19.9	594	525	115.3	837,800	13.7	129.0
47 New Haven, Village of	18,400	0.79	1.10	29.8	613	80	50.4	548,300	9.1	59.5
48 N O C W A	876,100	45.10	49.10	27.7	895	5,173	2,400.3	24,268,000	396.4	2,796.7
49 Northville	31,100	1.55	1.65	31.1	836	211	85.2	967,200	15.9	101.1
50 Northville Township	138,200	10.00	13.80	30.5	855	521	378.6	4,215,100	68.8	447.4
51 Novi	292,600	17.00	19.00	31.4	936	1,836	801.6	9,187,600	150.2	951.8
52 Oak Park	94,900	3.90	3.90	19.7	669	285	260.0	1,869,500	30.4	290.4
53 Oakland Co. Drain Comm.	9,700	0.184	0.184	20.4	617	115	26.6	197,900	3.3	29.9
54 Plymouth	44,600	1.81	2.62	30.8	750	203	122.2	1,373,700	22.5	144.7
55 Plymouth Township	160,900	10.00	10.00	31.3	793	315	440.8	5,036,200	82.2	523.0
56 Redford Township	158,600	7.20	10.00	22.6	638	1,271	434.5	3,584,400	58.7	493.2
57 River Rouge	37,900	1.78	2.26	19.4	585	431	103.8	735,300	12.1	115.9
58 Riverview	48,000	1.68	2.67	25.3	594	130	131.5	1,214,400	19.7	151.2
59 Rockwood	9,800	0.56	0.72	32.7	592	88	26.8	320,500	5.3	32.1
60 Romeo	6,100	0.42	0.60	32.2	789	155	16.7	196,400	3.3	20.0
61 Romulus	223,500	8.92	11.00	27.3	651	919	612.3	6,101,600	99.8	712.1
62 Roseville	186,500	6.39	9.06	19.0	620	885	511.0	3,543,500	57.8	568.8
63 Royal Oak Township	10,300	0.473	0.649	19.2	665	146	28.2	197,800	3.3	31.5
64 S O C W A	1,230,500	60.50	60.50	22.2	732	4,998	3,371.2	27,317,100	446.3	3,817.5
65 Shelby Township	412,700	24.79	45.44	26.4	694	1,246	1,130.7	10,895,300	178.1	1,308.8
66 South Rockwood	4,600	0.176	0.297	33.4	586	88	12.6	153,600	2.5	15.1
67 Southgate	111,700	5.00	7.00	23.7	601	361	306.0	2,647,300	43.3	349.3
68 St. Clair County-Burtchville Twp	8,400	0.48	0.68	47.2	620	105	23.0	396,500	6.6	29.6
69 St. Clair County BPW	25,100	2.53	2.53	45.4	774	413	68.8	1,139,500	18.6	87.4
70 St. Clair Shores	194,400	7.50	10.00	20.2	594	1,239	532.6	3,926,900	64.1	596.7
71 Sterling Heights	591,100	33.00	52.50	22.3	632	3,175	1,619.5	13,181,500	215.3	1,834.8

TFG

THE FOSTER GROUP

Table 1a
Water Supply System
FY 2023 Units of Service Data

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Units of Service Input Data									
		<u>Volume</u>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Distance</u>	<u>Elevation</u>	<u>Eq Mtrs</u>	<u>Avg Day Use</u>	<u>Dist x Sales</u>	<u>Allo NRW</u>	<u>Avg Day Prod</u>
		<i>mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>miles</i>	<i>feet</i>	<i>5/8" proxies</i>	<i>mcf/day</i>	<i>mcf</i>	<i>mcf/day</i>	<i>mcf/day</i>
								<i>(1) / 365</i>	<i>(1) * (4)</i>	<i>~ (8)</i>	<i>(7) + (9)</i>
72	Sumpter Township	30,300	1.08	1.67	32.9	663	155	83.0	996,900	16.2	99.2
73	Sylvan Lake	6,400	0.35	0.55	29.1	938	80	17.5	186,200	3.0	20.5
74	Taylor	258,900	11.20	14.00	23.5	616	1,078	709.3	6,084,200	99.5	808.8
75	Trenton	86,400	3.30	4.92	25.8	596	1,185	236.7	2,229,100	36.5	273.2
76	Troy	465,000	27.00	40.00	24.2	756	2,548	1,274.0	11,253,000	183.8	1,457.8
77	Utica	23,100	1.20	1.75	24.4	660	155	63.3	563,600	9.3	72.6
78	Van Buren Township	135,500	6.90	8.17	32.5	676	1,090	371.2	4,403,800	72.1	443.3
79	Walled Lake	29,900	1.16	1.67	31.7	959	115	81.9	947,800	15.6	97.5
80	Warren	618,100	27.00	35.00	18.4	623	1,509	1,693.4	11,373,000	185.8	1,879.2
81	Washington Township	81,800	5.40	5.40	29.6	754	278	224.1	2,421,300	39.5	263.6
82	Wayne	105,400	8.28	8.28	25.9	646	600	288.8	2,729,900	44.6	333.4
83	West Bloomfield Township	266,600	15.50	26.00	28.7	912	1,960	730.4	7,651,400	124.9	855.3
84	Westland	322,000	12.50	17.50	26.0	653	1,925	882.2	8,372,000	136.7	1,018.9
85	Wixom	75,300	4.33	5.10	33.9	944	155	206.3	2,552,700	41.6	247.9
86	Woodhaven	57,900	3.24	5.12	28.5	596	195	158.6	1,650,200	26.9	185.5
87	Ypsilanti Comm Util Auth	482,800	21.00	21.00	35.8	726	1,880	1,322.7	17,284,200	282.5	1,605.2
88	Subtotal Wholesale	13,512,900	658.11	853.91			67,158	37,020.9	353,599,100	5,778.2	42,799.1
89	Detroit	4,169,200	114.57	135.53	16.8	629		11,422.5	70,042,600	1,142.1	12,564.6
90	Grand Total	17,682,100	772.68	989.45			67,158	48,443.4	423,641,700	6,920.3	55,363.7
91	Modified Demands (1)	25,100	2.53	2.53	1		413	68.8	1,139,500	18.6	87.4
92	Non-Master Metered (3)	4,863,200	142.80	173.43	3		0	13,323.8	83,696,700	1,365.2	14,689.0
93	No Mods - All Others (84)	12,793,800	627.36	813.49	84		66,745	35,050.8	338,805,500	5,536.5	40,587.3
94	Total	17,682,100	772.68	989.45	88		67,158	48,443.4	423,641,700	6,920.3	55,363.7

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THE FOSTER GROUP

Table 1c
Water Supply System
Consolidated FY 2023 Units of Service

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
		Consolidated Units of Service									
	Sales	Common-to-All								Suburban Only	
	Volume	Commod	Max Day	PH Incr	PH Dist	Comm DE	MD DE	PH DE	PHI DE	Mtrs	
	Mcf	Mcf/day	Mcf/day	Mcf/day	Mcf-miles/day	Mcf-miles/day	Mcf-miles/day	Mcf-miles/day	Mcf-miles/day	eq 5/8" mtrs	
1	Allen Park	145,600	448.8	811.9	294.1	23,225.5	9,424.8	17,049.5	23,225.5	6,176.0	928
2	Almont Village	9,600	32.3	59.5	5.3	2,456.7	1,812.0	3,336.4	3,636.4	300.0	115
3	Ash Township	42,200	136.2	213.1	100.3	9,369.5	4,399.3	6,883.1	10,121.5	3,238.4	160
4	Belleville	15,300	50.1	75.0	33.4	3,525.0	1,943.9	2,911.6	4,208.3	1,296.7	115
5	Berlin Township	27,100	89.6	175.8	93.6	9,321.0	3,100.2	6,083.3	9,321.0	3,237.7	211
6	Brownstown Township	136,300	437.0	972.6	561.5	43,721.5	12,454.5	27,719.9	43,721.5	16,001.6	523
7	Bruce Twp	2,640	8.6	71.7	46.7	3,882.6	410.2	3,420.9	5,646.3	2,225.4	115
8	Canton Township	359,900	1,175.3	3,197.1	133.7	107,251.5	52,535.9	142,910.9	148,886.4	5,975.5	1,770
9	Center Line	32,200	97.8	160.7	62.8	4,112.2	1,916.9	3,148.9	4,380.4	1,231.5	155
10	Chesterfield Township	176,500	565.2	1,251.3	434.5	47,707.2	16,390.8	36,287.8	48,887.2	12,599.4	725
11	Clinton Township	399,300	1,242.7	2,782.2	427.8	73,187.6	28,333.6	63,434.3	73,187.6	9,753.3	1,218
12	Commerce Township	104,400	339.5	927.8	139.0	33,497.5	22,135.4	60,490.7	69,555.3	9,064.6	520
13	Dearborn	588,500	1,805.5	3,521.6	1,282.8	96,567.7	36,290.6	70,783.3	96,567.7	25,784.5	0
14	Dearborn Heights	197,300	612.9	1,141.8	534.7	37,555.1	14,525.7	27,061.7	39,734.6	12,672.9	617
15	Eastpointe	104,300	316.7	525.5	240.6	13,867.2	5,795.6	9,617.0	14,020.4	4,403.4	1,013
16	Ecorse	126,800	389.0	549.6	80.2	12,658.9	7,818.9	11,046.7	12,658.9	1,612.2	285
17	Farmington	44,600	141.9	320.5	26.7	9,409.6	5,931.4	13,396.1	14,513.7	1,117.6	315
18	Farmington Hills	349,500	1,114.0	2,830.1	173.8	82,306.7	48,904.6	124,241.9	131,871.0	7,629.1	2,754
19	Ferndale	71,800	218.1	395.7	40.1	7,931.7	4,645.5	8,428.5	9,282.7	854.2	568
20	Flat Rock	52,200	168.8	377.4	160.4	16,187.7	5,080.9	11,359.1	16,187.7	4,828.5	235
21	Flint	469,200	1,684.1	2,337.0	0.0	121,522.3	128,328.4	178,077.0	178,077.0	0.0	3,600
22	Fraser	58,100	179.2	390.3	201.9	12,435.2	3,888.6	8,469.4	12,849.7	4,380.3	296
23	Garden City	78,300	246.6	473.2	255.3	18,214.4	6,830.8	13,108.9	20,181.5	7,072.6	491
24	Gibraltar	16,400	53.2	95.2	28.1	3,808.9	1,643.9	2,941.4	3,808.9	867.5	176
25	Grosse Ile Township	38,100	121.1	285.4	200.5	13,119.8	3,269.7	7,705.7	13,119.8	5,414.1	400
26	Grosse Pt. Park	54,900	166.6	448.0	278.1	13,068.8	2,998.8	8,063.8	13,068.8	5,005.0	291
27	Grosse Pt. Shores	19,200	58.6	197.2	165.8	6,859.3	1,107.5	3,726.4	6,859.3	3,132.9	283
28	Grosse Pt. Woods	69,400	211.5	470.6	124.3	11,243.4	3,997.4	8,893.7	11,243.4	2,349.7	461
29	Hamtramck	62,500	188.2	253.6	129.7	6,400.9	3,557.0	4,793.3	7,244.1	2,450.8	658
30	Harper Woods	47,200	143.6	293.7	120.3	7,617.7	2,642.2	5,403.9	7,617.7	2,213.7	357
31	Harrison Township	95,400	298.9	532.1	140.4	16,139.6	7,173.6	12,770.8	16,139.6	3,368.7	440
32	Hazel Park	50,200	152.3	242.1	98.9	6,171.7	3,167.8	5,034.8	7,092.4	2,057.6	538
33	Highland Park	105,500	318.9	474.5	10.2	8,384.6	6,378.0	9,489.4	9,693.2	203.7	0
34	Huron Township	62,000	200.3	444.8	108.3	16,537.4	6,469.7	14,367.4	17,864.8	3,497.5	278
35	Imlay City	46,200	161.1	331.3	17.4	16,003.0	11,937.5	24,547.2	25,834.9	1,287.7	155

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THE FOSTER GROUP

Table 1c
Water Supply System
Consolidated FY 2023 Units of Service

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
		Consolidated Units of Service									
	Sales	Common-to-All								Suburban Only	
	<u>Volume</u>	<u>Commod</u>	<u>Max Day</u>	<u>PH Incr</u>	<u>PH Dist</u>	<u>Comm DE</u>	<u>MD DE</u>	<u>PH DE</u>	<u>PHI DE</u>	<u>Mtrs</u>	
	<i>Mcf</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>eq 5/8" mtrs</i>	
36	Imlay Twp	150	0.4	1.6	1.6	137.0	25.2	101.2	202.4	101.2	80
37	Inkster	101,300	317.8	366.5	120.3	11,877.7	8,612.4	9,931.6	13,192.1	3,260.5	443
38	Keego Harbor	10,000	32.1	64.9	29.5	2,747.0	1,919.6	3,878.4	5,645.1	1,766.7	123
39	Lapeer	52,900	187.4	272.4	104.3	18,496.0	13,455.3	19,560.5	27,047.2	7,486.6	400
40	Lenox Township	14,000	45.2	75.0	25.9	3,077.8	1,419.3	2,354.3	3,168.6	814.3	400
41	Lincoln Park	165,300	507.9	790.2	200.5	20,211.6	10,361.2	16,121.0	20,211.6	4,090.6	813
42	Livonia	471,000	1,492.1	3,276.4	1,336.8	120,864.7	49,985.4	109,757.8	154,540.8	44,783.0	2,386
43	Macomb Township	320,800	1,019.5	3,429.1	2,285.9	153,164.1	28,444.1	95,673.0	159,450.7	63,777.7	1,015
44	Madison Heights	105,100	321.4	668.5	233.9	17,507.0	6,813.7	14,171.8	19,131.4	4,959.5	755
45	Mayfield Twp	510	1.7	5.6	4.0	466.5	119.0	395.3	676.0	280.7	155
46	Melvindale	42,100	129.0	214.2	80.2	5,859.1	2,567.1	4,263.0	5,859.1	1,596.1	525
47	New Haven, Village of	18,400	59.5	114.0	42.1	4,653.2	1,791.0	3,432.6	4,700.1	1,267.5	80
48	N O C W A	876,100	2,796.7	6,425.4	534.7	192,795.2	152,979.5	351,469.0	380,718.3	29,249.3	5,173
49	Northville	31,100	101.1	223.1	13.4	7,354.3	5,307.8	11,713.0	12,414.8	701.8	211
50	Northville Township	138,200	447.4	1,405.6	508.0	58,364.5	24,025.4	75,481.0	102,759.9	27,278.9	521
51	Novi	292,600	951.8	2,422.8	267.4	84,470.1	59,297.1	150,938.5	167,595.1	16,656.6	1,836
52	Oak Park	94,900	290.4	551.8	0.0	10,869.6	7,347.1	13,959.4	13,959.4	0.0	285
53	Oakland Co. Drain Comm.	9,700	29.9	27.9	0.0	569.1	630.9	588.6	588.6	0.0	115
54	Plymouth	44,600	144.7	264.5	108.3	11,480.5	6,381.3	11,662.8	16,438.0	4,775.2	203
55	Plymouth Township	160,900	523.0	1,419.0	0.0	44,414.9	25,417.8	68,963.7	68,963.7	0.0	315
56	Redford Township	158,600	493.2	1,021.2	374.3	31,538.4	12,478.0	25,836.4	35,306.3	9,469.9	1,271
57	River Rouge	37,900	115.9	250.1	64.2	6,095.8	2,248.5	4,851.0	6,095.8	1,244.8	431
58	Riverview	48,000	151.2	244.3	132.3	9,528.7	3,825.4	6,180.4	9,528.7	3,348.3	130
59	Rockwood	9,800	32.1	80.2	20.7	3,298.8	1,049.7	2,621.3	3,298.8	677.6	88
60	Romeo	6,100	20.0	59.4	24.1	2,689.0	984.0	2,924.7	4,108.6	1,183.9	155
61	Romulus	223,500	712.1	1,292.2	278.1	42,868.8	22,217.5	40,317.6	48,992.9	8,675.3	919
62	Roseville	186,500	568.8	912.0	356.9	24,110.0	11,319.1	18,149.2	25,252.0	7,102.8	885
63	Royal Oak Township	10,300	31.5	66.5	23.5	1,729.1	768.6	1,623.4	2,197.4	574.1	146
64	S O C W A	1,230,500	3,817.5	8,534.0	0.0	189,454.2	129,031.5	288,448.3	288,448.3	0.0	4,998
65	Shelby Township	412,700	1,308.8	3,492.0	2,760.5	165,067.2	45,022.7	120,126.2	215,087.5	94,961.3	1,246
66	South Rockwood	4,600	15.1	26.0	16.2	1,409.6	504.3	869.3	1,409.6	540.3	88
67	Southgate	111,700	349.3	711.7	267.4	23,203.8	8,278.4	16,867.4	23,203.8	6,336.5	361
68	St. Clair County-Burchville Twp	8,400	29.6	70.5	27.0	4,602.1	1,423.8	3,391.0	4,689.9	1,298.9	105
69	St. Clair County BPW	25,100	87.4	356.8	0.0	16,199.3	5,322.7	21,729.8	21,729.8	0.0	413
70	St. Clair Shores	194,400	596.7	1,066.7	334.2	28,298.3	12,053.3	21,547.4	28,298.3	6,750.9	1,239
71	Sterling Heights	591,100	1,834.8	4,626.8	2,606.8	161,307.7	44,769.1	112,892.9	176,498.1	63,605.2	3,175

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THE FOSTER GROUP

Table 1c
Water Supply System
Consolidated FY 2023 Units of Service

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
		Consolidated Units of Service									
	Sales	Common-to-All								Suburban Only	
	Volume	Commod	Max Day	PH Incr	PH Dist	Comm DE	MD DE	PH DE	PHI DE	Mtrs	
	Mcf	Mcf/day	Mcf/day	Mcf/day	Mcf-miles/day	Mcf-miles/day	Mcf-miles/day	Mcf-miles/day	Mcf-miles/day	eq 5/8" mtrs	
72	Sumpter Township	30,300	99.2	160.6	78.9	7,877.8	3,759.7	6,085.8	9,075.0	2,989.2	155
73	Sylvan Lake	6,400	20.5	50.1	26.5	2,226.9	1,234.1	3,013.3	4,606.8	1,593.4	80
74	Taylor	258,900	808.8	1,596.7	374.3	46,319.1	19,492.1	38,481.0	47,501.8	9,020.8	1,078
75	Trenton	86,400	273.2	477.6	216.6	17,910.6	7,048.6	12,323.3	17,910.6	5,587.3	1,185
76	Troy	465,000	1,457.8	3,793.2	1,737.8	133,850.7	55,396.4	144,140.6	210,178.8	66,038.2	2,548
77	Utica	23,100	72.6	169.7	73.5	5,935.1	2,112.7	4,938.8	7,078.3	2,139.6	155
78	Van Buren Township	135,500	443.3	994.5	169.8	37,838.8	17,200.0	38,586.4	45,173.7	6,587.2	1,090
79	Walled Lake	29,900	97.5	170.7	68.2	7,571.4	6,308.3	11,042.3	15,453.4	4,411.1	115
80	Warren	618,100	1,879.2	3,795.2	1,069.4	89,509.0	36,832.3	74,385.4	95,346.5	20,961.1	1,509
81	Washington Township	81,800	263.6	761.4	0.0	22,536.7	11,387.5	32,891.4	32,891.4	0.0	278
82	Wayne	105,400	333.4	1,151.5	0.0	29,823.2	9,768.6	33,738.2	33,738.2	0.0	600
83	West Bloomfield Township	266,600	855.3	2,196.9	1,403.6	103,337.1	49,008.7	125,885.1	206,314.0	80,428.9	1,960
84	Westland	322,000	1,018.9	1,807.7	668.4	64,378.8	30,668.9	54,412.0	74,530.9	20,118.9	1,925
85	Wixom	75,300	247.9	620.4	102.9	24,522.3	16,237.5	40,638.6	47,380.8	6,742.2	155
86	Woodhaven	57,900	185.5	460.0	251.3	20,273.3	5,286.8	13,110.7	20,273.3	7,162.6	195
87	Ypsilanti Comm Util Auth	482,800	1,605.2	3,089.8	0.0	110,614.5	75,123.4	144,602.2	144,602.2	0.0	1,880
88	Total Suburban	13,512,900	42,799.1	93,754.6	26,175.4	3,120,575.4	1,532,304.0	3,388,072.6	4,213,773.6	825,700.8	67,158
89	Detroit	4,169,200	12,564.6	16,458.5	2,801.9	323,575.0	233,701.6	306,127.8	358,243.7	52,115.9	0
90	Grand Total	17,682,100	55,363.7	110,213.1	28,977.3	3,444,150.3	1,766,005.6	3,694,200.4	4,572,017.3	877,816.7	67,158
91	Modified Demands (1)	25,100	87.4	356.8	0.0	16,199.3	5,322.7	21,729.8	21,729.8	0.0	413
92	Non-Master Metered (3)	4,863,200	14,689.0	20,454.5	4,094.9	428,527.3	276,370.2	386,400.5	464,504.6	78,104.1	0
93	No Mods - All Others (84)	12,793,800	40,587.3	89,401.8	24,882.4	2,999,423.8	1,484,312.7	3,286,070.1	4,085,782.9	799,712.6	66,745
94	Total	17,682,100	55,363.7	110,213.1	28,977.3	3,444,150.3	1,766,005.6	3,694,200.4	4,572,017.3	877,816.7	67,158

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THE FOSTER GROUP

Table 1d
Water Supply System
Consolidated FY 2023 Units of Service by Customer Group

	(1)	(2)	(3)	(4)	
	<u>Total System</u>	<u>St. Clair County BPW</u>	<u>Non Master Metered Group</u>	<u>All Other Members</u>	
					(1) - (2) - (3)
<u>Baseline Units of Service Data</u>					
1 Annual Sales - <i>Mcf</i>	17,682,100	25,100	4,863,200	12,793,800	<i>Sales = 36 mo "hybrid" -> 9/21</i>
2 Average Day Units - <i>Mcf</i>	48,444.1	68.8	13,323.8	35,051.5	<i>Line (1) / 365</i>
3 Allocated Non-Revenue Water - <i>Mcf</i>	6,920.3	18.6	1,365.2	5,536.5	<i>Allocated share based on distance and sales</i>
4 Commodity Units - <i>Mcf</i>	55,364.4	87.4	14,689.0	40,588.0	<i>Line (2) + Line 3</i>
5 Max Day Units - <i>mgd</i>	772.68	2.53	142.80	627.36	<i>Contract or proxy</i>
6 Max Day Units - <i>Mcf</i>	110,213.1	356.8	20,454.5	89,401.8	<i>Line (5) x 1,000/7.48 + Line 3</i>
7 Peak Hour Units - <i>mgd</i>	989.45	2.53	173.43	813.49	<i>Contract or proxy</i>
8 Peak Hour Units - <i>Mcf</i>	139,190.4	356.8	24,549.4	114,284.2	<i>Line (7) x 1,000/7.48 + Line 3</i>
9 Distance - <i>miles</i>	24.7	45.4	17.5	26.2	<i>Avg from WTPs to connections</i>
10 Elevation - <i>feet</i>	686	774	624	719	<i>Avg of connections to System</i>
11 Dist-Elev Factor - <i>miles</i>	31.9	60.9	18.8	36.6	<i>[Line (10)-610]/10.56 + Ln 9</i>
<u>Cost Pool Units of Service</u>					
12 Commodity Units - <i>Mcf</i>	55,363.7	87.4	14,689.0	40,587.3	<i>Line (4)</i>
13 Max Day Units - <i>Mcf/Day</i>	110,213.1	356.8	20,454.5	89,401.8	<i>Line (6)</i>
14 Peak Hour Increment - <i>Mcf/Day</i>	28,977.3	0.0	4,094.9	24,882.4	<i>Line (8) - Line (6)</i>
15 Peak Hour Distance - <i>Mcf-miles/Day</i>	3,444,150.3	16,199.3	428,527.3	2,999,423.7	<i>Line (8) x Line (9)</i>
16 Commodity Distance-Elevation - <i>Mcf-miles/Day</i>	1,766,005.6	5,322.7	276,370.2	1,484,312.7	<i>Line (4) x Line (11)</i>
17 Max Day Distance-Elevation - <i>Mcf-miles/Day</i>	3,694,200.4	21,729.8	386,400.5	3,286,070.1	<i>Line (6) x Line (11)</i>
18 Peak Hour Distance-Elevation - <i>Mcf-miles/Day</i>	4,572,017.3	21,729.8	464,504.6	4,085,782.9	<i>Line (8) x Line (11)</i>
19 Peak Hour Increment Dist-Elev - <i>Mcf-miles/Day</i>	877,816.7	0.0	78,104.1	799,712.6	<i>Line (14) x Line (11)</i>
20 Suburban Equivalent Meters	67,158	413	0.0	66,745	<i>Equivalent 5/8" master meters</i>
<u>Cost Pool Shares</u>					
21 Commodity Units - <i>Mcf</i>	100.0%	0.158%	26.532%	73.310%	<i>Relative Share of Line 12</i>
22 Max Day Units - <i>Mcf/Day</i>	100.0%	0.324%	18.559%	81.117%	<i>Relative Share of Line 13</i>
23 Peak Hour Increment - <i>Mcf/Day</i>	100.0%	0.000%	14.132%	85.868%	<i>Relative Share of Line 14</i>
24 Peak Hour Distance - <i>Mcf-miles/Day</i>	100.0%	0.470%	12.442%	87.087%	<i>Relative Share of Line 15</i>
25 Commodity Distance-Elevation - <i>Mcf-miles/Day</i>	100.0%	0.301%	15.649%	84.049%	<i>Relative Share of Line 16</i>
26 Max Day Distance-Elevation - <i>Mcf-miles/Day</i>	100.0%	0.588%	10.460%	88.952%	<i>Relative Share of Line 17</i>
27 Peak Hour Distance-Elevation - <i>Mcf-miles/Day</i>	100.0%	0.475%	10.160%	89.365%	<i>Relative Share of Line 18</i>
28 Peak Hour Increment Dist-Elev - <i>Mcf-miles/Day</i>	100.0%	0.000%	8.898%	91.102%	<i>Relative Share of Line 19</i>
29 Suburban Equivalent Meters	100.0%	0.615%	0.000%	99.385%	<i>Relative Share of Line 20</i>

Table 2
Water Supply System
Determination of FY 2023 Proforma Revenue Under Existing Charges

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FY 2023 Proforma Revenue							
	Sales Volume	Existing Charges Fixed Mo	Commodity	Gross Revenue Exist Charges	Wholesale Rev Exist Charges	Ownership Benefit Adjustment	KWA Debt Service Credit	Highland Park Bad Debt Expense
	Mcf	\$/mo	\$/Mcf	\$	\$	\$	\$	\$
				(1)*(3) + (2)*12	(4)-(6)-(7)-(8)	Allocated Prorata Based on Prior COS		
1 Allen Park	145,600	126,400	7.82	2,655,400	2,430,700	167,300	48,700	8,700
2 Almont Village	9,600	12,600	10.54	252,400	231,100	15,900	4,600	800
3 Ash Township	42,200	43,900	8.27	875,800	801,600	55,200	16,100	2,900
4 Belleville	15,300	16,600	9.74	348,200	318,600	22,000	6,400	1,200
5 Berlin Township	27,100	38,400	11.54	773,500	708,100	48,700	14,200	2,500
6 Brownstown Township	136,300	190,600	11.09	3,798,800	3,477,300	239,300	69,800	12,400
7 Bruce Twp	2,640	16,700	61.19	361,900	331,300	22,800	6,600	1,200
8 Canton Township	359,900	539,900	12.36	10,927,200	10,002,600	688,200	200,600	35,800
9 Center Line	32,200	24,600	6.28	497,400	455,400	31,300	9,100	1,600
10 Chesterfield Township	176,500	223,800	10.41	4,523,000	4,140,400	284,800	83,000	14,800
11 Clinton Township	399,300	398,900	7.92	7,949,300	7,276,700	500,600	145,900	26,100
12 Commerce Township	104,400	187,700	14.72	3,789,200	3,468,700	238,600	69,500	12,400
13 Dearborn	588,500	538,500	7.22	10,711,000	9,804,700	674,600	196,600	35,100
14 Dearborn Heights	197,300	193,300	7.84	3,866,400	3,539,200	243,500	71,000	12,700
15 Eastpointe	104,300	82,000	6.31	1,642,100	1,503,100	103,400	30,200	5,400
16 Ecorse	126,800	79,400	4.48	1,520,900	1,392,200	95,800	27,900	5,000
17 Farmington	44,600	53,000	9.52	1,060,600	970,900	66,800	19,400	3,500
18 Farmington Hills	349,500	465,600	10.57	9,281,400	8,496,100	584,500	170,400	30,400
19 Ferndale	71,800	54,100	6.19	1,093,600	1,001,200	68,900	20,000	3,500
20 Flat Rock	52,200	69,900	9.79	1,349,800	1,235,700	85,000	24,700	4,400
21 Flint	469,200	10,000	9.43	11,197,400	10,441,600	718,400	(6,652,800)	37,400
22 Fraser	58,100	64,300	8.72	1,278,200	1,170,000	80,500	23,500	4,200
23 Garden City	78,300	88,100	8.71	1,739,200	1,592,000	109,600	31,900	5,700
24 Gibraltar	16,400	17,500	8.61	351,200	321,600	22,100	6,400	1,100
25 Grosse Ile Township	38,100	57,800	12.10	1,154,600	1,056,900	72,700	21,200	3,800
26 Grosse Pt. Park	54,900	71,000	10.21	1,412,500	1,292,900	89,000	25,900	4,700
27 Grosse Pt. Shores	19,200	34,800	13.75	681,600	623,900	42,900	12,500	2,300
28 Grosse Pt. Woods	69,400	67,700	7.50	1,332,900	1,220,200	84,000	24,400	4,300
29 Hamtramck	62,500	42,200	5.42	845,200	773,600	53,200	15,600	2,800
30 Harper Woods	47,200	42,500	7.12	846,100	774,400	53,300	15,600	2,800
31 Harrison Township	95,400	85,100	7.21	1,709,000	1,564,400	107,600	31,400	5,600
32 Hazel Park	50,200	38,800	6.15	774,300	708,800	48,800	14,200	2,500
33 Highland Park	105,500	61,200	4.63	1,222,900	1,123,100	77,300	22,500	0
34 Huron Township	62,000	77,600	10.28	1,568,600	1,435,800	98,800	28,800	5,200
35 Inlay City	46,200	77,200	13.50	1,550,100	1,418,900	97,600	28,500	5,100

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Table 2
Water Supply System
Determination of FY 2023 Proforma Revenue Under Existing Charges

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	FY 2023 Proforma Revenue								
	Sales	Existing Charges		Gross Revenue	Wholesale Rev	Ownership Benefit	KWA Debt Service	Highland Park	
	Volume	Fixed Mo	Commodity	Exist Charges	Exist Charges	Adjustment	Credit	Bad Debt Expense	
	Mcf	\$/mo	\$/Mcf	\$	\$	\$	\$	\$	
				(1)*(3) + (2)*12	(4)-(6)-(7)-(8)	Allocated Prorata Based on Prior COS			
36	Imlay Twp	150	800	42.50	16,000	14,600	1,000	300	100
37	Inkster	101,300	65,100	5.56	1,344,400	1,230,600	84,700	24,700	4,400
38	Keego Harbor	10,000	15,700	12.74	315,800	289,100	19,900	5,800	1,000
39	Lapeer	52,900	80,600	12.39	1,622,600	1,485,300	102,200	29,800	5,300
40	Lenox Township	14,000	15,600	8.42	305,100	279,200	19,300	5,600	1,000
41	Lincoln Park	165,300	121,000	6.04	2,450,400	2,243,100	154,300	45,000	8,000
42	Livonia	471,000	607,100	10.11	12,047,000	11,027,600	758,700	221,200	39,500
43	Macomb Township	320,800	669,300	16.23	13,238,200	12,118,100	833,700	243,000	43,400
44	Madison Heights	105,100	98,000	7.35	1,948,500	1,783,600	122,700	35,800	6,400
45	Mayfield Twp	510	2,500	24.68	42,600	38,900	2,700	800	200
46	Melvindale	42,100	34,100	6.42	679,500	622,000	42,800	12,500	2,200
47	New Haven, Village of	18,400	22,200	6.94	394,100	360,800	24,800	7,200	1,300
48	N O C W A	876,100	1,168,100	10.41	23,137,400	21,179,800	1,457,100	424,700	75,800
49	Northville	31,100	40,600	10.48	813,100	744,300	51,200	14,900	2,700
50	Northville Township	138,200	299,300	17.00	5,941,000	5,438,400	374,200	109,000	19,400
51	Novi	292,600	476,200	13.03	9,527,000	8,720,900	600,000	174,900	31,200
52	Oak Park	94,900	73,700	6.08	1,461,400	1,337,800	92,000	26,800	4,800
53	Oakland Co. Drain Comm.	9,700	4,300	3.49	85,500	78,200	5,400	1,600	300
54	Plymouth	44,600	57,000	10.34	1,145,200	1,048,400	72,100	21,000	3,700
55	Plymouth Township	160,900	234,100	11.57	4,670,800	4,275,600	294,200	85,700	15,300
56	Redford Township	158,600	167,100	8.32	3,324,800	3,043,500	209,400	61,000	10,900
57	River Rouge	37,900	35,900	7.58	718,100	657,300	45,200	13,200	2,400
58	Riverview	48,000	46,900	7.73	933,800	854,700	58,800	17,200	3,100
59	Rockwood	9,800	14,700	11.79	291,900	267,100	18,400	5,400	1,000
60	Romeo	6,100	13,500	18.13	272,600	249,600	17,100	5,000	900
61	Romulus	223,500	224,200	8.21	4,525,300	4,142,500	284,900	83,100	14,800
62	Roseville	186,500	142,200	5.99	2,823,500	2,584,700	177,800	51,800	9,200
63	Royal Oak Township	10,300	10,400	7.65	203,600	186,400	12,800	3,700	700
64	S O C W A	1,230,500	1,215,400	7.75	24,121,200	22,080,300	1,519,100	442,800	79,000
65	Shelby Township	412,700	751,600	14.88	15,160,200	13,877,600	954,700	278,200	49,700
66	South Rockwood	4,600	6,100	10.17	120,000	109,900	7,500	2,200	400
67	Southgate	111,700	116,300	8.12	2,302,600	2,107,900	145,000	42,200	7,500
68	St. Clair County-Burtchville Twp	8,400	17,700	18.19	365,200	334,300	23,000	6,700	1,200
69	St. Clair County BPW	25,100	49,400	19.18	1,074,200	983,400	67,600	19,700	3,500
70	St. Clair Shores	194,400	161,800	6.80	3,263,500	2,987,400	205,500	59,900	10,700
71	Sterling Heights	591,100	804,500	11.14	16,238,900	14,864,900	1,022,700	298,100	53,200

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Table 2
Water Supply System
Determination of FY 2023 Proforma Revenue Under Existing Charges

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FY 2023 Proforma Revenue							
	Sales Volume Mcf	Existing Charges Fixed Mo \$/mo	Commodity \$/Mcf	Gross Revenue Exist Charges \$ (1)*(3) + (2)*12	Wholesale Rev Exist Charges \$ (4)-(6)-(7)-(8)	Ownership Benefit Adjustment \$	KWA Debt Service Credit \$	Highland Park Bad Debt Expense \$
						Allocated Prorata Based on Prior COS		
72 Sumpter Township	30,300	35,600	9.67	720,200	659,200	45,400	13,300	2,300
73 Sylvan Lake	6,400	12,300	15.48	246,700	225,900	15,500	4,500	800
74 Taylor	258,900	244,700	7.46	4,867,800	4,456,000	306,600	89,300	15,900
75 Trenton	86,400	89,100	8.19	1,776,800	1,626,500	111,900	32,600	5,800
76 Troy	465,000	722,200	12.20	14,339,400	13,126,100	903,100	263,200	47,000
77 Utica	23,100	30,000	9.72	584,500	535,100	36,800	10,700	1,900
78 Van Buren Township	135,500	183,700	11.10	3,708,500	3,394,700	233,600	68,100	12,100
79 Walled Lake	29,900	42,200	10.98	834,700	764,000	52,500	15,400	2,800
80 Warren	618,100	545,200	6.94	10,832,000	9,915,500	682,200	198,900	35,400
81 Washington Township	81,800	121,700	12.37	2,472,300	2,263,100	155,700	45,400	8,100
82 Wayne	105,400	168,700	12.96	3,390,400	3,103,600	213,500	62,200	11,100
83 West Bloomfield Township	266,600	551,000	16.52	11,016,200	10,084,200	693,700	202,200	36,100
84 Westland	322,000	327,500	7.99	6,502,800	5,952,600	409,500	119,400	21,300
85 Wixom	75,300	130,500	13.95	2,616,400	2,394,900	164,800	48,100	8,600
86 Woodhaven	57,900	88,100	12.22	1,764,700	1,615,400	111,100	32,400	5,800
87 Ypsilanti Comm Util Auth	482,800	547,900	9.03	10,934,500	10,009,300	688,700	200,700	35,800
88 Total Suburban	13,512,900	180,600	10.19	328,474,600	300,877,600	20,700,100	(828,800)	1,072,900
89 Detroit	4,169,200	1,808,100		21,697,300	41,418,600	(20,700,000)	828,700	150,000
90 GRAND TOTAL	17,682,100			350,171,900	342,296,200	100	(100)	1,222,900
91 less: Bad Debt Expense								
92 Net Wholesale Revenue								
<u>(a) Flint / Detroit Adjustment Impacts</u>								
93 Flint Gross	469,200	564,400	9.43	11,197,400	10,441,600	718,400	(6,652,800)	37,400
94 less: KWA Debt Svc Credit		(554,400)		(6,652,800)	0	0	0	0
95 Flint Net		10,000		4,544,600	10,441,600	718,400	(6,652,800)	37,400
96 Detroit Gross				42,397,300	41,418,600	(20,700,000)	828,700	150,000
97 less: Ownership Adj Credit				(20,700,000)	0	0	0	0
98 Detroit Net				21,697,300	41,418,600	(20,700,000)	828,700	150,000
99 Modified Demands (1)	25,100	49,400		1,074,200	983,400	67,600	19,700	3,500
100 Non-Master Metered (3)	4,863,200	2,407,800		33,631,200	52,346,400	(19,948,100)	1,047,800	185,100
101 No Mods - All Others (84)	12,793,800	15,246,000		315,466,500	288,966,400	19,880,600	(1,067,600)	1,034,300
102 Total	17,682,100	17,703,200		350,171,900	342,296,200	100	(100)	1,222,900
103 Total Mods (99) + (100)	4,888,300	2,457,200		34,705,400	53,329,800	(19,880,500)	1,067,500	188,600

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Table 3
Water Supply System
Revenue Requirement and Charge Adjustment Summary

	(1)	(2)	(3)	(4)
	Approved	Recommended		
	<u>FY 2022</u>	<u>FY 2023</u>	<u>Variance</u>	<u>% Variance</u>
	\$	\$	\$	
<u>Revenues</u>				
1 Revenues from Charges	342,808,200	354,946,100	12,137,900	3.5%
2 Other Operating Revenue	175,000	175,000	0	0.0%
3 Non-Operating Revenue	1,047,300	950,500	(96,800)	-9.2%
4 Total Revenues	344,030,500	356,071,600	12,041,100	3.5%
<u>Revenue Requirements</u>				
5 Operations & Maintenance (O&M) Expense	143,933,800	144,847,700	913,900	0.6%
6 General Retirement System Legacy Pension	6,048,000	6,048,000	0	0.0%
7 Debt Service - Regional System Allocation	135,481,000	150,337,100	14,856,100	11.0%
8 General Retirement System Accelerated Pension	6,268,300	6,268,300	0	0.0%
9 WRAP Contribution	1,705,500	1,770,500	65,000	3.8%
10 Lease Payment	22,500,000	22,500,000	0	0.0%
11 Deposit to Improvement & Extension (I&E) Fund	28,093,900	24,300,000	(3,793,900)	-13.5%
12 Total Revenue Requirements	344,030,500	356,071,600	12,041,100	3.5%
<u>Charge Adjustment Summary</u>				
13 Adjustment Index		3.50%		
14 Baseline Revenue		342,296,100		
15 Change in Annual Revenue Requirement			12,041,100	3.5%
16 Change Attributable to Non-Charge Revenue			96,800	0.03%
17 Change Attributable to Sales Revenue / Bad Debt			<u>512,100</u>	<u>0.15%</u>
18 System Charge Adjustment			12,650,000	3.70%

Table 4
Water Supply System
Summarized *Wholesale Service* Revenue Requirement Allocation to Cost Pools

	(1)	(2)	(3)
	FY 2022 Cost of Svc <u>Allocation</u> \$	FY 2022 Cost of Svc <u>Alloc Factors</u> ~ (1)	Allocated FY 2023 <u>Rev Req't</u> ~ (2)
<u>Cost Pools</u>			
1 Commodity	8,879,400	2.6%	9,193,900
2 Max Day Usage	156,443,800	45.6%	161,984,100
3 Peak Hour Increment	7,041,000	2.1%	7,290,300
4 Peak Hour Distance	84,456,800	24.6%	87,447,700
5 Commodity Distance-Elevation	18,392,200	5.4%	19,043,500
6 Max Day Distance-Elevation	12,778,100	3.7%	13,230,600
7 Peak Hour Distance-Elevation	41,377,100	12.1%	42,842,400
8 Peak Hour Increment Distance-Elevation	9,196,200	2.7%	9,521,900
9 Suburban Only - Meter Related	4,241,400	1.2%	4,391,600
10 Total	342,806,000	100.0%	354,946,000
<u>Summary by Major Category</u>			
11 Commodity			28,237,400
12 Max Day			175,214,700
13 Peak Hour			147,102,300
14 <i>Total Demand</i>			322,317,000
15 Suburban Only - Meter Related			4,391,600

Table 5
Water Supply System
Calculation of Wholesale Cost of Service Charge Adjustment Factors

	(1)	(2)	(3)	(4)	
	<u>Total System</u>	<u>St. Clair County BPW</u>	<u>Non Master Metered Group</u>	<u>All Other Members</u>	
					(1) - (2) - (3)
<u>Cost Pool Shares</u>					
1 Commodity Units - Mcf	100.0%	0.158%	26.532%	73.310%	Table 1d
2 Max Day Units - Mcf/Day	100.0%	0.324%	18.559%	81.117%	Table 1d
3 Peak Hour Increment - Mcf/Day	100.0%	0.000%	14.132%	85.868%	Table 1d
4 Peak Hour Distance - Mcf-miles/Day	100.0%	0.470%	12.442%	87.087%	Table 1d
5 Commodity Distance-Elevation - Mcf-miles/Day	100.0%	0.301%	15.649%	84.049%	Table 1d
6 Max Day Distance-Elevation - Mcf-miles/Day	100.0%	0.588%	10.460%	88.952%	Table 1d
7 Peak Hour Distance-Elevation - Mcf-miles/Day	100.0%	0.475%	10.160%	89.365%	Table 1d
8 Peak Hour Increment Dist-Elev - Mcf-miles/Day	100.0%	0.000%	8.898%	91.102%	Table 1d
9 Suburban Equivalent Meters	100.0%	0.615%	0.000%	99.385%	Table 1d
<u>Revenue Requirement Allocation</u> (a)					
10 Commodity	9,193,900	14,500	2,439,300	6,740,100	Line 1 x Column (1)
11 Max Day Usage	161,984,100	524,400	30,062,700	131,397,000	Line 2 x Column (1)
12 Peak Hour Increment	7,290,300	0	1,030,200	6,260,100	Line 3 x Column (1)
13 Peak Hour Distance	87,447,700	411,300	10,880,400	76,156,000	Line 4 x Column (1)
14 Commodity Distance-Elevation	19,043,500	57,400	2,980,200	16,005,900	Line 5 x Column (1)
15 Max Day Distance-Elevation	13,230,600	77,800	1,383,900	11,768,900	Line 6 x Column (1)
16 Peak Hour Distance-Elevation	42,842,400	203,600	4,352,700	38,286,100	Line 7 x Column (1)
17 Peak Hour Increment Distance-Elevation	9,521,900	0	847,200	8,674,700	Line 8 x Column (1)
18 Suburban Only - Meter Related	4,391,600	27,000	0	4,364,600	Line 9 x Column (1)
19 Total	354,946,000	1,316,000	53,976,600	299,653,400	
20 "Wholesale Service" Revenue - Existing Charges	342,296,100	983,400	52,346,300	288,966,400	Table 2
21 "Wholesale Service" Adjustment Required - \$	12,649,900	332,600	1,630,300	10,687,000	
22 "Wholesale Service" Adjustment Required - %	3.70%	33.82%	3.11%	3.70%	<-- Simplified Wholesale Charge Adjustment

