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MEMORANDUM

FY 2025 Cost of Service Study and Service
Charge Recommendations

December 29, 2023
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To: Sue Coffey, Nickie Bateson

From: Bart Foster

This memorandum has been prepared to introduce the exhibits setting forth the cost of service allocations and recommended proposed Water and Sewer service charges for FY 2025. *This memorandum was originally published on December 29, 2023. It has been updated to reflect developments since that date – most importantly to reflect modifications to certain data originally provided by the annual Sewer Flow Balance Report, which has the impact of moderately changing the originally proposed Sewer Charges to individual Member Partners.*

The materials presented herein summarize calculations that are subject to review, change and modification by the Great Lakes Water Authority (“GLWA”) Board. The proposed service charges were initially presented to Member Partners at a meeting on January 11, 2024, and further discussed at a meeting on January 18, 2024. GLWA will be formally proposing the FY 2025 charges for Board consideration on January 24, and subsequently issuing notification of the proposed charges to Member Partners on January 26, 2024. A public hearing on the proposed Water and Sewer service charges for FY 2025 is scheduled for February 28, 2024.

This is the ninth cost of service and service charge study prepared for GLWA. This study only addresses the wholesale 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 aspect of the Agreements.

The material presented herein employs a similar presentation and format to that included in studies from prior years. The effect of the preliminary proposed FY 2025 Water and Sewer Charges were originally documented in our December 12, 2023 “Proposed FY 2025 Water and Sewer Charges” memorandum, *which is included as Appendix A to this report – and has been*

modified to reflect the updated proposed Sewer Charges. As noted in that document, the proposed FY 2025 Water Charges reflect implementation of the simplified Water Charge Methodology recently endorsed via the GLWA Outreach process, and the proposed FY 2025 Sewer Charges reflect the first update to Sewer SHARES in three years.

The overall strategy for the FY 2025 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 interested stakeholders are encouraged 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. These (and other) assumptions are elaborated upon as appropriate in the introduction of specific tables and calculations that follows this executive summary introduction.

1. The FY 2025 Budgeted Revenue Requirements depicted herein represents the “budget request” as developed by GLWA, which was originally presented to the Audit Committee on December 15, 2023 and is scheduled to be formally reflected in the preliminary “*FY 2025-2026 Biennial Budget and Five-Year Plan*” document to be published in January 2024. The overall five-year plan in that document aligns with the current version of the our ten-year financial forecast, which has been moderately updated from the version published in support of the recent revenue bond transactions, which closed on December 5. We have not included updated schedules as part of this report, but it is our intention to publish a formally updated document early next year.
 - *As further explained herein, the FY 2025 Budgeted Revenue Requirements included in these calculations reflect a 4.0% budgetary increase for both the Water and Sewer Systems This represents full implementation of the 4% Revenue Requirement Increase set forth the Agreements. FY 2025 represents that last year of the commitment in the Agreements.*
 - *It is our understanding that the final FY 2025 Budgeted Revenue Requirements may contain modifications to the current “budget request” version, as final review of specific items are completed, including coordination with the DWSD Budget for the Local Systems.*
 - *It is our further understanding that GLWA management has committed to delivering final FY 2025 Budgeted Revenue Requirements that fit 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 financial forecast.
 - *The FY 2025 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”) 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 2025 Budgeted Revenue Requirements, the spend rate assumption is 100% for both Systems.*
 - *This concept has been slightly modified for FY 2025-2026 Biennial Budget and Five-Year Plan. The annual CIP requirements in that document reflect application of a financial plan adjustment that rounds annual amounts in the CIP up to the nearest \$5 million, recognizing the dynamic nature of the CIPs.*

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 2025 BUDGET 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.*

4. The recommended charge adjustment strategies introduced herein reflect proposed “System Charge Adjustments” of 3.25% for the Water System and 3.0% for the Sewer System to meet wholesale revenue requirements. The proposed service charges for each Member Partner will vary from this system average, to reflect:
 - *Recognition of required contractual adjustments for both the Water and Sewer Charges;*
 - *Application of the “MOD” / “No MOD” strategy for the FY 2025 Water Charges to address the 3 Member Partners with interim changes to contractual peak demands; and*
 - *Results of the FY 2025 Sewer Cost of Service Study and SHAREs update*

5. The Proposed Water Charges for the City of Highland Park assume that the recently negotiated Term Sheet between the parties will result in formal agreement prior to final consideration of the proposed charges. As such, Highland Park’s water units of service have been reduced by an amount envisioned by the Term Sheet. No such adjustment is necessary for Highland Park’s sewer units of service, as the Term Sheet does not contain any required adjustment for FY 2025, but rather addresses new metering capabilities and arrangements for future charges.

These calculations follow the same general cost allocation strategies, practices, and protocols that have been applied in prior cost of service studies and charge proposals for GLWA. However, as noted herein the proposed FY 2025 Water Charges reflect application of a simplified Water Charge Methodology recently endorsed by the One Water Partnership. The core logic of the new methodology embraces the same measures of customer use (commodity, max day demand, peak hour demand) as the prior, more complex method but applies such measures in a simplified fashion and replaces the impacts of customer distance and elevation with a “water delivery factor”. *See Appendix E for a detailed discussion of the simplified methodology.*

With respect to the proposed FY 2025 Sewer Charges, it is important to note that the existing FY 2024 Sewer Charges were determined via “across the board” Wholesale Charge Adjustments in both FY 2023 and FY 2024 (applied to the FY 2022 service charges) to all Member Partners. The last charges determined via a detailed cost of service study that treated every Member Partner uniquely and individually were the FY 2022 Sewer Charges. The proposed FY 2025 Sewer Charges reflect updated Sewer SHARES for the 4th SHARES period established by the Sewer Rate Simplification initiative originally implemented for the FY 2015 Sewer Charges. Thus the impact of the proposed charges on individual Member Partners varies from the System average.

With respect to the Cost of Service Studies, the core calculation approach remains the same as in prior analyses. Costs are allocated to “cost pools” that align with characteristics that define each Member Partner’s use of the System(s). In many instances, the allocation of specific revenue requirement elements to cost pools reflects the same allocation assumptions as those applied in the development of the current service charges, although specific operating programs as reflected in the budget request for FY 2025 do impact the cost pool allocations. Also, the FY 2025 Cost of Service Study continues to reflect results of the GLWA capital asset inventory and valuation project conducted at the “launch” of the Authority. We have utilized information provided by that project, including updates reflecting activity through FY 2023, to allocate capital revenue requirements to cost pools.

A detailed discussion with accompanying material that delineate the specific process we have taken to allocate the FY 2025 Budgeted Revenue Requirements to cost pools as part of the FY 2025 Cost of Service and Charges Study is included as Appendix B to this memorandum report.

The exhibits to this memorandum report contain executive summary material on:

- The determination of the Proposed FY 2025 Budgeted Revenue Requirements;
- The allocation of Proposed FY 2025 Water and Sewer Revenue Requirements to cost pools based on the results of the FY 2025 Cost of Service Studies;
- The proposed allocation of these costs to individual Member Partners;
- 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 “two pager” illustration of the proposed charge calculations. As noted earlier, these individual calculation sheets were distributed to Member Partners in advance of a meeting on January 11, 2024, and GLWA is formally issuing notification of the proposed charges on January 26, 2024. We suggest publishing this memorandum report to support review of the proposed charges. Additional material has been 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:

1. Presents an executive summary of the comprehensive Water Supply System Budgeted Revenue Requirements for FY 2025 compared to the originally approved FY 2024 Revenue Requirements. This table was originally presented in the December 12, 2023 memorandum (*see Appendix A for additional discussion*). Of note:
 - The total Revenue Requirement increase is \$14.8 million, or 4.0%, as shown on Line 12 of the table.
 - The budgeted investment earnings for FY 2025 are significantly higher than those budgeted for FY 2024 and provide funds to meet a portion of the budget increase (*Line 16*).
 - Proforma wholesale Water revenues under existing charges reflect a \$3.0 million decrease compared to originally forecasted FY 2023 amounts, creating a negative budget variance that must be recovered from the FY 2025 Water Charges. (*Line 17*).
 - As a result, the “System Charge Adjustment” required from charges to Member Partners is 3.25%, designed to generate \$11.8 million more revenue than the existing charges.
 - ***The Water Service Charge calculations delineated herein allocate responsibility for the “Revenue Requirement from Charges” totaling \$374.85 million as shown on Line 1 of Column 2 of the table.***

2. Allocates the FY 2025 Revenue Requirements from Table 1 to the Cost Pools necessary to assign costs to Member Partners and Customer classes. As noted earlier, the proposed FY 2025 Water Charges reflect application of a simplified Water Charge Methodology recently endorsed by the One Water Partnership. This simplified approach fixes the allocation to Commodity / Max Day Demand, and Peak Hour Demand at 10% / 50% / 40% respectively. Therefore the detailed allocation of revenue requirements to Cost Pools is solely intended to indicate general alignment with long term averages. ***The detailed allocations are set forth in Appendix B to this memorandum report.*** There are a few items of note:
 - The preliminary operating expense budget reflects the detailed review of specific cost elements. In general, compared to the prior cost of service studies the total operating expense budget for FY 2025 reflects material increases in the commodity and max day Cost Pools and a more moderate increase in peak hour related Cost Pools.
 - *This is principally related to increases in chemical and utility costs at the water treatment plants.*

- The capital revenue requirement allocations continue to reflect the detailed review of the fixed asset data that resulted from the capital asset inventory and valuation project. In general, the relative capital revenue requirements allocated to peak hour cost pools are proportionally higher than the operating revenue requirements. A large amount of Transmission Main assets will be fully depreciated during FY 2025, therefore the capital revenue requirement allocation to the Peak Hour Cost Pool is lower than prior years.
 - ***Again, the cost allocation results indicated in this table are provided for information only, as the 10/50/40 Simplification Methodology locks in Cost Pool weights.***
3. Illustrates the calculation of proforma FY 2025 revenues under the existing FY 2024 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.
 - This is necessary to provide context to the results of the cost of service analyses and charge adjustment strategy presented in Tables 6 and 7.
 - ***The total proforma revenue of \$363.05 million in Column 4 of the last page of the table becomes the “Baseline Revenue” on Line 14 in Table 1.***
4. Establishes the “Units of Service” and individual Cost Pool Shares for each Member Partner to support the cost of service allocations under the Simplified Water Charge Methodology. The preliminary units of service in Columns 1 through 4 were originally presented to Member Partners at the second FY 2025 Charges Rollout Meeting on November 15, 2023. ***See Appendix D for a detailed discussion.*** At that presentation there were no anticipated in contract demands, and it was suggested that all Member Partners should expect a uniform charge adjustment. The final proposed units of service reflect modifications to contractual max day and peak hour demands for three Member Partners, and creates the need to specifically calculate proposed charges for these three “MOD” customers via a detailed cost of service methodology. ***See Appendix A for a detailed discussion.*** The three Member Partners with changes in contract demands are Grosse Pointe Shores, Highland Park, and Romeo. These three “MOD” customers are **highlighted** throughout the tables in this discussion, and they are treated individually with respect to their specific units of service. All other Member Partners are treated uniformly as members of the “No MOD” class and ultimately receive the charge adjustment indicated by the class’s collective units of service.

- The annual sales volumes in Column 1 continue to reflect a uniform forecasting approach. For FY 2025 the projected volume was determined by averaging annual sales for each Member Partner over the most recent 36 months from October 2020 through September 2023. 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. 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. Note that projected annual volumes for certain Member Partners were modified to remove “outlier” data from the historical period.
- The max day and peak hour demand figures in Columns 3 and 4 reflect figures from Exhibit B of the contract for the 85 master metered Member Partners.
- ***Absent “out of cycle” reopener adjustments it is anticipated that these max day and peak hour demands will remain in place for ALL Member Partners for the FY 2025, FY 2026, and FY 2027 Water Charges – and that the next CAP process will take place in 2026 to be reflected in the FY 2028 Water Charges.***
- Dearborn, Highland Park, and Detroit are not served by master meters. Units of service for these “Non-Master Metered” Member Partners continue to be established via the phase 2 Units of Service (“UoS”) Study protocols initially established for the FY 2020 charges. ***The max day and peak hour demands resulting from this approach are also intended to be “locked in” for the remaining 3 years of the current CAP period introduced above.***
- Highland Park’s units of service reflect an adjustment to align with the agreement set forth in the recently negotiated Term Sheet. ***See Appendix A.***
- Columns 5 through 7 simply compute each Member Partner’s “share” of each usage cost pool, based on their relative use of the System as measured by Commodity, Max Day, and Peak Hour.
- Column 8 indicates each Member Partner’s Water Delivery Factor, which implements the variable costs of delivering water to Member Partners to their individual geographical location in the System. The simplified Water Charge Methodology applies these factors to replicate the impacts of distance and elevation in prior Water Charge calculations. ***See Appendix E for a detailed discussion of how these factors are determined.***
- Column 9 simply indicates which Member Partners are being treated as members of the “MOD” and “No MOD” customer classes for the proposed FY 2025 Water Charges.