(a) FY 2022 Allocated Revenue Requirement + 3.5% - from Table 4

Table 6
Water Supply System
Allocation of FY 2023 Revenue Requirements and Adjustments to Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Proforma Wholesale Revenue	Indexed Adjustment	Wholesale Rev Req't Adjustment	Allocated Wholesale Rev Req't	Detroit Ownership Adjustment		Flint KWA Debt Svc Adj		HP Bad Debt Adjustment	
	<u>\$</u>	<u>%</u>	<u>\$</u>	<u>\$</u>	<u>Apply Adjustment</u>	<u>Adjusted Rev Req't</u>	<u>Apply Adjustment</u>	<u>Adjusted Rev Req't</u>	<u>Apply Adjustment</u>	<u>Charge Rev Req't</u>
	Table 2	Table 5	(1) * (2)	(1) + (3)	<u>\$</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>
					20,700,000	(4) + (5)	6,651,800	(6) + (7)	1,257,300	(8) + (9)
1 Allen Park	2,430,700	3.70%	89,900	2,520,600	167,100	2,687,700	48,700	2,736,400	9,000	2,745,400
2 Almont Village	231,100	3.70%	8,500	239,600	15,900	255,500	4,600	260,100	900	261,000
3 Ash Township	801,600	3.70%	29,600	831,200	55,100	886,300	16,100	902,400	3,000	905,400
4 Belleville	318,600	3.70%	11,800	330,400	21,900	352,300	6,400	358,700	1,200	359,900
5 Berlin Township	708,100	3.70%	26,200	734,300	48,700	783,000	14,200	797,200	2,600	799,800
6 Brownstown Township	3,477,300	3.70%	128,600	3,605,900	239,100	3,845,000	69,700	3,914,700	12,800	3,927,500
7 Bruce Twp	331,300	3.70%	12,300	343,600	22,800	366,400	6,600	373,000	1,200	374,200
8 Canton Township	10,002,600	3.70%	369,900	10,372,500	687,700	11,060,200	200,500	11,260,700	36,900	11,297,600
9 Center Line	455,400	3.70%	16,800	472,200	31,300	503,500	9,100	512,600	1,700	514,300
10 Chesterfield Township	4,140,400	3.70%	153,100	4,293,500	284,600	4,578,100	83,000	4,661,100	15,300	4,676,400
11 Clinton Township	7,276,700	3.70%	269,100	7,545,800	500,300	8,046,100	145,900	8,192,000	26,800	8,218,800
12 Commerce Township	3,468,700	3.70%	128,300	3,597,000	238,500	3,835,500	69,500	3,905,000	12,800	3,917,800
13 Dearborn	9,804,700	3.11%	305,400	10,110,100	670,300	10,780,400	195,400	10,975,800	35,900	11,011,700
14 Dearborn Heights	3,539,200	3.70%	130,900	3,670,100	243,300	3,913,400	70,900	3,984,300	13,000	3,997,300
15 Eastpointe	1,503,100	3.70%	55,600	1,558,700	103,300	1,662,000	30,100	1,692,100	5,500	1,697,600
16 Ecorse	1,392,200	3.70%	51,500	1,443,700	95,700	1,539,400	27,900	1,567,300	5,100	1,572,400
17 Farmington	970,900	3.70%	35,900	1,006,800	66,700	1,073,500	19,500	1,093,000	3,600	1,096,600
18 Farmington Hills	8,496,100	3.70%	314,200	8,810,300	584,100	9,394,400	170,300	9,564,700	31,300	9,596,000
19 Ferndale	1,001,200	3.70%	37,000	1,038,200	68,800	1,107,000	20,100	1,127,100	3,700	1,130,800
20 Flat Rock	1,235,700	3.70%	45,700	1,281,400	85,000	1,366,400	24,800	1,391,200	4,600	1,395,800
21 Flint	10,441,600	3.70%	386,200	10,827,800	717,800	11,545,600	(6,651,800)	4,893,800	38,500	4,932,300
22 Fraser	1,170,000	3.70%	43,300	1,213,300	80,400	1,293,700	23,500	1,317,200	4,300	1,321,500
23 Garden City	1,592,000	3.70%	58,900	1,650,900	109,400	1,760,300	31,900	1,792,200	5,900	1,798,100
24 Gibraltar	321,600	3.70%	11,900	333,500	22,100	355,600	6,400	362,000	1,200	363,200
25 Grosse Ile Township	1,056,900	3.70%	39,100	1,096,000	72,700	1,168,700	21,200	1,189,900	3,900	1,193,800
26 Grosse Pt. Park	1,292,900	3.70%	47,800	1,340,700	88,900	1,429,600	25,900	1,455,500	4,800	1,460,300
27 Grosse Pt. Shores	623,900	3.70%	23,100	647,000	42,900	689,900	12,500	702,400	2,300	704,700
28 Grosse Pt. Woods	1,220,200	3.70%	45,100	1,265,300	83,900	1,349,200	24,500	1,373,700	4,500	1,378,200
29 Hamtramck	773,600	3.70%	28,600	802,200	53,200	855,400	15,500	870,900	2,900	873,800
30 Harper Woods	774,400	3.70%	28,600	803,000	53,200	856,200	15,500	871,700	2,900	874,600
31 Harrison Township	1,564,400	3.70%	57,900	1,622,300	107,600	1,729,900	31,400	1,761,300	5,800	1,767,100
32 Hazel Park	708,800	3.70%	26,200	735,000	48,700	783,700	14,200	797,900	2,600	800,500
33 Highland Park	1,123,100	3.11%	35,000	1,158,100	76,800	1,234,900	22,400	1,257,300	0	1,257,300
34 Huron Township	1,435,800	3.70%	53,100	1,488,900	98,700	1,587,600	28,800	1,616,400	5,300	1,621,700
35 Imlay City	1,418,900	3.70%	52,500	1,471,400	97,500	1,568,900	28,400	1,597,300	5,200	1,602,500

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Table 6
Water Supply System
Allocation of FY 2023 Revenue Requirements and Adjustments to Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Proforma Wholesale Revenue	Indexed Adjustment	Wholesale Rev Req't Adjustment	Allocated Wholesale Rev Req't	Detroit Ownership Adjustment		Flint KWA Debt Svc Adj		HP Bad Debt Adjustment	
	<u>Revenue</u>	<u>Adjustment</u>	<u>Adjustment</u>	<u>Rev Req't</u>	<u>Apply Adjustment</u>	<u>Adjusted Rev Req't</u>	<u>Apply Adjustment</u>	<u>Adjusted Rev Req't</u>	<u>Apply Adjustment</u>	<u>Charge Rev Req't</u>
	\$	%	\$	\$	\$	\$	\$	\$	\$	\$
	Table 2	Table 5	(1) * (2)	(1) + (3)	20,700,000	(4) + (5)	6,651,800	(6) + (7)	1,257,300	(8) + (9)
36 Imlay Twp	14,600	3.70%	500	15,100	1,000	16,100	300	16,400	100	16,500
37 Inkster	1,230,600	3.70%	45,500	1,276,100	84,600	1,360,700	24,700	1,385,400	4,500	1,389,900
38 Keego Harbor	289,100	3.70%	10,700	299,800	19,900	319,700	5,800	325,500	1,100	326,600
39 Lapeer	1,485,300	3.70%	54,900	1,540,200	102,100	1,642,300	29,800	1,672,100	5,500	1,677,600
40 Lenox Township	279,200	3.70%	10,300	289,500	19,200	308,700	5,600	314,300	1,000	315,300
41 Lincoln Park	2,243,100	3.70%	83,000	2,326,100	154,200	2,480,300	45,000	2,525,300	8,300	2,533,600
42 Livonia	11,027,600	3.70%	407,800	11,435,400	758,100	12,193,500	221,000	12,414,500	40,600	12,455,100
43 Macomb Township	12,118,100	3.70%	448,200	12,566,300	833,100	13,399,400	242,900	13,642,300	44,700	13,687,000
44 Madison Heights	1,783,600	3.70%	66,000	1,849,600	122,600	1,972,200	35,800	2,008,000	6,600	2,014,600
45 Mayfield Twp	38,900	3.70%	1,400	40,300	2,700	43,000	800	43,800	100	43,900
46 Melvindale	622,000	3.70%	23,000	645,000	42,800	687,800	12,500	700,300	2,300	702,600
47 New Haven, Village of	360,800	3.70%	13,300	374,100	24,800	398,900	7,200	406,100	1,300	407,400
48 N O C W A	21,179,800	3.70%	783,300	21,963,100	1,456,100	23,419,200	424,500	23,843,700	78,100	23,921,800
49 Northville	744,300	3.70%	27,500	771,800	51,200	823,000	14,900	837,900	2,700	840,600
50 Northville Township	5,438,400	3.70%	201,100	5,639,500	373,900	6,013,400	109,000	6,122,400	20,000	6,142,400
51 Novi	8,720,900	3.70%	322,500	9,043,400	599,500	9,642,900	174,800	9,817,700	32,100	9,849,800
52 Oak Park	1,337,800	3.70%	49,500	1,387,300	92,000	1,479,300	26,800	1,506,100	4,900	1,511,000
53 Oakland Co. Drain Comm.	78,200	3.70%	2,900	81,100	5,400	86,500	1,600	88,100	300	88,400
54 Plymouth	1,048,400	3.70%	38,800	1,087,200	72,100	1,159,300	21,000	1,180,300	3,900	1,184,200
55 Plymouth Township	4,275,600	3.70%	158,100	4,433,700	293,900	4,727,600	85,700	4,813,300	15,800	4,829,100
56 Redford Township	3,043,500	3.70%	112,600	3,156,100	209,200	3,365,300	61,000	3,426,300	11,200	3,437,500
57 River Rouge	657,300	3.70%	24,300	681,600	45,200	726,800	13,200	740,000	2,400	742,400
58 Riverview	854,700	3.70%	31,600	886,300	58,800	945,100	17,100	962,200	3,100	965,300
59 Rockwood	267,100	3.70%	9,900	277,000	18,400	295,400	5,400	300,800	1,000	301,800
60 Romeo	249,600	3.70%	9,200	258,800	17,200	276,000	5,000	281,000	900	281,900
61 Romulus	4,142,500	3.70%	153,200	4,295,700	284,800	4,580,500	83,000	4,663,500	15,300	4,678,800
62 Roseville	2,584,700	3.70%	95,600	2,680,300	177,700	2,858,000	51,800	2,909,800	9,500	2,919,300
63 Royal Oak Township	186,400	3.70%	6,900	193,300	12,800	206,100	3,700	209,800	700	210,500
64 S O C W A	22,080,300	3.70%	816,600	22,896,900	1,518,000	24,414,900	442,600	24,857,500	81,400	24,938,900
65 Shelby Township	13,877,600	3.70%	513,200	14,390,800	954,000	15,344,800	278,200	15,623,000	51,100	15,674,100
66 South Rockwood	109,900	3.70%	4,100	114,000	7,600	121,600	2,200	123,800	400	124,200
67 Southgate	2,107,900	3.70%	78,000	2,185,900	144,900	2,330,800	42,300	2,373,100	7,800	2,380,900
68 St. Clair County-Burchville Twp	334,300	3.70%	12,400	346,700	23,000	369,700	6,700	376,400	1,200	377,600
69 St. Clair County BPW	983,400	33.82%	332,600	1,316,000	87,200	1,403,200	25,400	1,428,600	4,700	1,433,300
70 St. Clair Shores	2,987,400	3.70%	110,500	3,097,900	205,400	3,303,300	59,900	3,363,200	11,000	3,374,200
71 Sterling Heights	14,864,900	3.70%	549,800	15,414,700	1,021,900	16,436,600	298,000	16,734,600	54,800	16,789,400

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Table 6
Water Supply System
Allocation of FY 2023 Revenue Requirements and Adjustments to Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Proforma Wholesale Revenue	Indexed Adjustment	Wholesale Rev Req't Adjustment	Allocated Wholesale Rev Req't	Detroit Ownership Adjustment		Flint KWA Debt Svc Adj		HP Bad Debt Adjustment	
	<u>\$</u>	<u>%</u>	<u>\$</u>	<u>\$</u>	<u>Apply Adjustment</u>	<u>Adjusted Rev Req't</u>	<u>Apply Adjustment</u>	<u>Adjusted Rev Req't</u>	<u>Apply Adjustment</u>	<u>Charge Rev Req't</u>
	<i>Table 2</i>	<i>Table 5</i>	<i>(1) * (2)</i>	<i>(1) + (3)</i>	<u>\$</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>
					20,700,000	<i>(4) + (5)</i>	6,651,800	<i>(6) + (7)</i>	1,257,300	<i>(8) + (9)</i>
72 Sumpter Township	659,200	3.70%	24,400	683,600	45,300	728,900	13,200	742,100	2,400	744,500
73 Sylvan Lake	225,900	3.70%	8,400	234,300	15,500	249,800	4,500	254,300	800	255,100
74 Taylor	4,456,000	3.70%	164,800	4,620,800	306,300	4,927,100	89,300	5,016,400	16,400	5,032,800
75 Trenton	1,626,500	3.70%	60,200	1,686,700	111,800	1,798,500	32,600	1,831,100	6,000	1,837,100
76 Troy	13,126,100	3.70%	485,400	13,611,500	902,400	14,513,900	263,100	14,777,000	48,400	14,825,400
77 Utica	535,100	3.70%	19,800	554,900	36,800	591,700	10,700	602,400	2,000	604,400
78 Van Buren Township	3,394,700	3.70%	125,500	3,520,200	233,400	3,753,600	68,000	3,821,600	12,500	3,834,100
79 Walled Lake	764,000	3.70%	28,300	792,300	52,500	844,800	15,300	860,100	2,800	862,900
80 Warren	9,915,500	3.70%	366,700	10,282,200	681,700	10,963,900	198,800	11,162,700	36,500	11,199,200
81 Washington Township	2,263,100	3.70%	83,700	2,346,800	155,600	2,502,400	45,400	2,547,800	8,300	2,556,100
82 Wayne	3,103,600	3.70%	114,800	3,218,400	213,400	3,431,800	62,200	3,494,000	11,400	3,505,400
83 West Bloomfield Township	10,084,200	3.70%	372,900	10,457,100	693,300	11,150,400	202,100	11,352,500	37,200	11,389,700
84 Westland	5,952,600	3.70%	220,100	6,172,700	409,200	6,581,900	119,300	6,701,200	21,900	6,723,100
85 Wixom	2,394,900	3.70%	88,600	2,483,500	164,600	2,648,100	48,000	2,696,100	8,800	2,704,900
86 Woodhaven	1,615,400	3.70%	59,700	1,675,100	111,100	1,786,200	32,400	1,818,600	6,000	1,824,600
87 Ypsilanti Comm Util Auth	10,009,300	3.70%	370,200	10,379,500	688,100	11,067,600	200,600	11,268,200	36,900	11,305,100
88 Total Suburban	300,877,600	3.78%	11,359,900	312,237,500	20,700,300	332,937,800	(825,700)	332,112,100	1,105,700	333,217,800
89 Detroit	41,418,600	3.11%	1,290,000	42,708,600	(20,700,000)	22,008,600	825,700	22,834,300	151,600	22,985,900
90 GRAND TOTAL	342,296,200	3.70%	12,649,900	354,946,100	300	354,946,400	0	354,946,400	1,257,300	356,203,700
91 less: Bad Debt Expense										(1,257,300)
92 Net Wholesale Revenue				354,946,100	300	354,946,400	0	354,946,400	1,257,300	354,946,400
93 Modified Demands (1)	983,400	33.82%	332,600	1,316,000	87,200	1,403,200	25,400	1,428,600	4,700	1,433,300
94 Non-Master Metered (3)	52,346,400	3.11%	1,630,400	53,976,800	(19,952,900)	34,023,900	1,043,500	35,067,400	187,500	35,254,900
95 No Mods - All Others (84)	288,966,400	3.70%	10,686,900	299,653,300	19,866,000	319,519,300	(1,068,900)	318,450,400	1,065,100	319,515,500
96 Total	342,296,200	3.70%	12,649,900	354,946,100	300	354,946,400	0	354,946,400	1,257,300	356,203,700

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Table 7
Water Supply System
Calculation of FY 2023 Wholesale Water Service Charge Schedule

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
		Sales Volume <i>Mcf</i>	Existing Charges		Proforma Revenue	Allocated	Charge	% Charge	60%	Recover Via:		Proposed Charges		Projected	Revenue
			Fixed Mo	Commodity	Exist Charges	Revenue Req't	Adjustment	Adjustment	Fixed Mo	Commodity	Fixed Mo	Commodity	Revenue	Recovery	
			<i>\$/mo</i>	<i>\$/Mcf</i>	<i>\$</i>	<i>\$</i>	<i>\$</i>		<i>\$</i>	<i>\$</i>	<i>\$/mo</i>	<i>\$/Mcf</i>	<i>\$</i>		
		0			Table 2	Table 7	(5) - (4)	(6) / (4)	60% of (5)	(5) - (8)*12	(8) / 12 mos	(9) / (1)	'2*(10)+(1)*(11)	(12) / (5)	
1	Allen Park	145,600	126,400	7.82	2,655,400	2,745,400	90,000	3.39%	1,647,200	1,097,800	137,300	7.54	2,745,400	100.0%	
2	Almont Village	9,600	12,600	10.54	252,400	261,000	8,600	3.41%	156,600	103,800	13,100	10.81	261,000	100.0%	
3	Ash Township	42,200	43,900	8.27	875,800	905,400	29,600	3.38%	543,200	361,800	45,300	8.57	905,300	100.0%	
4	Belleville	15,300	16,600	9.74	348,200	359,900	11,700	3.36%	215,900	143,900	18,000	9.41	360,000	100.0%	
5	Berlin Township	27,100	38,400	11.54	773,500	799,800	26,300	3.40%	479,900	319,800	40,000	11.80	799,800	100.0%	
6	Brownstown Township	136,300	190,600	11.09	3,798,800	3,927,500	128,700	3.39%	2,356,500	1,570,700	196,400	11.52	3,927,000	100.0%	
7	Bruce Twp	2,640	16,700	61.19	361,900	374,200	12,300	3.40%	224,500	149,800	18,700	56.74	374,200	100.0%	
8	Canton Township	359,900	539,900	12.36	10,927,200	11,297,600	370,400	3.39%	6,778,600	4,518,800	564,900	12.56	11,299,100	100.0%	
9	Center Line	32,200	24,600	6.28	497,400	514,300	16,900	3.40%	308,600	205,900	25,700	6.39	514,200	100.0%	
10	Chesterfield Township	176,500	223,800	10.41	4,523,000	4,676,400	153,400	3.39%	2,805,800	1,870,800	233,800	10.60	4,676,500	100.0%	
11	Clinton Township	399,300	398,900	7.92	7,949,300	8,218,800	269,500	3.39%	4,931,300	3,288,000	410,900	8.23	8,217,000	100.0%	
12	Commerce Township	104,400	187,700	14.72	3,789,200	3,917,800	128,600	3.39%	2,350,700	1,567,000	195,900	15.01	3,917,800	100.0%	
13	Dearborn	588,500	538,500	7.22	10,711,000	11,011,700	300,700	2.81%	6,607,000	4,404,500	550,600	7.48	11,009,200	100.0%	
14	Dearborn Heights	197,300	193,300	7.84	3,866,400	3,997,300	130,900	3.39%	2,398,400	1,598,500	199,900	8.10	3,996,900	100.0%	
15	Eastpointe	104,300	82,000	6.31	1,642,100	1,697,600	55,500	3.38%	1,018,600	678,800	84,900	6.51	1,697,800	100.0%	
16	Ecorse	126,800	79,400	4.48	1,520,900	1,572,400	51,500	3.39%	943,400	629,200	78,600	4.96	1,572,100	100.0%	
17	Farmington	44,600	53,000	9.52	1,060,600	1,096,600	36,000	3.39%	658,000	439,000	54,800	9.84	1,096,500	100.0%	
18	Farmington Hills	349,500	465,600	10.57	9,281,400	9,596,000	314,600	3.39%	5,757,600	3,838,400	479,800	10.98	9,595,100	100.0%	
19	Ferndale	71,800	54,100	6.19	1,093,600	1,130,800	37,200	3.40%	678,500	452,800	56,500	6.31	1,131,100	100.0%	
20	Flat Rock	52,200	69,900	9.79	1,349,800	1,395,800	46,000	3.41%	837,500	558,200	69,800	10.69	1,395,600	100.0%	
21	Flint	469,200	10,000	9.43	4,544,600	4,932,300	387,700	8.53%	298,700	4,633,500	24,900	9.88	4,934,500	100.0%	
22	Fraser	58,100	64,300	8.72	1,278,200	1,321,500	43,300	3.39%	792,900	528,300	66,100	9.09	1,321,300	100.0%	
23	Garden City	78,300	88,100	8.71	1,739,200	1,798,100	58,900	3.39%	1,078,900	719,300	89,900	9.19	1,798,400	100.0%	
24	Gibraltar	16,400	17,500	8.61	351,200	363,200	12,000	3.42%	217,900	144,800	18,200	8.83	363,200	100.0%	
25	Grosse Ile Township	38,100	57,800	12.10	1,154,600	1,193,800	39,200	3.40%	716,300	477,400	59,700	12.53	1,193,800	100.0%	
26	Grosse Pt. Park	54,900	71,000	10.21	1,412,500	1,460,300	47,800	3.38%	876,200	584,300	73,000	10.64	1,460,100	100.0%	
27	Grosse Pt. Shores	19,200	34,800	13.75	681,600	704,700	23,100	3.39%	422,800	282,300	35,200	14.70	704,600	100.0%	
28	Grosse Pt. Woods	69,400	67,700	7.50	1,332,900	1,378,200	45,300	3.40%	826,900	551,400	68,900	7.95	1,378,500	100.0%	
29	Hamtramck	62,500	42,200	5.42	845,200	873,800	28,600	3.38%	524,300	349,400	43,700	5.59	873,800	100.0%	
30	Harper Woods	47,200	42,500	7.12	846,100	874,600	28,500	3.37%	524,800	350,200	43,700	7.42	874,600	100.0%	
31	Harrison Township	95,400	85,100	7.21	1,709,000	1,767,100	58,100	3.40%	1,060,300	706,300	88,400	7.40	1,766,800	100.0%	
32	Hazel Park	50,200	38,800	6.15	774,300	800,500	26,200	3.38%	480,300	320,500	40,000	6.38	800,300	100.0%	
33	Highland Park	105,500	61,200	4.63	1,222,900	1,257,300	34,400	2.81%	754,400	502,500	62,900	4.76	1,257,000	100.0%	
34	Huron Township	62,000	77,600	10.28	1,568,600	1,621,700	53,100	3.39%	973,000	648,500	81,100	10.46	1,621,700	100.0%	
35	Imlay City	46,200	77,200	13.50	1,550,100	1,602,500	52,400	3.38%	961,500	641,300	80,100	13.88	1,602,500	100.0%	

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Table 7
Water Supply System
Calculation of FY 2023 Wholesale Water Service Charge Schedule

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
	Sales	Existing Charges		Proforma Revenue	Allocated	Charge	% Charge	60%	Recover Via:		Proposed Charges		Projected	Revenue
	Volume	Fixed Mo	Commodity	Exist Charges	Revenue Req't	Adjustment	Adjustment	Fixed Mo	Commodity	Fixed Mo	Commodity	Revenue	Recovery	
	Mcf	\$/mo	\$/Mcf	\$	\$	\$		\$	\$	\$/mo	\$/Mcf	\$		
		0		Table 2	Table 7	(5) - (4)	(6) / (4)	60% of (5)	(5) - (8)*12	(8) / 12 mos	(9) / (1)	'2*(10)+(1)*(11)	(12) / (5)	
36	Imlay Twp	150	800	42.50	16,000	16,500	500	3.13%	9,900	6,900	800	46.00	16,500	100.0%
37	Inkster	101,300	65,100	5.56	1,344,400	1,389,900	45,500	3.38%	833,900	555,900	69,500	5.49	1,390,100	100.0%
38	Keego Harbor	10,000	15,700	12.74	315,800	326,600	10,800	3.42%	196,000	131,000	16,300	13.10	326,600	100.0%
39	Lapeer	52,900	80,600	12.39	1,622,600	1,677,600	55,000	3.39%	1,006,600	670,800	83,900	12.68	1,677,600	100.0%
40	Lenox Township	14,000	15,600	8.42	305,100	315,300	10,200	3.34%	189,200	125,700	15,800	8.98	315,300	100.0%
41	Lincoln Park	165,300	121,000	6.04	2,450,400	2,533,600	83,200	3.40%	1,520,200	1,013,200	126,700	6.13	2,533,700	100.0%
42	Livonia	471,000	607,100	10.11	12,047,000	12,455,100	408,100	3.39%	7,473,100	4,981,500	622,800	10.58	12,456,800	100.0%
43	Macomb Township	320,800	669,300	16.23	13,238,200	13,687,000	448,800	3.39%	8,212,200	5,474,200	684,400	17.06	13,685,600	100.0%
44	Madison Heights	105,100	98,000	7.35	1,948,500	2,014,600	66,100	3.39%	1,208,800	806,200	100,700	7.67	2,014,500	100.0%
45	Mayfield Twp	510	2,500	24.68	42,600	43,900	1,300	3.05%	26,300	17,500	2,200	34.31	43,900	100.0%
46	Melvindale	42,100	34,100	6.42	679,500	702,600	23,100	3.40%	421,600	281,400	35,100	6.68	702,400	100.0%
47	New Haven, Village of	18,400	22,200	6.94	394,100	407,400	13,300	3.37%	244,400	162,600	20,400	8.84	407,500	100.0%
48	N O C W A	876,100	1,168,100	10.41	23,137,400	23,921,800	784,400	3.39%	14,353,100	9,568,600	1,196,100	10.92	23,920,200	100.0%
49	Northville	31,100	40,600	10.48	813,100	840,600	27,500	3.38%	504,400	336,600	42,000	10.82	840,500	100.0%
50	Northville Township	138,200	299,300	17.00	5,941,000	6,142,400	201,400	3.39%	3,685,400	2,457,200	307,100	17.78	6,142,400	100.0%
51	Novi	292,600	476,200	13.03	9,527,000	9,849,800	322,800	3.39%	5,909,900	3,939,800	492,500	13.46	9,848,400	100.0%
52	Oak Park	94,900	73,700	6.08	1,461,400	1,511,000	49,600	3.39%	906,600	603,800	75,600	6.36	1,510,800	100.0%
53	Oakland Co. Drain Comm.	9,700	4,300	3.49	85,500	88,400	2,900	3.39%	53,000	35,600	4,400	3.67	88,400	100.0%
54	Plymouth	44,600	57,000	10.34	1,145,200	1,184,200	39,000	3.41%	710,500	473,800	59,200	10.62	1,184,100	100.0%
55	Plymouth Township	160,900	234,100	11.57	4,670,800	4,829,100	158,300	3.39%	2,897,500	1,931,100	241,500	12.00	4,828,800	100.0%
56	Redford Township	158,600	167,100	8.32	3,324,800	3,437,500	112,700	3.39%	2,062,500	1,374,700	171,900	8.67	3,437,900	100.0%
57	River Rouge	37,900	35,900	7.58	718,100	742,400	24,300	3.38%	445,400	297,200	37,100	7.84	742,300	100.0%
58	Riverview	48,000	46,900	7.73	933,800	965,300	31,500	3.37%	579,200	385,700	48,300	8.04	965,500	100.0%
59	Rockwood	9,800	14,700	11.79	291,900	301,800	9,900	3.39%	181,100	120,600	15,100	12.31	301,800	100.0%
60	Romeo	6,100	13,500	18.13	272,600	281,900	9,300	3.41%	169,100	112,700	14,100	18.48	281,900	100.0%
61	Romulus	223,500	224,200	8.21	4,525,300	4,678,800	153,500	3.39%	2,807,300	1,872,000	233,900	8.38	4,679,700	100.0%
62	Roseville	186,500	142,200	5.99	2,823,500	2,919,300	95,800	3.39%	1,751,600	1,167,300	146,000	6.26	2,919,500	100.0%
63	Royal Oak Township	10,300	10,400	7.65	203,600	210,500	6,900	3.39%	126,300	84,500	10,500	8.20	210,500	100.0%
64	S O C W A	1,230,500	1,215,400	7.75	24,121,200	24,938,900	817,700	3.39%	14,963,300	9,976,100	1,246,900	8.11	24,942,200	100.0%
65	Shelby Township	412,700	751,600	14.88	15,160,200	15,674,100	513,900	3.39%	9,404,500	6,269,700	783,700	15.19	15,673,300	100.0%
66	South Rockwood	4,600	6,100	10.17	120,000	124,200	4,200	3.50%	74,500	49,800	6,200	10.83	124,200	100.0%
67	Southgate	111,700	116,300	8.12	2,302,600	2,380,900	78,300	3.40%	1,428,500	952,900	119,000	8.53	2,380,800	100.0%
68	St. Clair County-Burchville Twp	8,400	17,700	18.19	365,200	377,600	12,400	3.40%	226,600	150,800	18,900	17.95	377,600	100.0%
69	St. Clair County BPW	25,100	49,400	19.18	1,074,200	1,433,300	359,100	33.43%	860,000	572,900	71,700	22.82	1,433,200	100.0%
70	St. Clair Shores	194,400	161,800	6.80	3,263,500	3,374,200	110,700	3.39%	2,024,500	1,349,800	168,700	6.94	3,373,500	100.0%
71	Sterling Heights	591,100	804,500	11.14	16,238,900	16,789,400	550,500	3.39%	10,073,600	6,715,400	839,500	11.36	16,788,900	100.0%

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Table 7
Water Supply System
Calculation of FY 2023 Wholesale Water Service Charge Schedule

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
	Sales Volume <i>Mcf</i>	Existing Charges		Proforma Revenue Exist Charges <i>\$</i>	Allocated Revenue Req't <i>\$</i>	Charge Adjustment <i>\$</i>	% Charge Adjustment	60% Recover Via:		Proposed Charges		Projected Revenue <i>\$</i>	Revenue Recovery	
		Fixed Mo <i>\$/mo</i>	Commodity <i>\$/Mcf</i>					Fixed Mo <i>\$</i>	Commodity <i>\$</i>	Fixed Mo <i>\$/mo</i>	Commodity <i>\$/Mcf</i>			
		0		<i>Table 2</i>	<i>Table 7</i>	<i>(5) - (4)</i>	<i>(6) / (4)</i>	<i>60% of (5)</i>	<i>(5) - (8)*12</i>	<i>(8) / 12 mos</i>	<i>(9) / (1)</i>	<i>'2*(10)+(1)*(11)</i>	<i>(12) / (5)</i>	
72	Sumpter Township	30,300	35,600	9.67	720,200	744,500	24,300	3.37%	446,700	298,100	37,200	9.84	744,600	100.0%
73	Sylvan Lake	6,400	12,300	15.48	246,700	255,100	8,400	3.40%	153,100	101,500	12,800	15.86	255,100	100.0%
74	Taylor	258,900	244,700	7.46	4,867,800	5,032,800	165,000	3.39%	3,019,700	2,013,600	251,600	7.78	5,033,400	100.0%
75	Trenton	86,400	89,100	8.19	1,776,800	1,837,100	60,300	3.39%	1,102,300	734,300	91,900	8.50	1,837,200	100.0%
76	Troy	465,000	722,200	12.20	14,339,400	14,825,400	486,000	3.39%	8,895,200	5,929,800	741,300	12.75	14,824,400	100.0%
77	Utica	23,100	30,000	9.72	584,500	604,400	19,900	3.40%	362,600	242,000	30,200	10.48	604,500	100.0%
78	Van Buren Township	135,500	183,700	11.10	3,708,500	3,834,100	125,600	3.39%	2,300,500	1,533,700	191,700	11.32	3,834,300	100.0%
79	Walled Lake	29,900	42,200	10.98	834,700	862,900	28,200	3.38%	517,700	345,700	43,100	11.56	862,800	100.0%
80	Warren	618,100	545,200	6.94	10,832,000	11,199,200	367,200	3.39%	6,719,500	4,479,200	560,000	7.25	11,201,200	100.0%
81	Washington Township	81,800	121,700	12.37	2,472,300	2,556,100	83,800	3.39%	1,533,700	1,022,500	127,800	12.50	2,556,100	100.0%
82	Wayne	105,400	168,700	12.96	3,390,400	3,505,400	115,000	3.39%	2,103,200	1,401,800	175,300	13.30	3,505,400	100.0%
83	West Bloomfield Township	266,600	551,000	16.52	11,016,200	11,389,700	373,500	3.39%	6,833,800	4,555,700	569,500	17.09	11,390,200	100.0%
84	Westland	322,000	327,500	7.99	6,502,800	6,723,100	220,300	3.39%	4,033,900	2,688,700	336,200	8.35	6,723,100	100.0%
85	Wixom	75,300	130,500	13.95	2,616,400	2,704,900	88,500	3.38%	1,622,900	1,082,500	135,200	14.38	2,705,200	100.0%
86	Woodhaven	57,900	88,100	12.22	1,764,700	1,824,600	59,900	3.39%	1,094,800	730,200	91,200	12.61	1,824,500	100.0%
87	Ypsilanti Comm Util Auth	482,800	547,900	9.03	10,934,500	11,305,100	370,600	3.39%	6,783,100	4,521,500	565,300	9.37	11,307,400	100.0%
88	Total Suburban	13,512,900	15,895,100	9.70	321,821,800	333,217,800	11,396,000	3.54%	197,270,300	135,943,800	16,439,500	10.06	333,219,000	100.0%
89	Detroit (a)	4,169,200	1,808,100		21,697,300	22,985,900	1,288,600	5.94%	22,985,900		1,915,500		22,985,900	100.0%
90	GRAND TOTAL	17,682,100			343,519,100	356,203,700	12,684,600	3.69%	220,256,200	135,943,800			356,204,900	100.0%
91	less: Bad Debt Expense				(1,222,900)	(1,257,300)	(34,400)						(1,257,000)	
92	Net Wholesale Revenue				342,296,200	354,946,400	12,650,200	3.70%					354,947,900	100.0%
	(a) Flint / Detroit Adjustment Impacts													
93	Flint Gross	469,200	564,400	9.43	11,197,400	11,584,100	386,700	3.45%	6,950,500	4,633,700	579,200	9.88	11,586,100	100.0%
94	less: KWA Debt Svc Credit		(554,400)		(6,652,800)	(6,651,800)	1,000	-0.02%	(6,651,800)	(200)	(554,300)		(6,651,600)	100.0%
95	Flint Net for Line 21		10,000	9.43	4,544,600	4,932,300	387,700	8.53%	298,700	4,633,500	24,900	9.88	4,934,500	100.0%
96	Detroit Gross		3,533,100		42,397,300	43,685,900	1,288,600	3.04%	(42,397,300)	(84,794,600)	3,640,500		43,685,900	100.0%
97	less: Ownership Adj Credit		(1,725,000)		(20,700,000)	(20,700,000)	0	0.00%	20,700,000	41,400,000	(1,725,000)		(20,700,000)	100.0%
98	Detroit Net for Line 89		1,808,100		21,697,300	22,985,900	1,288,600	5.94%	(21,697,300)	(43,394,600)	1,915,500		22,985,900	100.0%
99	Modified Demands (1)	25,100			1,074,200	1,433,300	359,100	33.43%					1,433,200	100.0%
100	Non-Master Metered (3)	4,863,200			33,631,200	35,254,900	1,623,700	4.83%					35,252,100	100.0%
101	No Mods - All Others (84)	12,793,800			308,813,700	319,515,500	10,701,800	3.47%					319,519,600	100.0%
102	Total	17,682,100			343,519,100	356,203,700	12,684,600	3.69%					356,204,900	100.0%

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Table 1
Sewage Disposal System
Revenue Requirement and Charge Adjustment Summary

	(1)	(2)	(3)	(4)
	Approved	Recommended		
	<u>FY 2022</u>	<u>FY 2023</u>	<u>Variance</u>	<u>% Variance</u>
	\$	\$	\$	
<u>Revenues</u>				
1 Revenues from Charges	474,005,900	485,760,000	11,754,100	2.5%
2 Other Operating Revenue	400,000	400,000	0	0.0%
3 Non-Operating Revenue	1,023,300	1,154,900	131,600	12.9%
4 Total Revenues	475,429,200	487,314,900	11,885,700	2.5%
<u>Revenue Requirements</u>				
5 Operations & Maintenance (O&M) Expense	181,299,800	187,052,600	5,752,800	3.2%
6 General Retirement System Legacy Pension	10,824,000	10,824,000	0	0.0%
7 Debt Service - Regional System Allocation	207,209,500	205,638,100	(1,571,400)	-0.8%
8 General Retirement System Accelerated Pension	11,620,700	11,620,700	0	0.0%
9 WRAP Contribution	2,358,300	2,423,800	65,500	2.8%
10 Lease Payment	27,500,000	27,500,000	0	0.0%
11 Deposit to Improvement & Extension (I&E) Fund	34,616,900	42,255,700	7,638,800	22.1%
12 Total Revenue Requirements	475,429,200	487,314,900	11,885,700	2.5%
<u>Charge Adjustment Summary</u>				
13 Adjustment Index		2.50%		
14 Baseline Revenue		468,644,700		
15 Change in Annual Revenue Requirement			11,885,700	2.5%
16 Change Attributable to Non-Charge Revenue			(131,600)	-0.03%
17 Change Attributable to Sales Revenue / Bad Debt			<u>5,361,200</u>	<u>1.14%</u>
18 System Charge Adjustment			17,115,300	3.65%
19 Revenue Requirement to Collect with Charges		485,760,000		
20 less: OMID Contract Revenue		(2,186,400)		
21 Revenue Requirement to Collect with Wholesale Charges		483,573,600		
22 Proforma Revenue from <u>Wholesale</u> Charges		471,847,400	prior to bad debt expense	
23 Additional Revenue Required from Wholesale Charges		11,726,200		
24 Wholesale Charge Adjustment - %		2.49%		

Table 2
Sewage Disposal System
Allocation of FY 2023 Revenue Requirements to Member Partners and Industrial Customer Classes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Proforma Revenue - Existing Charges				Allocated FY 2023 Revenue Requirement				Change for FY 2023 Charges				"Unbundled" FY 2023 Charge Adjustment			
	Wholesale Rev Req'ts	Contractual Adjustments	Bad Debt Adjustment	Total (1)+(2)+(3)	Wholesale Rev Req'ts <i>Table 1</i>	Contractual Adjustments <i>(a)</i>	Bad Debt Adjustment <i>(c)</i>	Total <i>(5)+(6)+(7)</i>	Wholesale Rev Req'ts <i>(5) - (1)</i>	Contractual Adjustments <i>(6) - (2)</i>	Bad Debt Adjustment <i>(7) - (3)</i>	Total <i>(8) - (4)</i>	Wholesale Rev Req'ts <i>(9) / (4)</i>	Contractual Adjustments <i>(10) / (4)</i>	Bad Debt Adjustment <i>(11) / (4)</i>	Total <i>(12) / (4)</i>
		<i>(a)</i>		<i>(1)+(2)+(3)</i>	<i>Table 1</i>	<i>(a)</i>	<i>(c)</i>	<i>(5)+(6)+(7)</i>	<i>(5) - (1)</i>	<i>(6) - (2)</i>	<i>(7) - (3)</i>	<i>(8) - (4)</i>	<i>(9) / (4)</i>	<i>(10) / (4)</i>	<i>(11) / (4)</i>	<i>(12) / (4)</i>
					2.49%		5,486,600									
<u>Suburban Wholesale</u>																
1 OMID Common *	66,910,800	1,395,500	0	68,306,300	68,573,600	1,395,500	1,388,100	71,357,200	1,662,800	0	1,388,100	3,050,900	2.43%	0.00%	2.03%	4.47%
2 Rouge Valley	54,137,700	1,129,200	0	55,266,900	55,483,100	1,129,200	1,123,200	57,735,500	1,345,400	0	1,123,200	2,468,600	2.43%	0.00%	2.03%	4.47%
3 Oakland GWK	44,891,500	936,300	0	45,827,800	46,007,100	936,300	931,300	47,874,700	1,115,600	0	931,300	2,046,900	2.43%	0.00%	2.03%	4.47%
4 Evergreen Farmington	35,035,400	730,800	0	35,766,200	35,906,100	730,800	726,900	37,363,800	870,700	0	726,900	1,597,600	2.43%	0.00%	2.03%	4.47%
5 SE Macomb San Dist	24,266,600	506,100	0	24,772,700	24,869,700	506,100	503,400	25,879,200	603,100	0	503,400	1,106,500	2.43%	0.00%	2.03%	4.47%
6 Dearborn	19,648,100	409,800	0	20,057,900	20,136,400	409,800	407,600	20,953,800	488,300	0	407,600	895,900	2.43%	0.00%	2.03%	4.47%
7 Grosse Pointe Farms	2,660,100	55,500	0	2,715,600	2,726,200	55,500	55,200	2,836,900	66,100	0	55,200	121,300	2.43%	0.00%	2.03%	4.47%
8 Grosse Pointe Park	1,843,700	38,500	0	1,882,200	1,889,500	38,500	38,300	1,966,300	45,800	0	38,300	84,100	2.43%	0.00%	2.03%	4.47%
9 Melvindale	1,522,700	31,800	0	1,554,500	1,560,500	31,800	31,600	1,623,900	37,800	0	31,600	69,400	2.43%	0.00%	2.03%	4.46%
10 Farmington	1,160,400	24,200	0	1,184,600	1,189,200	24,200	24,100	1,237,500	28,800	0	24,100	52,900	2.43%	0.00%	2.03%	4.47%
11 Center Line	1,009,000	21,000	0	1,030,000	1,034,100	21,000	20,900	1,076,000	25,100	0	20,900	46,000	2.44%	0.00%	2.03%	4.47%
12 Allen Park	821,000	17,100	0	838,100	841,400	17,100	17,000	875,500	20,400	0	17,000	37,400	2.43%	0.00%	2.03%	4.46%
13 Highland Park	5,246,800	109,400	0	5,356,200	5,377,200	109,400	108,900	5,595,500	130,400	0	108,900	239,300	2.43%	0.00%	2.03%	4.47%
14 Hamtramck	3,912,200	81,600	0	3,993,800	4,009,400	81,600	81,200	4,172,200	97,200	0	81,200	178,400	2.43%	0.00%	2.03%	4.47%
15 Grosse Pointe	871,400	18,200	0	889,600	893,100	18,200	18,100	929,400	21,700	0	18,100	39,800	2.44%	0.00%	2.03%	4.47%
16 Harper Woods	211,000	4,400	0	215,400	216,200	4,400	4,400	225,000	5,200	0	4,400	9,600	2.41%	0.00%	2.04%	4.46%
17 Redford Township	261,400	5,500	0	266,900	267,900	5,500	5,400	278,800	6,500	0	5,400	11,900	2.44%	0.00%	2.02%	4.46%
18 Wayne County #3	50,500	1,100	0	51,600	51,800	1,100	1,000	53,900	1,300	0	1,000	2,300	2.52%	0.00%	1.94%	4.46%
19 Subtotal Suburban Wholesale	264,460,300	5,516,000	0	269,976,300	271,032,500	5,516,000	5,486,600	282,035,100	6,572,200	0	5,486,600	12,058,800	2.43%	0.00%	2.03%	4.47%
20 Detroit Customers	194,178,200	(5,516,000)		188,662,200	199,003,900	(5,516,000)		193,487,900	4,825,700	0	0	4,825,700	2.56%	0.00%	0.00%	2.56%
21 Total Wholesale	458,638,500	0	0	458,638,500	470,036,400	0	5,486,600	475,523,000	11,397,900	0	5,486,600	16,884,500	2.49%	0.00%	1.20%	3.68%
22 OMID Direct *		2,153,500		2,153,500		2,186,400		2,186,400	0	32,900	0	32,900	0.00%	1.53%	0.00%	1.53%
23 Total Member Partner	458,638,500	2,153,500	0	460,792,000	470,036,400	2,186,400	5,486,600	477,709,400	11,397,900	32,900	5,486,600	16,917,400	2.47%	0.01%	1.19%	3.67%
24 OMID Total *	66,910,800	3,549,000	0	70,459,800	68,573,600	3,581,900	1,388,100	73,543,600	1,662,800	32,900	1,388,100	3,083,800	2.36%	0.05%	1.97%	4.38%
<u>Industrial Specific Charges</u>																
25 Industrial Waste Control	8,318,000			8,318,000	8,524,700	0		8,524,700	206,700	0	0	206,700	2.48%	0.00%	0.00%	2.48%
26 Industrial Surcharges	4,890,900			4,890,900	5,012,400	0		5,012,400	121,500	0	0	121,500	2.48%	0.00%	0.00%	2.48%
27 Subtotal	13,208,900	0	0	13,208,900	13,537,100	0	0	13,537,100	328,200	0	0	328,200	2.48%	0.00%	0.00%	2.48%
28 Total	471,847,400	2,153,500	0	474,000,900	483,573,500	2,186,400	5,486,600	491,246,500	11,726,100	32,900	5,486,600	17,245,600	2.47%	0.01%	1.16%	3.64%
29 less: Expected Bad Debt	(5,246,800)	(109,400)	0	(5,356,200)	(5,377,200)	(109,400)	100	(5,486,500)	(130,400)	0	(108,900)	(239,300)	2.43%	0.00%	2.03%	4.47%
30 Total Expected Revenue	466,600,600	2,044,100	0	468,644,700	478,196,300	2,077,000	5,486,700	485,760,000	11,595,700	32,900	5,377,700	17,006,300	2.47%	0.01%	1.15%	3.63%