5. Allocates the FY 2025 Wholesale Revenue Requirement to each “MOD” Member Partner and to the “No MOD” customer class at large, and determines the corresponding SHARES. The simplified “10/50/40” Cost Pool weights are shown at the top of Table 5. Each “MOD” Member Partner’s *Unadjusted Wholesale SHARE* in Column 4 is simply the sum of the products of the individual Cost Pool Share (from Table 4) times these Cost Pool Weighting Factors. Column 5 applies the Water Delivery Factor to these figures to arrive at the Adjusted Wholesale SHARE in Column 6. These SHARES are applied to the overall \$374.85 million Wholesale Revenue Requirement from Table 1 to allocate Member Partner responsibility in Column 7. This is compared to the proforma Wholesale Revenue figures in Column 8 (from Table 3) to determine the “wholesale” charge adjustment required in Columns 9 and 10. The same process is applied for the “No MOD” customer class as a whole, which is “bundled” for purposes of these calculations. Of note:
 - The “MOD” customer class accounts for approximately 0.5% of the wholesale revenue requirement. The other 99.5% is allocated to the “No MOD” class.
 - Collectively, the wholesale charge adjustment for the “MOD” Member Partners is a reduction of approximately 10.8%.
 - As a result, the uniform wholesale charge adjustment for the “No MOD” customer class is 3.33%, in order to achieve the overall System charge adjustment of 3.25%.
 - These figures will subsequently be modified in Table 6 to reflect adjustments required by contractual agreements.
 - The illustration above will be reflected on the “Charge Calculation Worksheets” that are being developed for each Member Partner and that will be distributed prior to the 3rd Charges Rollout Meeting on January 11.
 - Individual Member Partner Cost Pool Shares are rounded to 0.001%.
6. Computes the allocated FY 2025 allocated wholesale revenue requirements for each Member Partner and applies the adjustments necessary to reflect two special contractual agreements. This table “unbundles” the “No MOD” customer class in order to support calculation of revenue requirement responsibility of each Member Partner in that class.
 - Column 1 presents the proforma “Wholesale” revenue under the existing charges, from Table 3.
 - The required “wholesale” charge adjustment for each Member Partner was determined in Table 5 and is shown in Column 2. For the “No MOD” class this is the uniform 3.33%.

- The product of Columns 1 and 2 is the Allocated Wholesale Revenue Requirement in Column 3, which must then be modified to reflect two contractual agreements:
- The “Detroit capital ownership adjustment” of \$20.7 million annually, which is established in the Agreements must be recognized. In Column 4 of the table this amount is reduced from the Wholesale Revenue Requirement allocated to Detroit and allocated to all other Member Partners in proportion to their individually allocated 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 2025 is estimated to be \$6,651,800. This adjustment is accomplished in Column 5 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 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 ~ \$5.0 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.*
- Table 6 also compares the final allocated FY 2025 Total Revenue Requirement with the proforma revenue under the existing charge schedule, and identifies the relative charge adjustment required from each Member Partner. These figures are uniform for the “No MOD” class, and are slightly lower than the wholesale charge adjustment computed in Table 5. This is because the contractual adjustments in Columns 4 and 5 are fixed – so amounts in the final charges do not need to be increased to implement those adjustments.
- The fixed nature of these adjustments also produces total “net” charge adjustments for Detroit and Flint that vary from the class average. *See Table 8.*
- ***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.
 - Column 3 presents the “average unit cost” for each Member Partner, which simply represents that allocated cost of service divided by the total annual sales volume. *This metric is included in Table 7 for reference purposes and is not part of the Water Charge Schedule.*
 - The proposed FY 20245 Water Service Charge Schedule is calculated in Columns 4 through 7. The proposed service charge structure represents the same approach as the existing charge structure, which was originally implemented for the FY 2016 Water Service Charges. 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 – and is determined by dividing by the projected sales volume resulting from the uniform forecasting approach.
 - Column 8 calculates projected revenue under the proposed service charge schedule and Column 9 illustrates that the proposed charges recover the adjusted, allocated revenue requirements for each Member Partner.

8. Illustrates the impact of the Detroit Ownership Benefit and Flint / KWA Debt Service contractual adjustments on the relative charge adjustments.
 - These adjustments are fixed, and not subject to any indexed adjustment to overall revenue requirements.
 - As a result the most pertinent percentage adjustment figures resulting from the FY 2025 Cost of Service Study are those related to the “Allocated Wholesale Revenue Requirement” – prior to any adjustments.
 - Table 8 is designed to emphasize this notion for Detroit, Flint, and the other Member Partners in total.

Sewer Service Charge Calculation Tables:

1. Presents an executive summary of the comprehensive Sewage Disposal System Budgeted Revenue Requirements for FY 2025 compared to the originally approved FY 2024 Revenue Requirements. This table was originally presented in the December 12, 2023 memorandum – *as modified to reflect the updated proposed Sewer Charges (see Appendix A for additional discussion)*. Of note:
 - The total Revenue Requirement increase is \$20 million, or 4.0%, as shown on Line 12 of the table.

- The budgeted investment earnings for FY 2025 are significantly higher than those budgeted for FY 2024 and provide funds to meet a portion of the budget increase (*Line 16*).
 - As a result, the “System Charge Adjustment” required from charges to Member Partners is 3.0%, designed to generate \$14.785 million more revenue than the existing charges.
 - ***The Sewer Service Charge calculations delineated herein allocate responsibility for the “Revenue Requirement from Charges” totaling \$507.59 million as shown on Line 1 of Column 2 of the table.***
2. Allocates the FY 2025 Revenue Requirements from Table 1 to the Sewer Cost Pools necessary to assign costs to Member Partners and Customer classes. ***This schedule is developed via the detailed cost of service analysis set forth in Appendix B.***
- A small portion of the revenue requirement is recovered from the Oakland Macomb Interceptor District (“OMID”) on a fixed contractual basis, as shown in Column 2.
 - The remaining revenue shown in Column 3 must be recovered from wholesale charges (including industrial charges).
 - Amounts to be collected from industrial waste control charges are directly identified in Column 4. Columns 5 through 10 identify revenue requirements allocable to the WRRF Cost Pool. As noted in the table the detail provided by Columns 5 through 9 are identified separately solely for purposes of determining industrial surcharges, since the wholesale Sewer Charge Methodology does not require such detail.
 - Columns 11 and 12 present wholesale costs of service to be recovered from SHAREs that are allocable to the Conveyance and Combined Sewer Overflow (“CSO”) facilities.
 - The portion of the WRRF wholesale costs that are designed to be recovered from Industrial Surcharges (*see Table 5*) are deducted on Line 11 to result in the wholesale revenue requirements to be recovered from SHAREs on Line 12.
 - The resulting Cost Pool weights on Line 13 for the WRRF, Conveyance and CSO 83/17 are converted to the simplified Allocator Factors on Line 14. 50% of the WRRF Cost Pool is allocated to Member Partners based on contributed Sanitary Flow. The other 50% of the WRRF Cost Pool, and all of the Conveyance Cost Pool, is allocated to Member Partners based on contributed Total Flow. The CSO Facilities Cost Pool is limited to specific facilities identified in legal agreements and costs in this cost pool are allocated to Member Partners based on their relative share of the CSO 83/17 agreements,

with Detroit being allocated 83%. For purposes of SHARE calculations the Allocator Factors are simplified by rounding the nearest 0.5%.