(a) DWSD Ownership Benefit

(b) Highland Park Amounts from Columns (5) and (6)

Table 3
Sewage Disposal System
Calculation of FY 2023 Wholesale Sewer Service Charge Schedule - Fixed Monthly Charges

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Allocated Wholesale <u>Rev Req't</u> \$	Detroit Capital Ownership <u>Adjustment</u> \$	Adjusted Wholesale <u>Rev Req't</u> \$	OMID <u>Specific</u> \$	Total Allocated <u>Rev Req'ts</u> \$	Bad Debt <u>Adjustment</u> \$ (a)	Total Amount for <u>Charges</u> \$
<u>Suburban Wholesale</u>							
1 OMID	5,714,500	116,300	5,830,800	182,200	6,013,000	115,600	6,128,600
2 Rouge Valley	4,623,600	94,100	4,717,700		4,717,700	93,600	4,811,300
3 Oakland GWK	3,833,900	78,000	3,911,900		3,911,900	77,700	3,989,600
4 Evergreen Farmington	2,992,200	60,900	3,053,100		3,053,100	60,600	3,113,700
5 SE Macomb San Dist	2,072,500	42,200	2,114,700		2,114,700	41,900	2,156,600
6 Dearborn	1,678,000	34,200	1,712,200		1,712,200	34,000	1,746,200
7 Grosse Pointe Farms	227,200	4,600	231,800		231,800	4,600	236,400
8 Grosse Pointe Park	157,500	3,200	160,700		160,700	3,200	163,900
9 Melvindale	130,000	2,700	132,700		132,700	2,600	135,300
10 Farmington	99,100	2,000	101,100		101,100	2,000	103,100
11 Center Line	86,200	1,800	88,000		88,000	1,700	89,700
12 Allen Park	70,100	1,400	71,500		71,500	1,500	73,000
13 Highland Park	448,100	9,100	457,200		457,200	9,100	466,300
14 Hamtramck	334,100	6,800	340,900		340,900	6,800	347,700
15 Grosse Pointe	74,400	1,500	75,900		75,900	1,600	77,500
16 Harper Woods	18,000	400	18,400		18,400	400	18,800
17 Redford Township	22,300	500	22,800		22,800	400	23,200
18 Wayne County #3	4,300	100	4,400		4,400	100	4,500
19 Subtotal Suburban Wholesale	22,586,000	459,800	23,045,800	182,200	23,228,000	457,400	23,685,400
20 Detroit Customers (b)	16,583,700	(459,700)	16,124,000		16,124,000	0	16,124,000
21 Total	39,169,700	100	39,169,800	182,200	39,352,000	457,400	39,809,400

(a) Rounded to align with total monthly charge

Table 4
Sewage Disposal System
Comparison of Existing and Poposed Member Partner Service Charges

	(1)	(2)	(3)	(4)
	Existing FY 2022 <u>Charges</u> \$/mo	Proposed FY 2023 <u>Charges</u> \$/mo	Charge <u>Adjustment</u> \$/mo	% Charge <u>Adjustment</u>
<u>Suburban Wholesale</u>				
1 OMID Common *	5,692,200	5,946,400	254,200	4.5%
2 Rouge Valley	4,605,600	4,811,300	205,700	4.5%
3 Oakland GWK	3,819,000	3,989,600	170,600	4.5%
4 Evergreen Farmington	2,980,500	3,113,700	133,200	4.5%
5 SE Macomb San Dist	2,064,400	2,156,600	92,200	4.5%
6 Dearborn	1,671,500	1,746,200	74,700	4.5%
7 Grosse Pointe Farms	226,300	236,400	10,100	4.5%
8 Grosse Pointe Park	156,900	163,900	7,000	4.5%
9 Melvindale	129,500	135,300	5,800	4.5%
10 Farmington	98,700	103,100	4,400	4.5%
11 Center Line	85,800	89,700	3,900	4.5%
12 Allen Park	69,800	73,000	3,200	4.6%
13 Highland Park	446,400	466,300	19,900	4.5%
14 Hamtramck	332,800	347,700	14,900	4.5%
15 Grosse Pointe	74,100	77,500	3,400	4.6%
16 Harper Woods	18,000	18,800	800	4.4%
17 Redford Township	22,200	23,200	1,000	4.5%
18 Wayne County #3	4,300	4,500	200	4.7%
19 Subtotal Suburban Wholesale	22,498,000	23,503,200	1,005,200	4.5%
20 Detroit Customers (a)	15,721,900	16,124,000	402,100	2.6%
21 Subtotal Wholesale	38,219,900	39,627,200	1,407,300	3.7%
22 OMID Direct *	179,500	182,200	2,700	1.5%
23 Total Member Partner Chgs	38,399,400	39,809,400	1,410,000	3.7%
24 <i>OMID Total *</i>	<i>5,871,700</i>	<i>6,128,600</i>	<i>256,900</i>	<i>4.4%</i>
<u>(a) Detroit Revenue Req'ts</u>				
25 Gross Revenue Requirements	16,181,600	16,583,700	402,100	2.5%
26 Ownership Benefit	(459,700)	(459,700)	0	0.0%
27 Net Revenue Requirements	15,721,900	16,124,000	402,100	2.6%

Table 5
Sewage Disposal System
FY 2023 Industrial Specific Charges

Industrial Waste Control Charges - \$/month					Industrial Surcharges - \$/lb			
<u>Meter Size</u>	<u>Equivalency Ratio</u>	<u>Existing Rate</u>	<u>Proposed Rate</u>	<u>Rate Adjustment</u>		<u>Existing Rate</u>	<u>Proposed Rate</u>	<u>Rate Adjustment</u>
5/8	1.0	3.54	3.63	2.5%	BIOCHEMICAL OXYGEN DEMAND (BOD)			
3/4	1.5	5.31	5.45	2.6%	for concentrations > 275 mg/l	0.347	0.356	2.6%
1	2.5	8.85	9.08	2.6%				
1-1/2	5.5	19.47	19.97	2.6%				
2	8.0	28.32	29.04	2.5%	TOTAL SUSPENDED SOLIDS (TSS)			
3	14.5	51.33	52.64	2.6%	for concentrations > 350 mg/l	0.476	0.488	2.5%
4	20.0	70.80	72.60	2.5%				
6	30.0	106.20	108.90	2.5%				
8	50.0	177.00	181.50	2.5%	PHOSPHORUS (P)			
10	70.0	247.80	254.10	2.5%	for concentrations > 12 mg/l	6.368	6.527	2.5%
12	80.0	283.20	290.40	2.5%				
14	100.0	354.00	363.00	2.5%				
16	120.0	424.80	435.60	2.5%	FATS, OIL AND GREASE (FOG)			
18	140.0	495.60	508.20	2.5%	for concentrations > 100 mg/l	0.111	0.114	2.7%
20	160.0	566.40	580.80	2.5%				
24	180.0	637.20	653.40	2.5%				
30	200.0	708.00	726.00	2.5%	SEPTAGE DISPOSAL FEE			
36	220.0	778.80	798.60	2.5%	Per 500 gallons of disposal	36.00	37.00	2.8%
48	240.0	849.60	871.20	2.5%				

(a) Full Service Rate. "Administrative Only" Rate = 25% of Full Service Rate.

Appendices

- A. December 15, 2021 memorandum: “Proposed FY 2023 Water and Sewer Charges”
- B. December 15, 2021 memorandum: “GLWA Financial Forecast Update”
- C. December 15, 2021 memorandum: “Highland Park Bad Debt Expense Review Executive Summary”

Additional appendices may be added to this report to address the results of ongoing review of the budget and charge proposals.

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MEMORANDUM

Proposed FY 2023 Water and Sewer Charges

December 15, 2021

To: Sue Coffey, Nicolette Bateson

From: Bart Foster

This memorandum is intended to introduce our recommended proposed Water and Sewer Charges for FY 2023. Herewith we provide an executive summary of our recommendations. We have prepared and provided additional material under separate cover which supports the analyses summarized in this document.

Executive Summary

1. Proposed FY 2023 Water and Sewer Charges reflect a simplified approach that does not require preparation of a FY 2023 Cost of Service Study.
 - *Supported by uniformity in units of service related to the upcoming Water Contract Alignment Process (CAP) and continuation of the FY 2022 Sewer SHARES.*
 - *Cost of service analyses will still be completed to support ongoing review and initiatives.*
2. Proposed FY 2023 Water Charges reflect:
 - *Budgeted Revenue Requirement increase of 3.5%;*
 - *System Charge Adjustment equal to a 3.7% increase;*
 - *Wholesale Charge Adjustment equal to a 3.6% increase;*
 - *Uniform Charge Increase of 3.4% for almost all Member Partners;*
 - *Uniform Charge Increase of 2.6% for Non Master Metered Member Partners;*
 - *Slightly higher increase for Detroit and Flint after recognizing specific contract requirements.*
3. Proposed FY 2023 Sewer Charges reflect:
 - *Budgeted Revenue Requirement increase of 2.5%;*
 - *System Charge Adjustment equal to a 3.7% increase;*
 - *Uniform System Charge Increase of 4.5% for suburban wholesale Member Partners related to Highland Park bad debt;*
 - *Increase to Detroit is 2.5%*

Proposed FY 2023 Water and Sewer Charges

December 15, 2021

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Proposed FY 2023 Water Charges**Budgeted Revenue Requirements and System Charge Adjustment:**

- We are proposing a ***System Charge Adjustment*** of a 3.7% increase. As shown in the table below, this adjustment is the product of:
 - *3.5% to address a \$12.0 million revenue requirement increase;*
 - *Approximately 0.2% to reflect a decrease in budgeted water sales volumes, creating a \$0.5 million negative sales revenue forecast. (See Line 17)*

Recommended FY 2023 Water Revenue Requirement Summary

	Approved FY 2022	Recommended FY 2023	Variance	% Variance
<u>Revenues</u>				
1 Revenues from Charges	342,808,200	354,946,100	12,137,900	3.5%
2 Other Operating Revenue	175,000	175,000	0	0.0%
3 Non-Operating Revenue	1,047,300	950,500	(96,800)	-9.2%
4 Total Revenues	344,030,500	356,071,600	12,041,100	3.5%
<u>Revenue Requirements</u>				
5 Operations & Maintenance (O&M) Expense	143,933,800	144,847,700	913,900	0.6%
6 General Retirement System Legacy Pension	6,048,000	6,048,000	0	0.0%
7 Debt Service - Regional System Allocation	135,481,000	150,337,100	14,856,100	11.0%
8 General Retirement System Accelerated Pension	6,268,300	6,268,300	0	0.0%
9 WRAP Contribution	1,705,500	1,770,500	65,000	3.8%
10 Lease Payment	22,500,000	22,500,000	0	0.0%
11 Deposit to Improvement & Extension (I&E) Fund	28,093,900	24,300,000	(3,793,900)	-13.5%
12 Total Revenue Requirements	344,030,500	356,071,600	12,041,100	3.5%
<u>Charge Adjustment Summary</u>				
13 Adjustment Index		3.50%		
14 Baseline Revenue		342,296,100		
15 Change in Annual Revenue Requirement			12,041,100	3.5%
16 Change Attributable to Non-Charge Revenue			96,800	0.03%
17 Change Attributable to Sales Revenue / Bad Debt			512,100	0.15%
18 System Charge Adjustment			12,650,000	3.70%

- The budgeted revenue variance is lower than that presented earlier in the charge planning process, including at the November 16 Charge Rollout meeting on proposed Units of Service. Subsequent to that meeting, we have:
 - *Made some minor adjustments to projected sales volumes for specific Member Partners based on review of specific data;*
 - *Adjusted the presumed decline in base month water sales from 2.5% annually to 1.0% annually, which is more indicative of recent activity - so the adjustment factor applied to the 3-year average base month sales is 98% instead of 95%.*
 - *This reduces the “negative budgeted revenue variance” from approximately \$2.0 million to approximately \$0.5 million and puts less pressure on the FY 2023 charges.*
- As a result, the proposed System Charge Adjustment is lower than what was indicated in originally presented material.

Specific Member Partner Charge Proposals:

As presented at the November 16 Charge Rollout meeting, there is only one Member Partner (St. Clair County DTE) whose contracted max day and peak hour demands will change for FY 2023. All Member Partners will have the opportunity to change their contracted demands during the re-opener process during 2022, and to impact their charges for FY 2024. We believe this dynamic supports a simplified approach to the proposed FY 2023 Water Charges, similar to what has been employed in recent years, to support the stability objectives embraced by the GLWA Charge Methodologies. Our recommended charges have been developed by:

- Using the FY 2022 Cost of Service Study as an appropriate mechanism to allocate the FY 2023 Revenue Requirements to Cost Pools, for purposes of establishing the allocation of Revenue Requirements to “Mod” customers introduced below.
- Treating St. Clair County DTE as a “Mod” customer and compute their proposed charges based on their specific demands.
 - *This will result in a significant charge increase for this Member Partner.*
- Treating the Non Master Metered Member Partners (Detroit, Dearborn, Highland Park) uniformly as a group of “Mod” customers and uniformly adjust their allocated wholesale revenue requirement.
 - *After adjusting for the “Mod” above, this results in a 2.9% uniform increase in the “wholesale” revenue requirement for this “No Mod” class.*
 - *This approach continues recent charge calculations that allow the max day and peak hour demands to vary with variances in average day volumes year over year. The change in average volumes for these Member Partners from FY 2022 to FY 2023 is relatively uniform and we believe treating this group as a class is reasonable and embraces the simplified approach introduced herein.*
- Treating ALL other Member Partners as members of the “No Mod” customer class and uniformly adjust their allocated wholesale revenue requirement.
 - *After adjusting for the “Mods” above, this results in a 3.7% uniform increase in the “wholesale” revenue requirement for this “No Mod” class.*
- Apply the required contractual adjustments to the allocated wholesale revenue requirements.
 - *Since the Detroit Ownership Benefit and the KWA debt service credit are fixed¹, the uniform charge adjustment for all members of the “No Mod” customer class is 3.4%.*
 - *Proposed charge adjustments to Detroit and Flint (expressed on a “gross” pre credit basis) after reflecting contractual adjustments are 3.0% and 3.5%, respectively.*

¹ There is a minor reduction in the budgeted KWA debt service credit, which has the effect of moderately reducing the amount allocated to all other Member Partners.

Proposed FY 2023 Water and Sewer Charges

December 15, 2021

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Proposed FY 2023 Sewer Charges**Budgeted Revenue Requirements and System Charge Adjustment:**

- We are proposing a ***System Charge Adjustment*** of a 3.66% increase. As shown in the table below, this adjustment is the product of:
 - *2.5% to address a \$11.9 million revenue requirement increase;*
 - *Approximately 1.15% to reflect inclusion of one year's worth of revenue requirements allocable to Highland Park as a bad debt expense allowance. (See Line 17). No such amounts were included in the approved FY 2022 Budget and Charges.*

Recommended FY 2023 Sewer Revenue Requirement Summary

	Approved FY 2022	Recommended FY 2023	Variance	% Variance
<u>Revenues</u>				
1 Revenues from Charges	474,005,900	485,760,000	11,754,100	2.5%
2 Other Operating Revenue	400,000	400,000	0	0.0%
3 Non-Operating Revenue	1,023,300	1,154,900	131,600	12.9%
4 Total Revenues	475,429,200	487,314,900	11,885,700	2.5%
<u>Revenue Requirements</u>				
5 Operations & Maintenance (O&M) Expense	181,299,800	187,052,600	5,752,800	3.2%
6 General Retirement System Legacy Pension	10,824,000	10,824,000	0	0.0%
7 Debt Service - Regional System Allocation	207,209,500	205,638,100	(1,571,400)	-0.8%
8 General Retirement System Accelerated Pension	11,620,700	11,620,700	0	0.0%
9 WRAP Contribution	2,358,300	2,423,800	65,500	2.8%
10 Lease Payment	27,500,000	27,500,000	0	0.0%
11 Deposit to Improvement & Extension (I&E) Fund	34,616,900	42,255,700	7,638,800	22.1%
12 Total Revenue Requirements	475,429,200	487,314,900	11,885,700	2.5%
<u>Charge Adjustment Summary</u>				
13 Adjustment Index		2.50%		
14 Baseline Revenue		468,611,800		
15 Change in Annual Revenue Requirement			11,885,700	2.5%
16 Change Attributable to Non-Charge Revenue			(131,600)	-0.03%
17 Change Attributable to Sales Revenue / Bad Debt			5,394,100	1.15%
18 System Charge Adjustment			17,148,200	3.66%

- As a result, the proposed System Charge Adjustment is higher than what was indicated in originally presented material.

Specific Member Partner Charge Proposals:

As presented at the November 16 Charge Rollout meeting, the existing SHAREs established for the FY 2022 Charges will remain in effect for FY 2023 and FY 2024. Revenues collected via the SHAREs process account for almost 97% of the revenues generated from charges, with Industrial Specific charges and contractual charges to OMID making up the remainder. We believe this dynamic supports a simplified approach to the proposed FY 2023 Sewer Charges to support the stability objectives embraced by the GLWA Charge Methodologies. Our recommended charges have been developed by:

- Increase the “wholesale revenue requirements from charges” for ALL charge categories by 2.5% to align with the overall budgeted revenue requirement increase.

Proposed FY 2023 Water and Sewer Charges

December 15, 2021

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- *This will effectively increase the Sewer Charges for ALL Member Partners (prior to adjustments related to the Agreements) by 2.5%.*
- Allocate responsibility for the \$5.4 million expected bad debt expense allowance associated with Highland Park to Member Partners in the Suburban Wholesale customer class and compute a FY 2023 “surcharge” associated with this amount².
 - *This will effectively result in uniform charge increase of 4.5% for members of this customer class.*
- Apply the required contractual adjustments related to the Detroit Ownership Benefit and the OMID Specific revenue requirements.
 - *Since the Detroit Ownership Benefit is fixed, the charge adjustment for Detroit is 2.56% expressed on a “gross” pre credit basis (Compared to the 2.5% budgeted revenue requirement increase).*
- Compute specific Industrial Waste Control and Industrial Surcharge rates for FY 2023 that align with the overall 2.5% increase in budgeted revenue requirements.

We believe that the simplified approaches recommended above are consistent with the goals and objectives set forth in the “One Water Charge Initiatives” that were (most recently) presented at the November 16 Charge Rollout meeting. We are prepared to prepare and provide specific Member Partner charge calculation sheets that embrace and follow these approaches.

We are prepared to present this material to the Audit Committee meeting scheduled for December 17 and to discuss this matter further at your convenience.

² We have provided commentary and analysis regarding specific details on the Highland Park bad debt expense and the impact on Sewer Charges under separate cover.

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MEMORANDUM

GLWA Financial Forecast Update

December 15, 2021

To: Nicolette Bateson

From: Bart Foster

This memorandum is intended to introduce updated long-term financial plan forecasts for the GLWA Regional System Water and Sewer funds, prepared in coordination with development of the Fiscal Year 2023 budget and charges. ***The material presented herein updates that originally presented in a similar document published on October 15, 2021 date, and reflects the results of our ongoing review and analysis – including incorporation of the requested FY 2023 Budget for both the Water and Sewer Systems. Significant updated information, which reflects the “Preliminary Second Discussion Draft” of the updated forecast, is highlighted where appropriate in this document.*** These PRELIMINARY updated projections reflect forecasted financial results for a ten-year¹ projection period (*Fiscal Year 2022 through Fiscal Year 2032*) for GLWA’s capital and operating financial requirements. Separate exhibits are designed to summarize forecasts for both the Water Fund and the Sewer Fund. These forecast summaries are presented in similar format to prior published work products we have prepared in various forums, which largely focused on revenue requirements (reflected as either “budget” or “cash” basis) in a manner that aligns with requirements of the GLWA Master Bond Ordinances (MBO’s). ***We have also included forecast exhibits that illustrate projected “GAAP basis” results, and forecasted “Net Position” of both utilities.***

This version of the forecast report continues to focus entirely on projected financial results for the GLWA Regional System. We are in the process of incorporating preliminary budget and forecast information for the DWSD Local System into the comprehensive forecast. Those exhibits will also be presented in subsequent documents.

This forecast document embraces a forecasting approach and format that we’ve utilized for several years, and readers should find the general exhibits and discussion familiar. It has been used in support of GLWA revenue bond issues and annual budgeting and charge setting. This material is designed to support the proposed FY 2023 budget and charges. ***We are concurrently submitting material specific to our recommendations regarding the FY 2023 Budget and FY 2023 Water Charges and FY 2023 Sewer Charges under separate cover.***

¹ Actually 11 years, including estimated results for the current year.

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Executive Summary Takeaways

- This forecast introduces preliminarily recommended overall FY 2023 ***System Charge Adjustments*** of a 3.7% increase for both the Water Sewer Systems.
 - *The Water adjustment is the product of:*
 - 3.5% to address a \$12.0 million revenue requirement increase;
 - 0.15% to reflect a decrease in budgeted water sales volumes, creating a \$0.5 million negative sales revenue forecast.
 - *The Sewer adjustment is the product of:*
 - 2.5% to address a \$11.9 million revenue requirement increase;
 - ***1.2% to reflect reinstitution of Highland Park bad debt adjustment, creating a \$3.0 million negative revenue forecast.***
 - ***These proposed adjustments are more fully documented in other material published contemporaneously with this forecast update.***
- The forecast produces the executive summary metrics for the 10-year forecast period summarized below.

GLWA Financial Plan Summary (\$ millions)

Executive Summary Metrics

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>
<u>Water Supply System</u>											
Charge Adjustment		3.7%	3.3%	3.0%	3.0%	3.6%	3.5%	3.6%	3.5%	3.6%	3.6%
Projected Revenue	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3
Projected Expenses	143.9	144.8	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
Net Revenues	198.2	211.2	219.8	227.1	239.1	249.4	260.6	272.1	284.1	296.6	309.6
Projected Cash Balance	222.7	202.8	203.8	203.1	202.7	202.6	203.0	202.6	202.5	202.9	202.9
Capital Improvements *	160.4	172.8	195.6	189.5	151.2	130.5	228.4	228.5	179.3	176.4	153.5
Debt Service Coverage **	1.42	1.36	1.38	1.33	1.32	1.34	1.33	1.34	1.30	1.32	1.32
<u>Sewage Disposal System</u>											
Charge Adjustment		3.7%	2.3%	2.0%	2.1%	2.5%	2.5%	2.5%	2.6%	2.6%	2.5%
Projected Revenue	472.9	489.8	502.0	514.6	527.4	540.6	554.1	568.0	582.2	596.7	611.7
Projected Expenses	181.3	187.1	192.4	193.6	196.8	200.0	204.0	208.1	212.3	216.5	220.8
Net Revenues	291.6	302.7	309.6	321.0	330.6	340.6	350.1	359.9	369.9	380.2	390.8
Projected Cash Balance	247.2	244.6	244.3	244.6	244.1	244.0	244.2	244.1	244.0	242.6	281.9
Capital Improvements *	95.5	112.9	133.3	146.5	126.9	108.7	181.1	161.0	121.7	123.5	82.8
Debt Service Coverage **	1.37	1.42	1.40	1.51	1.54	1.54	1.53	1.56	1.61	1.67	1.72

* Includes Budgeted Capital Outlay

** Regional System contribution only

- The Water CIP creates relatively more financing pressure on the forecast than does the Sewer CIP. As a result the Water System forecast contains continuation of significant debt financing, while mostly “pay go” capital financing is forecasted for the Sewer System towards the end of the ten year period.
 - *This fundamental difference in the Water and Sewer Forecasts is highlighted throughout this memorandum and in the accompanying exhibits.*

Forecast Introduction and Exhibits

As noted earlier, the efforts undertaken to prepare these forecasts are consistent with the analyses that we utilize to prepare financial feasibility report(s) that we have provided to GLWA in support of financial transactions. However, the efforts to date have not been as rigorous as those designed to support a public offering of debt, and should be considered “**Preliminary**”. We encourage stakeholders to review these forecasts with that understanding in mind. In addition, our formally published forecasts always carry this caveat:

In conducting our studies and formulating our projections and opinions contained herein, we reviewed the books, records, agreements, capital improvement programs and other information produced by the Authority as we deemed necessary. While we consider such books, records, and other documents to be reliable, we have not verified the accuracy of these documents. The projections set forth herein are intended as “forward-looking statements”. Actual results may differ materially from those projected, as influenced by conditions, events, and circumstances that may actually occur.

Having said all that, let’s review the next look at the updated forecasts. First, an introduction of the core executive summary assumptions we’ve incorporated into the baseline analysis.

1. FY 2022 estimated activity is consistent with the approved first quarter budget amendments, with additional minor estimates to reflect ongoing review.
2. FY 2023 through FY 2027 O&M is consistent with the budget request established by GLWA.
 - FY 2023 increase of 2.0% in total (combined Water and Sewer) compared to originally approved FY 2022 budget;
 - Water increase for FY 2023 is 0.6%, Sewer increase is 3.2% - this reflects diligent review of the FY 2023 budget preparation and individual budget programs, including increased focus on programs to address Sewer issues.
3. Future O&M growth beyond FY 2023 = 2%, on average, overall for the System, with varying amounts between Water and Sewer through FY 2027 to match the FY 2023 Budget documents, and uniformly thereafter.
4. CIP’s reflect versions submitted to the Capital Planning Committee on October 19 and to Member Partners on November 9.
5. CIP Expenditure Level reflects a Spend Rate Assumption of:
 - 80% for the Water System for FY 2022 through FY 2027;
 - 75% for the Sewer System for FY 2022 through FY 2027;
 - 100% for both systems for FY 2028 through FY 2032.
6. Investment earnings rate = 0.45% for FY 2022, declining to 0.35% for FY 2023, then gradually increasing to 2.2% by FY 2026 and remaining at that level for the remainder of the forecast period (consistent with estimates provided by PFM).
7. Capital financing forecast policy:
 - Fund all Major CIP expenditures via Construction Fund, which is sourced by:
 - SRF loans

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- Transfers from I&E
 - Bond Proceeds
 - Investment Earnings on Bond Proceeds
 - *CIP funding source priority:*
 - Identify short lived CIP projects that should be financed by I&E (*currently estimated at 10% of total CIP*);
 - Apply “confirmed” SRF resources to specific projects²; then
 - Spend existing I&E Funds until they reach policy minimum (*\$90 million*);
 - Do not rely on annual deposits to I&E to finance CIP until subsequent year(s);
 - Issue debt to finance remainder of annual capital requirements;
 - Plan biennial bond sales in amounts that result in moderate “carryover” balances at end of 2nd year³
 - *Apply Capital Spend Rate Assumption to ALL elements noted above, including:*
 - Total annual requirements;
 - Estimated short lived projects;
 - Scheduled SRF reimbursements
8. “Top Line” increases in annual revenue requirements starting in FY 2023 of:
- *3.5% for the Water System;*
 - *2.5% for the Sewer System*
9. Preliminary FY 2023 System Charge adjustments of:
- **3.7% increase for Water**
 - Reflects moderate reduction in baseline sales revenue compared to approved FY 2022 Budget and Charges
 - **3.7% increase for Sewer**
 - Reflects reinstitution of Highland Park bad debt adjustment compared to approved FY 2022 Budget and Charges
10. Total GLWA / DWSD “Legacy Pension Obligation” annual payments reduce from \$45.4 million to \$11.0 million starting in FY 2024, and all amounts are treated as a non-operating expense after FY 2023.

The forecasted financial results resulting from our application of these assumptions are summarized in the attached exhibits, and briefly introduced below. The exhibit page number references are consistent between the separate Water (W) and Sewer (S) page numbers.

² In prior forecasts “confirmed” SRF projects were limited to those for which GLWA Board had formally passed ordinances and intent to issue. The forecast policy has been updated to include as “confirmed” all projects that have been approved on the State’s Project Priority List.

³ The forecasted bond sales anticipated towards the end of FY 2022 are designed to provide financing through FY 2024, with the “biennial cycle” continuing starting in FY 2025.

1. Forecasted CIP Financing Plan

- Illustrates forecasted plan resulting from application of CIP financing policy noted above. Note that the forecast anticipates the next “new money Regional System” bond transactions to occur in late FY 2022 for both the Water and Sewer Systems. These transactions are designed in this forecast to not provide any meaningful bond funds to pay for CIP expenditures during FY 2022, nor result in any debt service during FY 2022. We’ve assumed a full annual amortization starting in FY 2023. The size and nature of these transactions are subject to change, and could be impacted by availability of additional SRF loans, DWSD Local System needs, and/or refinancing opportunities. Also note the relatively larger need for forecasted additional Water bond sales compared to Sewer due to the relatively larger Water CIP requirements. The Sewer forecast anticipates being able to “pay go” all ***known and projected*** CIP Financing starting in FY 2030.

2. Forecasted CIP Financing Plan Table

- Same as 1, in tabular form consistent with published Feasibility Reports.

3. Forecasted Application of CIP Funding Sources

- Illustrates growing utilization of I&E monies to finance annual capital improvements, particularly for Sewer. The Water picture is “muddled” because of the early year spend down of existing balances while the Sewer picture is more evident of steady growth – sufficient to fully fund the CIP and exceed the \$90 million policy minimum by the end of the forecast period.
- ***At the bottom of the exhibit, we’ve included a metric that identifies the amount of spend from, and deposit to, the I&E Funds as a percentage of total annual CIP. We note that once the existing I&E reserves are spent down to the targeted balance of \$90 million, the amounts deposited to the I&E Funds annually basically match the amounts spent from the I&E Funds. Again, the current level, and the growth, in this metric is more favorable for Sewer than Water.***

4. Revenue Requirement Financing Plan

- Graphical depiction of the “business plan” assuming annual top line revenue requirement growth of 3.5% for Water and 2.5% for Sewer and 2% O&M growth rate assumption for the balance of the forecast period. Note the relatively stable transfers to Water I&E compared to the rapid growth in the Sewer amounts.

5. Wholesale System Revenue Requirement Financing Plan Table

- Same as 4, in tabular form consistent with published Feasibility Reports.

6. Forecasted Fund Balance Summary

- Illustrates “non-restricted” liquidity balances and debt service coverage (as computed for the Regional System portion).
 - * *Note that the targeted and forecasted balances reflect a “Working Capital Reserve” that is designed to reflect an Operating Fund reserve balance equivalent to 105 days of annual Operations and Maintenance Expense plus 60 days of scheduled transfers to all other MBO Funds.*

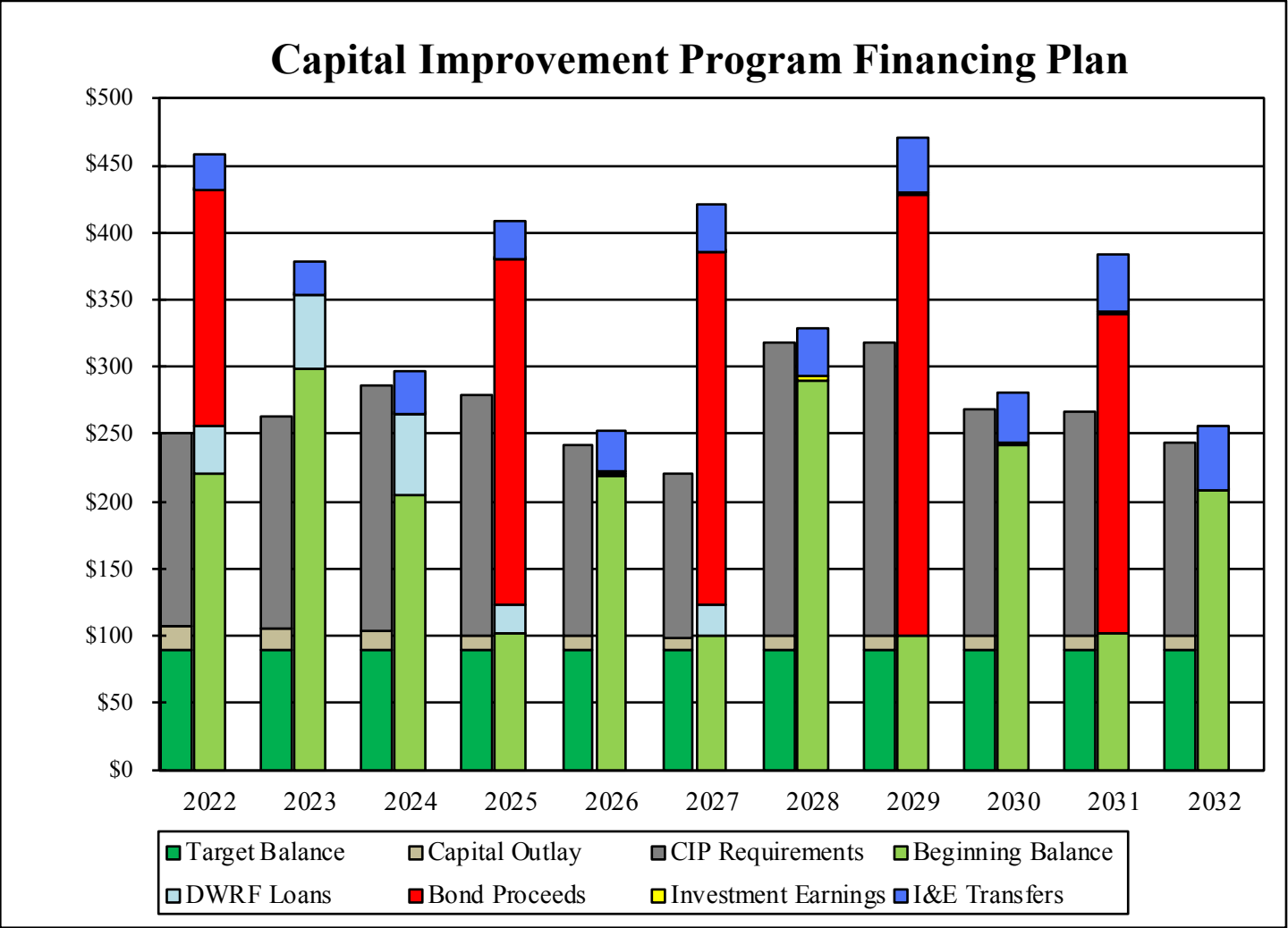
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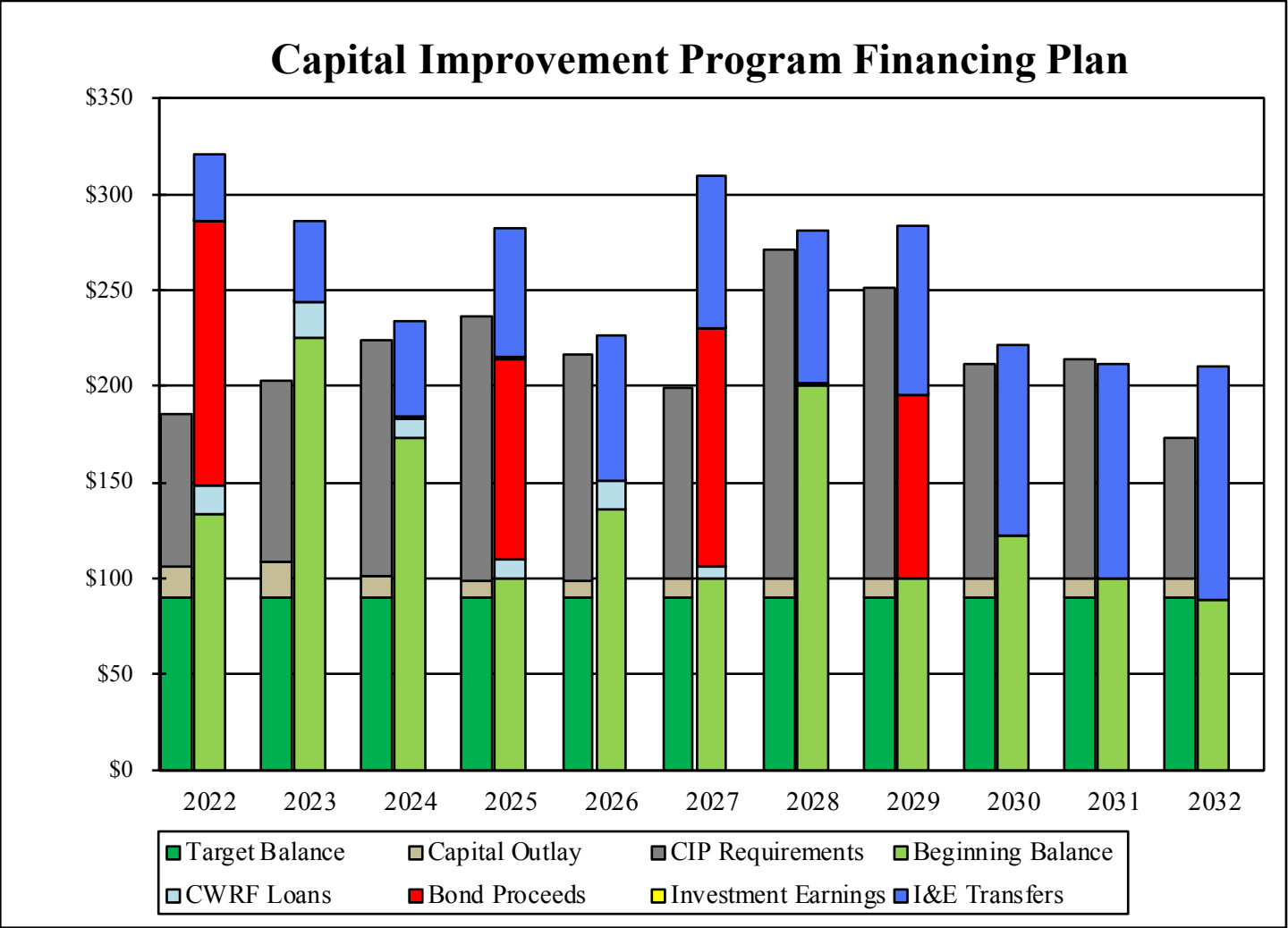
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- Shows forecasted reduction of existing I&E balances to policy minimums for both systems, with Sewer increasing towards the end of the forecast period.
 - * *Note that if full “pay go” status of the Sewer CIP is achieved it may be appropriate to reduce the top line revenue growth assumption in the forecast.*
- Debt service coverage provided by Regional System net revenues is relatively stable for Water and materially increasing for Sewer.
- 7. Projected Cash and Investment Balances – Wholesale System Table
 - Same as 6, in tabular form consistent with published Feasibility Reports.
 - Documents forecasted “Days Cash on Hand” metric
- 8. Relative Revenue Requirement Distribution
 - Illustrates “where each \$ of revenue goes” with respect to revenue requirements. Again, note the reduction in debt service, and corresponding increase in I&E bottom line transfers for Sewer, while the Water bottom line contribution is fairly constant as the relative debt service portion increases.
- 9. I&E Flow of Funds Forecast
 - Illustrates draw down of existing balances to fund CIP requirements, maintenance of the \$90 million policy minimums, and the growth in annual transfers from revenues, particularly for Sewer.
- 10. GAAP Basis Income Statement Forecast
 - *Presents forecast of changes in, and level of, net position as reported on a GAAP Basis for forecast purposes;*
 - *As has been discussed in prior deliberations, the reductions in net position reported for both funds since GLWA’s inception have (in part) been related to an accelerated level of depreciation expense associated with the valuation of acquired and leased assets;*
 - *Due to the accelerated depreciation structure, many of the acquired assets will be fully depreciated in the next few years, and the annual depreciation expense is projected to decrease;*
 - *As a result the GAAP basis change in net position is projected to increase during the forecast period, and result in positive cumulative net position metrics by FY 2027 for Water and by FY 2026 for Sewer, and to continue to grow thereafter;*
 - *We note that there are other “non cash revenue requirement” elements that impact the GAAP basis results, many of which are difficult to project. These include statements of liabilities associated with long term liabilities.*

We are hopeful that this executive summary presentation provides a platform for continued discussion of financial planning policies and assumptions as the development of the FY 2023 Budget, proposed FY 2023 Water Charges and Sewer Charges, and related updated financial forecast efforts proceed. We are prepared to present this material to the Audit Committee meeting scheduled for December 17 and to discuss this matter further at your convenience.