3. Illustrates the calculation of proforma FY 2025 revenues under the existing FY 2024 service charge schedule.
 - Separates the proforma revenue projections into amounts related to:
 - “Wholesale” revenue requirements;
 - Contractual adjustment to implementation of the Detroit Ownership Adjustment;
 - Specific contractual adjustments to reflect the OMID specific charges.
 - This is necessary to provide context to the results of the cost of service analyses and charge adjustment strategy presented in Tables 6 and 7.
 - ***The total proforma revenue of \$492.8 million in Column 6 of the table becomes the “Baseline Revenue” on Line 14 in Table 1.***
4. Presents the Proposed FY 2025 SHAREs and compares them to the existing SHAREs. ***See the “FY 2025 Shares Period Memorandum” in Appendix C, as augmented by Appendix F and Appendix G, for specifics – all of which have been modified to reflect the updated proposed Sewer Charges.***
5. Presents the calculation of FY 2025 Industrial Surcharges.
 - The WRRF “pollutant” Cost Pool revenue requirements from Table 2 are shown on Line 1.
 - Dividing these revenue requirements by the total estimated influent loadings at the WRRF (Line 4) yields the unit cost per pound for each pollutant, which become the FY 2025 industrial surcharges. (Line 5).
 - Applying the estimated surcharge loadings to these surcharge rates indicate the total projected surcharge revenues on Line 10. These revenues are subsequently reduced from the WRRF Cost Pool revenue requirements prior to calculation of wholesale SHAREs. *See Table 2.*
6. Allocates the FY 2025 Revenue Requirements to Member Partners.
 - The SHAREs from Table 4 are applied to the wholesale revenue requirement from Table 2 to compute the allocated revenue requirements in Column 2.
 - The “Detroit Capital Ownership Adjustment” identified in the Agreements is reduced from Detroit and allocated to all other Member Partners (based on their SHAREs) in Column 3.
 - The OMID specific contractual amounts are applied in Column 5.

- The Proposed FY 2025 Sewer Charges contain one final adjustment related to Green Infrastructure expenditures made by DWSD, shown in Column 7. In accordance with the NPDES Permit, DWSD spends approximately \$2 million annually on Green Infrastructure initiatives. In accordance with the Agreements, 17% of such costs are the responsibility of GLWA’s suburban wholesale Member Partners. This budgeted GLWA operating expense of \$347,000 is originally assigned to the CSO 83/17 Cost Pool, and Detroit is allocated 83% of that amount, or \$288,000. The adjustment in Column 7 reverses that initial allocation and reallocates it to all other Member Partners based on their 17% share.
 - The total revenue requirement to be recovered from charges is shown in Column 8. ***The figure for Detroit becomes the figure for consideration by the GLWA Board. The calculations herein do not produce specific charge proposals for the Detroit retail class.***
7. Calculates the Proposed FY 2025 Wholesale Sewer Service Charges. The proposed charges for Member Partners continue to consist entirely of fixed monthly charges are simply the amounts from Table 6 divided by 12. Table 7 presents the fixed monthly charges in the same format as Table 6.
 8. Compares the Proposed FY 2025 Wholesale Sewer Service Charges to the existing charges.
 - The proposed charge adjustments shown in Column 4 to individual Member Partners aligns with the change in their individual SHARES. They are basically the change in SHARE plus a uniform 3% to implement the System Charge Adjustment.
 - ***The relative changes for individual Member Partners are discussed in Appendices A, C, F, and G.***
 9. Compares the projected **revenues** from the Proposed FY 2025 Wholesale Sewer Service Charges to those produced by the existing charges.
 10. Presents the Proposed FY 2025 Industrial Waste Control Charges and Industrial Surcharges. The Industrial Waste Control Charges are designed to recover the \$8.7 million annual revenue requirement from Table 2 via monthly charges to non-residential customers in the System. The charges escalate based on retail connection size, and an “administrative” only fee is presented for certain Member Partner communities who perform their own monitoring activities. The Industrial Surcharges were presented earlier in Table 5.

Table 1
Water Supply System
Recommended FY 2025 Revenue Requirement and Charge Adjustment Summary

	Approved FY 2024 <u>Budget</u> \$	Recommended FY 2025 <u>Budget</u> \$	<u>Variance</u> \$	<u>% Variance</u>
<u>Revenues</u>				
1	366,077,800	374,850,500	8,772,700	2.4%
2	175,000	400,000	225,000	128.6%
3	4,061,700	9,876,600	5,814,900	143.2%
4	<u>370,314,500</u>	<u>385,127,100</u>	<u>14,812,600</u>	4.0%
<u>Revenue Requirements</u>				
5	152,906,400	169,625,000	16,718,600	10.9%
6	159,482,800	175,300,800	15,818,000	9.9%
7	3,395,500	2,283,300	(1,112,200)	-32.8%
8	1,851,600	1,947,800	96,200	5.2%
9	22,500,000	22,500,000	0	0.0%
10	0	6,200,000	6,200,000	0.0%
11	30,178,200	7,270,200	(22,908,000)	-75.9%
12	<u>370,314,500</u>	<u>385,127,100</u>	<u>14,812,600</u>	4.0%
<u>Revenue Requirements</u>				
13		4.0%		<i>~ Baseline Revenue</i>
14		363,051,300		
15			14,812,600	4.08%
16			(6,039,900)	-1.66%
17			<u>3,026,500</u>	<u>0.83%</u>
18			11,799,200	3.25%

Table 2
Water Supply System
Cost Pool Allocation for FY 2025 Wholesale Revenue Requirements

	(1)	(2)	(3)	(4)	
	Total				
	<u>Rev Req't</u>	<u>Commodity</u>	<u>Max Day</u>	<u>Peak Hour</u>	
	\$	\$	\$	\$	
<u>Revenue Requirements</u>					
1	Operations & Maintenance (O&M) Expense	169,625,000	35,831,600	95,973,800	37,819,800
2	Debt Service - Regional System Allocation	175,300,800	3,510,800	81,504,800	90,285,200
3	General Retirement System Accelerated Pension	2,283,300	187,800	1,601,200	494,300
4	WRAP Contribution	1,947,800	218,000	1,003,100	726,500
5	Lease Payment	22,500,000	2,518,400	11,587,500	8,392,500
6	Receiving Fund Working Capital Requirement	6,200,000	145,600	3,380,200	3,744,400
7	Deposit to Improvement & Extension (I&E) Fund	7,270,200	693,900	3,193,000	2,312,600
8	Total Revenue Requirements	385,127,100	43,106,100	198,243,600	143,775,300
9	less: Miscellaneous and Non-Operating Revenue	(10,276,600)	(1,150,200)	(5,292,400)	(3,833,200)
10	Revenue Requirements from Charges	374,850,500	41,955,900	192,951,200	139,942,100
11	<i>Cost Pool Weights</i>		11.2%	51.5%	37.3%
12	<i>Simplified Cost Pool Weights *</i>		10%	50%	40%