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<u>Requirements</u>											
Target Balance	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Capital Outlay	17.0	15.5	13.4	10.4	9.6	9.0	10.0	10.0	10.0	10.0	10.0
CIP Requirement	143.4	157.4	182.2	179.1	141.6	121.5	218.4	218.5	169.3	166.4	143.5
Total	250.4	262.8	285.6	279.5	241.2	220.5	318.4	318.5	269.3	266.4	243.5
<u>Sources</u>											
Beginning Balance	219.9	298.4	205.1	101.8	219.1	100.9	290.4	100.3	242.4	101.2	207.5
DWRf Loans	36.5	55.0	59.4	21.4	2.4	22.5	-	-	-	-	-
Bond Proceeds	175.8	-	-	256.5	-	261.3	-	327.8	-	237.5	-
Investment Earnings	0.1	0.1	0.4	1.2	1.3	1.1	2.1	2.4	1.6	1.7	1.2
I&E Transfers	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
Total Sources	458.8	377.9	297.5	408.7	252.2	420.9	328.7	470.9	280.4	383.9	255.5
End Balance	298.4	205.1	101.8	219.1	100.9	290.4	100.3	242.4	101.2	207.5	102.0



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<u>Requirements</u>											
Target Balance	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Capital Outlay	16.0	18.4	11.6	8.1	8.7	10.3	10.0	10.0	10.0	10.0	10.0
CIP Requirement	79.5	94.4	121.7	138.4	118.3	98.5	171.1	151.0	111.7	113.5	72.8
Total	185.5	202.9	223.3	236.5	216.9	198.7	271.1	251.0	211.7	213.5	172.8
<u>Sources</u>											
Beginning Balance	133.9	225.1	173.3	99.9	135.5	99.4	200.2	100.1	122.5	100.1	88.6
CWRf Loans	14.1	18.7	10.2	9.8	15.4	7.2	-	-	-	-	-
Bond Proceeds	137.8	-	-	104.5	-	123.5	-	95.0	-	-	-
Investment Earnings	0.1	0.1	0.3	0.6	0.4	0.4	1.1	0.9	0.2	0.1	-
I&E Transfers	34.7	42.3	49.5	67.2	75.1	78.5	79.8	87.5	99.0	111.9	122.1
Total Sources	320.6	286.2	233.3	282.0	226.3	308.9	281.1	283.5	221.8	212.1	210.7
End Balance	225.1	173.3	99.9	135.5	99.4	200.2	100.1	122.5	100.1	88.6	127.9

Water Table 4
GLWA Wholesale System Capital Improvement Program Financing Plan (\$ millions)

Line No.		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Financing Requirements													
1	Budgeted Capital Outlay	17.0	15.5	13.4	10.4	9.6	9.0	10.0	10.0	10.0	10.0	10.0	124.9
2	Major Capital Improvement Program (a)	143.4	157.4	182.2	179.1	141.6	121.5	218.4	218.5	169.3	166.4	143.5	1,841.2
3	Total Financing Requirements	160.4	172.8	195.6	189.5	151.2	130.5	228.4	228.5	179.3	176.4	153.5	1,966.1
Financing Sources													
Construction Fund													
4	Beginning Balance (b)	12.4	188.3	114.8	10.6	128.5	10.8	200.2	9.8	152.4	11.1	117.0	12.4 (g)
5	State Drinking Water Revolving Fund Loans	56.0	74.3	70.5	21.4	2.4	22.5	-	-	-	-	-	247.2
6	Less: Transfer to DWSD Constr. Fund	(19.5)	(19.3)	(11.1)	-	-	-	-	-	-	-	-	(49.9)
7	Net State DWRf Financing for Authority	36.5	55.0	59.4	21.4	2.4	22.5	-	-	-	-	-	197.3
8	Transfers from Water Constr. Bond Fund (Line 2)	175.8	0.1	0.4	257.7	1.3	262.3	2.1	330.2	1.6	239.2	1.2	1,271.9
9	Transfers from Water I&E Fund (Line 26)	106.8	28.7	18.2	17.9	20.2	26.1	25.8	30.9	26.4	33.1	36.8	371.1
10	Total Construction Fund Sources	331.6	272.1	192.8	307.6	152.4	321.7	228.2	370.9	180.4	283.5	155.1	1,852.8
11	Uses - Major CIP Expenditures (Line 2)	143.4	157.4	182.2	179.1	141.6	121.5	218.4	218.5	169.3	166.4	143.5	1,841.2
12	Ending Balance	188.3	114.8	10.6	128.5	10.8	200.2	9.8	152.4	11.1	117.0	11.6	11.6 (h)
Subsidiary Capital Financing Funds													
Construction Bond Fund													
13	Beginning Balance (b)	-	-	-	-	-	-	-	-	-	-	-	0.0 (g)
Bond Proceeds													
14	Water System Revenue Bonds (c)	185.0	-	-	270.0	-	275.0	-	345.0	-	250.0	-	1,325.0
15	Less: Transfer to DWSD Const. Fund (e)	-	-	-	-	-	-	-	-	-	-	-	0.0
16	Less: Issuance Expenses (f)	(9.3)	-	-	(13.5)	-	(13.8)	-	(17.3)	-	(12.5)	-	(66.3)
17	Net Bond Proceeds Available	175.8	-	-	256.5	-	261.3	-	327.8	-	237.5	-	1,258.8
18	Investment Income	0.1	0.1	0.4	1.2	1.3	1.1	2.1	2.4	1.6	1.7	1.2	13.2
19	Total Construction Bond Fund Sources	175.8	0.1	0.4	257.7	1.3	262.3	2.1	330.2	1.6	239.2	1.2	1,271.9
20	Less: Transfer to GLWA Construction Fund	(175.8)	(0.1)	(0.4)	(257.7)	(1.3)	(262.3)	(2.1)	(330.2)	(1.6)	(239.2)	(1.2)	(1,271.9)
21	Ending Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (h)
GLWA Regional System Improvement and Extension Account													
22	Beginning Balance (b)	207.5	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4	207.5 (g)
23	Transfers from Water Receiving Fund	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8	378.9
24	Total I&E Fund Sources	234.0	134.5	122.9	118.9	120.0	125.3	126.3	130.9	126.5	133.5	137.2	586.4
25	Less: Capital Outlay (Line 1)	(17.0)	(15.5)	(13.4)	(10.4)	(9.6)	(9.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(124.9)
26	Less: Transfer to GLWA Construction Fund	(106.8)	(28.7)	(18.2)	(17.9)	(20.2)	(26.1)	(25.8)	(30.9)	(26.4)	(33.1)	(36.8)	(371.1)
27	Ending Balance	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4	90.4	90.4 (h)
28	Combined Ending Balance of Capital Funds	298.4	205.1	101.8	219.1	100.9	290.4	100.3	242.4	101.2	207.5	102.0	102.0 (h)

(a) From Table 1.

(b) Estimated balance available June 30, 2021 (applies only to Fiscal Year 2022).

(c) Par value for future bonds.

(d) Reserved

(e) Includes amounts to provide funding to the DWSD CIP.

(f) Assumes amounts will be required from bond proceeds to fund debt service reserve fund.

(g) Total column reflects estimated balance available June 30, 2021.

(h) Total column reflects estimated balance available June 30, 2032.

Sewer Table 4
GLWA Wholesale System Capital Improvement Program Financing Plan (\$ millions)

Line No.		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Financing Requirements													
1	Budgeted Capital Outlay	16.0	18.4	11.6	8.1	8.7	10.3	10.0	10.0	10.0	10.0	10.0	123.1
2	Major Capital Improvement Program (a)	79.5	94.4	121.7	138.4	118.3	98.5	171.1	151.0	111.7	113.5	72.8	1,270.9
3	Total Financing Requirements	95.5	112.9	133.3	146.5	126.9	108.7	181.1	161.0	121.7	123.5	82.8	1,394.0
Financing Sources													
Construction Fund													
4	Beginning Balance (b)	11.5	131.9	82.7	9.6	44.9	9.3	110.2	9.9	32.4	10.1	0.0	11.5 (g)
5	State Clean Water Revolving Fund Loans	21.6	25.3	13.4	9.8	15.4	7.2	-	-	-	-	-	92.7
6	Less: Transfer to DWSD Constr. Fund	(7.5)	(6.5)	(3.2)	-	-	-	-	-	-	-	-	(17.2)
7	Net State DWRF Financing for Authority	14.1	18.7	10.2	9.8	15.4	7.2	-	-	-	-	-	75.5
8	Transfers from Sewer Constr. Bond Fund (Line 2)	137.8	0.1	0.3	105.1	0.4	123.9	1.1	95.9	0.2	0.1	-	464.9
9	Transfers from Sewer I&E Fund (Line 27)	48.0	26.4	38.2	58.8	66.8	68.3	69.6	77.6	89.2	103.2	72.8	719.0
10	Total Construction Fund Sources	211.4	177.1	131.4	183.3	127.5	208.7	180.9	183.4	121.8	113.5	72.8	1,270.9
11	Uses - Major CIP Expenditures (Line 2)	79.5	94.4	121.7	138.4	118.3	98.5	171.1	151.0	111.7	113.5	72.8	1,270.9
12	Ending Balance	131.9	82.7	9.6	44.9	9.3	110.2	9.9	32.4	10.1	0.0	0.0	0.0 (h)
Subsidiary Capital Financing Funds													
Construction Bond Funds													
13	Beginning Balance (b)	-	-	-	-	-	-	-	-	-	-	-	- (g)
Bond Proceeds													
14	Sewer System Revenue Bonds (c)	145.0	-	-	110.0	-	130.0	-	100.0	-	-	-	485.0
15	Less: Transfer to DWSD Const. Fund (e)	-	-	-	-	-	-	-	-	-	-	-	-
16	Less: Issuance Expenses (f)	(7.3)	-	-	(5.5)	-	(6.5)	-	(5.0)	-	-	-	(24.3)
17	Net Bond Proceeds Available	137.8	-	-	104.5	-	123.5	-	95.0	-	-	-	460.8
18	Investment Income	0.1	0.1	0.3	0.6	0.4	0.4	1.1	0.9	0.2	0.1	-	4.2
19	Total Constr. Bond Fund Sources	137.8	0.1	0.3	105.1	0.4	123.9	1.1	95.9	0.2	0.1	-	464.9
20	Less: Transfer to GLWA Construction Fund	(137.8)	(0.1)	(0.3)	(105.1)	(0.4)	(123.9)	(1.1)	(95.9)	(0.2)	(0.1)	-	(464.9)
21	Ending Balance	-	-	-	-	-	-	-	-	-	-	-	- (h)
GLWA Regional System Improvement and Extension Account													
22	Beginning Balance (b)	122.4	93.2	90.6	90.3	90.6	90.1	90.0	90.2	90.1	90.0	88.6	122.4 (g)
23	Transfers from Sewer Receiving Fund	34.3	42.3	49.5	67.2	75.1	78.5	79.8	87.5	99.0	111.9	122.1	847.2
24	Other Sources - DWSD Loan Receivable Pmts	0.4	-	-	-	-	-	-	-	-	-	-	0.4
25	Total I&E Fund Sources	157.1	135.5	140.1	157.5	165.6	168.6	169.8	177.7	189.1	201.9	210.7	970.0
26	Less: Capital Outlay (Line 1)	(16.0)	(18.4)	(11.6)	(8.1)	(8.7)	(10.3)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(123.1)
27	Less: Transfer to GLWA Construction Fund	(48.0)	(26.4)	(38.2)	(58.8)	(66.8)	(68.3)	(69.6)	(77.6)	(89.2)	(103.2)	(72.8)	(719.0)
28	Ending Balance	93.2	90.6	90.3	90.6	90.1	90.0	90.2	90.1	90.0	88.6	127.9	127.9 (h)
29	Combined Ending Balance of Capital Funds	225.1	173.3	99.9	135.5	99.4	200.2	100.1	122.5	100.1	88.6	127.9	127.9 (h)

(a) From Table 1.

(b) Estimated balance available June 30, 2021 (applies only to Fiscal Year 2022).

(c) Par value for future bonds.

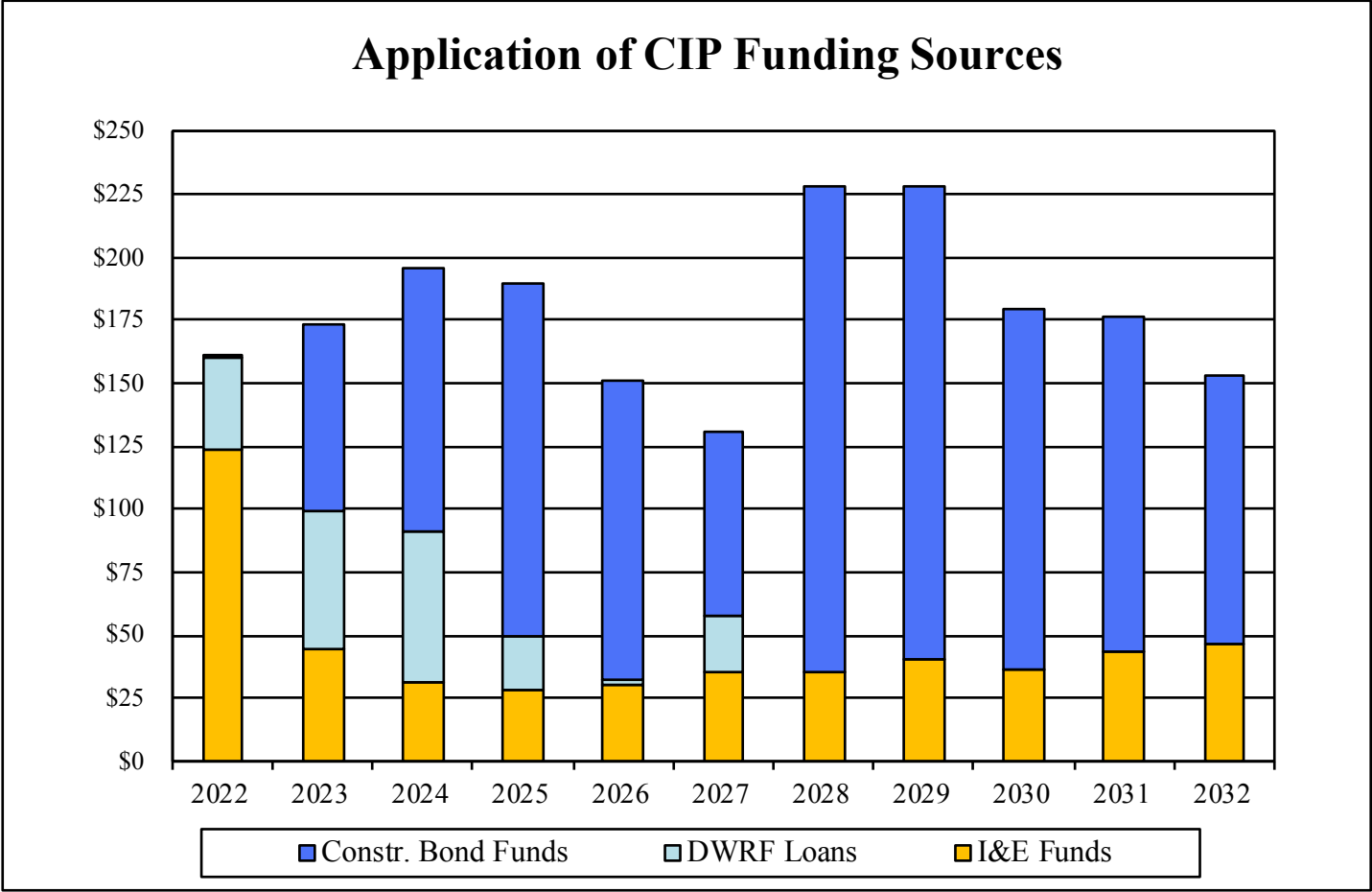
(d) Reserved

(e) Includes amounts to provide funding to the DWSD CIP.

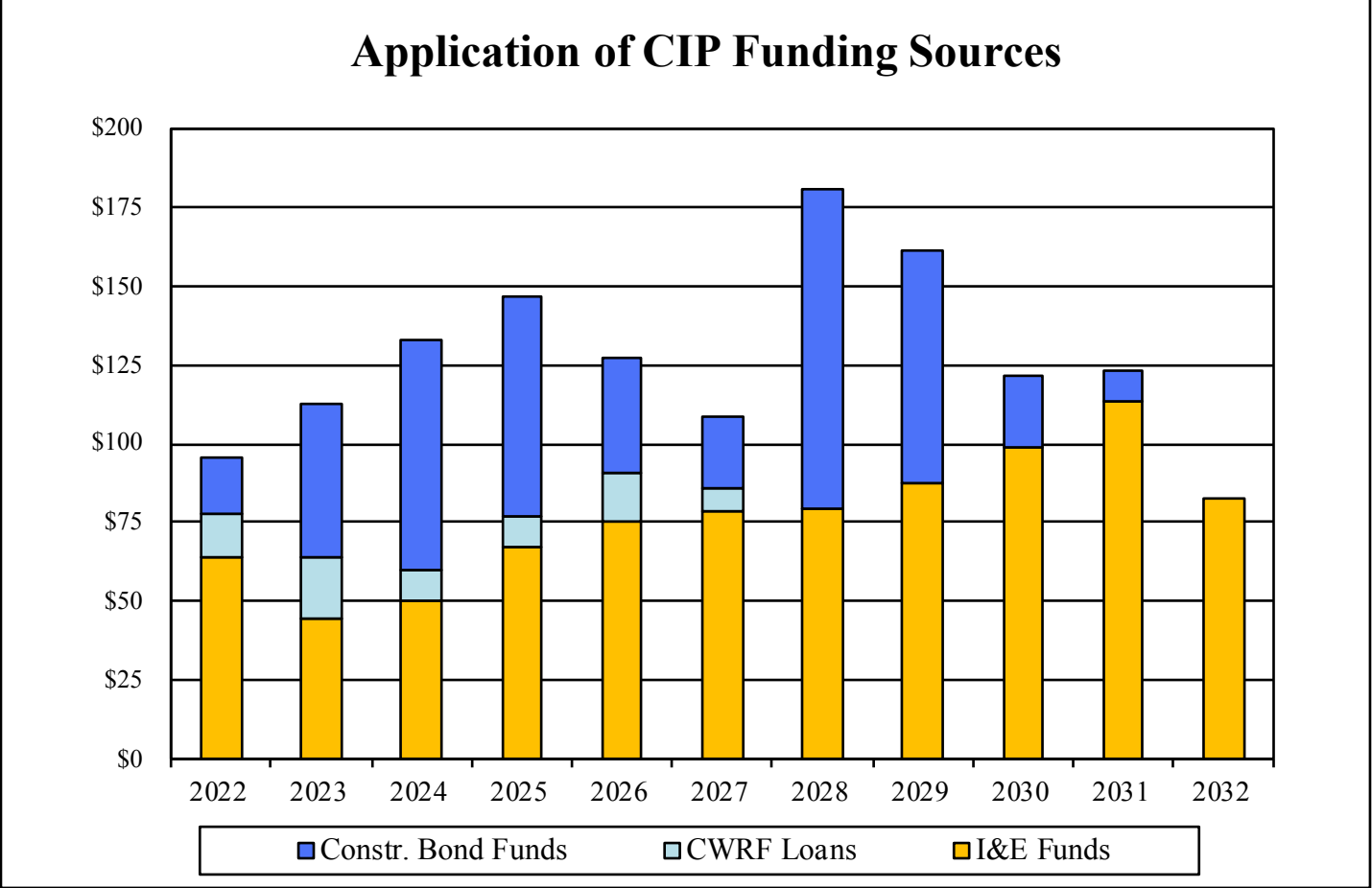
(f) Assumes amounts will be required from bond proceeds to fund debt service reserve fund.

(g) Total column reflects estimated balance available June 30, 2021.

(h) Total column reflects estimated balance available June 30, 2032.

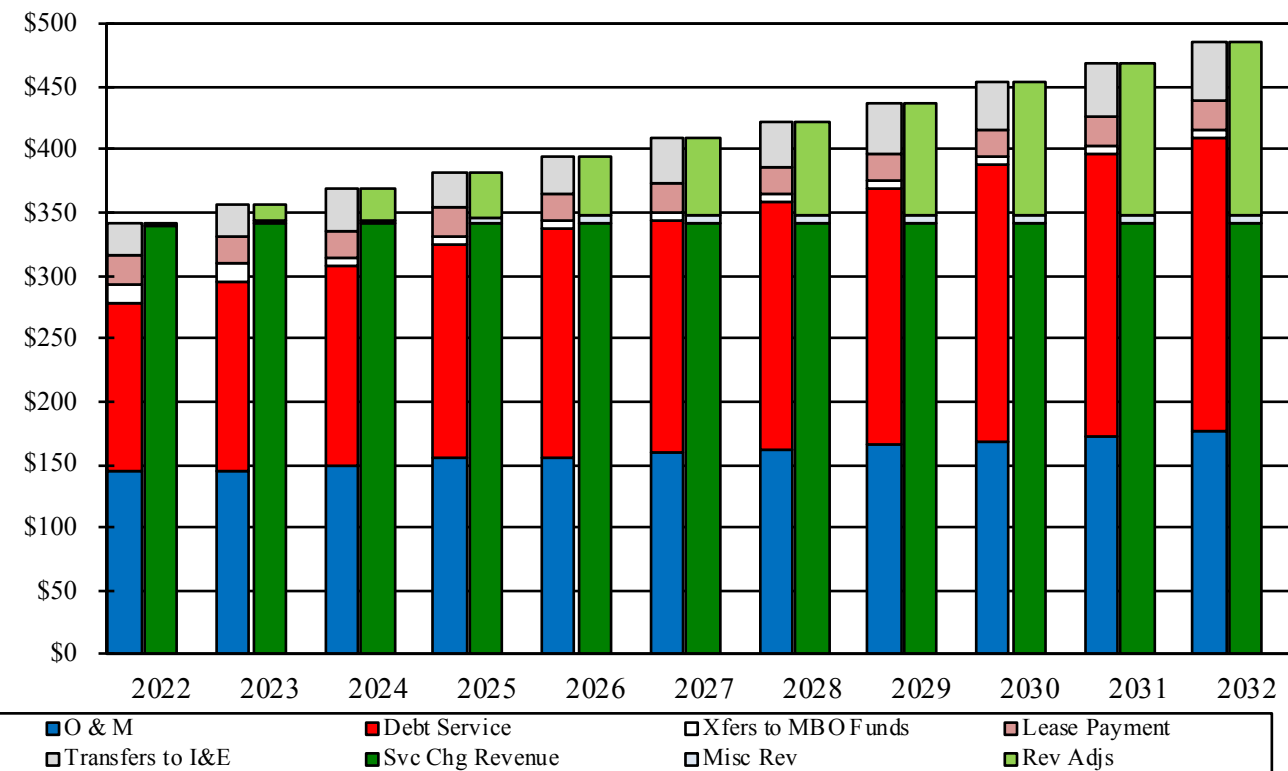


	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
I&E Funds	123.8	44.2	31.6	28.3	29.8	35.2	35.8	40.9	36.4	43.1	46.8
DWRP Loans	36.5	55.0	59.4	21.4	2.4	22.5	-	-	-	-	-
Constr. Bond Funds	0.0	73.6	104.5	139.8	119.0	72.8	192.5	187.7	142.8	133.3	106.6
I&E <i>Spend</i> % of Total	77%	26%	16%	15%	20%	27%	16%	18%	20%	24%	31%
I&E <i>Deposit</i> % of Tot	17%	14%	17%	15%	19%	27%	16%	18%	20%	25%	31%



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
I&E Funds	63.9	44.9	49.8	66.9	75.5	78.6	79.6	87.6	99.2	113.2	82.8
CWRF Loans	14.1	18.7	10.2	9.8	15.4	7.2	-	-	-	-	-
Constr. Bond Funds	17.4	49.3	73.3	69.8	36.1	22.9	101.5	73.4	22.5	10.2	-
I&E <i>Spend</i> % of Total	67%	40%	37%	46%	59%	72%	44%	54%	81%	92%	100%
I&E <i>Deposit</i> % of Tot	36%	37%	37%	46%	59%	72%	44%	54%	81%	91%	147%

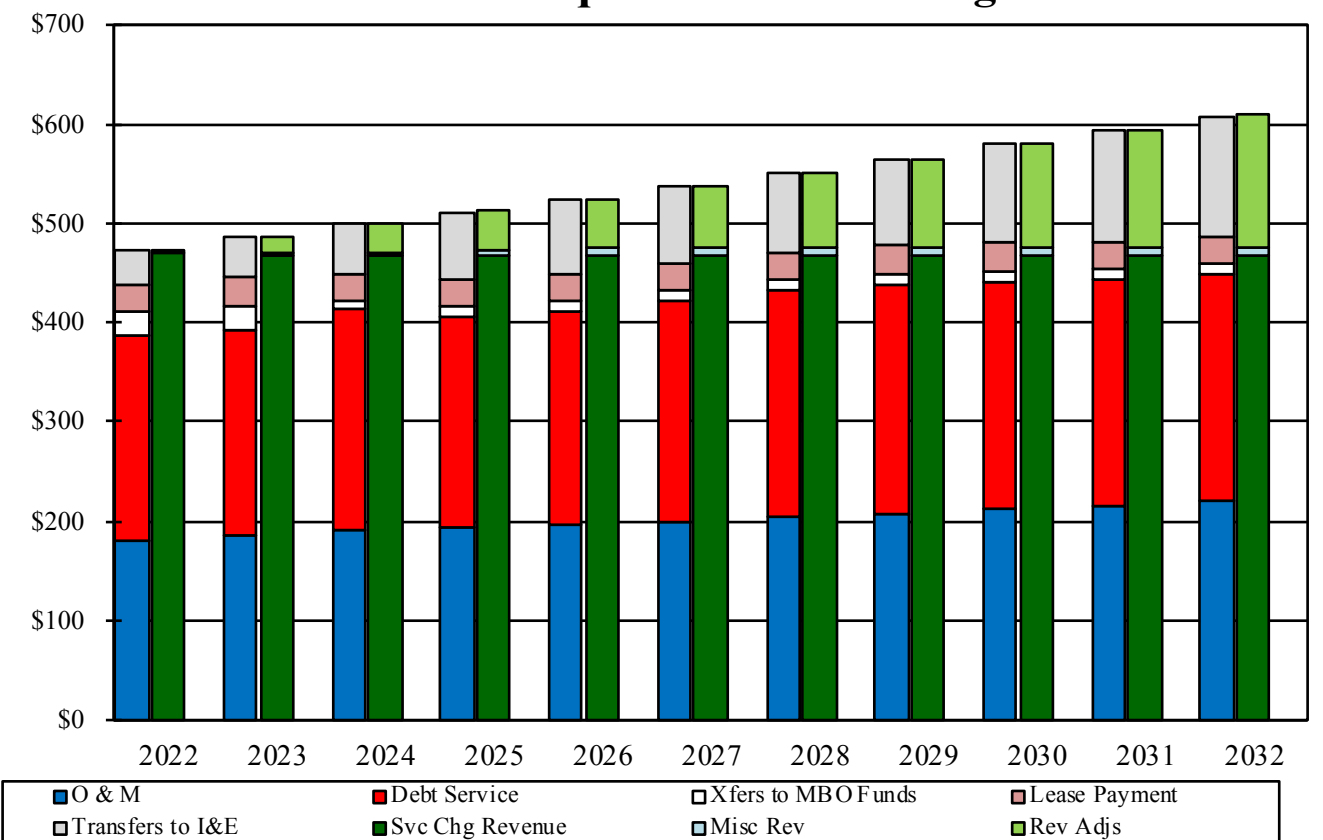
Revenue Requirement Financing Plan



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
REVENUE											
Svc. Chg. Revenue	340.4	342.3	342.3	342.3	342.3	342.3	342.3	342.3	342.3	342.3	342.3
Charge Adjustments		3.7%	3.3%	3.0%	3.0%	3.6%	3.5%	3.6%	3.5%	3.6%	3.6%
Revenue from Adjs		12.7	24.2	35.1	46.4	60.2	74.5	89.3	104.4	120.3	136.7
Other	1.7	1.1	2.0	4.1	6.1	6.1	6.2	6.2	6.3	6.3	6.3
Total Revenue	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3
BUDGET											
O&M Expense	143.9	144.8	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
Debt Service	135.1	150.3	159.2	170.6	181.0	185.6	195.7	202.9	218.9	224.3	233.9
Xfers to MBO Funds	14.0	14.1	5.5	6.3	6.4	6.3	6.2	6.2	6.3	6.3	6.4
Lease Payment	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Transfers to I&E	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
Total BUDGET	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3
Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TFG

Revenue Requirement Financing Plan



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
REVENUE											
Svc. Chg. Revenue	471.0	468.6	468.6	468.6	468.6	468.6	468.6	468.6	468.6	468.6	468.6
Charge Adjustments		3.7%	2.3%	2.0%	2.1%	2.5%	2.5%	2.5%	2.6%	2.6%	2.5%
Revenue from Adjs		17.1	28.2	38.4	48.8	62.0	75.4	89.2	103.5	118.1	132.7
Other	1.9	1.6	2.7	5.0	7.3	7.3	7.4	7.3	7.2	7.0	7.3
Total Revenue	472.9	487.4	499.5	512.0	524.8	537.9	551.4	565.2	579.3	593.8	608.6
BUDGET											
O&M Expense	181.3	187.1	192.4	193.6	196.8	200.0	204.0	208.1	212.3	216.5	220.8
Debt Service	205.0	205.6	220.7	212.5	214.2	221.0	229.3	231.4	229.8	227.2	227.5
Xfers to MBO Funds	24.8	24.9	9.4	11.2	11.2	10.9	10.7	10.7	10.7	10.7	10.7
Lease Payment	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Transfers to I&E	34.3	42.3	49.5	67.2	75.1	78.5	79.8	87.5	99.0	111.9	122.1
Total BUDGET	472.9	487.3	499.5	512.0	524.8	537.9	551.4	565.1	579.3	593.7	608.6
Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TFG

Water Table 5a
Wholesale System Revenue Requirement Financing Plan (\$ millions)

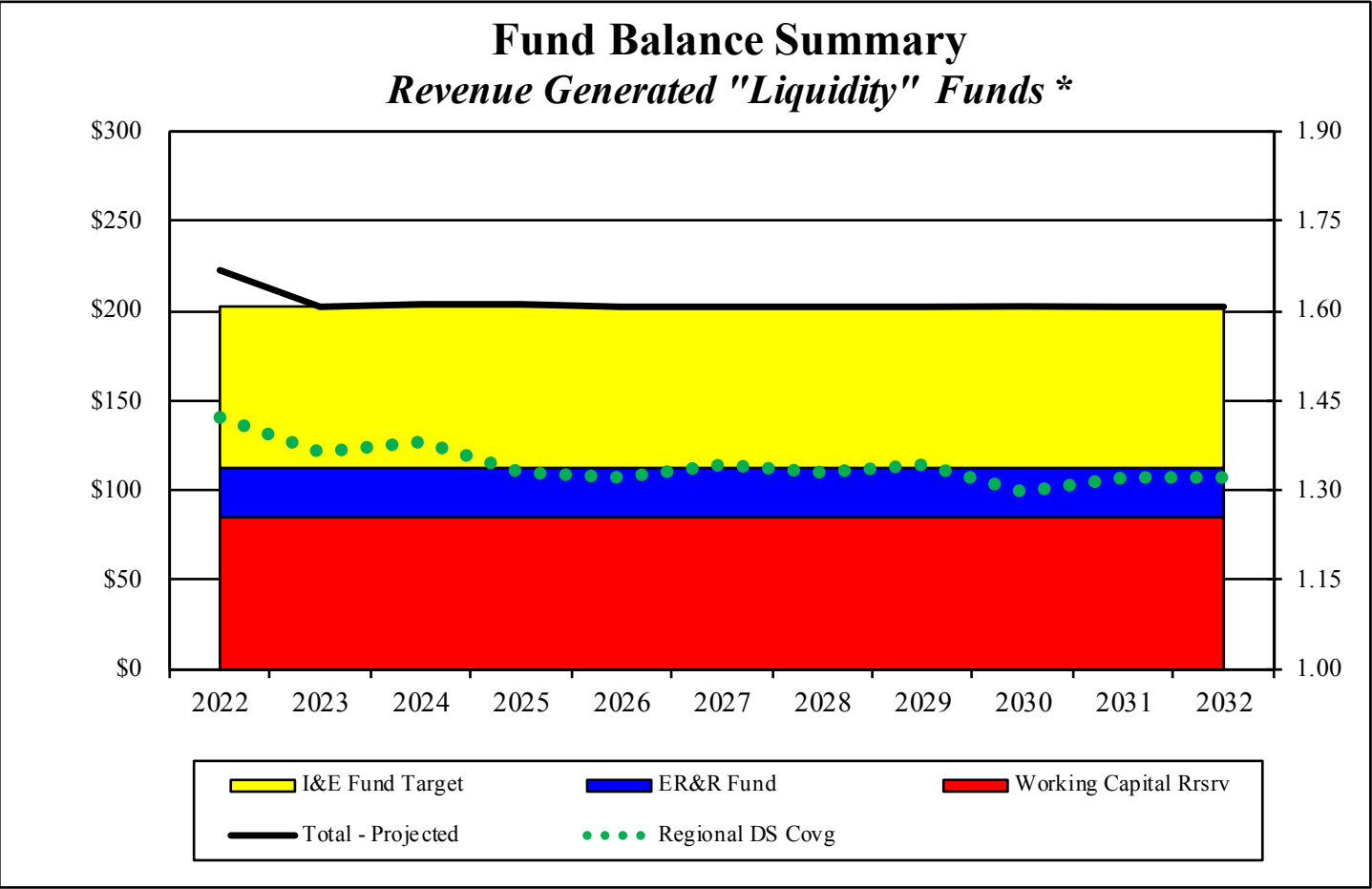
Line No.	Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Revenue (a)												
1	Operating Revenue Under Existing Charges	340.4	342.3	342.3	342.3	342.3	342.3	342.3	342.3	342.3	342.3	342.3
<u>Projected Revenue from Adjustments</u>												
2	FY 2023: 3.7%		12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
3	FY 2024: 3.3%			11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
4	FY 2025: 3.0%				10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
5	FY 2026: 3.0%					11.3	11.3	11.3	11.3	11.3	11.3	11.3
6	FY 2027: 3.6%						13.9	13.9	13.9	13.9	13.9	13.9
7	FY 2028: 3.5%							14.2	14.2	14.2	14.2	14.2
8	FY 2029: 3.6%								14.8	14.8	14.8	14.8
9	FY 2030: 3.5%									15.2	15.2	15.2
10	FY 2031: 3.6%										15.9	15.9
11	FY 2032: 3.5%											16.4
12	Total Projected Revenue from Water Charges	340.4	354.9	366.5	377.4	388.7	402.5	416.8	431.5	446.7	462.6	479.0
13	Other Revenue	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
14	Non-Operating Revenue	1.5	1.0	1.8	3.9	5.9	5.9	6.0	6.0	6.1	6.1	6.1
15	Total Revenue Available	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3
Revenue Requirements												
16	Transfer to GLWA Regional O&M Account	143.9	144.8	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
17	Transfer to GLWA Pension O&M Account	6.0	6.0	-	-	-	-	-	-	-	-	-
18	Total O&M Expense	150.0	150.9	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
19	Debt Service Allocation - Regional System	135.1	150.3	159.2	170.6	181.0	185.6	195.7	202.9	218.9	224.3	233.9
20	Non-Operating Portion of Pension Obligation	5.4	5.4	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
21	B & C Note Non-Operating Payments	0.9	0.9	0.9	1.7	1.6	1.4	1.3	1.3	1.2	1.2	1.2
22	Transfer to Pension Obligation Payment Fund	6.3	6.3	3.6	4.4	4.4	4.2	4.1	4.0	4.0	4.0	4.0
23	Transfer to WRAP Fund	1.7	1.8	1.8	1.9	2.0	2.0	2.1	2.2	2.3	2.3	2.4
24	Lease Payment to DWSD Local System	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
25	Transfer to GLWA Regional I&E Account	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
26	Total Revenue Requirements	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3
27	Indicated Balance (Deficiency)	-	-	-	-	-	-	-	-	-	-	-
28	Projected Debt Service Coverage Ratio (Regional)	1.42	1.36	1.38	1.33	1.32	1.34	1.33	1.34	1.30	1.32	1.32
29	<i>Net Revenues (15) - (18)</i>	192.1	205.2	219.8	227.1	239.1	249.4	260.6	272.1	284.1	296.6	309.6
30	<i>Revenues Remaining after Debt Service (29)-(19)</i>	57.0	54.8	60.6	56.5	58.2	63.9	64.9	69.2	65.2	72.3	75.7
31	<i>Applied to MBO Reserve Funds (22,23)</i>	(8.0)	(8.0)	(5.5)	(6.3)	(6.4)	(6.3)	(6.2)	(6.2)	(6.3)	(6.3)	(6.4)
32	<i>Applied as Lease Payment to DWSD (24)</i>	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)
33	<i>Available for I&E Fund (29) - (30,31,32)</i>	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8

(a) From Table 3. Based on application of FY 2022 charges for 2022 through 2032.

Sewer Table 5a
Wholesale System Revenue Requirement Financing Plan (\$ millions)

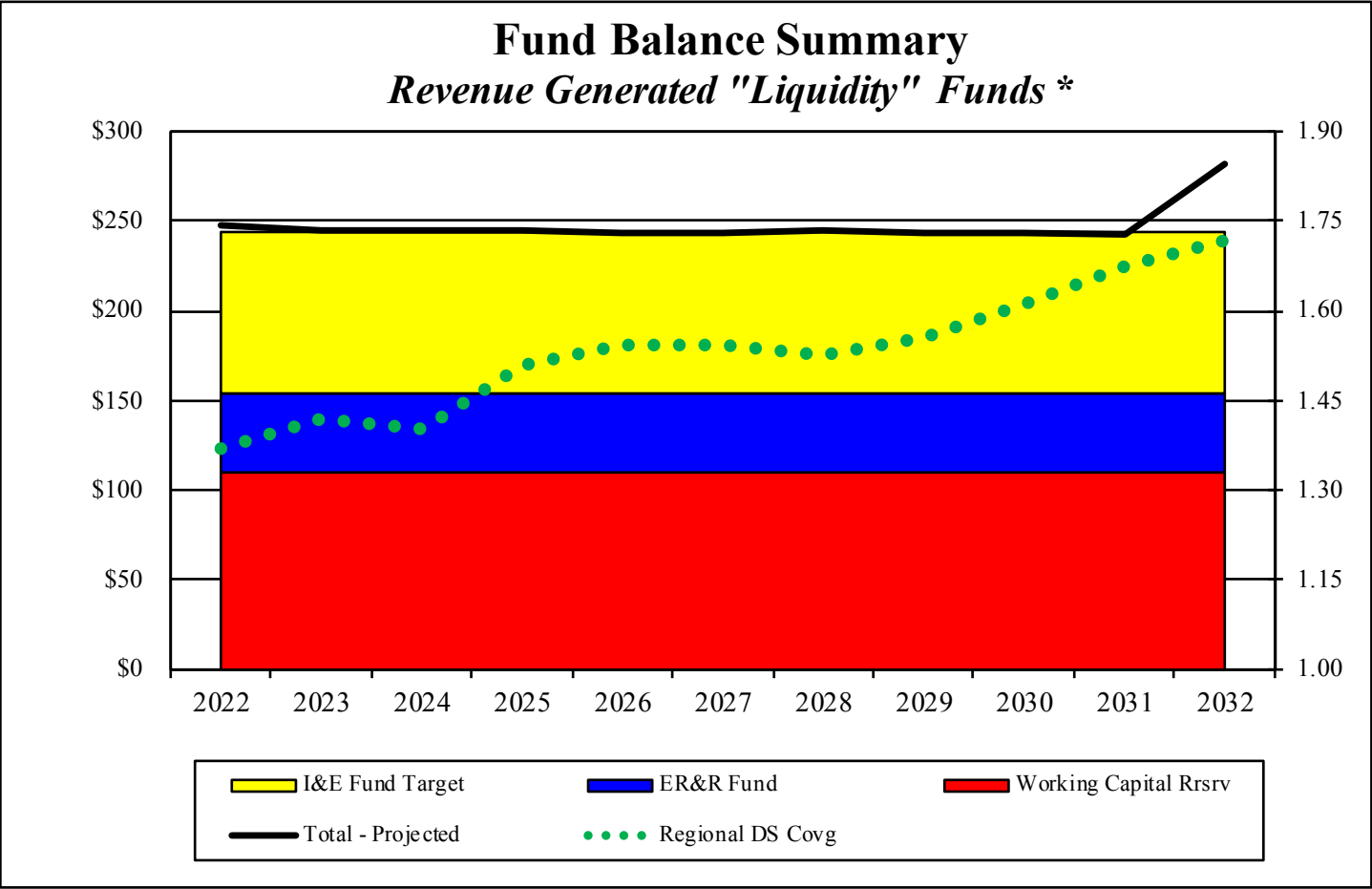
Line No.	Item	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Revenue (a)												
1	Operating Revenue Under Existing Charges	471.0	468.6	468.6	468.6	468.6	468.6	468.6	468.6	468.6	468.6	468.6
<u>Projected Revenue from Adjustments</u>												
2	FY 2023: 3.7%		17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
3	FY 2024: 2.3%			11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
4	FY 2025: 2.0%				10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
5	FY 2026: 2.1%					10.5	10.5	10.5	10.5	10.5	10.5	10.5
6	FY 2027: 2.5%						13.1	13.1	13.1	13.1	13.1	13.1
7	FY 2028: 2.5%							13.4	13.4	13.4	13.4	13.4
8	FY 2029: 2.5%								13.9	13.9	13.9	13.9
9	FY 2030: 2.6%									14.3	14.3	14.3
10	FY 2031: 2.6%										14.7	14.7
11	FY 2032: 2.5%											14.5
12	Total Operating Revenue	471.0	485.8	496.8	507.0	517.5	530.6	544.0	557.9	572.1	586.8	601.3
13	Other Revenue	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
14	Non-Operating Revenue	1.5	1.2	2.3	4.6	6.9	6.9	7.0	6.9	6.8	6.6	6.9
15	Total Revenue Available	472.9	487.4	499.5	512.0	524.8	537.9	551.4	565.2	579.3	593.8	608.6
Revenue Requirements												
16	Transfer to GLWA Regional O&M Account	181.3	187.1	192.4	193.6	196.8	200.0	204.0	208.1	212.3	216.5	220.8
17	Transfer to GLWA Pension O&M Account	10.8	10.8	-	-	-	-	-	-	-	-	-
18	Total O&M Expense	192.1	197.9	192.4	193.6	196.8	200.0	204.0	208.1	212.3	216.5	220.8
19	Debt Service Allocation - Regional System	205.0	205.6	220.7	212.5	214.2	221.0	229.3	231.4	229.8	227.2	227.5
20	Non-Operating Portion of Pension Obligation	9.7	9.7	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
21	B & C Note Non-Operating Payments	2.0	2.0	2.0	3.7	3.6	3.3	2.9	2.9	2.8	2.7	2.7
22	Transfer to Pension Obligation Payment Fund	11.6	11.6	6.9	8.7	8.6	8.2	7.9	7.8	7.8	7.7	7.6
23	Transfer to WRAP Fund	2.4	2.4	2.5	2.6	2.6	2.7	2.8	2.8	2.9	3.0	3.0
24	Lease Payment to DWSD Local System	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
25	Transfer to GLWA Regional I&E Account	34.3	42.3	49.5	67.2	75.1	78.5	79.8	87.5	99.0	111.9	122.1
26	Total Revenue Requirements	472.9	487.3	499.5	512.0	524.8	537.9	551.4	565.1	579.3	593.7	608.6
27	Indicated Balance (Deficiency)	-	-	-	-	-	-	-	-	-	-	-
28	Projected Debt Service Coverage Ratio (Regional)	1.37	1.41	1.39	1.50	1.53	1.53	1.51	1.54	1.60	1.66	1.70
29	<i>Net Revenues (15) - (18)</i>	280.8	289.5	307.1	318.5	328.0	337.9	347.4	357.1	367.1	377.3	387.8
30	<i>Revenues Remaining after Debt Service (29)-(19)</i>	75.8	83.8	86.5	106.0	113.8	116.9	118.0	125.7	137.2	150.1	160.3
31	<i>Applied to MBO Reserve Funds (22,23)</i>	(14.0)	(14.0)	(9.4)	(11.2)	(11.2)	(10.9)	(10.7)	(10.7)	(10.7)	(10.7)	(10.7)
32	<i>Applied as Lease Payment to DWSD (24)</i>	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)
33	<i>Available for I&E Fund (29) - (30,31,32)</i>	34.3	42.3	49.5	67.3	75.1	78.5	79.9	87.5	99.1	112.0	122.2

(a) From Table 3. Based on application of FY 2022 charges for 2022 through 2032.