* *These Simplified Cost Pool Weights reflect long term averages and are fixed under the Water Charge Methodology. They become the basis for determination of SHARES in Table 5.*

Table 3
Water Supply System
FY 2025 Proforma Revenue Under Existing Charges

	(1) FY 2025 <u>Volume</u> <i>Mcf</i>	(2) FY 2024 Charges		(4) FY 2025 Proforma Revenue by Category				(8) Proforma <u>Unit Cost</u> <i>\$/Mcf</i>	(9) MOD / <u>No MOD</u>	
		(3) <u>Commodity</u> <i>\$/Mcf</i>	(2) <u>Fixed</u> <i>\$/mo</i>	(4) <u>Gross</u> <u>TOTAL</u> \$	(5) DWSD <u>Ownership Adj</u> \$	(6) Flint / KWA <u>Adjustment</u> \$	(7) Wholesale <u>Rev Req't</u> \$			
1	Allen Park	116,700	132,700	8.73	2,611,200	157,100	45,800	2,408,300	20.64	No MOD
2	Almont Village	9,000	13,300	11.53	263,400	15,800	4,600	243,000	27.00	No MOD
3	Ash Township	38,700	47,800	9.30	933,500	56,100	16,400	861,000	22.25	No MOD
4	Belleville	13,900	18,300	9.68	354,200	21,300	6,200	326,700	23.50	No MOD
5	Berlin Township	27,100	39,500	11.42	783,500	47,100	13,700	722,700	26.67	No MOD
6	Brownstown Township	139,100	210,000	11.98	4,186,400	251,800	73,500	3,861,100	27.76	No MOD
7	Bruce Township	3,070	17,400	46.26	350,800	21,100	6,200	323,500	105.37	No MOD
8	Burtchville Township	9,100	21,800	19.33	437,500	26,300	7,700	403,500	44.34	No MOD
9	Canton Township	375,000	577,700	12.34	11,559,900	695,300	202,800	10,661,800	28.43	No MOD
10	Center Line	32,200	27,100	6.73	541,900	32,600	9,500	499,800	15.52	No MOD
11	Chesterfield Township	180,300	245,000	10.86	4,898,100	294,600	85,900	4,517,600	25.06	No MOD
12	Clinton Township	385,000	428,200	8.70	8,487,900	510,500	148,900	7,828,500	20.33	No MOD
13	Commerce Township	104,100	195,400	14.45	3,849,000	231,500	67,500	3,550,000	34.10	No MOD
14	Dearborn	540,800	551,100	7.85	10,858,500	653,100	190,500	10,014,900	18.52	No MOD
15	Dearborn Heights	195,700	211,900	8.53	4,212,100	253,300	73,900	3,884,900	19.85	No MOD
16	Eastpointe	102,800	90,900	6.99	1,809,400	108,800	31,700	1,668,900	16.23	No MOD
17	Ecorse	81,700	66,200	5.80	1,268,300	76,300	22,300	1,169,700	14.32	No MOD
18	Farmington	44,100	55,800	9.92	1,107,100	66,600	19,400	1,021,100	23.15	No MOD
19	Farmington Hills	350,400	502,800	11.30	9,993,100	601,000	175,300	9,216,800	26.30	No MOD
20	Ferndale	64,500	60,000	7.32	1,192,100	71,700	20,900	1,099,500	17.05	No MOD
21	Flat Rock	50,800	79,700	12.30	1,581,200	95,100	27,700	1,458,400	28.71	No MOD
22	Flint	415,500	30,100	10.27	4,628,400	678,500	(6,651,800)	10,601,700	25.52	No MOD
23	Fraser	56,500	70,800	9.94	1,411,200	84,900	24,800	1,301,500	23.04	No MOD
24	Garden City	72,800	97,000	10.21	1,907,300	114,700	33,500	1,759,100	24.16	No MOD
25	Gibraltar	16,100	19,200	9.35	380,900	22,900	6,700	351,300	21.82	No MOD
26	Greenwood Township (DTE)	26,100	68,500	20.74	1,363,300	82,000	23,900	1,257,400	48.18	No MOD
27	Grosse Ile Township	41,700	63,600	13.19	1,313,200	79,000	23,000	1,211,200	29.05	No MOD
28	Grosse Pt. Park	52,700	76,700	11.04	1,502,200	90,400	26,400	1,385,400	26.29	No MOD
29	Grosse Pt. Shores	18,900	36,700	15.07	725,200	43,600	12,700	668,900	35.39	MOD
30	Grosse Pt. Woods	68,100	73,700	8.42	1,457,800	87,700	25,600	1,344,500	19.74	No MOD
31	Hamtramck	62,000	46,300	6.05	930,700	56,000	16,300	858,400	13.85	No MOD

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Table 3
Water Supply System
FY 2025 Proforma Revenue Under Existing Charges

	(1) FY 2025 <u>Volume</u> <i>Mcf</i>	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		FY 2024 Charges		FY 2025 Proforma Revenue by Category			Wholesale <u>Rev Req't</u> \$	Proforma <u>Unit Cost</u> \$/Mcf	MOD / <u>No MOD</u>
	<u>Fixed</u> \$/mo	<u>Commodity</u> \$/Mcf	<u>Gross</u> <u>TOTAL</u> \$	DWSD <u>Ownership Adj</u> \$	Flint / KWA <u>Adjustment</u> \$				
32 Harper Woods	53,800	49,400	7.56	999,500	60,100	17,500	921,900	17.14	No MOD
33 Harrison Township	97,700	94,900	7.70	1,891,100	113,700	33,200	1,744,200	17.85	No MOD
34 Hazel Park	47,900	43,100	7.01	853,000	51,300	15,000	786,700	16.42	No MOD
35 Highland Park	77,200	64,700	5.02	1,163,900	70,000	20,400	1,073,500	13.91	MOD
36 Huron Township	65,600	85,400	10.53	1,715,600	103,200	30,100	1,582,300	24.12	No MOD
37 Imlay City	47,100	83,700	14.64	1,693,900	101,900	29,700	1,562,300	33.17	No MOD
38 Imlay Township (Single User)	10	900	62.31	11,400	700	200	10,500	1,050.00	No MOD
39 Inkster	100,800	74,400	5.89	1,486,500	89,400	26,100	1,371,000	13.60	No MOD
40 Keego Harbor	9,800	17,000	13.72	338,500	20,400	5,900	312,200	31.86	No MOD
41 Lapeer	55,000	87,000	13.15	1,767,300	106,300	31,000	1,630,000	29.64	No MOD
42 Lenox Township	14,800	17,100	9.88	351,400	21,100	6,200	324,100	21.90	No MOD
43 Lincoln Park	171,600	129,300	6.04	2,588,100	155,700	45,400	2,387,000	13.91	No MOD
44 Livonia	453,800	662,000	11.34	13,090,100	787,300	229,700	12,073,100	26.60	No MOD
45 Macomb Township	329,900	695,100	16.79	13,880,200	834,800	243,500	12,801,900	38.81	No MOD
46 Madison Heights	124,800	113,000	8.09	2,365,600	142,300	41,500	2,181,800	17.48	No MOD
47 Mayfield Township (KAMAX)	510	2,700	47.11	56,400	3,400	1,000	52,000	101.96	No MOD
48 Melvindale	45,400	36,400	6.70	741,000	44,600	13,000	683,400	15.05	No MOD
49 New Haven, Village of	19,400	24,500	10.18	491,500	29,600	8,600	453,300	23.37	No MOD
50 NOCWA	869,800	1,253,500	11.37	24,931,600	1,499,500	437,400	22,994,700	26.44	No MOD
51 Northville	30,100	44,200	11.61	879,900	52,900	15,400	811,600	26.96	No MOD
52 Northville Township	135,200	311,100	17.76	6,134,400	369,000	107,600	5,657,800	41.85	No MOD
53 Novi	298,600	519,900	13.69	10,326,600	621,100	181,200	9,524,300	31.90	No MOD
54 Oak Park	90,000	80,600	6.88	1,586,400	95,400	27,800	1,463,200	16.26	No MOD
55 Oakland GWK Drain District	9,200	5,100	4.49	102,500	6,200	1,800	94,500	10.27	No MOD
56 Plymouth	44,300	62,800	11.10	1,245,300	74,900	21,800	1,148,600	25.93	No MOD
57 Plymouth Township	156,500	256,700	12.66	5,061,700	304,400	88,800	4,668,500	29.83	No MOD
58 Redford Township	154,800	169,100	8.58	3,357,400	201,900	58,900	3,096,600	20.00	No MOD
59 River Rouge	37,300	29,400	6.03	577,700	34,700	10,100	532,900	14.29	No MOD
60 Riverview	46,200	50,300	8.41	992,100	59,700	17,400	915,000	19.81	No MOD
61 Rockwood	9,500	14,300	11.52	281,000	16,900	4,900	259,200	27.28	No MOD
62 Romeo	3,100	14,900	19.64	239,700	14,400	4,200	221,100	71.32	MOD

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Table 3
Water Supply System
FY 2025 Proforma Revenue Under Existing Charges

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
	FY 2024 Charges		FY 2025 Proforma Revenue by Category							
FY 2025	<u>Volume</u>	<u>Fixed</u>	<u>Commodity</u>	<u>Gross</u>	DWSD	Flint / KWA	Wholesale	Proforma	MOD /	
	<u>Mcf</u>	<u>\$/mo</u>	<u>\$/Mcf</u>	<u>TOTAL</u>	<u>Ownership Adj</u>	<u>Adjustment</u>	<u>Rev Req't</u>	<u>Unit Cost</u>	<u>No MOD</u>	
				\$	\$	\$	\$	\$/Mcf		
63	Romulus	206,200	214,700	7.90	4,205,400	252,900	73,800	3,878,700	18.81	No MOD
64	Roseville	172,100	148,500	6.61	2,919,600	175,600	51,200	2,692,800	15.65	No MOD
65	Royal Oak Township	10,100	11,800	9.34	235,900	14,200	4,100	217,600	21.54	No MOD
66	Shelby Township	414,700	641,700	11.93	12,647,800	760,700	221,900	11,665,200	28.13	No MOD
67	SOCWA	1,234,200	1,342,700	8.59	26,714,200	1,606,700	468,700	24,638,800	19.96	No MOD
68	South Rockwood	4,800	6,600	11.43	134,100	8,100	2,400	123,600	25.75	No MOD
69	Southgate	113,900	116,800	8.24	2,340,100	140,700	41,100	2,158,300	18.95	No MOD
70	St. Clair Shores	199,200	178,100	7.09	3,549,500	213,500	62,300	3,273,700	16.43	No MOD
71	Sterling Heights	587,300	846,100	11.25	16,760,300	1,008,100	294,100	15,458,100	26.32	No MOD
72	Sumpter Township	33,900	40,500	9.67	813,800	48,900	14,300	750,600	22.14	No MOD
73	Sylvan Lake	6,700	13,300	15.75	265,100	15,900	4,700	244,500	36.49	No MOD
74	Taylor	264,300	259,500	7.87	5,194,000	312,400	91,100	4,790,500	18.13	No MOD
75	Trenton	83,000	103,000	9.28	2,006,200	120,700	35,200	1,850,300	22.29	No MOD
76	Troy	435,100	792,000	13.67	15,451,800	929,400	271,100	14,251,300	32.75	No MOD
77	Utica	23,600	32,900	11.44	664,800	40,000	11,700	613,100	25.98	No MOD
78	Van Buren Township	132,200	197,400	11.56	3,897,000	234,400	68,400	3,594,200	27.19	No MOD
79	Walled Lake	29,000	45,200	12.27	898,200	54,000	15,800	828,400	28.57	No MOD
80	Warren	622,900	544,300	6.95	10,860,800	653,200	190,600	10,017,000	16.08	No MOD
81	Washington Township	86,100	132,900	12.28	2,652,100	159,500	46,500	2,446,100	28.41	No MOD
82	Wayne	101,700	102,800	7.85	2,031,900	122,200	35,700	1,874,000	18.43	No MOD
83	West Bloomfield Township	277,900	602,300	17.28	12,029,700	723,500	211,100	11,095,100	39.92	No MOD
84	Westland	319,900	349,600	8.48	6,908,000	415,500	121,200	6,371,300	19.92	No MOD
85	Wixom	76,300	141,000	14.44	2,793,800	168,000	49,000	2,576,800	33.77	No MOD
86	Woodhaven	56,700	84,700	11.55	1,671,300	100,500	29,300	1,541,500	27.19	No MOD
87	Ypsilanti Comm Util Auth	488,200	589,300	9.62	11,768,100	707,800	206,500	10,853,800	22.23	No MOD
88	Detroit	4,230,000	2,128,100	0.00	25,537,200	(20,700,000)	811,200	45,426,000	10.74	No MOD
	TOTAL	17,504,190		20.74	363,051,300	(100)	(200)	363,051,600	20.74	
3	MOD Customers	99,200	116,300	21.46	2,128,800	128,000	37,300	1,963,500	19.79	MOD
85	No MOD Customers	17,404,990	18,817,200	20.74	360,922,500	(128,100)	(37,500)	361,088,100	20.75	No MOD
88	Total	17,504,190		20.74	363,051,300	(100)	(200)	363,051,600	20.74	