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Fund Balance Minimums											
Working Capital Rrsr	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
ER&R Fund	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
I&E Fund Target	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Total - Minimums	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5
Projections											
Working Capital Rrsr	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
ER&R Fund	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
I&E Fund	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4	90.4
Total - Projected	222.7	202.8	203.8	203.1	202.7	202.6	203.0	202.6	202.5	202.9	202.9
Projected > Minimum	20.2	0.3	1.3	0.6	0.2	0.1	0.5	0.1	0.0	0.4	0.4
Regional DS Covg	1.42	1.36	1.38	1.33	1.32	1.34	1.33	1.34	1.30	1.32	1.32

* Revenue Generated Funds only. Excludes Debt Service Reserve & Construction Funds (Bond Generated) & "Pass Thru" Funds such as Debt Service Payment Funds, WRAP, etc.



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Fund Balance Minimums											
Working Capital Rrsr	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
ER&R Fund	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
I&E Fund Target	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Total - Minimums	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0
Projections											
Working Capital Rrsr	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
ER&R Fund	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
I&E Fund	93.2	90.6	90.3	90.6	90.1	90.0	90.2	90.1	90.0	88.6	127.9
Total - Projected	247.2	244.6	244.3	244.6	244.1	244.0	244.2	244.1	244.0	242.6	281.9
Projected > Minimum	3.2	0.6	0.3	0.6	0.1	(0.0)	0.2	0.1	(0.0)	(1.4)	37.9
Regional DS Covg	1.37	1.42	1.40	1.51	1.54	1.54	1.53	1.56	1.61	1.67	1.72

* Revenue Generated Funds only. Excludes Debt Service Reserve & Construction Funds (Bond Generated) & "Pass Thru" Funds such as Debt Service Payment Funds, WRAP, etc.

Water Table 6
Projected Cash and Investment Fund Balances - Wholesale System (\$ millions) (a)

Line No.	Fiscal Year Ended June 30,										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<u>Working Capital Reserve (b)</u>											
1	Beginning Balance	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
2	Deposit from Operations	-	-	-	-	-	-	-	-	-	-
3	Ending Balance	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
<u>Budget Stabilization Fund (a)</u>											
4	Beginning Balance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
5	Deposits / (Withdrawals)	-	-	-	-	-	-	-	-	-	-
6	Ending Balance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<u>ER&R Fund (a)</u>											
7	Beginning Balance	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
8	Transfers In	-	-	-	-	-	-	-	-	-	-
9	Ending Balance	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
<u>I&E Fund (c)</u>											
10	Beginning Balance	207.5	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.4
11	Budgeted Capital Outlay	(17.0)	(15.5)	(13.4)	(10.4)	(9.6)	(9.0)	(10.0)	(10.0)	(10.0)	(10.0)
12	Transfer to Construction Fund	(106.8)	(28.7)	(18.2)	(17.9)	(20.2)	(26.1)	(25.8)	(30.9)	(26.4)	(33.1)
13	Subtotal prior to Revenue Transfer	83.6	66.0	58.7	63.0	60.9	55.0	54.3	49.6	53.6	43.6
14	Deposits from Revenues (c)	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	46.8
15	Ending Balance	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.4	90.4
<u>Total Revenue Generated Funds (d)</u>											
16	Beginning Balance	322.0	224.7	204.8	205.8	205.1	204.7	204.6	205.0	204.6	204.9
17	Net Sources and Uses	(97.3)	(19.9)	1.0	(0.6)	(0.5)	(0.0)	0.3	(0.4)	(0.0)	(0.0)
18	Ending Balance	224.7	204.8	205.8	205.1	204.7	204.6	205.0	204.6	204.5	204.9
19	Days Cash on Hand (e)	565	511	500	480	475	465	456	447	438	421
<u>Other Funds</u>											
20	Bond Reserve (excludes Surety)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
21	Construction Bond Fund	-	-	-	-	-	-	-	-	-	-
22	Construction Fund	188.3	114.8	10.6	128.5	10.8	200.2	9.8	152.4	11.1	117.0
23	Total Funds	417.4	324.1	220.8	338.1	219.9	409.4	219.3	361.4	220.2	326.5
24	Subtotal w/o Construction Funds	229.2	209.3	210.3	209.6	209.2	209.1	209.5	209.1	209.0	209.4

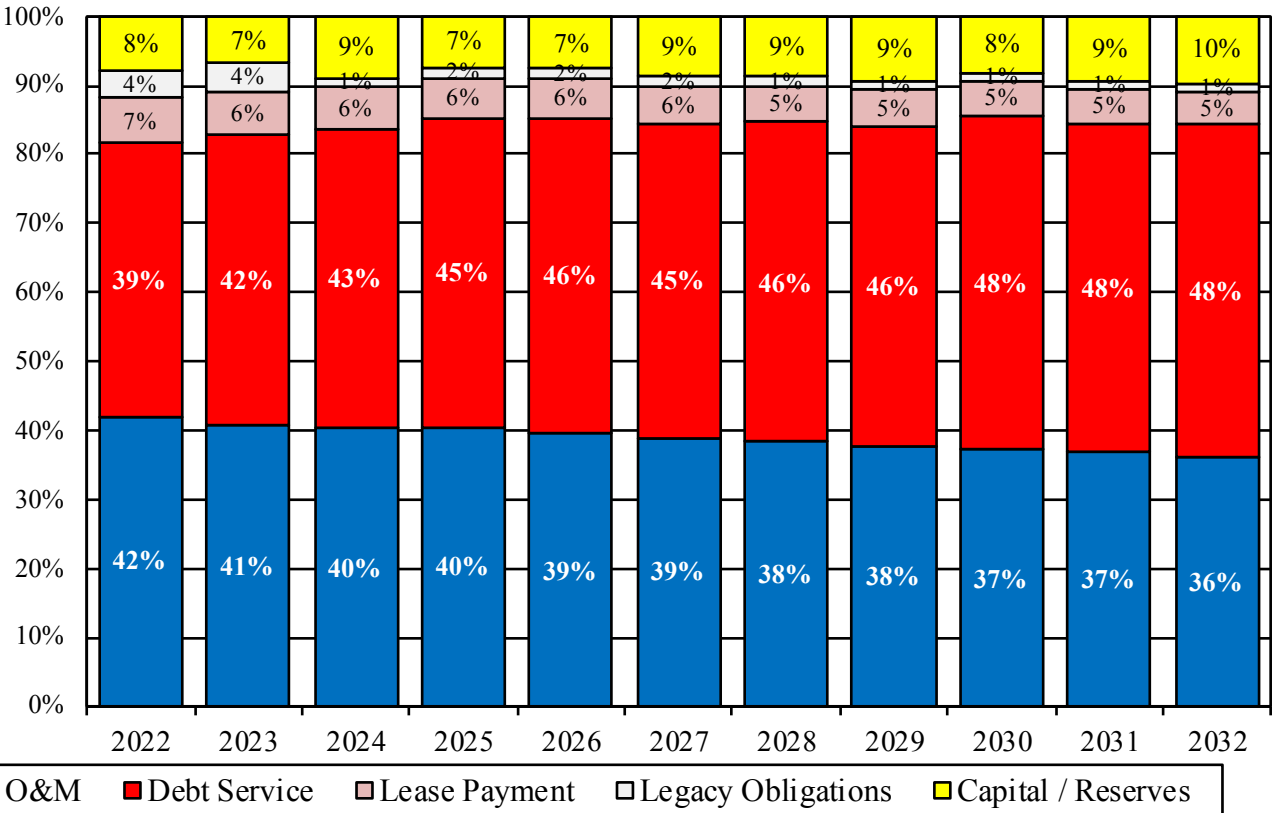
(a) Technically includes "Combined System" amounts held by GLWA.
(b) Represents Operating Reserve and amounts maintained in the Receiving Fund for subsequent MBO transfers.
(c) Only includes GLWA Regional I&E Account. Does not include Lease Payment transferred to DWSD Local I&E Account.
(d) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond Interest and Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.
(e) Excludes Budget Stabilization Fund amounts from Line 6.

Sewer Table 6
Projected Cash and Investment Fund Balances - Wholesale System (\$ millions) (a)

Line No.	Fiscal Year Ended June 30,										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<u>Working Capital Reserve (b)</u>											
1	Beginning Balance	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
2	Deposit from Operations	-	-	-	-	-	-	-	-	-	-
3	Ending Balance	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
<u>Budget Stabilization Fund (a)</u>											
4	Beginning Balance	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	Deposits / (Withdrawals)	-	-	-	-	-	-	-	-	-	-
6	Ending Balance	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
<u>ER&R Fund (a)</u>											
7	Beginning Balance	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
8	Transfers In	-	-	-	-	-	-	-	-	-	-
9	Ending Balance	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
<u>I&E Fund (c)</u>											
10	Beginning Balance	122.4	93.2	90.6	90.3	90.6	90.1	90.0	90.2	90.1	88.6
11	Budgeted Capital Outlay	(16.0)	(18.4)	(11.6)	(8.1)	(8.7)	(10.3)	(10.0)	(10.0)	(10.0)	(10.0)
12	Transfer to Construction Fund	(48.0)	(26.4)	(38.2)	(58.8)	(66.8)	(68.3)	(69.6)	(77.6)	(89.2)	(103.2)
13	Subtotal prior to Revenue Transfer	58.5	48.3	40.8	23.3	15.1	11.5	10.4	2.6	(9.1)	(23.3)
14	Deposits from Revenues (c)	34.3	42.3	49.5	67.2	75.1	78.5	79.8	87.5	99.0	111.9
15	Other Deposits (d)	0.4	-	-	-	-	-	-	-	-	-
16	Ending Balance	93.2	90.6	90.3	90.6	90.1	90.0	90.2	90.1	90.0	88.6
<u>Total Revenue Generated Funds (e)</u>											
17	Beginning Balance	281.4	252.2	249.6	249.3	249.6	249.1	249.0	249.2	249.1	247.6
18	Net Sources and Uses	(29.6)	(2.6)	(0.3)	0.3	(0.4)	(0.1)	0.2	(0.1)	(0.2)	39.3
19	Ending Balance	251.8	249.6	249.3	249.6	249.1	249.0	249.2	249.1	249.0	286.9
20	Days Cash on Hand (f)	497	477	463	461	453	445	437	428	420	466
<u>Other Funds</u>											
21	Bond Reserve (excludes Surety)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
22	Construction Bond Fund	-	-	-	-	-	-	-	-	-	-
23	Construction Fund	21.3	24.6	36.7	40.1	18.0	17.6	50.7	41.4	11.3	(0.0)
24	Total Funds	791.0	772.5	770.3	771.8	740.9	732.8	757.8	739.7	700.7	682.8
25	Subtotal w/o Construction Funds	769.7	747.8	733.7	731.7	722.9	715.2	707.1	698.3	689.5	677.7

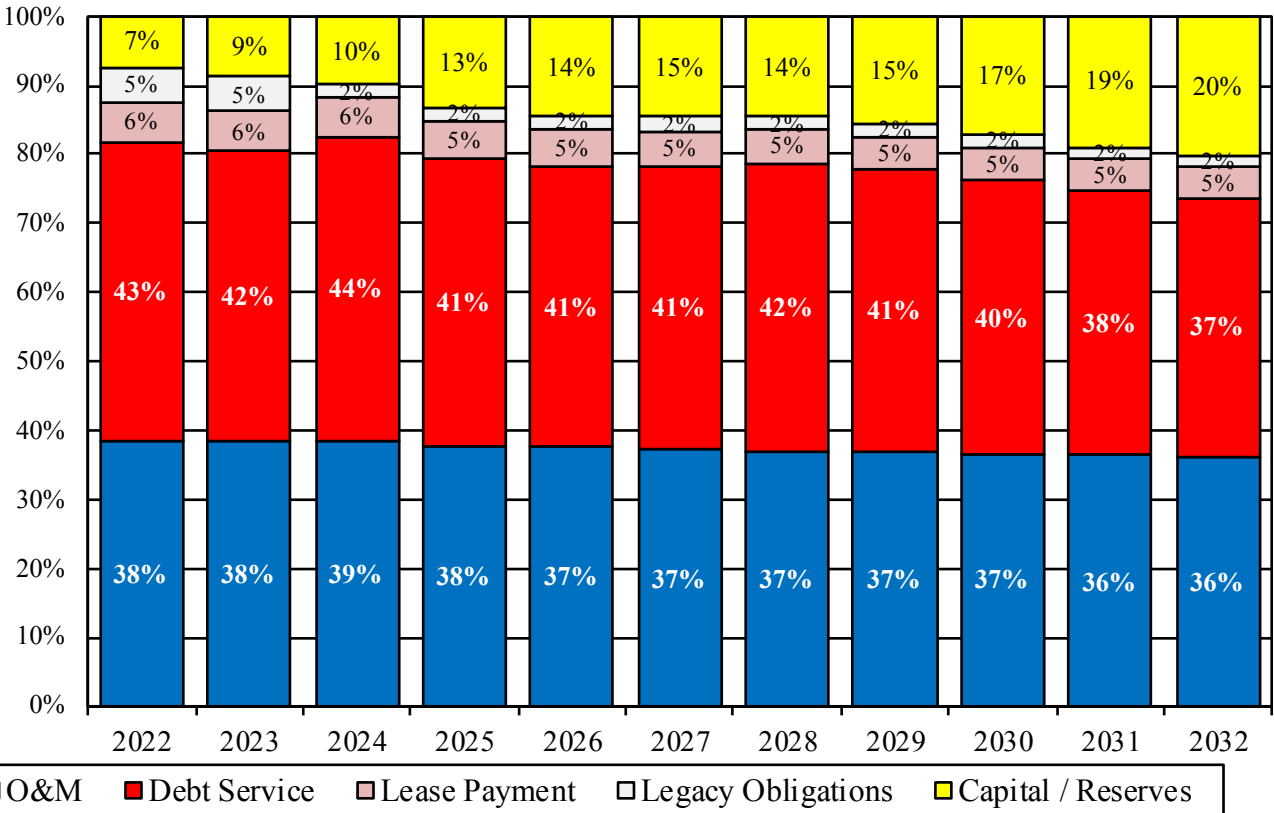
(a) Technically includes "Combined System" amounts held by GLWA.
(b) Represents Operating Reserve and amounts maintained in the Receiving Fund for subsequent MBO transfers.
(c) Only includes GLWA Regional I&E Account. Does not include Lease Payment transferred to DWSD Local I&E Account.
(d) Repayment of DWSD loan receivable.
(e) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond Interest and Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.
(f) Excludes Budget Stabilization Fund amounts from Line 6.

Relative Revenue Requirement Distribution

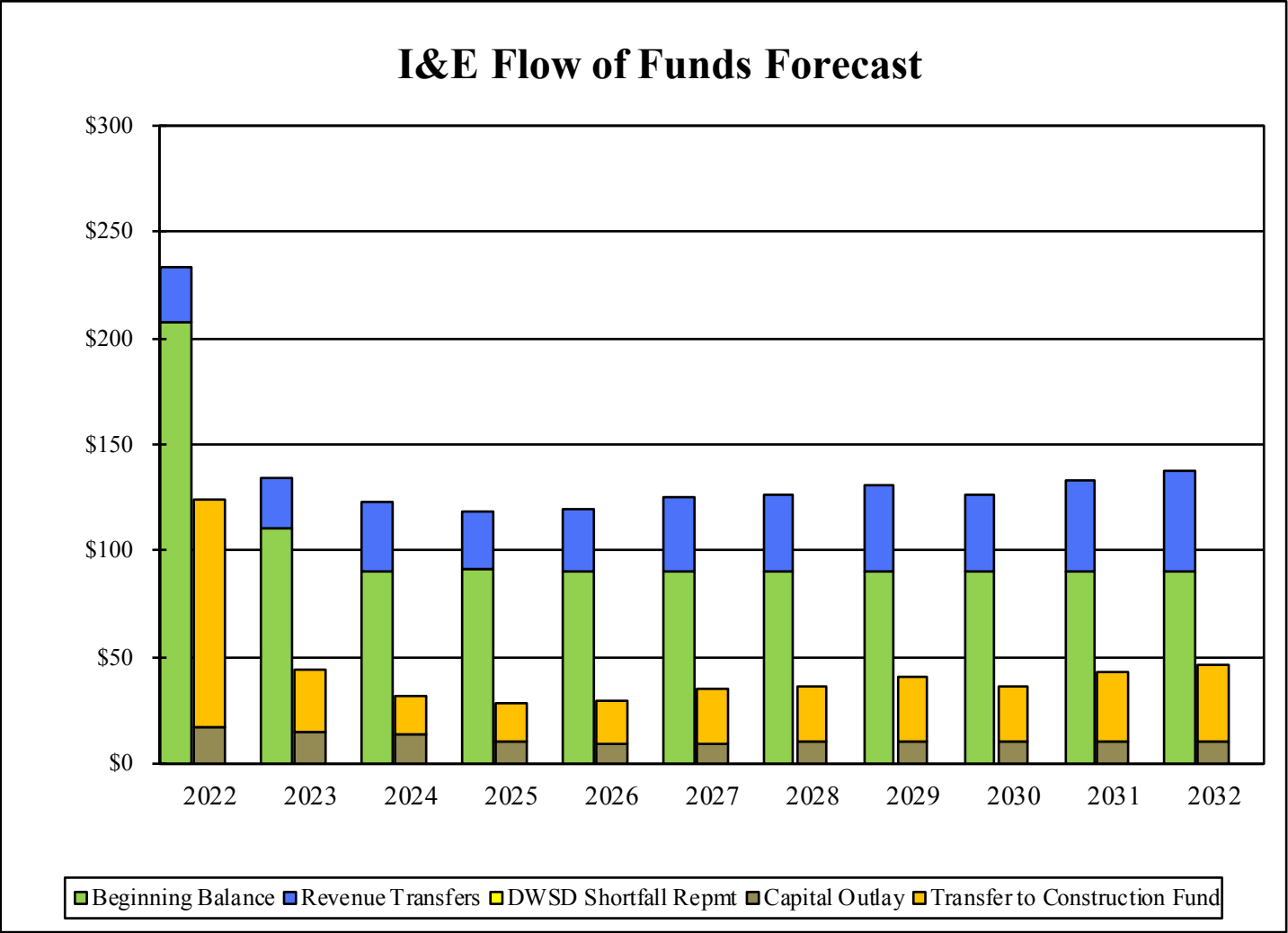


	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
O&M	143.9	144.8	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
Debt Service	135.1	150.3	159.2	170.6	181.0	185.6	195.7	202.9	218.9	224.3	233.9
Lease Payment	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Legacy Obligations	14.0	14.1	5.5	6.3	6.4	6.3	6.2	6.2	6.3	6.3	6.4
Capital / Reserves	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
Total	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3

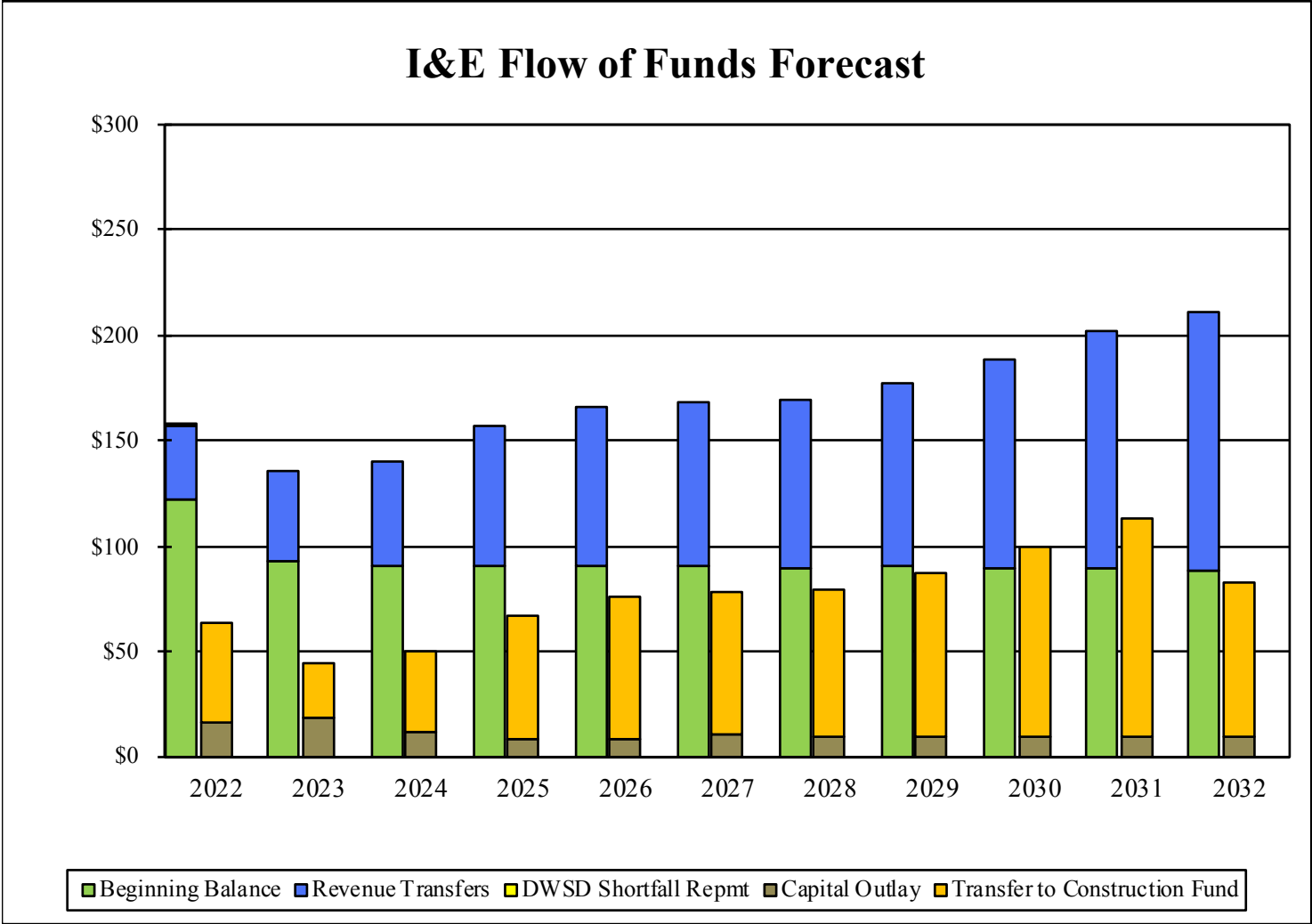
Relative Revenue Requirement Distribution



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
O&M	181.3	187.1	192.4	193.6	196.8	200.0	204.0	208.1	212.3	216.5	220.8
Debt Service	205.0	205.6	220.7	212.5	214.2	221.0	229.3	231.4	229.8	227.2	227.5
Lease Payment	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Legacy Obligations	24.8	24.9	9.4	11.2	11.2	10.9	10.7	10.7	10.7	10.7	10.7
Capital / Reserves	34.3	42.3	49.5	67.2	75.1	78.5	79.8	87.5	99.0	111.9	122.1
Total	472.9	487.3	499.5	512.0	524.8	537.9	551.4	565.1	579.3	593.7	608.6



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Beginning Balance	207.5	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4
Capital Outlay	(17.0)	(15.5)	(13.4)	(10.4)	(9.6)	(9.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
Transfer to Constr	(106.8)	(28.7)	(18.2)	(17.9)	(20.2)	(26.1)	(25.8)	(30.9)	(26.4)	(33.1)	(36.8)
Initial Balance	83.6	66.0	58.7	63.0	60.9	55.0	54.3	49.6	53.6	46.9	43.6
Revenue Transfers	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
Ending Balance	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4	90.4



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Beginning Balance	122.4	93.2	90.6	90.3	90.6	90.1	90.0	90.2	90.1	90.0	88.6
Capital Outlay	(16.0)	(18.4)	(11.6)	(8.1)	(8.7)	(10.3)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
Transfer to Constr	(48.0)	(26.4)	(38.2)	(58.8)	(66.8)	(68.3)	(69.6)	(77.6)	(89.2)	(103.2)	(72.8)
Initial Balance	58.5	48.3	40.8	23.3	15.1	11.5	10.4	2.6	(9.1)	(23.3)	5.8
Revenue Transfers	34.3	42.3	49.5	67.2	75.1	78.5	79.8	87.5	99.0	111.9	122.1
DWSD Shortfall Repmt	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ending Balance	93.2	90.6	90.3	90.6	90.1	90.0	90.2	90.1	90.0	88.6	127.9

PRELIMINARY SECOND DISCUSSION DRAFT

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Water Supply System - Reported and Forecasted Statement of Changes in Net Position (\$ millions)



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Act.	Act.	Act.	Act.	Act.	Act.	Est.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.
1 Total operating revenues	167.7	351.7	338.3	331.6	334.3	344.6	347.2	361.8	373.4	384.2	395.5	409.3	423.6	438.4	453.5	469.4	485.8
2 Operating expenses	49.5	101.7	108.5	119.8	132.5	123.6	143.9	144.8	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
3 Depreciation/Amortization	71.3	144.1	146.1	144.1	130.7	126.8	129.2	135.3	117.0	97.5	97.5	94.6	97.2	102.0	101.4	99.5	101.4
4 Total operating expenses	120.8	245.9	254.6	264.0	263.3	250.5	273.1	280.2	265.7	251.9	253.2	253.8	259.5	267.6	270.3	271.7	277.2
5 Operating income	46.8	105.9	83.7	67.6	71.0	94.1	74.1	81.6	107.7	132.3	142.3	155.6	164.1	170.8	183.2	197.7	208.6
Nonoperating revenue (expenses)																	
6 Earnings on investments	0.4	1.8	6.1	14.8	13.7	0.8	1.6	1.1	2.2	5.1	7.3	7.0	8.1	8.4	7.7	7.8	7.3
7 Interest Expense - Bonded Debt	(56.5)	(113.7)	(118.2)	(114.2)	(111.3)	(106.3)	(104.2)	(110.7)	(108.9)	(110.9)	(112.2)	(112.9)	(113.8)	(115.4)	(116.8)	(115.5)	(113.8)
8 Other Non-Operating	5.2	6.4	4.4	15.3	7.0	10.5	17.2	16.6	15.7	14.7	13.6	12.4	11.1	9.8	7.7	5.6	3.5
9 Special Item	0.0	(32.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Change in net position	(4.1)	(32.4)	(24.0)	(16.4)	(19.5)	(0.9)	(11.3)	(11.4)	16.7	41.3	51.0	62.0	69.4	73.6	81.8	95.7	105.6
10 Net position (deficit), beginning of yea	0.0	(4.1)	(36.5)	(60.4)	(76.9)	(96.4)	(97.3)	(108.5)	(120.0)	(103.3)	(62.0)	(11.0)	51.0	120.4	194.0	275.8	371.5
11 Net position (deficit), end of year	(4.1)	(36.5)	(60.4)	(76.9)	(96.4)	(97.3)	(108.5)	(120.0)	(103.3)	(62.0)	(11.0)	51.0	120.4	194.0	275.8	371.5	477.1

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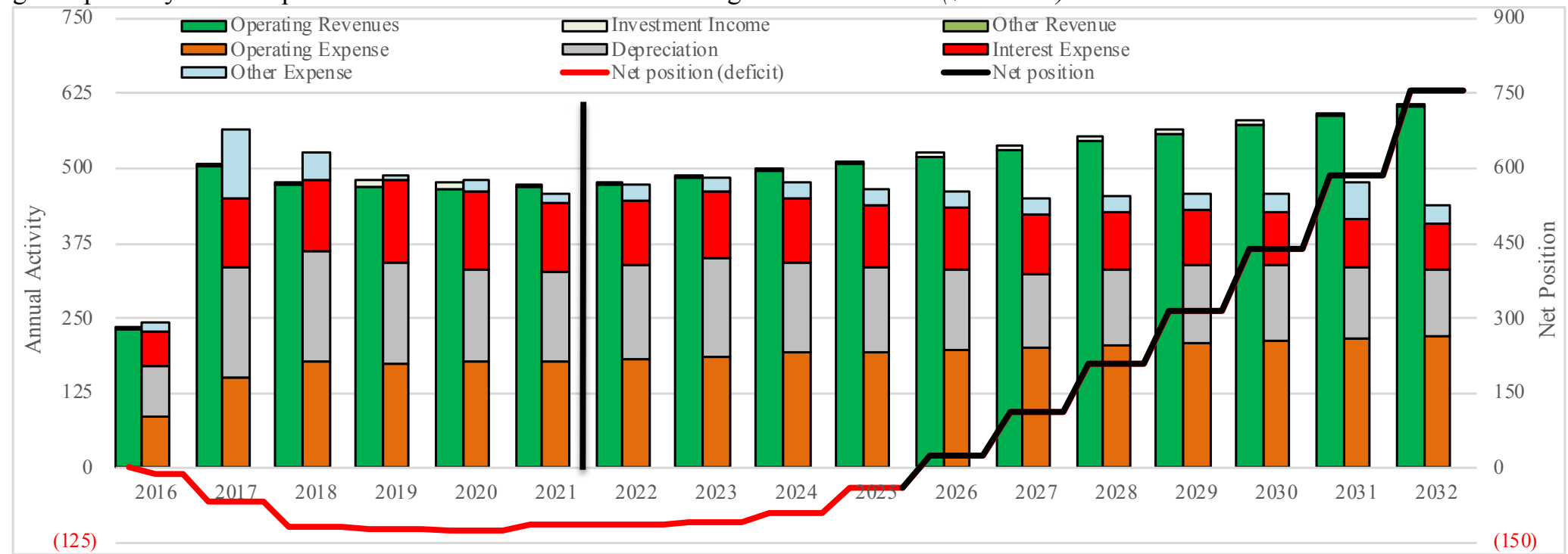
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PRELIMINARY SECOND DISCUSSION DRAFT

Page S-10

Sewage Disposal System - Reported and Forecasted Statement of Changes in Net Position (\$ millions)



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Act.	Act.	Act.	Act.	Act.	Act.	Est.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.	Proj.
1 Total operating revenues	230.5	505.8	473.6	469.5	466.6	470.8	471.4	486.2	497.2	507.4	517.9	531.0	544.4	558.2	572.5	587.2	601.7
2 Operating expenses	84.4	151.3	176.4	174.0	176.9	178.1	181.3	187.1	192.4	193.6	196.8	200.0	204.0	208.1	212.3	216.5	220.8
3 Depreciation/Amortization	86.0	185.6	187.3	168.5	152.9	150.9	156.9	161.8	151.5	139.9	136.0	125.0	127.9	131.3	127.8	117.0	112.0
4 Total operating expenses	170.4	336.9	363.6	342.6	329.9	329.0	338.2	348.8	343.9	333.5	332.8	325.0	332.0	339.4	340.1	333.5	332.8
5 Operating income	60.1	168.9	110.0	126.9	136.8	141.8	133.2	137.3	153.3	173.9	185.1	206.0	212.4	218.8	232.4	253.6	268.9
Nonoperating revenue (expenses)																	
6 Earnings on investments	1.1	2.2	5.3	11.8	11.7	0.5	1.6	1.2	2.6	5.2	7.3	7.3	8.1	7.8	7.0	6.7	6.9
7 Interest Expense - Bonded Debt	(56.5)	(113.7)	(118.2)	(136.8)	(132.6)	(112.6)	(109.3)	(111.2)	(107.4)	(104.2)	(100.9)	(98.7)	(96.0)	(91.9)	(88.0)	(82.1)	(76.2)
8 Other Non-Operating	(17.2)	(51.7)	(46.9)	(7.5)	(17.1)	(17.4)	(25.1)	(25.6)	(25.9)	(26.3)	(26.8)	(27.3)	(27.8)	(28.3)	(28.9)	(29.6)	(30.2)
9 Special Item	0.0	(61.5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Change in net position	(12.6)	(55.8)	(50.0)	(5.6)	(1.2)	12.3	0.4	1.8	22.5	48.6	64.7	87.4	96.7	106.3	122.5	148.7	169.4
10 Net position (deficit), beginning of year	0.0	(12.6)	(68.4)	(118.3)	(123.9)	(125.2)	(112.9)	(112.4)	(110.6)	(88.1)	(39.5)	25.2	112.5	209.3	315.6	438.1	586.8
11 Net position (deficit), end of year	(12.6)	(68.4)	(118.3)	(123.9)	(125.2)	(112.9)	(112.4)	(110.6)	(88.1)	(39.5)	25.2	112.5	209.3	315.6	438.1	586.8	756.2

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MEMORANDUM

Highland Park Bad Debt Expense Review
Executive Summary

December 15, 2021

To: Nicolette Bateson

From: Bart Foster

A brief update on Highland Park bad debt expense, and how it impacts charges to other GLWA Member Partners. More thorough discussion and analysis is documented elsewhere.

- The year-end working papers supporting the FY 2021 audit reveal an “allowance for doubtful accounts” for Highland Park totaling approximately \$49.1 million, and a resulting FY 2021 bad debt expense of approximately \$4.16 million, as summarized below.

Highland Park Bad Debt Amounts

	Allowance for Doubtful Accts		Change (a)
	<u>6/30/20</u>	<u>6/30/21</u>	
Sewer	34,584,627	37,509,475	2,924,848
Sewer Industrial Waste Control (b)	1,710,779	1,758,201	47,422
Water	<u>8,634,075</u>	<u>9,821,920</u>	<u>1,187,845</u>
Total (b)	44,929,481	49,089,596	4,160,115

(a) The change in the allowance is equivalent to the bad debt expense during the fiscal year, unless any accounts receivable were written off during the year.

(b) Estimated - prior balance includes a small amount not related to Highland Park.

The remainder of this document discusses Water and Sewer impacts separately.

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Highland Park Bad Debt Expense Review Executive Summary

December 15, 2021
Page 2

Water

- Starting with the FY 2017 Water service charges, we began effectively increasing charges to ALL Member Partners (including Detroit) by amounts equivalent to Highland Park's allocated revenue requirement.
- The FY 2021 Water bad debt expense for Highland Park was \$1.19 million, which was consistent with the amount we included in the FY 2021 charges.
- The proposed FY 2023 Water Charges include the entire revenue requirement allocated to Highland Park as a "bad debt revenue requirement" allocable to all Member Partners, including Detroit.

Sewer

- As shown in the table below, payment performance improved in FYs 2018 and 2019, but fell off during FY 2020 and 2021, and no payments have been made during FY 2022.

<u>Highland Park Sewer Payment History</u>	<u>Billings</u>	<u>Payments</u>	<u>Net</u>	<u>Balance</u>	<u>Collection Rate</u>
FY 2012				10,207,956	
FY 2013	4,987,635	2,206,211	2,781,424	12,989,380	44%
FY 2014	6,980,442	1,612,633	5,367,809	18,357,189	23%
FY 2015	5,553,123	1,444,623	4,108,500	22,465,689	26%
FY 2016	5,612,167	2,022,335	3,589,832	26,055,521	36%
FY 2017	5,802,000	2,309,186	3,492,814	29,548,335	40%
FY 2018	5,657,101	4,108,108	1,548,993	31,097,328	73%
FY 2019	5,617,100	5,241,583	375,517	31,472,845	93%
FY 2020	5,665,400	3,026,117	2,639,283	34,112,128	53%
FY 2021	5,708,400	2,783,552	2,924,848	37,036,976	49%
FY 2022 (5 months)	2,239,200	0	2,239,200	39,276,176	0%
Cumulative	53,822,568	24,754,348	29,068,220		46%
FY 2013 - FY 2017	28,935,367	9,594,988	19,340,379		33%
FY 2018 - FY 2019	11,274,201	9,349,691	1,924,510		83%
FY 2020 - FY 2022	13,613,000	5,809,669	7,803,331		43%

- Through the end of FY 2019, (via a combination of *prospective* bad debt recovery and bad debt *true up* recovery) Member Partners had been charged approximately \$324,500 more than the actual bad debt incurred by Highland Park. We'll refer to that figure as the "**Cumulative Balance**" herein.
- By the end of FY 2020, this figure was close to zero.
- Subsequently, the Board deferred implementation of the FY 2021 Charges, leaving the FY 2020 Charges (and the ~ \$188,000 per month of bad debt related amounts that they contained) in effect for the first six months of FY 2021. As a result, suburban wholesale Member Partners were charged an additional \$1.13 million in bad debt related charges that would not have been collected had the FY 2021 Charges been implemented as originally scheduled.

Highland Park Bad Debt Expense Review Executive Summary

December 15, 2021
Page 3

- We took this information into consideration when designing the FY 2022 Sewer Charges. When we developed the FY 2022 suburban wholesale Sewer charges we did not include any amounts related to Highland Park Sewer bad debt in the charges.
 - This decision was supported, in part, due to the COVID environment and by a desire to implement the FY 2022 SHAREs in a revenue neutral fashion.*
- The FY 2021 Sewer bad debt expense for Highland Park was \$2.92 million. This figure increased the Cumulative Balance to \$1.85 million as of June 30, 2021. This amount is technically due from Suburban Wholesale Member Partners via a surcharge to their allocated FY 2023 revenue requirements.

HP Bad Debt Collected in Sewer Charges					
	<u>Bad Debt Prospective</u>	<u>Bad Debt True Up</u>	<u>Total Bad Debt Collected</u>	<u>Bad Debt Incurred</u>	<u>Cumulative Balance</u>
pre 2016				17,295,300	17,295,300
2016	5,569,200	0	5,569,200	2,975,200	14,701,300
2017	5,600,000	3,459,100	9,059,100	2,782,200	8,424,400
2018	4,390,000	2,810,600	7,200,600	2,100,800	3,324,600
2019	2,780,000	1,871,300	4,651,300	1,002,200	(324,500)
2020	2,260,800	0	2,260,800	2,643,900	58,600
2021 *	<u>2,440,400</u>	<u>(1,310,000)</u>	<u>1,130,400</u>	<u>2,924,800</u>	1,853,000
Subtotal	23,040,400	6,831,000	29,871,400	31,724,400	1,853,000
2022	0	0	0	5,350,000	7,203,000
2023 **	5,350,000	0	5,350,000	5,350,000	7,203,000

* Via continuation of the FY 2020 Charges for the first 6 months of FY 2021.

** Assumes strategy to recover ~ one year of HP billings during FY 2023. **PRELIMINARY**

- If Highland Park makes no payments during FY 2022 the Cumulative Balance will grow to \$7.2 million, since no surcharge amounts were included in the FY 2022 charges.
- Assuming the non-payment continues, the Cumulative Balance could grow to \$12.5 million by the end of FY 2023. We believe it would be reasonable to include that entire amount and make the System “whole” via the FY 2023 charges, we would have to include over \$13 million as a revenue requirement. That approach would result in a 5.0% charge increase (all else being equal) for the Wholesale Sewer Member Partners (again not Detroit) – before consideration of any budget or other charge related considerations.
- In accordance with our recent discussions, we have included one year’s worth of billing to Highland Park as a “bad debt surcharge” to Suburban Wholesale Member Partners in the proposed FY 2023 Sewer Charges. We believe that this is reasonable approach. It will result in an approximate 2.0% “surcharge” to Suburban Wholesale Member

Highland Park Bad Debt Expense Review
Executive Summary

December 15, 2021
Page 4

Partners during FY 2023. The Sewer Charge calculations in the documentation summarizing our FY 2023 Service Charge Recommendations embrace this approach.

- Note that under current (non) payment performance this approach is forecasted to still result in a Cumulative Balance of \$7.2 million at the end of FY 2023.

We are prepared to discuss this matter at your convenience.