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Table 4
Water Supply System
FY 2025 Units of Service and Cost Pool Shares

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
	Annual Volume	Daily Demands			Cost Pool Shares			Water Delivery Factor	MOD / No MOD	
	<i>Mcf</i>	<i>Avg Day</i> <i>mgd</i>	<i>Max Day</i> <i>mgd</i>	<i>Peak Hour</i> <i>mgd</i>	<i>Commodity</i> <i>~ (2)</i>	<i>Max Day</i> <i>~ (3)</i>	<i>Peak Hour</i> <i>~ (4)</i>	<i>Appendix E</i>		
1	Allen Park	116,700	2.39	5.45	7.54	0.666%	0.730%	0.793%	0.892	No MOD
2	Almont Village	9,000	0.18	0.40	0.44	0.050%	0.054%	0.046%	1.333	No MOD
3	Ash Township	38,700	0.79	1.45	2.27	0.220%	0.194%	0.239%	1.119	No MOD
4	Belleville	13,900	0.28	0.55	0.76	0.078%	0.073%	0.080%	1.197	No MOD
5	Berlin Township	27,100	0.56	1.13	1.76	0.156%	0.151%	0.185%	1.207	No MOD
6	Brownstown Township	139,100	2.85	7.00	11.00	0.794%	0.938%	1.156%	1.049	No MOD
7	Bruce Township	3,070	0.060	0.456	0.830	0.017%	0.061%	0.087%	1.310	No MOD
8	Burtchville Township	9,100	0.19	0.53	0.82	0.053%	0.072%	0.086%	1.464	No MOD
9	Canton Township	375,000	7.69	20.00	23.50	2.144%	2.679%	2.470%	1.149	No MOD
10	Center Line	32,200	0.66	1.13	1.60	0.184%	0.151%	0.168%	0.850	No MOD
11	Chesterfield Township	180,300	3.70	8.24	12.50	1.031%	1.104%	1.314%	1.049	No MOD
12	Clinton Township	385,000	7.89	19.70	22.00	2.199%	2.639%	2.313%	0.877	No MOD
13	Commerce Township	104,100	2.13	6.28	7.13	0.594%	0.841%	0.750%	1.262	No MOD
14	Dearborn	540,800	11.08	23.70	32.90	3.089%	3.175%	3.458%	0.847	No MOD
15	Dearborn Heights	195,700	4.01	8.00	12.00	1.118%	1.072%	1.261%	0.929	No MOD
16	Eastpointe	102,800	2.11	3.71	5.38	0.588%	0.497%	0.566%	0.861	No MOD
17	Ecorse	81,700	1.67	2.97	3.42	0.466%	0.398%	0.360%	0.848	No MOD
18	Farmington	44,100	0.90	2.10	2.31	0.251%	0.281%	0.243%	1.070	No MOD
19	Farmington Hills	350,400	7.18	18.00	21.30	2.002%	2.411%	2.239%	1.103	No MOD
20	Ferndale	64,500	1.32	2.89	3.10	0.368%	0.387%	0.326%	0.840	No MOD
21	Flat Rock	50,800	1.04	2.63	3.99	0.290%	0.352%	0.419%	1.078	No MOD
22	Flint	415,500	8.52	13.50	14.00	2.375%	1.809%	1.472%	1.716	No MOD
23	Fraser	56,500	1.16	2.81	4.25	0.323%	0.376%	0.447%	0.896	No MOD
24	Garden City	72,800	1.49	3.30	5.21	0.415%	0.442%	0.548%	1.014	No MOD
25	Gibraltar	16,100	0.33	0.65	0.84	0.092%	0.087%	0.088%	1.103	No MOD
26	Greenwood Township (DTE)	26,100	0.53	2.24	2.24	0.148%	0.300%	0.235%	1.335	No MOD
27	Grosse Ile Township	41,700	0.85	2.01	3.51	0.237%	0.269%	0.369%	1.056	No MOD
28	Grosse Pt. Park	52,700	1.08	3.09	5.31	0.301%	0.414%	0.558%	0.839	No MOD
29	Grosse Pt. Shores	18,900	0.39	1.43	2.19	0.109%	0.192%	0.230%	0.875	MOD
30	Grosse Pt. Woods	68,100	1.40	3.36	4.29	0.390%	0.450%	0.451%	0.836	No MOD
31	Hamtramck	62,000	1.27	1.77	2.74	0.354%	0.237%	0.288%	0.871	No MOD

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Table 4
Water Supply System
FY 2025 Units of Service and Cost Pool Shares