Executive Summary

*Projected FY 2023
Water Units of Service
November 16, 2021*



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Charge Season Schedule

- This is the second formal “charge rollout” meeting for the FY 2022 Budget and Charges
 - ✓ **11/9/2021** - *Capital Improvement Programs*
 - ✓ **11/16/2021** - *Preliminary Units of Service*
 - ✓ **1/6/2022** – *Preliminary Proposed FY 2023 Budget and Financial Plan and Preliminary Charges*
 - ✓ **1/20/2022** – *Comprehensive Follow Up Review Session*
 - ✓ **2/23/2022 (tentative)** – *GLWA Public Hearing*
 - ✓ **7/1/2022** – *Effective Date for Charges*
- Parallel meetings of Outreach Work Groups

Key Takeaways

- *Adjusted* (October – September) AFY 2021 wholesale master metered water sales volumes were materially **lower** than AFY 2020 due to decreased use in “peak” months of July and August 2021;
- Total FY 2023 projected master metered sales volumes are ~ 1.8% **lower** than the projected FY 2022 figures;
- All else being equal, this will create a **negative** budgeted revenue variance of ~ 0.7% (~ \$2 million) for FY 2023
 - ✓ *Commodity sales account for 40% of budgeted revenue*
- Contract Alignment Process (“CAP”) starting in FY 2020 does not create any modified “demand related” allocation of costs of service to most Member Partners
 - ✓ *Perhaps some minor changes in demands for 3 Member Partners*
 - ✓ *No apparent meaningful differentiating factors included in preliminary units of service*

Member Partner Status Report

- Of the 87 wholesale Member Partners:
 - ✓ *85 are Master Metered, of which:*
 - **83** are under the “model” contract;
 - **2** remain under “older” contract structures;
 - » Negotiations towards “model” contracts underway with 1
 - ✓ *Dearborn and Highland Park are not Master Metered*
- Detroit is also not Master Metered and is being served under a “Water and Sewer Services Agreement”

FY 2023 Water Sales Volume Projections

November 16, 2021



Water Volume Analysis Units

- Water volume figures in this presentation are presented using two separate units, to align with the manner in which the data is reported.
- Water sales figures are reported in thousands of cubic feet (“**Mcf**”)
 - ✓ *Aligns with billing meters and commodity charges.*
- Water production figures (and peak demands) are reported in millions of gallons per day (“**mgd**”)
 - ✓ *Aligns with production reports and contract demands*
- 1 mgd = ~ 48,800 Mcf

Water Sales Volume Analysis Basics

- Water Sales Volumes presented today continue to reflect “Adjusted Fiscal Year” convention
- “Adjusted Fiscal Year” = October through September
 - ✓ *Allows for consideration of most recent data for peak demand season*
- Presentation also summarizes sales volume for Base and Peak months
 - ✓ *Base = October through March*
 - ✓ *Peak = April through September*

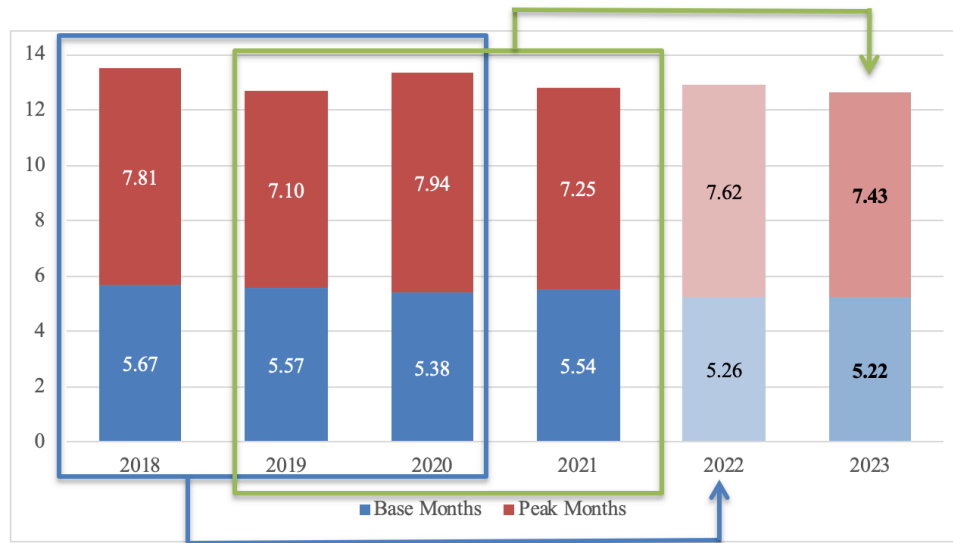
Recommended Projection Approach for FY 2023 Cost of Service / Charges

- NO CHANGE FROM UNIFORM FORECASTING METHOD IN PLACE SINCE FY 2018
- “Hybrid” approach based on review of Base and Peak month results
- Start with 3-Year average: Adjusted FYs 2019, 2020 and 2021
- Reduce “Base” month totals by 5% (*2.5% per year for 2 years to get from FY 2021 to FY 2023*) to reflect demographic reduction in potable water use based on recent trends
 - ✓ *These trends are being experienced worldwide*
- Do not adjust “Peak” month average
 - ✓ *Data reflects two low demand years and one “average” year*

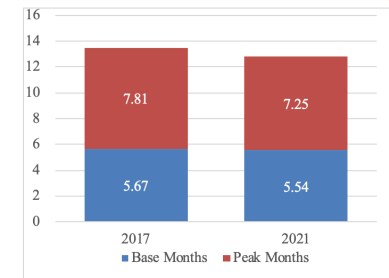
Recommended Projection Approach for FY 2023 Cost of Service / Charges

Metered Wholesale Water Sales - *millions of Mcf*

	Actual 2018	Actual 2019	Actual 2020	Actual 2021	Initial Proj 2022	Projected 2023	2023 / 2022 Variance	
							Mcf	%
Base Months	5.67	5.57	5.38	5.54	5.26	5.22	(0.04)	-0.8%
Peak Months	7.81	7.10	7.94	7.25	7.62	7.43	(0.19)	-2.4%
Total	13.49	12.67	13.33	12.79	12.88	12.65	(0.23)	-1.8%



	Actual 2018	Actual 2021	2021 / 2018 Variance	
			Mcf	%
Base Months	5.67	5.54	(0.14)	-2.40%
Peak Months	7.81	7.25	(0.56)	-7.17%
Total	13.49	12.79	(0.70)	-5.16%



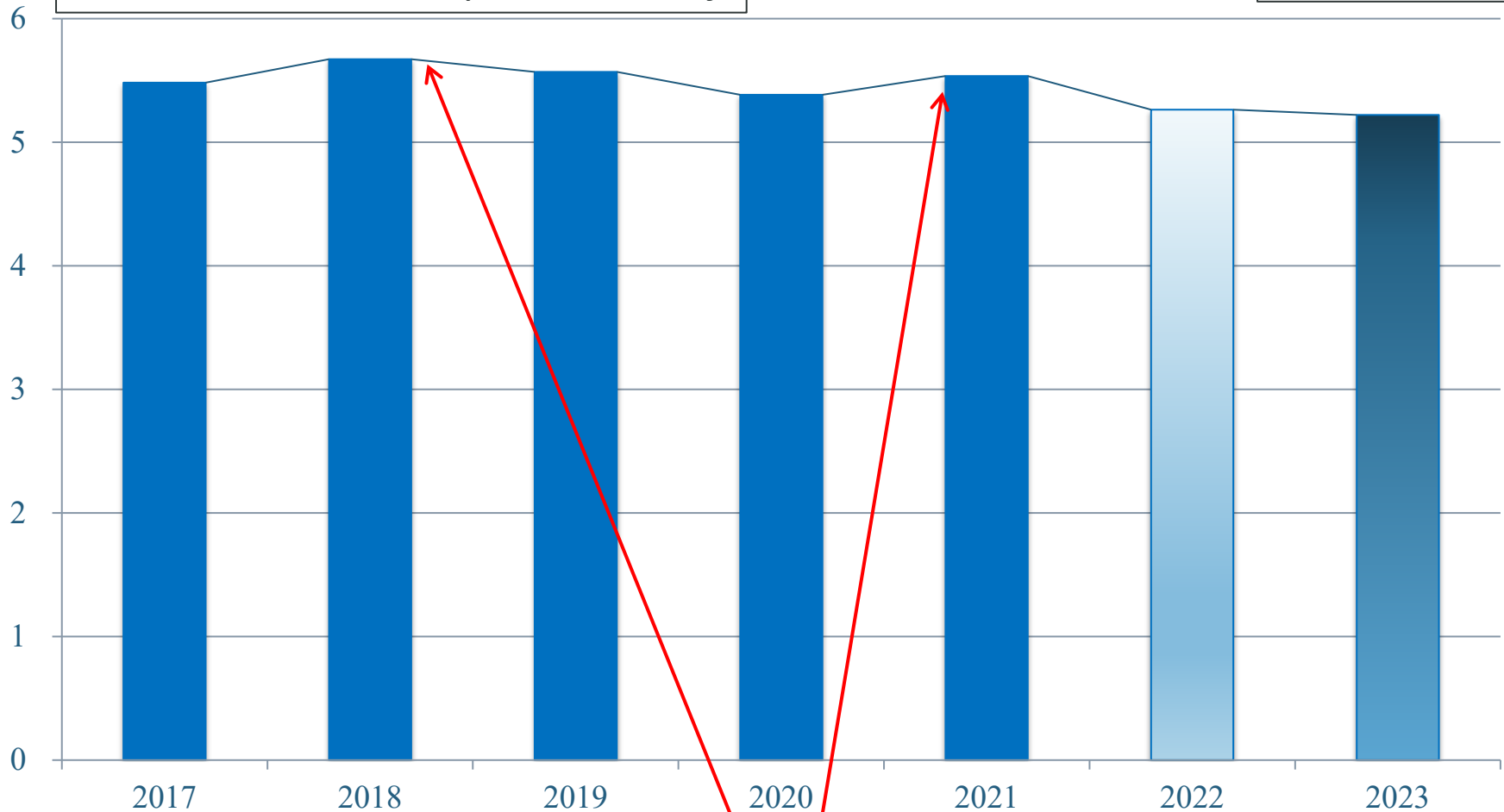
Preliminary Adjusted FY 2021 Master Metered Water Sales Volumes

- Preliminary Adjusted FY 2021 data presented today reflects review of billings through September 2021
- Preliminary Adjusted FY 2021 total for Master Metered Customers:
 - ✓ Base months 2.8% higher than FY 2020, 0.6% lower than FY 2019, and 2.4% lower than FY 2018
 - ✓ Peak months 8.7% lower than FY 2020, 2.1% higher than FY 2019, and 7.2% lower than FY 2018
 - ✓ Total 4.0% lower than FY 2020, 0.9% higher than FY 2019, and 5.2% lower than FY 2018

Recommended Projection Approach for FY⁹⁴ 2023 Cost of Service / Charges – *Base Months*

Master Meter Data Only – *millions Mcf*

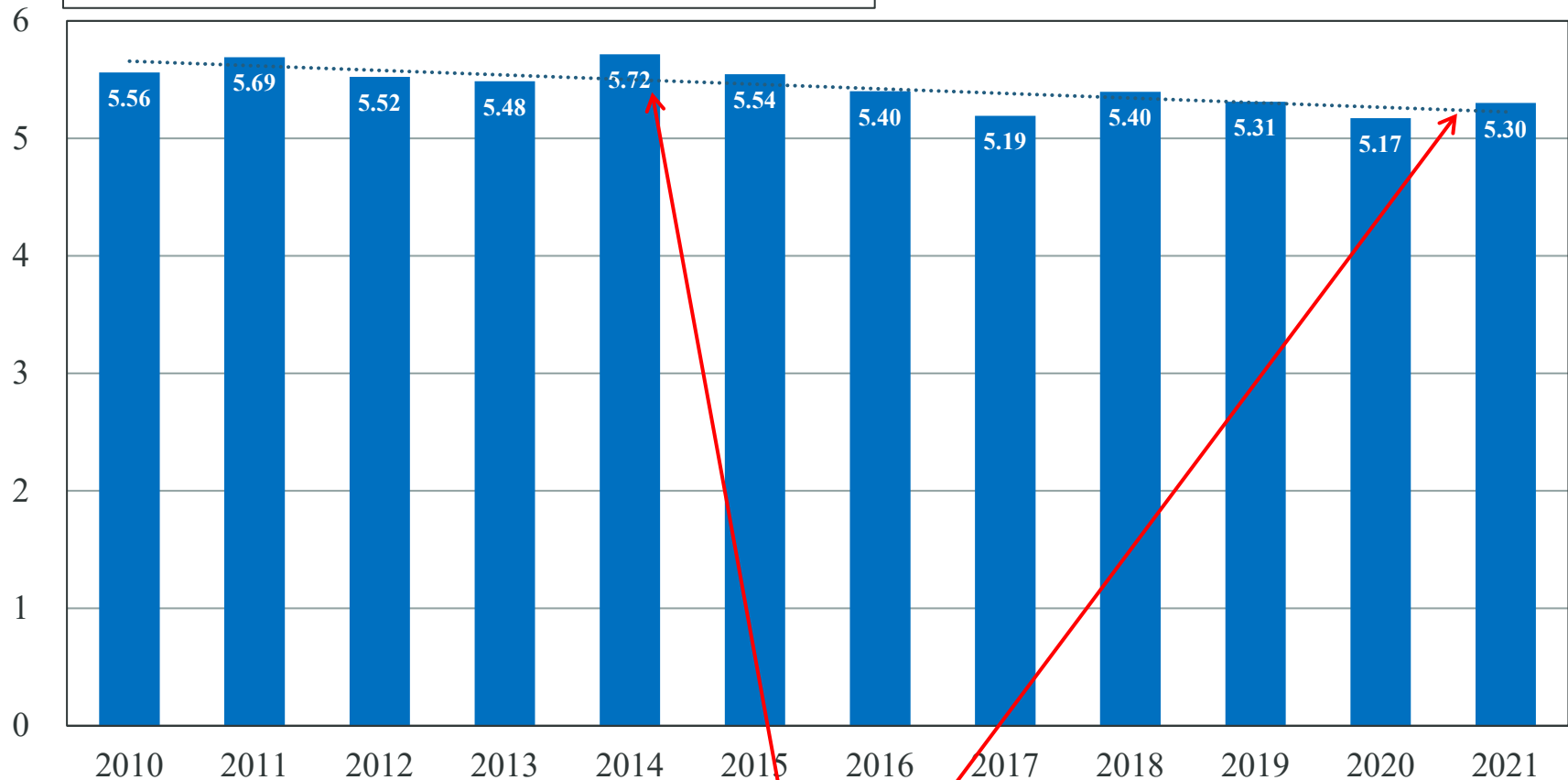
Handout Pages 2-4



Additional Base Month Water Sales Data

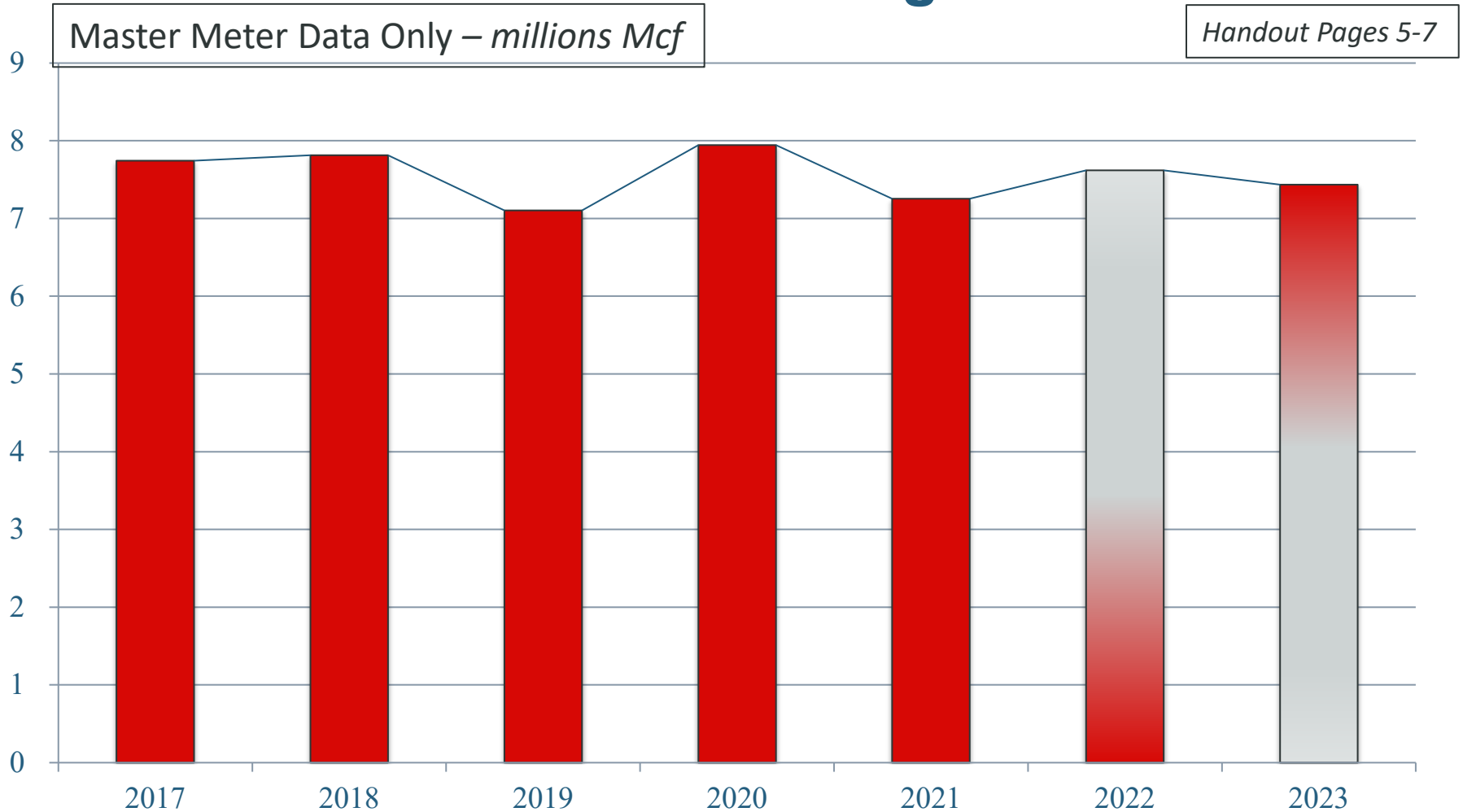
Master Meter Data Only * – millions Mcf

Handout Pages 2-4



7.3% Reduction from 2018 to 2021 (~ 1.1% Annually)

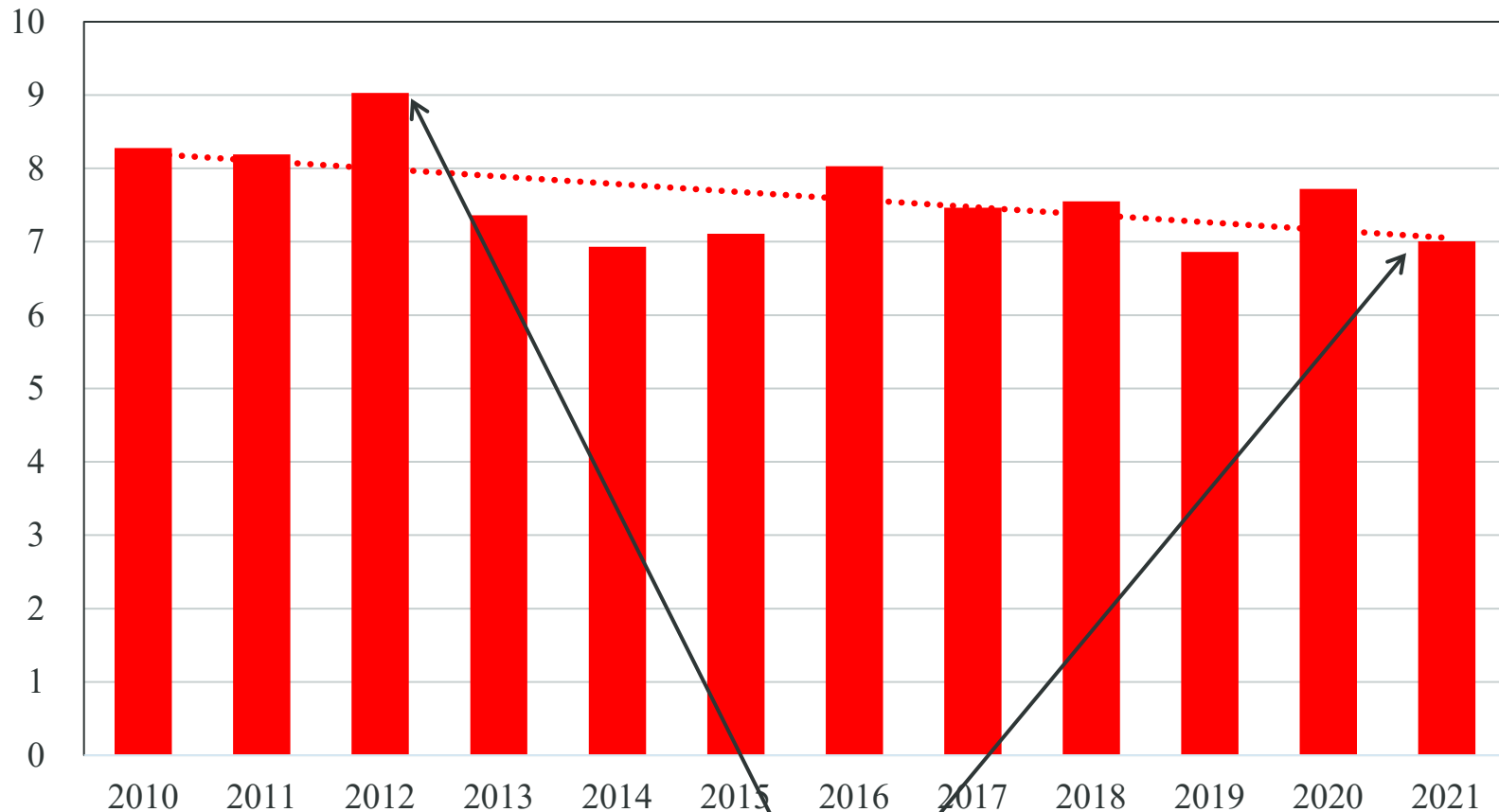
Recommended Projection Approach for FY⁹⁶ 2022 Cost of Service / Charges – *Peak Months*



Additional Peak Month Water Sales Data

Master Meter Data Only * – millions Mcf

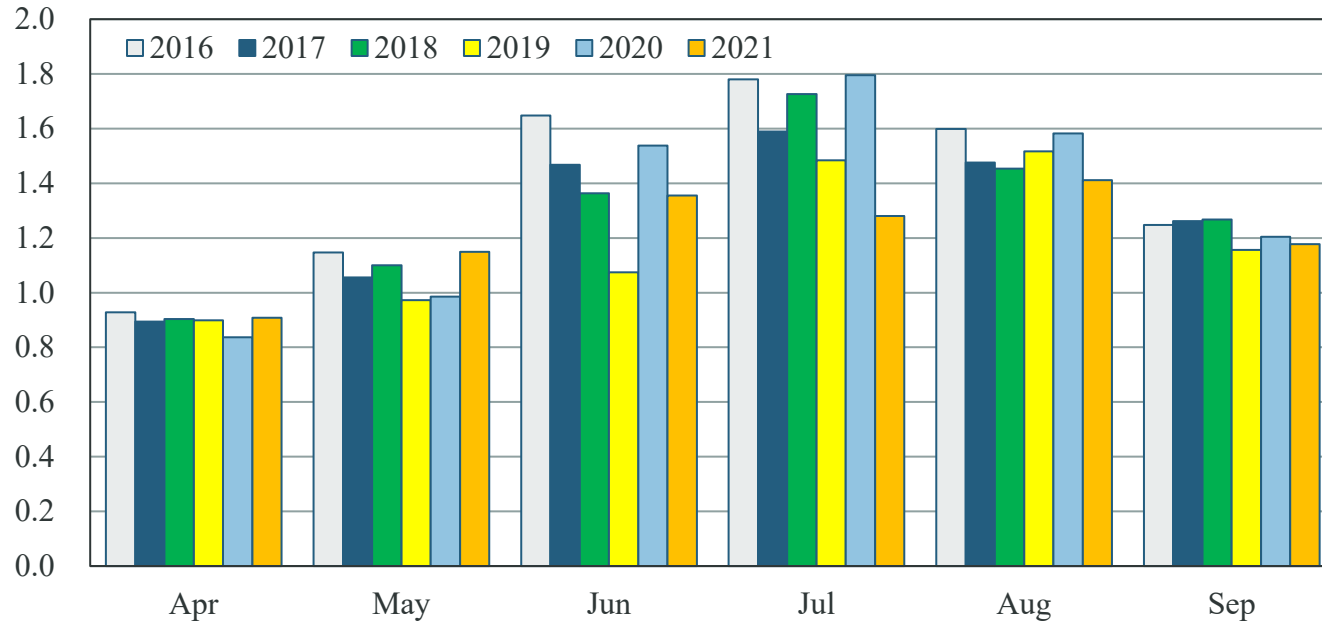
Handout Pages 5-7



22% Reduction from 2012 to 2021 (~ 2.3% Annually)

Additional Peak Month Water Sales Data

Millions of Mcf



	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Total</u>
2016	0.93	1.15	1.65	1.78	1.60	1.25	8.35
2017	0.89	1.06	1.47	1.59	1.48	1.26	7.74
2018	0.90	1.10	1.36	1.73	1.45	1.27	7.81
2019	0.90	0.97	1.07	1.48	1.52	1.16	7.10
2020	0.84	0.99	1.54	1.80	1.58	1.20	7.94
2021	0.91	1.15	1.36	1.28	1.41	1.18	7.28

Impact on FY 2022 Billed Revenue - \$ millions:

(3.66)

(1.00)

(0.09)

(4.75)

Impact on Proforma FY 2023 Billed Revenue Projections - \$ millions:

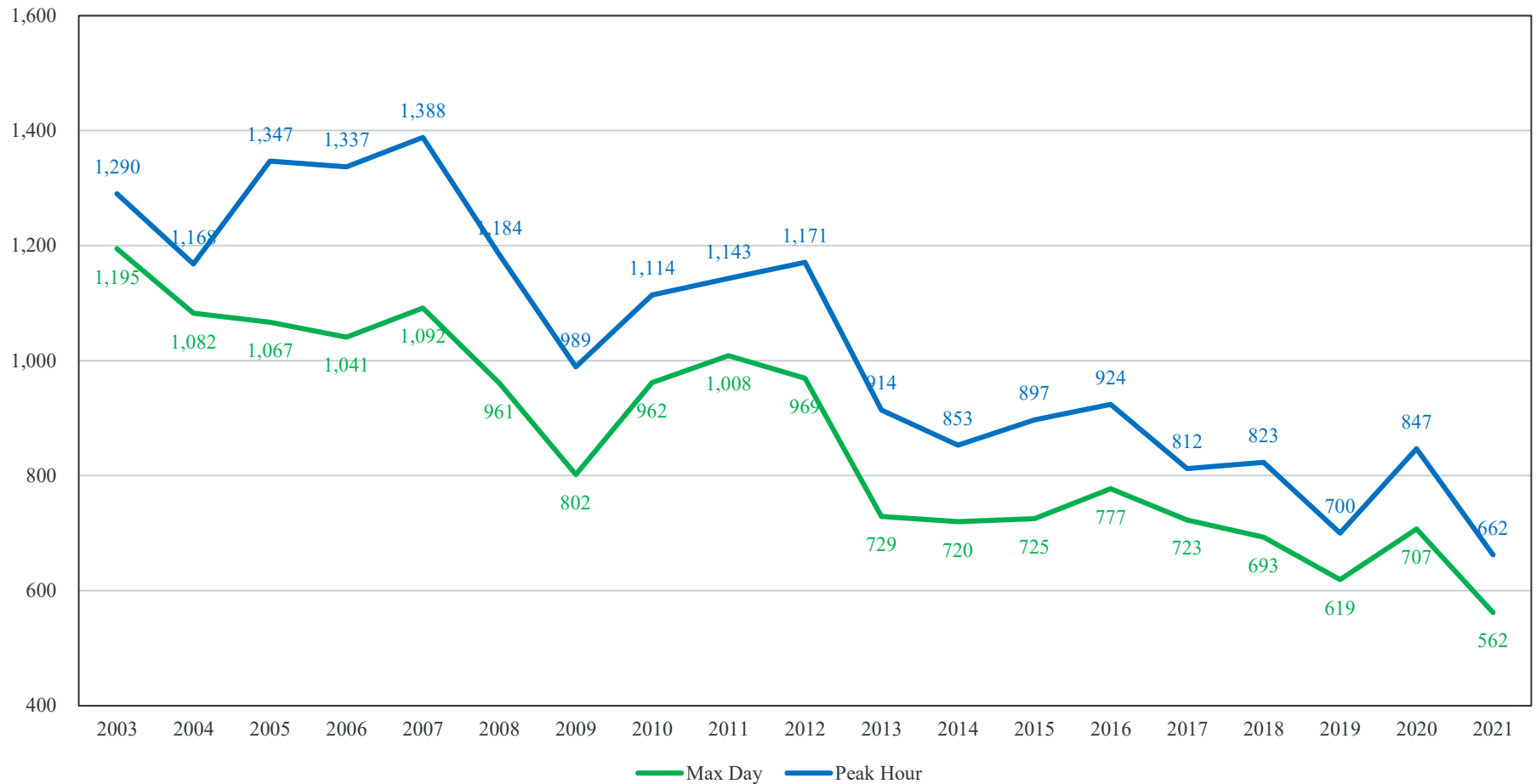
(2.00)

Reported Water Production Observations

	Customer Proxy		System Max Day		Reported Pumpage Days Over . . .				
	Max Day	Peak Hour	Max Day	Peak Hour	600 mgd	700 mgd	800 mgd	900 mgd	1,000 mgd
2003	13	13	1,195	1,290					
2004	2	1	1,082	1,168					
2005	26	26	1,067	1,347					
2006	17	8	1,041	1,337					
2007	16	18	1,092	1,388			96	40	11
2008	3	2	961	1,184			23	5	-
2009	-	1	802	989			1	-	-
2010	1	-	962	1,114			4	2	-
2011	-	4	1,008	1,143			22	6	1
2012	4	8	969	1,171			32	8	-
2013	-	1	729	914	47	7	-	-	-
2014	1	1	720	853	23	2	-	-	-
2015	NA	NA	725	897	18	2	-	-	-
2016	NA	NA	777	924	70	30	-	-	-
2017	NA	NA	723	812	38	4	-	-	-
2018	NA	NA	693	823	20	-	-	-	-
2019	NA	NA	619	700	6	-	-	-	-
2020	NA	NA	707	847	19	2	-	-	-
2021	NA	NA	562	662	-	-	-	-	-
	-----	-----					-----	-----	-----
	83	83	1,195	1,388			178	61	12

Reported Water Production Observations

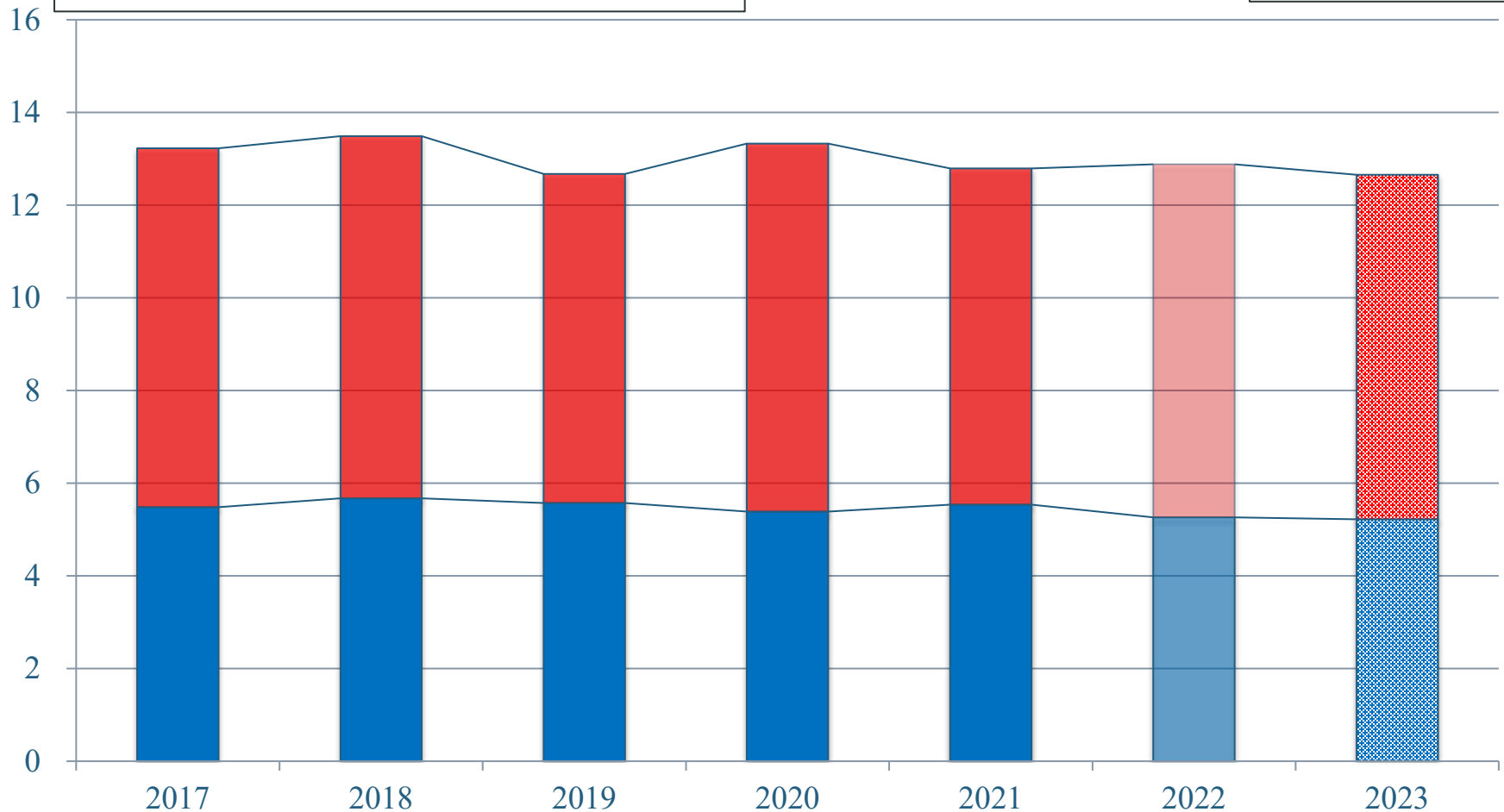
Millions of gallons per day (mgd)



Recommended Projection Approach for FY 2023 Cost of Service / Charges – All Months

Master Meter Data Only – *millions Mcf*

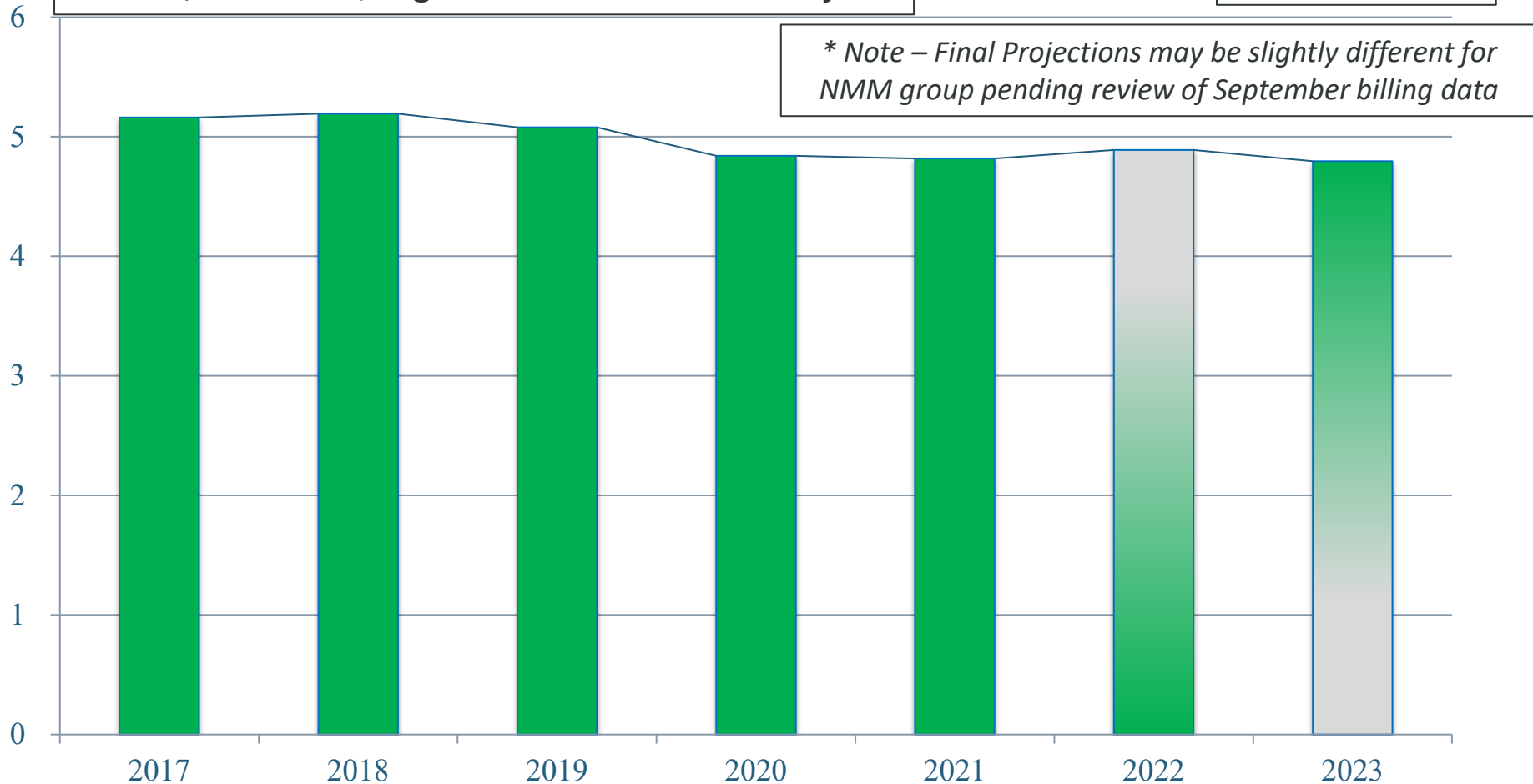
Handout Pages 8-10



Historical / Projected Non Master Metered Wholesale Water Sales Proxy – All Months

Detroit, Dearborn, Highland Park – millions Mcf

Handout Page 11 *



Projected FY 2023 TOTAL Master Metered Sales Volumes

- Compared to FY 2022 projections ...
 - ✓ 0.8% lower for Base months;
 - ✓ 2.4% lower for Peak months;
 - ✓ 1.8% lower overall
- Compared to FY 2021 actual sales ...
 - ✓ 5.7% lower for Base months;
 - ✓ 2.5% higher for Peak months;
 - ✓ 1.1% lower overall

Projected FY 2023 NMM Wholesale Sales Proxies * *Pending Final AFY 2021 Data*

- Reflects Retail sales, adjusted to reflect estimated local non revenue water as determined by UoS Study
- 1.9% **lower** Compared to FY 2022 projections
- 0.5% **lower** Compared to FY 2021 actual amounts

Non Master Metered UoS Update

November 16, 2021



NMM UoS Update

Handout Page 11 *

- Retail sales projections calculated based on same approach as wholesale sales projections
- Converted to wholesale sales proxies based on UoS Study
- No changes are planned for core assumptions
- Peaking factors used to establish max day and peak hour demands

✓ *No Change in Peaking Factors for FY 2023*

** Note – Final Projections may be slightly different for NMM group pending review of September billing data*

Other Units of Service

November 16, 2021



Water Model Contract Updates

Handout Pages 12-14

- Grosse Pointe Park negotiated a model contract last spring
 - ✓ *Their max day and peak hour demands were modified in the final FY 2022 Cost of Service / Charge Study*
- 1 Member Partner had a contract exceedance during the summer of 2021
 - ✓ *Exceedance was due to a water main break and therefore no changes to the Member Partner's contract demands will result*
- GLWA continues to meet with St. Clair County (DTE facility) to discuss possible model contract
 - ✓ *The demands for this Customer reflect preliminary discussions*

Water Model Contract Updates

Handout Pages 12-14

- GLWA **has** met with Bruce Twp to discuss usage during Summer 2021
- GLWA **may** meet with Shelby Twp to discuss exceedance from Summer 2020 and usage during Summer 2021
- The demands for these Member Partners reflect existing contracts in today's material, but may change if discussions lead to out of cycle modifications

Other Units of Service

Handout Pages 15-17

- The cost allocation model also incorporates each Customer's distance, elevation, and meter inventory
- The meter inventory impacts the calculation of distance and elevation, since it impacts the measurement used to establish the capacity weighted "point of commerce"
- While there have been some changes in meter inventory in recent years, those changes have been related to meter technology and not changes in "capacities" at delivery points of commerce
- Existing distance and elevation factors have been maintained pending further methodology review

Other Units of Service – Methodology Review

Handout Pages 15-17

- The Water Charge Methodology allocates “delivery” costs of service to Customers in part based on distance and elevation factors
- Each Customer’s “point of commerce” establishes their baseline;
 - ✓ *Distance factor = average distance between point of commerce and the 5 WTPs*
 - ✓ *Elevation factor = difference between point of commerce elevation and average elevation of the 5 WTPs*
- This approach will likely be a key issue that emerges from the pending Water Charge Methodology review



GLWA
Great Lakes Water Authority

Executive Summary

*Projected FY 2023
Sewer Units of Service
November 16, 2021*



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Charge Season Schedule

- This is the second formal “charge rollout” meeting for the FY 2022 Budget and Charges
 - ✓ **11/9/2021** - *Capital Improvement Programs*
 - ➔ ✓ **11/16/2021** - *Preliminary Units of Service*
 - ✓ **1/6/2022** – *Preliminary Proposed FY 2023 Budget and Financial Plan and Preliminary Charges*
 - ✓ **1/20/2022** – *Comprehensive Follow Up Review Session*
 - ✓ **2/23/2022 (tentative)** – *GLWA Public Hearing*
 - ✓ **7/1/2022** – *Effective Date for Charges*
- Parallel meetings of Outreach Work Groups

Key Takeaways

- Units of Service (SHAREs) for Member Partners are fixed through the FY 2024 Charges
 - ✓ *No changes for FY 2023 Charges*
- GLWA is committed to transparent rollout of interim data that will impact FY 2025 SHAREs
- Industrial Surcharge and Industrial Waste Control units are under review

Hypothetical Impact of FY 2020 Flow Balance Data on Sewer SHARE Calculations

WATF Meeting

March 11, 2021

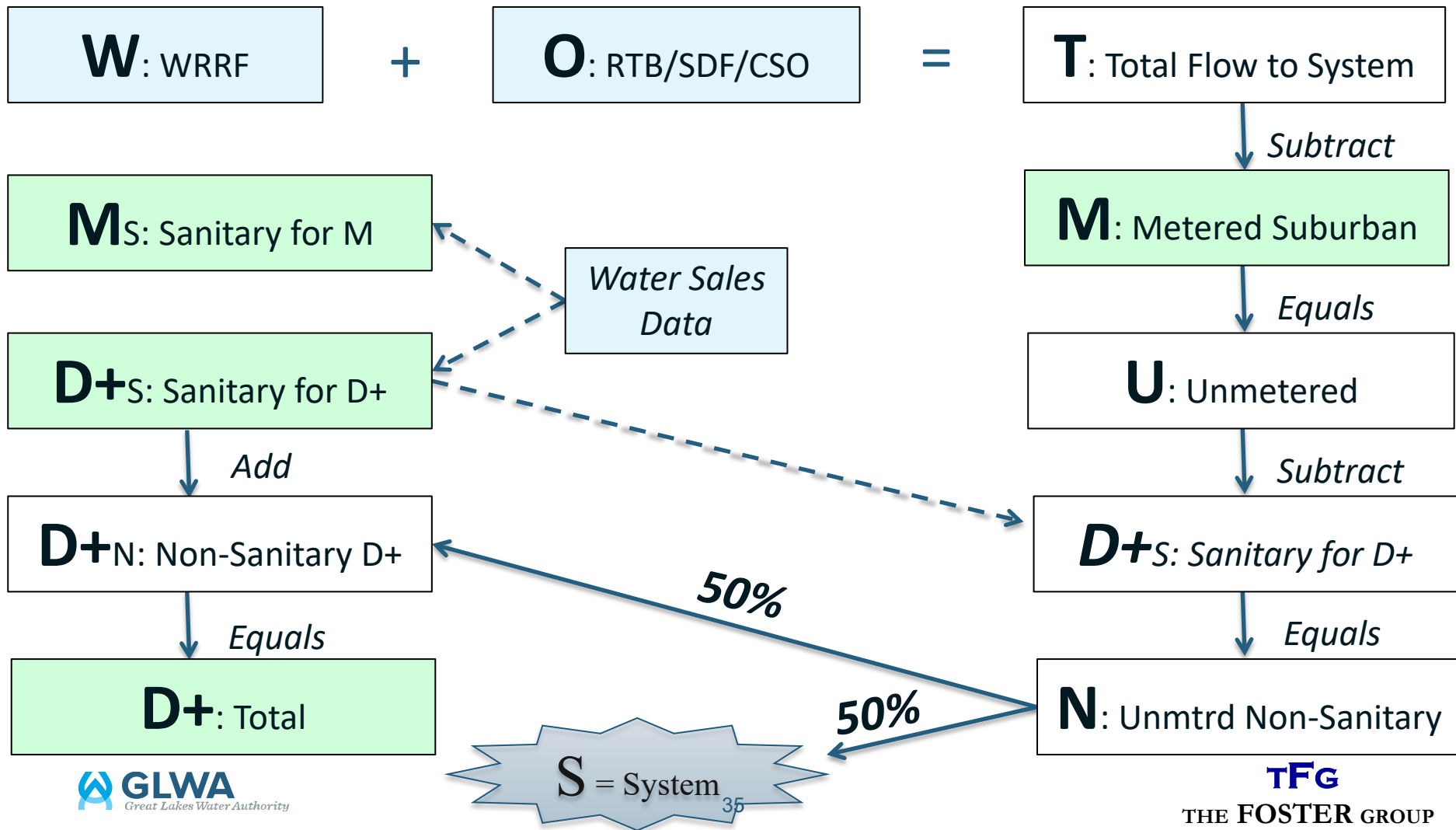


What is the purpose of this analysis?

- Provide Member Partner stakeholders with transparent information regarding **potential** impacts of new flow balance data on **future** SHARES
 - ✓ *Existing FY 2022 SHARES are based on 7 years of flow balance data from FY 2013 through FY 2019*
 - ✓ *Existing SHARES will remain in place for FY 2023 and FY 2024 wastewater charges*
 - ✓ *FY 2025 SHARES and wastewater charges will be updated to include flow balance data for FYs 2020, 2021, and 2022*
- Today's presentation illustrates the **hypothetical** impact on SHARE calculations of adding FY 2020 data to the current 7-year averages

What data from annual flow balances is used for SHARE calculations? *

118

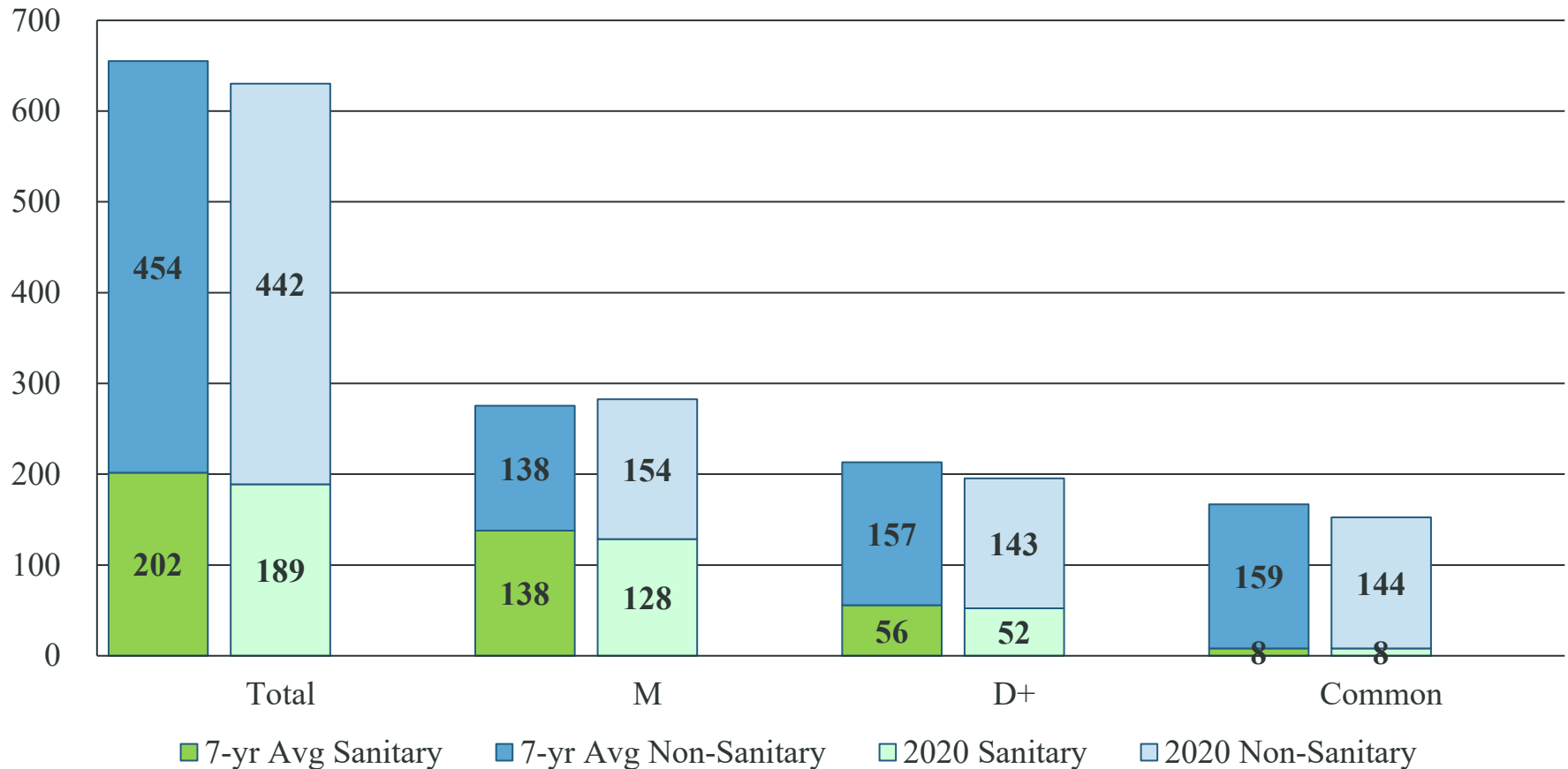


* Note that there is no reference to Dry or Wet Weather Flow

How does the FY 2020 data compare with existing long term averages?

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Flow Balance Data Comparison - mgd



How does the FY 2020 data compare with existing long term averages?

120

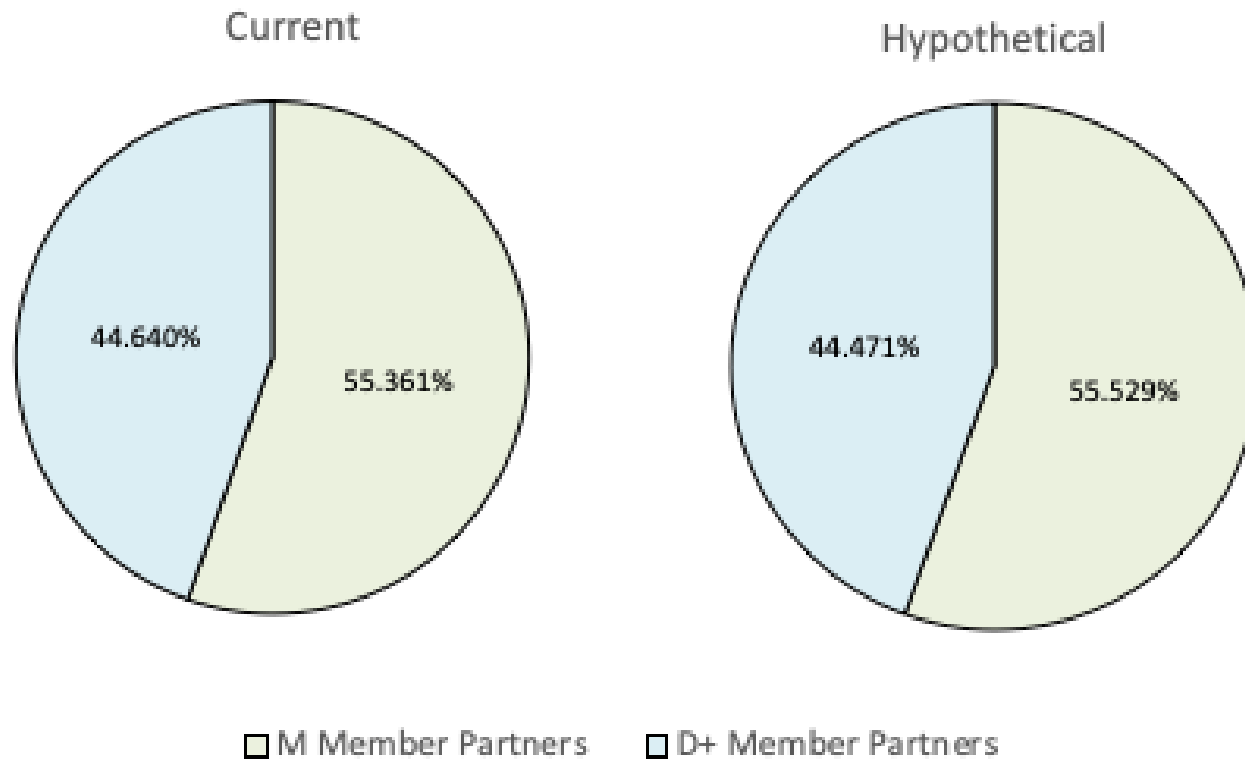
- Total System flow in FY 2020 lower across the board
 - ✓ *2% lower in total*
- Sanitary volumes universally lower
 - ✓ *~ 6% for both **M** and **D+***
- Metered flow for **M** class is ~ 3% increase
 - ✓ *Non-Sanitary increase of ~ 12% outweighs sanitary decrease*

What are the hypothetical results on **SHARE Calculations**?

- Increase in non-sanitary flow volumes for **M** Member Partner class results in:
 - ✓ Moderate hypothetical increase in calculated **M** SHARES, and
 - ✓ Corresponding moderate hypothetical reduction in calculated **D+** SHARES
- The hypothetical increase for **M** Member Partners varies, while the **D+** impact is relatively uniform
- None of these hypothetical calculations reflect analysis of cost pool changes, which are the other key input element in calculating SHARES

What are the hypothetical results on SHARE Calculations?

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✓ See Table 4 for calculation summary for individual Member Partners



GLWA

Great Lakes Water Authority

Upcoming Water & Wastewater Initiatives

November 16, 2021



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Upcoming Initiatives *

*** *Will not impact FY 2023 Charges***

- GLWA Fixed Asset Review Project
- Interim Wastewater SHAREs Review
- Water Contract Alignment Process Re-Opener Negotiations
- Water Charge Methodology Review

GLWA One Water Charge Initiatives

	Calendar 2018				Calendar 2019				Calendar 2020				Calendar 2021				Calendar 2022				Calendar 2023				Calendar 2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Cost Allocation Project	<i>Continual process improvement and phased implementation</i>																											
Functional GL Cost Reporting Implementation			x				x						x						x								x	
Administrative and General Cost Allocation Approaches			x				x						x						x								x	
Refined Functional Cost Structure			x				x						x						x								x	
Fixed Asset Functional Category Review			x																x									
2. Wastewater Charges / Methodology Update																												
2nd year of phase in for FY 2018 SHARES - Completed			X																									
SHARE Update - 3rd Fixed SHARE Period - Completed												X																
Evaluation of Peak Wastewater Flows and Costs - Terminated																												
Wastewater Strength of Flow Sampling Plan - Completed																												
Wastewater Strength of Flow Sampling Plan - Terminated																												
Wastewater Master Plan - Completed																												
Modeling & Monitoring - Completed																												
Wet Weather Optimization Refinements - Completed																												
Leverage National Expertise and Benchmarks - Completed		Symp																										
Interim SHARE Review																												
SHARE Update - 4th Fixed SHARE Period																												
Charge Update - Current Methodology			x				x					x							x				x					X
3. Water Charges / Methodology Update																												
Units of Service Study PHASE 1 - Non-Master Metered - Completed																												
Updated Water Charges - Current Methodology, Aligned Contracts								x																				
Updated Water Charges - Current Methodology												x							x									
Units of Service Study PHASE 2 - Non-Master Metered - Completed																												
Units of Service Study PHASE 3 - Non-Master Metered																												
System Water Audit																												
Contract Alignment Project (CAP)								X											X									
Updated Water Charges - CAP #2																												
Alternative Allocators for Pumping and Transmission																												
Reflection of NE WTP Repurposing																												
Leverage National Expertise and Benchmarks																												
Updated Water Charges - potential new methodology																												TO BE DETERMINED

* Designed to achieve hallmark objectives of charge **stability**, **simplicity**, and **equity**.

(a) Reflects continuation of current Charge Methodologies and Units of Service / SHARES

(b) Transparent Outreach meetings on hypothetical impact of incorporating additional volume and cost inputs.

(c) Reflects continuation of 3rd Period SHARES for FY 2023 and FY 2024 Charges.

(d) Intent to formally review announced January 2020. Deferred due to COVID and other emerging issues. Planning for the review will continue for a future implementation.

GLWA One Water Charge Initiatives

	Calendar 2022				Calendar 2023				Calendar 2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Cost Allocation Project												
Functional GL Cost Reporting Implementation			x				x				x	
Administrative and General Cost Allocation Approaches			x				x				x	
Refined Functional Cost Structure			x				x				x	
Fixed Asset Functional Category Review			X									
2. Wastewater Charges / Methodology Update												
2nd year of phase in for FY 2018 SHARES - Completed												
SHARE Update - 3rd Fixed SHARE Period - Completed												
Evaluation of Peak Wastewater Flows and Costs - Terminated												
Wastewater Strength of Flow Sampling Plan - Completed												
Wastewater Strength of Flow Sampling Plan - Terminated												
Wastewater Master Plan - Completed												
Modeling & Monitoring - Completed												
Wet Weather Optimization Refinements - Completed												
Leverage National Expertise and Benchmarks - Completed												
Interim SHARE Review												
SHARE Update - 4th Fixed SHARE Period							X					
Charge Update - Current Methodology			x				x				X	
3. Water Charges / Methodology Update												
Units of Service Study PHASE 1 - Non-Master Metered - Completed												
Updated Water Charges - Current Methodology, Aligned Contracts												
Updated Water Charges - Current Methodology			x									
Units of Service Study PHASE 2- Non-Master Metered - Completed												
Units of Service Study PHASE 3 - Non-Master Metered												
System Water Audit												
Contract Alignment Project (CAP)				X								
Updated Water Charges - CAP #2							X					
Alternative Allocators for Pumping and Transmission												
Reflection of NE WTP Repurposing												
Leverage National Expertise and Benchmarks												
Updated Water Charges - potential new methodology									TO BE DETERMINED			

* Designed to achieve hallmark objectives of charge stability, simplicity, and equity.

(a) Reflects continuation of current Charge Methodologies and Units of Service / SHARES

(b) Transparent Outreach meetings on hypothetical impact of incorporating additional volume and cost inputs.

(c) Reflects continuation of 3rd Period SHARES for FY 2023 and FY 2024 Charges.

(d) Intent to formally review announced January 2020. Deferred due to COVID and other emerging issues. Planning for the review will continue for a future implementation.

GLWA Fixed Asset Review Project

- GLWA Fixed Asset Database contains over 20,000 individual records
- These assets were “acquired” via Lease when GLWA launched
 - ✓ *Independent valuation study*
- Objective is a comprehensive review of initially assigned:
 - ✓ *Depreciation lives*
 - ✓ *Cost Allocation Functions*
 - ✓ *Related support fields*
- Will support Water Cost of Service Studies and updated Wastewater SHARES . . .

Interim Wastewater SHARES Review

- SHARES fixed through FY 2024 Charges
- GLWA committed to transparently presenting updates on the hypothetical impact of new:
 - ✓ *Flow volume data and impact on historical Member Partner contributions*
 - ✓ *Cost experience and allocation to cost pools*
- Objective is to prepare stakeholders for results of FY 2025 SHARES evaluation

Water Contract Alignment Process (CAP) Re-Opener Negotiations

- Original CAP implemented with FY 2020 Charges
 - ✓ *All Member Partners “Re-Opener” dates aligned*
 - ✓ *Scheduled updates every 4-years*
- 2nd CAP process will launch March 2022 – Complete November 2022
 - ✓ *New Exhibit B Max Day / Peak Hour demands for (potentially) ALL Member Partners*
- Results implemented with FY 2024 Water Charges

Water Charge Methodology Review

- Originally planned to launch in 2020
- Deferred due to focus on Sewer SHAREs, COVID, other emerging issues
- NE WTP Re-purposing is one of the driving forces
 - ✓ *Creates need to review methods for assigning pumping / transmission costs*
 - ✓ *NE WTP Re-purposing is several years away*
- Preparation for the review project will continue with a future launch to be determined



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Great Lakes Water Authority

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MEMORANDUM

Preliminary FY 2023 Water Units of Service

November 11, 2021

To: Nicolette Bateson, Kim Garland

From: Bart Foster

The accompanying exhibits set forth the *preliminary* proposed Units of Service for each Member Partner for the upcoming FY 2023 Water Cost of Service Study. These exhibits are designed to be formally distributed to Member Partners in advance of the second FY 2023 Charges Rollout Meeting, scheduled for next Tuesday, November 16, 2021. At that meeting we will present detailed commentary on this content. Herewith a brief introduction:

- Pages 1 through 9 present calculation of projected “Wholesale Water Sales” for each Member Partner, separated into:
 - “Base months” (October through March)
 - “Peak Months” (April through September)
 - Annual totals
- The projected volumes continue to reflect an average of the last 3 years, with the base month averages adjusted downward by 2.5% annually to reflect water use patterns.
- Page 10 shows the calculation of units of service for “non-master metered” Member Partners (Detroit, Dearborn, Highland Park) – whose “wholesale proxy” volumes are determined based on the Black & Veatch Units of Service (UoS) Studies.
- Pages 11 through 13 present a comparison of the projected wholesale volumes and max day and peak hour demands. ***Max day and peak hour demands for ALL but one of the Master Metered Member Partners are unchanged from FY 2022. The Contract Alignment Plan is scheduled to renegotiate updated demands for ALL Master Metered Member Partners during 2022 for use in the FY 2024 Water Charges.***
- Pages 14 through 16 present “other” Units of Service that are computed based on Wholesale Meter Inventory. ***These units are also identical to FY 2022.***

We look forward to providing additional detail and context at the meeting on November 16.

GLWA Wholesale Master Metered Water Sales Volumes during BASE Months - Mcf
October through March

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Base 2018	Base 2019	Base 2020	Base 2021	Original FY 2022 Proj	Proposed FY 2023 Proj	Variance from FY 2022 Proj		Variance from FY 2021 Actual	
		10/17 - 3/18	10/18 - 3/19	10/19 - 3/20	10/20 - 3/21	(1) ~ (3) Avg	(2) ~ (4) Avg	Volume (6) - (5)	Percent (7) / (5)	Volume (6) - (4)	Percent (9) / (4)
	Adjustment Factor:					95.0%	95.0%				
1	Allen Park	59,903	53,938	54,621	81,831	53,300	60,300	7,000	13.1%	(21,531)	-26.3%
2	Almont Village	4,201	5,537	4,082	4,164	4,400	4,400	0	0.0%	236	5.7%
3	Ash Township	19,168	20,767	19,996	19,038	19,000	18,900	(100)	-0.5%	(138)	-0.7%
4	Belleville	5,386	6,831	6,966	7,999	6,100	6,900	800	13.1%	(1,099)	-13.7%
5	Berlin Township	12,317	11,628	11,475	11,760	11,200	11,000	(200)	-1.8%	(760)	-6.5%
6	Brownstown Township	60,979	56,894	56,177	55,952	55,100	53,500	(1,600)	-2.9%	(2,452)	-4.4%
7	Bruce Twp	476	447	758	742	530	620	90	17.0%	(122)	-16.4%
8	Canton Township	140,219	135,770	142,944	146,552	132,700	134,700	2,000	1.5%	(11,852)	-8.1%
9	Center Line	15,096	15,101	15,305	16,870	14,400	15,000	600	4.2%	(1,870)	-11.1%
10	Chesterfield Township	72,205	74,514	68,713	76,746	68,200	69,700	1,500	2.2%	(7,046)	-9.2%
11	Clinton Township	175,711	173,097	168,106	165,468	163,700	160,400	(3,300)	-2.0%	(5,068)	-3.1%
12	Commerce Township	37,832	38,461	37,212	43,707	35,900	37,800	1,900	5.3%	(5,907)	-13.5%
13	Dearborn Heights	94,884	93,060	91,989	91,362	88,600	87,500	(1,100)	-1.2%	(3,862)	-4.2%
14	Eastpointe	52,083	53,112	49,890	52,296	49,100	49,200	100	0.2%	(3,096)	-5.9%
15	Ecorse	68,903	83,399	62,663	52,151	68,100	62,800	(5,300)	-7.8%	10,649	20.4%
16	Farmington	20,552	19,803	19,315	20,120	18,900	18,800	(100)	-0.5%	(1,320)	-6.6%
17	Farmington Hills	148,227	140,114	142,567	142,834	136,500	134,700	(1,800)	-1.3%	(8,134)	-5.7%
18	Ferndale	33,784	34,307	33,452	36,834	32,200	33,100	900	2.8%	(3,734)	-10.1%
19	Flat Rock	29,571	27,336	25,088	22,799	26,000	23,800	(2,200)	-8.5%	1,001	4.4%
20	Flint	275,356	258,850	211,713	235,932	236,200	223,700	(12,500)	-5.3%	(12,232)	-5.2%
21	Fraser	28,137	26,295	26,207	25,617	25,500	24,700	(800)	-3.1%	(917)	-3.6%
22	Garden City	28,137	37,994	36,621	36,126	32,500	35,100	2,600	8.0%	(1,026)	-2.8%
23	Gibraltar	7,802	7,518	8,140	7,832	7,400	7,400	0	0.0%	(432)	-5.5%
24	Grosse Ile Township	17,023	18,659	15,900	15,628	16,300	15,900	(400)	-2.5%	272	1.7%
25	Grosse Pt. Park	23,667	17,872	22,984	21,538	20,400	19,800	(600)	-2.9%	(1,738)	-8.1%
26	Grosse Pt. Shores	6,609	7,077	5,909	5,860	6,200	6,000	(200)	-3.2%	140	2.4%
27	Grosse Pt. Woods	32,618	29,562	28,447	26,123	28,700	26,600	(2,100)	-7.3%	477	1.8%
28	Hamtramck	30,518	30,655	30,828	31,069	29,100	29,300	200	0.7%	(1,769)	-5.7%
29	Harper Woods	25,988	21,514	24,565	24,533	22,800	22,400	(400)	-1.8%	(2,133)	-8.7%
30	Harrison Township	42,334	40,075	40,780	42,891	39,000	39,200	200	0.5%	(3,691)	-8.6%
31	Hazel Park	25,954	24,871	23,853	23,481	23,600	22,900	(700)	-3.0%	(581)	-2.5%
32	Huron Township	27,325	27,732	26,296	27,533	25,800	25,800	0	0.0%	(1,733)	-6.3%
33	Imlay City	14,336	17,922	18,741	18,639	16,100	17,500	1,400	8.7%	(1,139)	-6.1%

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GLWA Wholesale Master Metered Water Sales Volumes during BASE Months - Mcf
October through March

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Base 2018	Base 2019	Base 2020	Base 2021	Original FY 2022 Proj	Proposed FY 2023 Proj	Variance from FY 2022 Proj		Variance from FY 2021 Actual	
		10/17 - 3/18	10/18 - 3/19	10/19 - 3/20	10/20 - 3/21	(1) ~ (3) Avg	(2) ~ (4) Avg	Volume	Percent	Volume	Percent
								(6) - (5)	(7) / (5)	(6) - (4)	(9) / (4)
	Adjustment Factor:					95.0%	95.0%				
34	Imlay Twp	113	54	69	85	70	70	0	0.0%	(15)	-17.7%
35	Inkster	48,907	54,214	43,132	53,615	46,300	47,800	1,500	3.2%	(5,815)	-10.8%
36	Keego Harbor	4,427	4,562	4,406	4,229	4,200	4,200	0	0.0%	(28)	-0.7%
37	Lapeer	26,570	26,619	23,842	25,157	24,400	23,900	(500)	-2.0%	(1,257)	-5.0%
38	Lenox Township	8,130	8,712	6,239	6,257	7,300	6,700	(600)	-8.2%	443	7.1%
39	Lincoln Park	77,435	80,965	82,371	80,423	76,200	77,200	1,000	1.3%	(3,223)	-4.0%
40	Livonia	196,237	199,486	188,822	181,296	185,100	180,400	(4,700)	-2.5%	(896)	-0.5%
41	Macomb Township	125,716	112,282	111,862	125,005	110,800	110,600	(200)	-0.2%	(14,405)	-11.5%
42	Madison Heights	56,346	53,816	48,069	50,911	50,100	48,400	(1,700)	-3.4%	(2,511)	-4.9%
43	Mayfield Township	678	499	225	126	440	270	(170)	-38.6%	144	114.8%
44	Melvindale	27,185	20,939	19,163	21,235	21,300	19,400	(1,900)	-8.9%	(1,835)	-8.6%
45	New Haven, Village of	16,338	7,704	8,200	8,352	10,200	7,700	(2,500)	-24.5%	(652)	-7.8%
46	N O C W A	387,610	370,233	360,981	358,032	354,300	344,900	(9,400)	-2.7%	(13,132)	-3.7%
47	Northville	12,972	14,249	12,137	12,214	12,500	12,200	(300)	-2.4%	(14)	-0.1%
48	Northville Township	51,691	47,721	48,724	49,410	46,900	46,200	(700)	-1.5%	(3,210)	-6.5%
49	Novi	111,221	114,259	105,209	110,276	104,700	104,400	(300)	-0.3%	(5,876)	-5.3%
50	Oak Park	48,471	46,137	47,691	42,629	45,100	43,200	(1,900)	-4.2%	571	1.3%
51	Oakland Co. Drain Comm.	3,365	4,838	3,210	2,291	3,600	3,300	(300)	-8.3%	1,009	44.0%
52	Plymouth	19,208	19,104	19,572	18,717	18,300	18,200	(100)	-0.5%	(516)	-2.8%
53	Plymouth Township	63,967	62,337	62,344	60,449	59,700	58,600	(1,100)	-1.8%	(1,849)	-3.1%
54	Redford Township	81,091	74,952	73,846	73,322	72,800	70,300	(2,500)	-3.4%	(3,022)	-4.1%
55	River Rouge	17,177	14,879	22,971	16,696	17,400	17,300	(100)	-0.6%	604	3.6%
56	Riverview	22,674	22,106	22,047	21,926	21,200	20,900	(300)	-1.4%	(1,026)	-4.7%
57	Rockwood	4,639	4,525	4,540	4,804	4,300	4,400	100	2.3%	(404)	-8.4%
58	Romeo	2,251	2,561	2,352	2,305	2,300	2,300	0	0.0%	(5)	-0.2%
59	Romulus	91,660	106,324	101,151	102,763	94,700	98,200	3,500	3.7%	(4,563)	-4.4%
60	Roseville	95,704	94,253	83,804	93,571	86,700	86,000	(700)	-0.8%	(7,571)	-8.1%
61	Royal Oak Township	6,412	5,244	4,903	4,601	5,200	4,700	(500)	-9.6%	99	2.1%
62	S O C W A	534,735	515,598	501,228	495,528	491,300	478,900	(12,400)	-2.5%	(16,628)	-3.4%
63	Shelby Township	140,208	135,461	134,011	169,655	129,700	139,100	9,400	7.2%	(30,555)	-18.0%
64	South Rockwood	2,507	2,298	2,115	2,168	2,200	2,100	(100)	-4.5%	(68)	-3.1%
65	Southgate	55,674	54,852	56,246	51,769	52,800	51,600	(1,200)	-2.3%	(169)	-0.3%
66	St. Clair County-Burtchville T	2,961	2,508	2,563	3,533	2,500	2,700	200	8.0%	(833)	-23.6%

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GLWA Wholesale Master Metered Water Sales Volumes during BASE Months - Mcf
October through March

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Base 2018	Base 2019	Base 2020	Base 2021	Original FY 2022 Proj	Proposed FY 2023 Proj	Variance from FY 2022 Proj		Variance from FY 2021 Actual	
		10/17 - 3/18	10/18 - 3/19	10/19 - 3/20	10/20 - 3/21	(1) ~ (3) Avg	(2) ~ (4) Avg	Volume (6) - (5)	Percent (7) / (5)	Volume (6) - (4)	Percent (9) / (4)
	<i>Adjustment Factor:</i>					95.0%	95.0%				
67	St. Clair County	2,440	6,361	9,089	6,491	5,700	6,900	1,200	21.1%	409	6.3%
68	St. Clair Shores	92,274	81,788	95,701	88,073	85,400	84,100	(1,300)	-1.5%	(3,973)	-4.5%
69	Sterling Heights	230,347	241,123	218,100	262,667	218,400	228,600	10,200	4.7%	(34,067)	-13.0%
70	Sumpter Township	13,567	13,820	13,663	14,495	13,000	13,300	300	2.3%	(1,195)	-8.2%
71	Sylvan Lake	2,847	3,166	2,687	2,914	2,800	2,800	0	0.0%	(114)	-3.9%
72	Taylor	121,386	116,069	121,189	114,826	113,600	111,500	(2,100)	-1.8%	(3,326)	-2.9%
73	Trenton	41,721	39,336	41,080	37,841	38,700	37,400	(1,300)	-3.4%	(441)	-1.2%
74	Troy	192,330	197,363	189,101	184,123	183,300	180,700	(2,600)	-1.4%	(3,423)	-1.9%
75	Utica	11,509	12,441	9,821	9,355	10,700	10,000	(700)	-6.5%	645	6.9%
76	Van Buren Township	60,025	56,174	55,084	58,942	54,200	53,900	(300)	-0.6%	(5,042)	-8.6%
77	Walled Lake	14,869	15,160	12,928	13,388	13,600	13,100	(500)	-3.7%	(288)	-2.2%
78	Warren	281,316	284,906	278,224	291,278	267,400	270,600	3,200	1.2%	(20,678)	-7.1%
79	Washington Township	23,224	24,354	24,725	28,629	22,900	24,600	1,700	7.4%	(4,029)	-14.1%
80	Wayne	47,959	45,916	59,220	51,786	48,500	49,700	1,200	2.5%	(2,086)	-4.0%
81	West Bloomfield Township	112,664	106,754	100,527	107,265	101,300	99,600	(1,700)	-1.7%	(7,665)	-7.1%
82	Westland	164,201	150,487	144,327	150,650	145,400	141,100	(4,300)	-3.0%	(9,550)	-6.3%
83	Wixom	29,894	28,166	29,462	30,511	27,700	27,900	200	0.7%	(2,611)	-8.6%
84	Woodhaven	25,241	24,795	24,842	25,335	23,700	23,700	0	0.0%	(1,635)	-6.5%
85	Ypsilanti Comm Util Auth	221,782	225,397	213,128	211,937	209,100	206,000	(3,100)	-1.5%	(5,937)	-2.8%
86	Subtotal Master Metered	5,671,176	5,568,576	5,383,247	5,535,878	5,263,540	5,221,060	(42,480)	-0.8%	(314,818)	-5.7%
87	Genesee County DC	88,164	0	0	0	0	0	0	0.0%	0	0.0%
88	Total Master Metered	5,759,339	5,568,576	5,383,247	5,535,878	5,263,540	5,221,060	(42,480)	-0.8%	(314,818)	-5.7%
89	Dearborn Wholesale Proxy	298,881	296,015	285,232	277,604	278,700	272,000	(6,700)	-2.4%	(5,604)	-2.0%
90	Highland Park Wholesale Proxy	50,741	50,741	49,021	48,282	47,700	46,900	(800)	-1.7%	(1,382)	-2.9%
91	Detroit Wholesale Proxy	2,128,353	2,098,786	1,984,154	1,938,535	1,966,900	1,906,800	(60,100)	-3.1%	(31,735)	-1.6%
92	Subtotal Non Master Mtrd	13,996,653	13,582,693	13,084,901	13,336,176	12,820,380	12,667,820	(152,560)	-1.2%	(668,356)	-5.0%
93	TOTAL	19,755,992	19,151,269	18,468,148	18,872,053	18,083,920	17,888,880	(195,040)	-1.1%	(983,173)	-5.2%
94	Subtotal Sub Wholesale	17,627,639	17,052,483	16,483,994	16,933,518	16,117,020	15,982,080	(134,940)	-0.8%	(951,438)	-5.6%

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GLWA Wholesale Master Metered Water Sales Volumes during PEAK Months - Mcf
April through September

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Peak 2018	Peak 2019	Peak 2020	Peak 2021	Original FY 2022 Proj	Proposed FY 2023 Proj	Variance from FY 2022 Proj		Variance from FY 2021 Actual	
		4/18 - 9/18	4/19 - 9/19	4/20 - 9/20	4/20 - 9/21	(2) ~ (4) Avg	(2) ~ (4) Avg	Volume (6) - (5)	Percent (7) / (5)	Volume (6) - (4)	Percent (9) / (4)
	Adjustment Factor:					100.0%	100.0%				
1	Allen Park	73,030	70,650	84,227	95,289	76,000	83,400	7,400	9.7%	(11,889)	-12.5%
2	Almont Village	4,993	4,750	5,538	5,063	5,100	5,100	0	0.0%	37	0.7%
3	Ash Township	23,310	22,394	24,421	21,400	23,400	22,700	(700)	-3.0%	1,300	6.1%
4	Belleville	7,554	7,778	9,188	7,603	8,200	8,200	0	0.0%	597	7.9%
5	Berlin Township	15,074	14,162	17,067	15,857	15,400	15,700	300	1.9%	(157)	-1.0%
6	Brownstown Township	85,216	76,513	86,794	80,134	82,800	81,100	(1,700)	-2.1%	966	1.2%
7	Bruce Twp	1,331	1,530	2,082	2,374	1,650	2,000	350	21.2%	(374)	-15.8%
8	Canton Township	201,493	198,392	250,459	214,100	216,800	221,000	4,200	1.9%	6,900	3.2%
9	Center Line	16,572	16,571	17,185	16,760	16,800	16,800	0	0.0%	40	0.2%
10	Chesterfield Township	104,592	98,590	107,832	107,485	103,700	104,600	900	0.9%	(2,885)	-2.7%
11	Clinton Township	242,082	227,918	248,202	225,176	239,400	233,800	(5,600)	-2.3%	8,624	3.8%
12	Commerce Township	66,418	58,918	73,101	64,276	66,100	65,400	(700)	-1.1%	1,124	1.7%
13	Dearborn Heights	108,686	104,309	113,342	103,460	108,800	107,000	(1,800)	-1.7%	3,540	3.4%
14	Eastpointe	57,135	52,605	55,063	53,272	54,900	53,600	(1,300)	-2.4%	328	0.6%
15	Ecorse	82,604	77,491	60,998	47,727	73,700	62,100	(11,600)	-15.7%	14,373	30.1%
16	Farmington	25,659	24,309	27,269	24,140	25,700	25,200	(500)	-1.9%	1,060	4.4%
17	Farmington Hills	220,254	204,041	223,972	203,340	216,100	210,500	(5,600)	-2.6%	7,160	3.5%
18	Ferndale	35,822	35,653	41,397	35,703	37,600	37,600	0	0.0%	1,897	5.3%
19	Flat Rock	34,583	29,469	30,129	23,276	31,400	27,600	(3,800)	-12.1%	4,324	18.6%
20	Flint	262,541	241,203	224,902	248,949	242,900	238,400	(4,500)	-1.9%	(10,549)	-4.2%
21	Fraser	34,783	31,229	34,641	31,787	33,600	32,600	(1,000)	-3.0%	813	2.6%
22	Garden City	39,624	42,476	44,543	39,210	42,200	42,100	(100)	-0.2%	2,890	7.4%
23	Gibraltar	9,171	8,769	8,901	8,369	8,900	8,700	(200)	-2.2%	331	4.0%
24	Grosse Ile Township	22,336	20,823	22,728	21,429	22,000	21,700	(300)	-1.4%	271	1.3%
25	Grosse Pt. Park	34,240	34,317	36,476	32,795	35,000	34,500	(500)	-1.4%	1,705	5.2%
26	Grosse Pt. Shores	16,150	11,944	13,919	13,108	14,000	13,000	(1,000)	-7.1%	(108)	-0.8%
27	Grosse Pt. Woods	44,833	40,842	44,884	40,020	43,500	41,900	(1,600)	-3.7%	1,880	4.7%
28	Hamtramck	32,260	32,919	34,083	30,035	33,100	32,300	(800)	-2.4%	2,265	7.5%
29	Harper Woods	29,093	21,271	24,551	26,555	25,000	24,100	(900)	-3.6%	(2,455)	-9.2%
30	Harrison Township	56,568	50,892	58,689	55,358	55,400	55,000	(400)	-0.7%	(358)	-0.6%
31	Hazel Park	26,468	26,034	28,079	25,587	26,900	26,600	(300)	-1.1%	1,013	4.0%
32	Huron Township	33,657	32,675	37,318	36,238	34,500	35,400	900	2.6%	(838)	-2.3%
33	Imlay City	31,701	28,962	28,251	27,032	29,600	28,100	(1,500)	-5.1%	1,068	3.9%

TFG

GLWA Wholesale Master Metered Water Sales Volumes during PEAK Months - Mcf
April through September

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Peak 2018	Peak 2019	Peak 2020	Peak 2021	Original FY 2022 Proj	Proposed FY 2023 Proj	Variance from FY 2022 Proj		Variance from FY 2021 Actual	
		4/18 - 9/18	4/19 - 9/19	4/20 - 9/20	4/20 - 9/21	(2) ~ (4) Avg	(2) ~ (4) Avg	Volume (6) - (5)	Percent (7) / (5)	Volume (6) - (4)	Percent (9) / (4)
	Adjustment Factor:					100.0%	100.0%				
34	Imlay Twp	106	88	74	89	90	80	(10)	-11.1%	(9)	-10.1%
35	Inkster	48,559	48,204	45,277	62,633	47,300	52,000	4,700	9.9%	(10,633)	-17.0%
36	Keego Harbor	5,665	5,592	5,966	5,392	5,700	5,700	0	0.0%	308	5.7%
37	Lapeer	29,536	27,346	26,362	30,974	27,700	28,200	500	1.8%	(2,774)	-9.0%
38	Lenox Township	8,689	7,363	6,813	7,111	7,600	7,100	(500)	-6.6%	(11)	-0.2%
39	Lincoln Park	82,226	79,010	90,926	87,143	84,100	85,700	1,600	1.9%	(1,443)	-1.7%
40	Livonia	308,450	273,167	303,969	277,424	295,200	284,900	(10,300)	-3.5%	7,476	2.7%
41	Macomb Township	225,015	199,130	232,977	188,033	219,000	206,700	(12,300)	-5.6%	18,667	9.9%
42	Madison Heights	66,342	54,519	48,748	62,318	56,500	55,200	(1,300)	-2.3%	(7,118)	-11.4%
43	Mayfield Township	642	243	157	285	350	230	(120)	-34.3%	(55)	-19.2%
44	Melvindale	20,781	20,727	22,300	23,179	21,300	22,100	800	3.8%	(1,079)	-4.7%
45	New Haven, Village of	24,824	9,711	11,291	10,409	15,300	10,500	(4,800)	-31.4%	91	0.9%
46	N O C W A	562,867	510,408	560,500	490,017	544,600	520,300	(24,300)	-4.5%	30,283	6.2%
47	Northville	17,574	19,628	18,354	17,452	18,500	18,500	0	0.0%	1,048	6.0%
48	Northville Township	92,164	81,607	103,286	86,864	92,400	90,600	(1,800)	-1.9%	3,736	4.3%
49	Novi	190,474	173,060	199,654	181,861	187,700	184,900	(2,800)	-1.5%	3,039	1.7%
50	Oak Park	51,892	50,335	53,468	47,176	51,900	50,300	(1,600)	-3.1%	3,124	6.6%
51	Oakland Co. Drain Comm.	7,013	6,416	5,009	7,623	6,100	6,300	200	3.3%	(1,323)	-17.4%
52	Plymouth	25,956	24,270	27,234	26,114	25,800	25,900	100	0.4%	(214)	-0.8%
53	Plymouth Township	102,632	93,612	110,445	97,060	102,200	100,400	(1,800)	-1.8%	3,340	3.4%
54	Redford Township	88,200	83,684	91,241	83,217	87,700	86,000	(1,700)	-1.9%	2,783	3.3%
55	River Rouge	20,778	20,992	19,619	19,738	20,500	20,100	(400)	-2.0%	362	1.8%
56	Riverview	27,429	26,433	28,125	24,792	27,300	26,400	(900)	-3.3%	1,608	6.5%
57	Rockwood	5,641	5,187	5,931	4,804	5,600	5,300	(300)	-5.4%	496	10.3%
58	Romeo	3,692	3,494	3,817	3,777	3,700	3,700	0	0.0%	(77)	-2.0%
59	Romulus	120,038	121,630	129,538	115,357	123,700	122,200	(1,500)	-1.2%	6,843	5.9%
60	Roseville	103,572	96,692	109,325	87,488	103,200	97,800	(5,400)	-5.2%	10,312	11.8%
61	Royal Oak Township	6,108	5,770	5,410	5,298	5,800	5,500	(300)	-5.2%	202	3.8%
62	S O C W A	787,949	711,471	792,532	705,538	764,000	736,500	(27,500)	-3.6%	30,962	4.4%
63	Shelby Township	267,221	235,093	320,833	251,852	274,400	269,300	(5,100)	-1.9%	17,448	6.9%
64	South Rockwood	2,630	2,370	2,524	2,645	2,500	2,500	0	0.0%	(145)	-5.5%
65	Southgate	62,768	63,934	58,313	53,216	61,700	58,500	(3,200)	-5.2%	5,284	9.9%
66	St. Clair County-Burtchville T	5,228	4,241	6,411	6,064	5,300	5,600	300	5.7%	(464)	-7.7%

TFG

GLWA Wholesale Master Metered Water Sales Volumes during PEAK Months - *Mcf*
April through September

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Peak 2018 4/18 - 9/18	Peak 2019 4/19 - 9/19	Peak 2020 4/20 - 9/20	Peak 2021 4/20 - 9/21	Original FY 2022 Proj (2) ~ (4) Avg	Proposed FY 2023 Proj (2) ~ (4) Avg	Variance from FY 2022 Proj		Variance from FY 2021 Actual	
								Volume (6) - (5)	Percent (7) / (5)	Volume (6) - (4)	Percent (9) / (4)
	<i>Adjustment Factor:</i>					100.0%	100.0%				
67	St. Clair County	10,965	15,291	18,500	19,971	14,900	17,900	3,000	20.1%	(2,071)	-10.4%
68	St. Clair Shores	93,884	105,240	115,385	102,312	104,800	107,600	2,800	2.7%	5,288	5.2%
69	Sterling Heights	363,333	330,620	384,597	350,654	359,500	355,300	(4,200)	-1.2%	4,646	1.3%
70	Sumpter Township	16,507	15,356	17,655	16,759	16,500	16,600	100	0.6%	(159)	-0.9%
71	Sylvan Lake	3,639	3,313	3,891	3,400	3,600	3,500	(100)	-2.8%	100	2.9%
72	Taylor	155,816	142,983	148,156	140,682	149,000	143,900	(5,100)	-3.4%	3,218	2.3%
73	Trenton	47,954	45,751	51,575	45,952	48,400	47,800	(600)	-1.2%	1,848	4.0%
74	Troy	302,582	241,744	326,162	267,758	290,200	278,600	(11,600)	-4.0%	10,842	4.0%
75	Utica	15,747	12,991	13,175	12,333	14,000	12,800	(1,200)	-8.6%	467	3.8%
76	Van Buren Township	76,781	72,764	85,475	81,350	78,300	79,900	1,600	2.0%	(1,450)	-1.8%
77	Walled Lake	18,396	15,707	17,303	16,157	17,100	16,400	(700)	-4.1%	243	1.5%
78	Warren	405,276	332,102	344,963	340,019	360,800	339,000	(21,800)	-6.0%	(1,019)	-0.3%
79	Washington Township	53,825	50,038	63,670	55,383	55,800	56,400	600	1.1%	1,017	1.8%
80	Wayne	48,774	57,747	53,123	51,451	53,200	54,100	900	1.7%	2,649	5.1%
81	West Bloomfield Township	171,436	145,976	179,229	166,181	165,500	163,800	(1,700)	-1.0%	(2,381)	-1.4%
82	Westland	205,961	164,184	186,608	178,631	185,600	176,500	(9,100)	-4.9%	(2,131)	-1.2%
83	Wixom	47,837	44,139	49,481	45,768	47,200	46,500	(700)	-1.5%	732	1.6%
84	Woodhaven	34,848	32,640	34,496	32,973	34,000	33,400	(600)	-1.8%	427	1.3%
85	Ypsilanti Comm Util Auth	288,519	257,522	282,572	270,763	276,200	270,300	(5,900)	-2.1%	(463)	-0.2%
86	Subtotal Master Metered	7,814,577	7,101,935	7,942,673	7,254,345	7,619,490	7,433,110	(186,380)	-2.4%	178,765	2.5%
87	Genesee County DC	0	0	0	0	0	0	0	0.0%	0	0.0%
88	Total Master Metered	7,814,577	7,101,935	7,942,673	7,254,345	7,619,490	7,433,110	(186,380)	-2.4%	178,765	2.5%
89	Dearborn Wholesale Proxy	334,097	391,640	309,278	300,555	345,000	333,800	(11,200)	-3.2%	33,245	11.1%
90	Highland Park Wholesale Proxy	59,186	58,076	56,703	56,646	58,000	57,100	(900)	-1.6%	454	0.8%
91	Detroit Wholesale Proxy	2,321,312	2,182,389	2,154,807	2,196,669	2,219,500	2,178,000	(41,500)	-1.9%	(18,669)	-0.8%
92	Subtotal Non Master Mtrd	2,714,595	2,632,105	2,520,788	2,553,870	2,622,500	2,568,900	(53,600)	-2.0%	372,561	14.6%
93	TOTAL	10,529,173	9,734,041	10,463,461	9,808,214	10,241,990	10,002,010	(239,980)	-2.3%	551,326	5.6%
94	Subtotal Sub Wholesale	8,207,860	7,551,652	8,308,654	7,611,545	8,022,490	7,824,010	(198,480)	-2.5%	569,995	7.5%

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GLWA Wholesale Master Metered Water Sales Volumes - Mcf
Adjusted Fiscal Year Summary

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		October thru September				Original	Proposed	Variance from FY 2022 Proj		Variance from FY 2021 Actual	
		AFY 2018	AFY 2019	AFY 2020	AFY 2021	FY 2022 Proj	FY 2023 Proj	Volume	Percent	Volume	Percent
		10/17 - 9/18	10/18 - 9/19	10/19 - 9/20	10/20 - 9/21	(1) ~ (3) Avg	(2) ~ (4) Avg	(6) - (5)	(7) / (5)	(6) - (4)	(9) / (4)
Base Month Adjustment Factor:						95.0%	95.0%				
Peak Month Adjustment Factor:						100.0%	100.0%				
1	Allen Park	132,933	124,588	138,848	177,120	129,300	143,700	14,400	11.1%	(33,420)	-18.9%
2	Almont Village	9,193	10,286	9,620	9,227	9,500	9,500	0	0.0%	273	3.0%
3	Ash Township	42,478	43,161	44,417	40,437	42,400	41,600	(800)	-1.9%	1,163	2.9%
4	Belleville	12,940	14,609	16,153	15,602	13,600	15,100	1,500	11.0%	(502)	-3.2%
5	Berlin Township	27,391	25,790	28,542	27,616	26,600	26,700	100	0.4%	(916)	-3.3%
6	Brownstown Township	146,194	133,407	142,971	136,086	137,500	134,600	(2,900)	-2.1%	(1,486)	-1.1%
7	Bruce Twp	1,807	1,977	2,840	3,116	2,180	2,620	440	20.2%	(496)	-15.9%
8	Canton Township	341,712	334,162	393,403	360,652	349,500	355,700	6,200	1.8%	(4,952)	-1.4%
9	Center Line	31,668	31,671	32,490	33,630	31,200	31,800	600	1.9%	(1,830)	-5.4%
10	Chesterfield Township	176,797	173,104	176,546	184,231	171,900	174,300	2,400	1.4%	(9,931)	-5.4%
11	Clinton Township	417,793	401,015	416,307	390,644	403,100	394,200	(8,900)	-2.2%	3,556	0.9%
12	Commerce Township	104,251	97,379	110,313	107,983	102,000	103,200	1,200	1.2%	(4,783)	-4.4%
13	Dearborn Heights	203,570	197,370	205,331	194,822	197,400	194,500	(2,900)	-1.5%	(322)	-0.2%
14	Eastpointe	109,218	105,717	104,953	105,568	104,000	102,800	(1,200)	-1.2%	(2,768)	-2.6%
15	Ecorse	151,507	160,890	123,662	99,878	141,800	124,900	(16,900)	-11.9%	25,022	25.1%
16	Farmington	46,211	44,112	46,584	44,259	44,600	44,000	(600)	-1.3%	(259)	-0.6%
17	Farmington Hills	368,481	344,155	366,539	346,173	352,600	345,200	(7,400)	-2.1%	(973)	-0.3%
18	Ferndale	69,606	69,960	74,849	72,537	69,800	70,700	900	1.3%	(1,837)	-2.5%
19	Flat Rock	64,154	56,805	55,217	46,075	57,200	51,400	(5,800)	-10.1%	5,325	11.6%
20	Flint	537,898	500,053	436,615	484,881	478,700	462,100	(16,600)	-3.5%	(22,781)	-4.7%
21	Fraser	62,919	57,524	60,848	57,405	59,100	57,300	(1,800)	-3.0%	(105)	-0.2%
22	Garden City	67,760	80,471	81,164	75,336	80,900	77,200	(3,700)	-4.6%	1,864	2.5%
23	Gibraltar	16,973	16,287	17,041	16,201	16,300	16,100	(200)	-1.2%	(101)	-0.6%
24	Grosse Ile Township	39,360	39,482	38,627	37,057	38,300	37,600	(700)	-1.8%	543	1.5%
25	Grosse Pt. Park	57,907	52,189	59,460	54,332	55,600	54,300	(1,300)	-2.3%	(32)	-0.1%
26	Grosse Pt. Shores	22,759	19,021	19,828	18,969	20,200	19,000	(1,200)	-5.9%	31	0.2%
27	Grosse Pt. Woods	77,451	70,405	73,331	66,143	72,200	68,500	(3,700)	-5.1%	2,357	3.6%
28	Hamtramck	62,779	63,574	64,911	61,104	62,200	61,600	(600)	-1.0%	496	0.8%
29	Harper Woods	55,080	42,784	49,116	51,087	47,600	46,500	(1,100)	-2.3%	(4,587)	-9.0%
30	Harrison Township	98,901	90,967	99,468	98,249	94,400	94,200	(200)	-0.2%	(4,049)	-4.1%
31	Hazel Park	52,422	50,905	51,932	49,068	50,500	49,500	(1,000)	-2.0%	432	0.9%
32	Huron Township	60,982	60,407	63,613	63,771	60,300	61,200	900	1.5%	(2,571)	-4.0%
33	Imlay City	46,038	46,884	46,992	45,671	45,700	45,600	(100)	-0.2%	(71)	-0.2%

TFG

GLWA Wholesale Master Metered Water Sales Volumes - Mcf
Adjusted Fiscal Year Summary

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		October thru September				Original	Proposed	Variance from FY 2022 Proj		Variance from FY 2021 Actual	
		AFY 2018	AFY 2019	AFY 2020	AFY 2021	FY 2022 Proj	FY 2023 Proj	Volume	Percent	Volume	Percent
		10/17 - 9/18	10/18 - 9/19	10/19 - 9/20	10/20 - 9/21	(1) ~ (3) Avg	(2) ~ (4) Avg	(6) - (5)	(7) / (5)	(6) - (4)	(9) / (4)
	Base Month Adjustment Factor:					95.0%	95.0%				
	Peak Month Adjustment Factor:					100.0%	100.0%				
34	Imlay Twp	219	142	142	174	160	150	(10)	-6.3%	(24)	-13.8%
35	Inkster	97,465	102,417	88,409	116,248	93,600	99,800	6,200	6.6%	(16,448)	-14.1%
36	Keego Harbor	10,092	10,154	10,373	9,621	9,900	9,900	0	0.0%	279	2.9%
37	Lapeer	56,107	53,965	50,204	56,130	52,100	52,100	0	0.0%	(4,030)	-7.2%
38	Lenox Township	16,819	16,075	13,051	13,367	14,900	13,800	(1,100)	-7.4%	433	3.2%
39	Lincoln Park	159,662	159,975	173,298	167,566	160,200	162,900	2,700	1.7%	(4,666)	-2.8%
40	Livonia	504,687	472,653	492,791	458,720	480,300	465,300	(15,000)	-3.1%	6,580	1.4%
41	Macomb Township	350,731	311,412	344,839	313,038	329,800	317,300	(12,500)	-3.8%	4,262	1.4%
42	Madison Heights	122,688	108,334	96,818	113,229	106,600	103,600	(3,000)	-2.8%	(9,629)	-8.5%
43	Mayfield Township	1,320	743	382	410	790	500	(290)	-36.7%	90	21.9%
44	Melvindale	47,966	41,666	41,463	44,414	42,600	41,500	(1,100)	-2.6%	(2,914)	-6.6%
45	New Haven, Village of	41,162	17,416	19,491	18,761	25,500	18,200	(7,300)	-28.6%	(561)	-3.0%
46	N O C W A	950,478	880,641	921,480	848,049	897,900	865,200	(32,700)	-3.6%	17,151	2.0%
47	Northville	30,546	33,877	30,491	29,666	31,000	30,700	(300)	-1.0%	1,034	3.5%
48	Northville Township	143,855	129,328	152,011	136,274	140,800	136,800	(4,000)	-2.8%	526	0.4%
49	Novi	301,695	287,319	304,864	292,137	292,400	289,300	(3,100)	-1.1%	(2,837)	-1.0%
50	Oak Park	100,363	96,471	101,159	89,805	97,000	93,500	(3,500)	-3.6%	3,695	4.1%
51	Oakland Co. Drain Comm.	10,377	11,254	8,220	9,914	9,700	9,600	(100)	-1.0%	(314)	-3.2%
52	Plymouth	45,164	43,374	46,806	44,831	44,100	44,100	0	0.0%	(731)	-1.6%
53	Plymouth Township	166,599	155,949	172,788	157,509	161,900	159,000	(2,900)	-1.8%	1,491	0.9%
54	Redford Township	169,291	158,635	165,087	156,539	160,500	156,300	(4,200)	-2.6%	(239)	-0.2%
55	River Rouge	37,955	35,871	42,590	36,434	37,900	37,400	(500)	-1.3%	966	2.7%
56	Riverview	50,104	48,539	50,172	46,718	48,500	47,300	(1,200)	-2.5%	582	1.2%
57	Rockwood	10,280	9,711	10,471	9,608	9,900	9,700	(200)	-2.0%	92	1.0%
58	Romeo	5,943	6,055	6,169	6,082	6,000	6,000	0	0.0%	(82)	-1.4%
59	Romulus	211,698	227,954	230,690	218,120	218,500	220,400	1,900	0.9%	2,280	1.0%
60	Roseville	199,276	190,944	193,128	181,059	189,900	183,800	(6,100)	-3.2%	2,741	1.5%
61	Royal Oak Township	12,520	11,014	10,314	9,899	11,000	10,200	(800)	-7.3%	301	3.0%
62	S O C W A	1,322,683	1,227,069	1,293,760	1,201,066	1,254,800	1,215,400	(39,400)	-3.1%	14,334	1.2%
63	Shelby Township	407,429	370,554	454,844	421,506	404,100	408,400	4,300	1.1%	(13,106)	-3.1%
64	South Rockwood	5,136	4,668	4,639	4,813	4,700	4,600	(100)	-2.1%	(213)	-4.4%
65	Southgate	118,443	118,787	114,559	104,985	114,500	110,100	(4,400)	-3.8%	5,115	4.9%
66	St. Clair County-Burtchville T	8,189	6,749	8,973	9,597	7,800	8,300	500	6.4%	(1,297)	-13.5%

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GLWA Wholesale Master Metered Water Sales Volumes - Mcf
Adjusted Fiscal Year Summary

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		October thru September				Original	Proposed	Variance from FY 2022 Proj		Variance from FY 2021 Actual	
		AFY 2018	AFY 2019	AFY 2020	AFY 2021	FY 2022 Proj	FY 2023 Proj	Volume	Percent	Volume	Percent
		10/17 - 9/18	10/18 - 9/19	10/19 - 9/20	10/20 - 9/21	(1) ~ (3) Avg	(2) ~ (4) Avg	(6) - (5)	(7) / (5)	(6) - (4)	(9) / (4)
	Base Month Adjustment Factor:					95.0%	95.0%				
	Peak Month Adjustment Factor:					100.0%	100.0%				
67	St. Clair County	13,405	21,652	27,590	26,463	20,600	24,800	4,200	20.4%	(1,663)	-6.3%
68	St. Clair Shores	186,158	187,028	211,085	190,385	190,200	191,700	1,500	0.8%	1,315	0.7%
69	Sterling Heights	593,680	571,742	602,696	613,321	577,900	583,900	6,000	1.0%	(29,421)	-4.8%
70	Sumpter Township	30,074	29,176	31,318	31,254	29,500	29,900	400	1.4%	(1,354)	-4.3%
71	Sylvan Lake	6,486	6,479	6,578	6,314	6,400	6,300	(100)	-1.6%	(14)	-0.2%
72	Taylor	277,202	259,053	269,345	255,507	262,600	255,400	(7,200)	-2.7%	(107)	0.0%
73	Trenton	89,675	85,088	92,655	83,794	87,100	85,200	(1,900)	-2.2%	1,406	1.7%
74	Troy	494,912	439,107	515,263	451,881	473,500	459,300	(14,200)	-3.0%	7,419	1.6%
75	Utica	27,257	25,432	22,995	21,689	24,700	22,800	(1,900)	-7.7%	1,111	5.1%
76	Van Buren Township	136,807	128,938	140,559	140,292	132,400	133,800	1,400	1.1%	(6,492)	-4.6%
77	Walled Lake	33,266	30,867	30,230	29,545	30,700	29,500	(1,200)	-3.9%	(45)	-0.2%
78	Warren	686,592	617,008	623,187	631,298	628,200	609,600	(18,600)	-3.0%	(21,698)	-3.4%
79	Washington Township	77,049	74,392	88,394	84,012	78,700	81,000	2,300	2.9%	(3,012)	-3.6%
80	Wayne	96,733	103,663	112,344	103,237	104,100	103,800	(300)	-0.3%	563	0.5%
81	West Bloomfield Township	284,099	252,731	279,756	273,445	266,800	263,400	(3,400)	-1.3%	(10,045)	-3.7%
82	Westland	370,162	314,672	330,935	329,281	328,100	317,600	(10,500)	-3.2%	(11,681)	-3.5%
83	Wixom	77,731	72,305	78,944	76,279	74,900	74,400	(500)	-0.7%	(1,879)	-2.5%
84	Woodhaven	60,088	57,435	59,338	58,308	57,700	57,100	(600)	-1.0%	(1,208)	-2.1%
85	Ypsilanti Comm Util Auth	510,301	482,920	495,700	482,700	485,300	476,300	(9,000)	-1.9%	(6,400)	-1.3%
86	Subtotal Master Metered	13,485,753	12,670,511	13,325,920	12,790,222	12,886,930	12,654,170	(232,760)	-1.8%	(136,052)	-1.1%
87	Genesee County DC	88,164	0	0	0	0	0	0	0.0%	0	0.0%
88	Total Master Metered	13,573,917	12,670,511	13,325,920	12,790,222	12,886,930	12,654,170	(232,760)	-1.8%	(136,052)	-1.1%
89	Dearborn Wholesale Proxy	632,978	687,656	594,511	578,159	596,300	605,800	9,500	1.6%	27,641	4.8%
90	Highland Park Wholesale Proxy	109,927	108,817	105,723	104,928	105,700	104,000	(1,700)	-1.6%	(928)	-0.9%
91	Detroit Wholesale Proxy	4,449,665	4,281,175	4,138,961	4,135,204	4,186,400	4,084,800	(101,600)	-2.4%	(50,404)	-1.2%
92	Subtotal Non Master Mtrd	5,192,570	5,077,647	4,839,195	4,818,291	4,888,400	4,794,600	(93,800)	-1.9%	(23,691)	-0.5%
93	TOTAL	18,766,486	17,748,158	18,165,115	17,608,513	17,775,330	17,448,770	(326,560)	-1.8%	(159,743)	-0.9%
94	Subtotal Sub Wholesale	14,316,821	13,466,983	14,026,154	13,473,309	13,588,930	13,363,970	(224,960)	-1.7%	(109,339)	-0.8%

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THE FOSTER GROUP

Calculation of NMM Units of Service / Wholesale Sales Proxy - *Mcf*

	(1)	(2)	(3)	(4)	(5)	(6)
	Adjusted Fiscal Year					
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>Avg</u> (1) ~ (3)	<u>Adj Factor</u>	<u>FY 2023</u> (4) * (5)
<u>Detroit</u>						
Retail Sales - Base Months	1,328,786	1,219,654	1,176,235	1,241,600	95.0%	1,179,500
Retail Sales - Peak Months	1,408,289	1,382,107	1,421,969	1,404,100	100.0%	1,404,100
Total Retail Sales	2,737,075	2,601,761	2,598,204	2,645,700		2,583,600
Real Losses - Base Months	702,600	702,600	702,600	702,600	95.0%	667,500
Real Losses - Peak Months	702,600	702,600	702,600	702,600	100.0%	702,600
Total Real Losses	1,405,200	1,405,200	1,405,200	1,405,200		1,370,100
Apparent Losses - Base Months	67,400	61,900	59,700	63,000	95.0%	59,900
Apparent Losses - Peak Months	71,500	70,100	72,100	71,200	100.0%	71,200
Total Apparent Losses	138,900	132,000	131,800	134,200		131,100
Wholesale Proxy - Base Months	2,098,786	1,984,154	1,938,535	2,007,200		1,906,900
Wholesale Proxy - Peak Months	2,182,389	2,154,807	2,196,669	2,178,000		2,177,900
Total Wholesale Proxy	4,281,175	4,138,961	4,135,204	4,185,200		4,084,800
<u>Dearborn</u>						
Wholesale Proxy - Base Months	296,015	285,232	277,604	286,300	95.0%	272,000
Wholesale Proxy - Peak Months	391,640	309,278	300,555	333,800	100.0%	333,800
Total Wholesale Proxy	687,656	594,511	578,159	620,100		605,800
<u>Highland Park</u>						
Wholesale Proxy - Base Months	50,741	49,021	48,282	49,300	95.0%	46,800
Wholesale Proxy - Peak Months	58,076	56,703	56,646	57,100	100.0%	57,100
Total Wholesale Proxy	108,817	105,723	104,928	106,400		103,900

Calculation of NMM Customer Units of Service - FY 2023

	(1)	(2)	(3)	(4)	(5)	(6)
			Peaking Factor		Peak Demands	
	<u>Sales</u> <i>Mcf</i> <i>from above</i>	<u>Avg Day</u> <i>mgd</i>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Max Day</u> <i>mgd</i> (2) * (3)	<u>Peak Hour</u> <i>mgd</i> (2) * (4)
Detroit	4,084,800	83.72	1.34	1.59	112.26	132.79
Dearborn	605,800	12.42	2.06	2.86	25.63	35.51
Highland Park	103,900	2.13	1.54	1.57	3.28	3.35
Total	4,794,500	98.26			141.16	171.65

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GLWA Water Cost of Service Study - FY 2023
Summary of Baseline Units of Service - Volumes and Demands

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Customer	FY 2022			FY 2023			Variance			% Variance		
	Volume	Max Day	Peak Hour	Volume	Max Day	Peak Hour	Volume	Max Day	Peak Hour	Volume	Max Day	Peak Hour
	<i>Mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>Mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>Mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>Mcf</i>	<i>mgd</i>	<i>mgd</i>
1 Allen Park	129,300	5.70	7.90	143,700	5.70	7.90	14,400	-	-	11.1%	0.0%	0.0%
2 Almont Village	9,500	0.40	0.44	9,500	0.40	0.44	-	-	-	0.0%	0.0%	0.0%
3 Ash Township	42,400	1.44	2.19	41,600	1.44	2.19	(800)	-	-	-1.9%	0.0%	0.0%
4 Belleville	13,600	0.50	0.75	15,100	0.50	0.75	1,500	-	-	11.0%	0.0%	0.0%
5 Berlin Township	26,600	1.20	1.90	26,700	1.20	1.90	100	-	-	0.4%	0.0%	0.0%
6 Brownstown Township	137,500	6.80	11.00	134,600	6.80	11.00	(2,900)	-	-	-2.1%	0.0%	0.0%
7 Bruce Twp	2,180	0.526	0.875	2,620	0.526	0.875	440	-	-	20.2%	0.0%	0.0%
8 Canton Township	349,500	22.50	23.50	355,700	22.50	23.50	6,200	-	-	1.8%	0.0%	0.0%
9 Center Line	31,200	1.13	1.60	31,800	1.13	1.60	600	-	-	1.9%	0.0%	0.0%
10 Chesterfield Township	171,900	8.75	12.00	174,300	8.75	12.00	2,400	-	-	1.4%	0.0%	0.0%
11 Clinton Township	403,100	19.70	22.90	394,200	19.70	22.90	(8,900)	-	-	-2.2%	0.0%	0.0%
12 Commerce Township	102,000	6.54	7.58	103,200	6.54	7.58	1,200	-	-	1.2%	0.0%	0.0%
13 Dearborn Heights	197,400	8.00	12.00	194,500	8.00	12.00	(2,900)	-	-	-1.5%	0.0%	0.0%
14 Eastpointe	104,000	3.70	5.50	102,800	3.70	5.50	(1,200)	-	-	-1.2%	0.0%	0.0%
15 Ecorse	141,800	3.80	4.40	124,900	3.80	4.40	(16,900)	-	-	-11.9%	0.0%	0.0%
16 Farmington	44,600	2.25	2.45	44,000	2.25	2.45	(600)	-	-	-1.3%	0.0%	0.0%
17 Farmington Hills	352,600	20.00	21.30	345,200	20.00	21.30	(7,400)	-	-	-2.1%	0.0%	0.0%
18 Ferndale	69,800	2.80	3.10	70,700	2.80	3.10	900	-	-	1.3%	0.0%	0.0%
19 Flat Rock	57,200	2.63	3.83	51,400	2.63	3.83	(5,800)	-	-	-10.1%	0.0%	0.0%
20 Flint	478,700	14.50	14.50	462,100	14.50	14.50	(16,600)	-	-	-3.5%	0.0%	0.0%
21 Fraser	59,100	2.77	4.28	57,300	2.77	4.28	(1,800)	-	-	-3.0%	0.0%	0.0%
22 Garden City	80,900	3.30	5.21	77,200	3.30	5.21	(3,700)	-	-	-4.6%	0.0%	0.0%
23 Gibraltar	16,300	0.65	0.86	16,100	0.65	0.86	(200)	-	-	-1.2%	0.0%	0.0%
24 Grosse Ile Township	38,300	2.01	3.51	37,600	2.01	3.51	(700)	-	-	-1.8%	0.0%	0.0%
25 Grosse Pt. Park	55,600	3.23	5.31	54,300	3.23	5.31	(1,300)	-	-	-2.3%	0.0%	0.0%
26 Grosse Pt. Shores	20,200	1.43	2.67	19,000	1.43	2.67	(1,200)	-	-	-5.9%	0.0%	0.0%
27 Grosse Pt. Woods	72,200	3.36	4.29	68,500	3.36	4.29	(3,700)	-	-	-5.1%	0.0%	0.0%
28 Hamtramck	62,200	1.77	2.74	61,600	1.77	2.74	(600)	-	-	-1.0%	0.0%	0.0%
29 Harper Woods	47,600	2.09	2.99	46,500	2.09	2.99	(1,100)	-	-	-2.3%	0.0%	0.0%
30 Harrison Township	94,400	3.70	4.75	94,200	3.70	4.75	(200)	-	-	-0.2%	0.0%	0.0%
31 Hazel Park	50,500	1.70	2.44	49,500	1.70	2.44	(1,000)	-	-	-2.0%	0.0%	0.0%
32 Huron Township	60,300	3.10	3.91	61,200	3.10	3.91	900	-	-	1.5%	0.0%	0.0%
33 Imlay City	45,700	2.22	2.35	45,600	2.22	2.35	(100)	-	-	-0.2%	0.0%	0.0%

GLWA Water Cost of Service Study - FY 2023
Summary of Baseline Units of Service - Volumes and Demands

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Customer	FY 2022			FY 2023			Variance			% Variance		
	Volume	Max Day	Peak Hour	Volume	Max Day	Peak Hour	Volume	Max Day	Peak Hour	Volume	Max Day	Peak Hour
	Mcf	mgd	mgd	Mcf	mgd	mgd	Mcf	mgd	mgd	Mcf	mgd	mgd
34 Imlay Twp	160	0.01	0.02	150	0.01	0.02	(10)	-	-	-6.3%	0.0%	0.0%
35 Inkster	93,600	2.44	3.34	99,800	2.44	3.34	6,200	-	-	6.6%	0.0%	0.0%
36 Keego Harbor	9,900	0.450	0.671	9,900	0.450	0.671	-	-	-	0.0%	0.0%	0.0%
37 Lapeer	52,100	1.72	2.50	52,100	1.72	2.50	-	-	-	0.0%	0.0%	0.0%
38 Lenox Township	14,900	0.510	0.704	13,800	0.510	0.704	(1,100)	-	-	-7.4%	0.0%	0.0%
39 Lincoln Park	160,200	5.50	7.00	162,900	5.50	7.00	2,700	-	-	1.7%	0.0%	0.0%
40 Livonia	480,300	23.00	33.00	465,300	23.00	33.00	(15,000)	-	-	-3.1%	0.0%	0.0%
41 Macomb Township	329,800	24.60	41.70	317,300	24.60	41.70	(12,500)	-	-	-3.8%	0.0%	0.0%
42 Madison Heights	106,600	4.75	6.50	103,600	4.75	6.50	(3,000)	-	-	-2.8%	0.0%	0.0%
43 Mayfield Twp	790	0.04	0.07	500	0.04	0.07	(290)	-	-	-36.7%	0.0%	0.0%
44 Melvindale	42,600	1.50	2.10	41,500	1.50	2.10	(1,100)	-	-	-2.6%	0.0%	0.0%
45 New Haven, Village of	25,500	0.79	1.10	18,200	0.79	1.10	(7,300)	-	-	-28.6%	0.0%	0.0%
46 N O C W A	897,900	45.10	49.10	865,200	45.10	49.10	(32,700)	-	-	-3.6%	0.0%	0.0%
47 Northville	31,000	1.55	1.65	30,700	1.55	1.65	(300)	-	-	-1.0%	0.0%	0.0%
48 Northville Township	140,800	10.00	13.80	136,800	10.00	13.80	(4,000)	-	-	-2.8%	0.0%	0.0%
49 Novi	292,400	17.00	19.00	289,300	17.00	19.00	(3,100)	-	-	-1.1%	0.0%	0.0%
50 Oak Park	97,000	3.90	3.90	93,500	3.90	3.90	(3,500)	-	-	-3.6%	0.0%	0.0%
51 Oakland Co. Drain Comm.	9,700	0.184	0.184	9,600	0.184	0.184	(100)	-	-	-1.0%	0.0%	0.0%
52 Plymouth	44,100	1.81	2.62	44,100	1.81	2.62	-	-	-	0.0%	0.0%	0.0%
53 Plymouth Township	161,900	10.00	10.00	159,000	10.00	10.00	(2,900)	-	-	-1.8%	0.0%	0.0%
54 Redford Township	160,500	7.20	10.00	156,300	7.20	10.00	(4,200)	-	-	-2.6%	0.0%	0.0%
55 River Rouge	37,900	1.78	2.26	37,400	1.78	2.26	(500)	-	-	-1.3%	0.0%	0.0%
56 Riverview	48,500	1.68	2.67	47,300	1.68	2.67	(1,200)	-	-	-2.5%	0.0%	0.0%
57 Rockwood	9,900	0.560	0.715	9,700	0.560	0.715	(200)	-	-	-2.0%	0.0%	0.0%
58 Romeo	6,000	0.42	0.60	6,000	0.42	0.60	-	-	-	0.0%	0.0%	0.0%
59 Romulus	218,500	8.92	11.00	220,400	8.92	11.00	1,900	-	-	0.9%	0.0%	0.0%
60 Roseville	189,900	6.39	9.06	183,800	6.39	9.06	(6,100)	-	-	-3.2%	0.0%	0.0%
61 Royal Oak Township	11,000	0.473	0.649	10,200	0.473	0.649	(800)	-	-	-7.3%	0.0%	0.0%
62 S O C W A	1,254,800	60.50	60.50	1,215,400	60.50	60.50	(39,400)	-	-	-3.1%	0.0%	0.0%
63 Shelby Township	404,100	24.79	45.44	408,400	24.79	45.44	4,300	-	-	1.1%	0.0%	0.0%
64 South Rockwood	4,700	0.176	0.297	4,600	0.176	0.297	(100)	-	-	-2.1%	0.0%	0.0%
65 Southgate	114,500	5.00	7.00	110,100	5.00	7.00	(4,400)	-	-	-3.8%	0.0%	0.0%
66 St. Clair County-Burtchville Twp	7,800	0.478	0.680	8,300	0.478	0.680	500	-	-	6.4%	0.0%	0.0%

GLWA Water Cost of Service Study - FY 2023
Summary of Baseline Units of Service - Volumes and Demands

Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	FY 2022			FY 2023			Variance			% Variance		
	Volume <i>Mcf</i>	Max Day <i>mgd</i>	Peak Hour <i>mgd</i>	Volume <i>Mcf</i>	Max Day <i>mgd</i>	Peak Hour <i>mgd</i>	Volume <i>Mcf</i>	Max Day <i>mgd</i>	Peak Hour <i>mgd</i>	Volume <i>Mcf</i>	Max Day <i>mgd</i>	Peak Hour <i>mgd</i>
67 St. Clair County-DTE	20,600	1.75	1.75	24,800	2.53	2.53	4,200	0.780	0.780	20.4%	44.6%	44.6%
68 St. Clair Shores	190,200	7.50	10.00	191,700	7.50	10.00	1,500	-	-	0.8%	0.0%	0.0%
69 Sterling Heights	577,900	33.00	52.50	583,900	33.00	52.50	6,000	-	-	1.0%	0.0%	0.0%
70 Sumpter Township	29,500	1.08	1.67	29,900	1.08	1.67	400	-	-	1.4%	0.0%	0.0%
71 Sylvan Lake	6,400	0.35	0.55	6,300	0.35	0.55	(100)	-	-	-1.6%	0.0%	0.0%
72 Taylor	262,600	11.20	14.00	255,400	11.20	14.00	(7,200)	-	-	-2.7%	0.0%	0.0%
73 Trenton	87,100	3.30	4.92	85,200	3.30	4.92	(1,900)	-	-	-2.2%	0.0%	0.0%
74 Troy	473,500	27.00	40.00	459,300	27.00	40.00	(14,200)	-	-	-3.0%	0.0%	0.0%
75 Utica	24,700	1.20	1.75	22,800	1.20	1.75	(1,900)	-	-	-7.7%	0.0%	0.0%
76 Van Buren Township	132,400	6.90	8.17	133,800	6.90	8.17	1,400	-	-	1.1%	0.0%	0.0%
77 Walled Lake	30,700	1.16	1.67	29,500	1.16	1.67	(1,200)	-	-	-3.9%	0.0%	0.0%
78 Warren	628,200	27.00	35.00	609,600	27.00	35.00	(18,600)	-	-	-3.0%	0.0%	0.0%
79 Washington Township	78,700	5.40	5.40	81,000	5.40	5.40	2,300	-	-	2.9%	0.0%	0.0%
80 Wayne	104,100	8.28	8.28	103,800	8.28	8.28	(300)	-	-	-0.3%	0.0%	0.0%
81 West Bloomfield Township	266,800	15.50	26.00	263,400	15.50	26.00	(3,400)	-	-	-1.3%	0.0%	0.0%
82 Westland	328,100	12.50	17.50	317,600	12.50	17.50	(10,500)	-	-	-3.2%	0.0%	0.0%
83 Wixom	74,900	4.33	5.10	74,400	4.33	5.10	(500)	-	-	-0.7%	0.0%	0.0%
84 Woodhaven	57,700	3.24	5.12	57,100	3.24	5.12	(600)	-	-	-1.0%	0.0%	0.0%
85 Ypsilanti Comm Util Auth	485,300	21.00	21.00	476,300	21.00	21.00	(9,000)	-	-	-1.9%	0.0%	0.0%
86 Subtotal Master Metered	12,886,930	629.11	815.24	12,654,170	629.89	816.02	(232,760)	0.78	0.78	-1.8%	0.1%	0.1%
87 Dearborn	596,300	25.23	34.95	605,800	25.63	35.51	9,500	0.40	0.56	1.6%	1.6%	1.6%
88 Highland Park	105,700	3.34	3.41	104,000	3.28	3.35	(1,700)	(0.06)	(0.06)	-1.6%	-1.7%	-1.7%
89 Detroit	4,186,400	115.05	136.09	4,084,800	112.26	132.79	(101,600)	(2.79)	(3.30)	-2.4%	-2.4%	-2.4%
90 Subtotal Non Master Metered	4,888,400	143.61	174.46	4,794,600	141.16	171.65	(93,800)	(2.45)	(2.80)	-1.9%	-1.7%	-1.6%
91 Grand Total	17,775,330	772.72	989.70	17,448,770	771.05	987.67	(326,560)	(1.67)	(2.02)	-1.8%	-0.2%	-0.2%
Summary												
83 No Mods	12,866,170	627.34	813.47	12,629,220	627.34	813.47	(236,950)	-	-	-1.8%	0.0%	0.0%
2 Old Contract	20,760	1.76	1.77	24,950	2.54	2.55	4,190	0.780	0.780	20.2%	44.3%	44.0%
85 Subtotal Master Metered	12,886,930	629.106	815.239	12,654,170	629.886	816.019	(232,760)	0.78	0.78	-1.8%	0.1%	0.1%
3 Non-Master Metered	4,888,400	143.61	174.46	4,794,600	141.16	171.65	(93,800)	(2.45)	(2.80)	-1.9%	-1.7%	-1.6%
88 Grand Total	17,775,330	772.72	989.70	17,448,770	771.05	987.67	(326,560)	(1.67)	(2.02)	-1.8%	-0.2%	-0.2%

GLWA Water Cost Allocation Study - FY 2023
Summary of Baseline Units of Service - Meter Inventory Impacts

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<u>Community</u>	FY 2022				FY 2023				Variance				% Variance			
	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>
		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>
1 Allen Park	14	928	21.0	602	14	928	21.0	602	-	-	-	-	-	-	-	-
2 Almont Village	1	115	37.9	802	1	115	37.9	802	-	-	-	-	-	-	-	-
3 Ash Township	2	160	29.9	635	2	160	29.9	635	-	-	-	-	-	-	-	-
4 Belleville	1	115	32.5	676	1	115	32.5	676	-	-	-	-	-	-	-	-
5 Berlin Township	4	211	34.6	598	4	211	34.6	598	-	-	-	-	-	-	-	-
6 Brownstown Township	6	523	28.5	601	6	523	28.5	601	-	-	-	-	-	-	-	-
7 Bruce Twp	1	115	32.8	767	1	115	32.8	767	-	-	-	-	-	-	-	-
8 Canton Township	7	1,770	32.2	742	7	1,770	32.2	742	-	-	-	-	-	-	-	-
9 Center Line	1	155	18.4	623	1	155	18.4	623	-	-	-	-	-	-	-	-
10 Chesterfield Township	6	725	28.3	617	6	725	28.3	617	-	-	-	-	-	-	-	-
11 Clinton Township	5	1,218	22.8	607	5	1,218	22.8	607	-	-	-	-	-	-	-	-
12 Commerce Township	3	520	31.4	967	3	520	31.4	967	-	-	-	-	-	-	-	-
13 Dearborn	NA	NA	20.1	597	NA	NA	20.1	597	-	-	-	-	-	-	-	-
14 Dearborn Heights	10	617	22.4	624	10	617	22.4	624	-	-	-	-	-	-	-	-
15 Eastpointe	2	1,013	18.1	612	2	1,013	18.1	612	-	-	-	-	-	-	-	-
16 Ecorse	1	285	20.1	591	1	285	20.1	591	-	-	-	-	-	-	-	-
17 Farmington	3	315	27.1	765	3	315	27.1	765	-	-	-	-	-	-	-	-
18 Farmington Hills	14	2,754	27.4	784	14	2,754	27.4	784	-	-	-	-	-	-	-	-
19 Ferndale	2	568	18.2	643	2	568	18.2	643	-	-	-	-	-	-	-	-
20 Flat Rock	2	235	30.1	601	2	235	30.1	601	-	-	-	-	-	-	-	-
21 Flint	2	3,600	52.0	866	2	3,600	52.0	866	-	-	-	-	-	-	-	-
21 Fraser	5	296	21.0	617	5	296	21.0	617	-	-	-	-	-	-	-	-
22 Garden City	6	491	25.0	638	6	491	25.0	638	-	-	-	-	-	-	-	-
23 Gibraltar	4	176	30.9	588	4	176	30.9	588	-	-	-	-	-	-	-	-
24 Grosse Ile Township	2	400	27.0	584	2	400	27.0	584	-	-	-	-	-	-	-	-
25 Grosse Pt. Park	5	291	18.0	583	5	291	18.0	583	-	-	-	-	-	-	-	-
26 Grosse Pt. Shores	4	283	18.9	587	4	283	18.9	587	-	-	-	-	-	-	-	-
27 Grosse Pt. Woods	5	461	18.9	587	5	461	18.9	587	-	-	-	-	-	-	-	-
28 Hamtramck	14	658	16.7	633	14	658	16.7	633	-	-	-	-	-	-	-	-
29 Harper Woods	8	357	18.4	598	8	357	18.4	598	-	-	-	-	-	-	-	-
30 Harrison Township	2	440	24.0	587	2	440	24.0	587	-	-	-	-	-	-	-	-
31 Hazel Park	5	538	18.1	639	5	538	18.1	639	-	-	-	-	-	-	-	-
32 Highland Park	NA	NA	17.3	639	NA	NA	17.3	639	-	-	-	-	-	-	-	-
32 Huron Township	3	278	29.9	635	3	278	29.9	635	-	-	-	-	-	-	-	-
33 Imlay City	1	155	45.9	908	1	155	45.9	908	-	-	-	-	-	-	-	-

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GLWA Water Cost Allocation Study - FY 2023
Summary of Baseline Units of Service - Meter Inventory Impacts

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<u>Community</u>	FY 2022				FY 2023				Variance				% Variance			
	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>
		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>
34 Imlay Twp	1	80	42.7	825	1	80	42.7	825	-	-	-	-	-	-	-	-
35 Inkster	5	443	24.4	638	5	443	24.4	638	-	-	-	-	-	-	-	-
36 Keego Harbor	2	123	29.1	934	2	123	29.1	934	-	-	-	-	-	-	-	-
37 Lapeer	5	400	49.1	850	5	400	49.1	850	-	-	-	-	-	-	-	-
38 Lenox Township	2	400	30.5	619	2	400	30.5	619	-	-	-	-	-	-	-	-
39 Lincoln Park	4	813	20.4	594	4	813	20.4	594	-	-	-	-	-	-	-	-
40 Livonia	10	2,386	26.2	687	10	2,386	26.2	687	-	-	-	-	-	-	-	-
41 Macomb Township	5	1,015	26.8	622	5	1,015	26.8	622	-	-	-	-	-	-	-	-
42 Madison Heights	2	755	19.4	629	2	755	19.4	629	-	-	-	-	-	-	-	-
43 Mayfield Twp	1	155	48.3	839	1	155	48.3	839	-	-	-	-	-	-	-	-
44 Melvindale	4	525	19.9	594	4	525	19.9	594	-	-	-	-	-	-	-	-
45 New Haven, Village of	1	80	29.8	613	1	80	29.8	613	-	-	-	-	-	-	-	-
46 N O C W A	14	5,173	27.7	895	14	5,173	27.7	895	-	-	-	-	-	-	-	-
47 Northville	4	211	31.1	836	4	211	31.1	836	-	-	-	-	-	-	-	-
48 Northville Township	7	521	30.5	855	7	521	30.5	855	-	-	-	-	-	-	-	-
49 Novi	6	1,836	31.4	936	6	1,836	31.4	936	-	-	-	-	-	-	-	-
50 Oak Park	1	285	19.7	669	1	285	19.7	669	-	-	-	-	-	-	-	-
51 Oakland Co. Drain Comm.	1	115	20.4	617	1	115	20.4	617	-	-	-	-	-	-	-	-
52 Plymouth	3	203	30.8	750	3	203	30.8	750	-	-	-	-	-	-	-	-
53 Plymouth Township	3	315	31.3	793	3	315	31.3	793	-	-	-	-	-	-	-	-
54 Redford Township	17	1,271	22.6	638	17	1,271	22.6	638	-	-	-	-	-	-	-	-
55 River Rouge	5	431	19.4	585	5	431	19.4	585	-	-	-	-	-	-	-	-
56 Riverview	2	130	25.3	594	2	130	25.3	594	-	-	-	-	-	-	-	-
57 Rockwood	2	88	32.7	592	2	88	32.7	592	-	-	-	-	-	-	-	-
58 Romeo	1	155	32.2	789	1	155	32.2	789	-	-	-	-	-	-	-	-
59 Romulus	9	919	27.3	651	9	919	27.3	651	-	-	-	-	-	-	-	-
60 Roseville	2	885	19.0	620	2	885	19.0	620	-	-	-	-	-	-	-	-
61 Royal Oak Township	4	146	19.2	665	4	146	19.2	665	-	-	-	-	-	-	-	-
62 S O C W A	13	4,998	22.2	732	13	4,998	22.2	732	-	-	-	-	-	-	-	-
63 Shelby Township	9	1,246	26.4	694	9	1,246	26.4	694	-	-	-	-	-	-	-	-
64 South Rockwood	2	88	33.4	586	2	88	33.4	586	-	-	-	-	-	-	-	-
65 Southgate	5	361	23.7	601	5	361	23.7	601	-	-	-	-	-	-	-	-
66 St. Clair County-Burtchville Twp	2	105	47.2	620	2	105	47.2	620	-	-	-	-	-	-	-	-

GLWA Water Cost Allocation Study - FY 2023
Summary of Baseline Units of Service - Meter Inventory Impacts

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<u>Community</u>	FY 2022				FY 2023				Variance				% Variance			
	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>	<u>Mtr Count</u>	<u>Eq Mtrs</u>	<u>Distance</u>	<u>Elevation</u>
	<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>		<i>eq mtrs</i>	<i>miles</i>	<i>ft</i>	
67 St. Clair County-DTE	1	413	45.4	774	1	413	45.4	774	-	-	-	-	-	-	-	-
68 St. Clair Shores	6	1,239	20.2	594	6	1,239	20.2	594	-	-	-	-	-	-	-	-
69 Sterling Heights	16	3,175	22.3	632	16	3,175	22.3	632	-	-	-	-	-	-	-	-
70 Sumpter Township	1	155	32.9	663	1	155	32.9	663	-	-	-	-	-	-	-	-
71 Sylvan Lake	1	80	29.1	938	1	80	29.1	938	-	-	-	-	-	-	-	-
72 Taylor	7	1,078	23.5	616	7	1,078	23.5	616	-	-	-	-	-	-	-	-
73 Trenton	2	1,185	25.8	596	2	1,185	25.8	596	-	-	-	-	-	-	-	-
74 Troy	7	2,548	24.2	756	7	2,548	24.2	756	-	-	-	-	-	-	-	-
75 Utica	1	155	24.4	660	1	155	24.4	660	-	-	-	-	-	-	-	-
76 Van Buren Township	7	1,090	32.5	676	7	1,090	32.5	676	-	-	-	-	-	-	-	-
77 Walled Lake	1	115	31.7	959	1	115	31.7	959	-	-	-	-	-	-	-	-
78 Warren	12	1,509	18.4	623	12	1,509	18.4	623	-	-	-	-	-	-	-	-
79 Washington Township	3	278	29.6	754	3	278	29.6	754	-	-	-	-	-	-	-	-
80 Wayne	1	600	25.9	646	1	600	25.9	646	-	-	-	-	-	-	-	-
81 West Bloomfield Township	9	1,960	28.7	912	9	1,960	28.7	912	-	-	-	-	-	-	-	-
82 Westland	16	1,925	26.0	653	16	1,925	26.0	653	-	-	-	-	-	-	-	-
83 Wixom	1	155	33.9	944	1	155	33.9	944	-	-	-	-	-	-	-	-
84 Woodhaven	2	195	28.5	596	2	195	28.5	596	-	-	-	-	-	-	-	-
85 Ypsilanti Comm Util Auth	3	1,880	35.8	726	3	1,880	35.8	726	-	-	-	-	-	-	-	-
86 Subtotal Wholesale	402	67,158			402	67,158			-	-	-	-	-	-	-	-
87 Detroit	NA	NA	16.8	629	NA	NA	16.8	629	-	-	-	-	-	-	-	-
88 Grand Total	402	67,158			402	67,158			-	-	-	-	-	-	-	-