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
	Annual Volume	Daily Demands			Cost Pool Shares			Water Delivery Factor	MOD / No MOD	
	<i>Mcf</i>	<i>Avg Day</i> <i>mgd</i>	<i>Max Day</i> <i>mgd</i>	<i>Peak Hour</i> <i>mgd</i>	<i>Commodity</i> <i>~ (2)</i>	<i>Max Day</i> <i>~ (3)</i>	<i>Peak Hour</i> <i>~ (4)</i>	<i>Appendix E</i>		
32	Harper Woods	53,800	1.10	2.09	2.99	0.307%	0.280%	0.314%	0.845	No MOD
33	Harrison Township	97,700	2.00	3.90	4.75	0.558%	0.522%	0.499%	0.927	No MOD
34	Hazel Park	47,900	0.98	1.76	2.41	0.273%	0.236%	0.253%	0.881	No MOD
35	Highland Park	77,200	1.58	2.40	2.46	0.440%	0.322%	0.259%	0.786	MOD
36	Huron Township	65,600	1.34	3.10	3.91	0.374%	0.415%	0.411%	1.055	No MOD
37	Imlay City	47,100	0.97	2.22	2.48	0.270%	0.297%	0.261%	1.515	No MOD
38	Imlay Township (Single User)	10	0.000	0.012	0.024	0.000%	0.002%	0.003%	2.551	No MOD
39	Inkster	100,800	2.07	2.47	3.55	0.577%	0.331%	0.373%	1.011	No MOD
40	Keego Harbor	9,800	0.20	0.45	0.67	0.056%	0.060%	0.071%	1.341	No MOD
41	Lapeer	55,000	1.13	1.75	2.50	0.315%	0.234%	0.263%	1.742	No MOD
42	Lenox Township	14,800	0.30	0.51	0.70	0.084%	0.068%	0.074%	1.206	No MOD
43	Lincoln Park	171,600	3.52	5.30	6.93	0.981%	0.710%	0.728%	0.879	No MOD
44	Livonia	453,800	9.30	23.00	33.00	2.593%	3.081%	3.469%	1.047	No MOD
45	Macomb Township	329,900	6.76	23.00	40.00	1.884%	3.081%	4.205%	1.030	No MOD
46	Madison Heights	124,800	2.56	4.75	6.50	0.714%	0.636%	0.683%	0.872	No MOD
47	Mayfield Township (KAMAX)	510	0.01	0.05	0.07	0.003%	0.006%	0.007%	2.185	No MOD
48	Melvindale	45,400	0.93	1.41	1.97	0.259%	0.189%	0.207%	0.910	No MOD
49	New Haven, Village of	19,400	0.40	0.79	1.20	0.112%	0.105%	0.126%	1.086	No MOD
50	NOCWA	869,800	17.83	43.50	48.60	4.970%	5.828%	5.109%	1.160	No MOD
51	Northville	30,100	0.62	1.55	1.65	0.173%	0.208%	0.173%	1.172	No MOD
52	Northville Township	135,200	2.77	9.00	13.50	0.772%	1.206%	1.419%	1.257	No MOD
53	Novi	298,600	6.12	17.00	19.00	1.706%	2.278%	1.997%	1.245	No MOD
54	Oak Park	90,000	1.84	3.90	3.90	0.513%	0.522%	0.410%	0.851	No MOD
55	Oakland GWK Drain District	9,200	0.190	0.204	0.204	0.053%	0.027%	0.021%	0.941	No MOD
56	Plymouth	44,300	0.91	1.81	2.71	0.254%	0.242%	0.285%	1.215	No MOD
57	Plymouth Township	156,500	3.21	10.00	10.00	0.895%	1.340%	1.051%	1.097	No MOD
58	Redford Township	154,800	3.17	6.35	9.00	0.884%	0.851%	0.946%	0.957	No MOD
59	River Rouge	37,300	0.76	1.07	1.63	0.212%	0.143%	0.171%	0.915	No MOD
60	Riverview	46,200	0.95	1.79	2.67	0.265%	0.240%	0.281%	0.980	No MOD
61	Rockwood	9,500	0.19	0.43	0.66	0.053%	0.058%	0.069%	1.159	No MOD
62	Romeo	3,100	0.060	0.253	0.451	0.017%	0.034%	0.047%	1.352	MOD

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Table 4
Water Supply System
FY 2025 Units of Service and Cost Pool Shares

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
	Annual Volume <i>Mcf</i>	<i>Daily Demands</i>			Cost Pool Shares			Water Delivery Factor <i>Appendix E</i>	MOD / No MOD	
		<u>Avg Day</u> <i>mgd</i>	<u>Max Day</u> <i>mgd</i>	<u>Peak Hour</u> <i>mgd</i>	<u>Commodity</u> ~ (2)	<u>Max Day</u> ~ (3)	<u>Peak Hour</u> ~ (4)			
63	Romulus	206,200	4.23	7.71	9.73	1.179%	1.033%	1.023%	1.034	No MOD
64	Roseville	172,100	3.53	6.03	8.63	0.984%	0.808%	0.907%	0.864	No MOD
65	Royal Oak Township	10,100	0.210	0.473	0.649	0.059%	0.063%	0.068%	0.921	No MOD
66	Shelby Township	414,700	8.50	26.60	30.00	2.370%	3.564%	3.154%	0.986	No MOD
67	SOCWA	1,234,200	25.29	60.50	60.50	7.050%	8.105%	6.360%	0.929	No MOD
68	South Rockwood	4,800	0.100	0.176	0.297	0.028%	0.024%	0.031%	1.247	No MOD
69	Southgate	113,900	2.33	4.60	6.23	0.650%	0.616%	0.655%	0.930	No MOD
70	St. Clair Shores	199,200	4.08	7.42	10.00	1.137%	0.994%	1.051%	0.872	No MOD
71	Sterling Heights	587,300	12.04	32.80	49.00	3.356%	4.394%	5.151%	0.929	No MOD
72	Sumpter Township	33,900	0.69	1.09	1.77	0.192%	0.146%	0.186%	1.229	No MOD
73	Sylvan Lake	6,700	0.14	0.35	0.54	0.039%	0.047%	0.057%	1.339	No MOD
74	Taylor	264,300	5.42	10.90	13.10	1.511%	1.460%	1.377%	0.916	No MOD
75	Trenton	83,000	1.70	3.52	5.20	0.474%	0.472%	0.547%	1.031	No MOD
76	Troy	435,100	8.92	27.30	40.30	2.487%	3.657%	4.236%	1.057	No MOD
77	Utica	23,600	0.48	1.20	1.75	0.134%	0.161%	0.184%	0.996	No MOD
78	Van Buren Township	132,200	2.71	6.90	8.17	0.755%	0.924%	0.859%	1.129	No MOD
79	Walled Lake	29,000	0.59	1.16	1.67	0.164%	0.155%	0.176%	1.389	No MOD
80	Warren	622,900	12.77	23.50	32.50	3.560%	3.148%	3.416%	0.834	No MOD
81	Washington Township	86,100	1.76	5.42	5.42	0.491%	0.726%	0.570%	1.049	No MOD
82	Wayne	101,700	2.08	3.95	4.71	0.580%	0.529%	0.495%	0.995	No MOD
83	West Bloomfield Township	277,900	5.70	15.00	26.40	1.589%	2.010%	2.775%	1.339	No MOD
84	Westland	319,900	6.56	12.00	17.00	1.829%	1.608%	1.787%	1.036	No MOD
85	Wixom	76,300	1.56	4.19	5.10	0.435%	0.561%	0.536%	1.320	No MOD
86	Woodhaven	56,700	1.16	2.85	4.40	0.323%	0.382%	0.463%	1.046	No MOD
87	Ypsilanti Comm Util Auth	488,200	10.01	19.50	21.00	2.790%	2.612%	2.208%	1.207	No MOD
88	Detroit	4,230,000	86.69	115.00	136.00	24.166%	15.407%	14.296%	0.787	No MOD
	TOTAL	17,504,190	358.72	746.43	951.28	100.000%	100.000%	100.000%	1.000	
3	MOD Customers	99,200	2.03	4.08	5.10	0.566%	0.547%	0.536%		MOD
85	No MOD Customers	17,404,990	356.69	742.35	946.18	99.434%	99.453%	99.464%		No MOD
88	Total	17,504,190	358.72	746.43	951.28	100.000%	100.000%	100.000%		



Table 5
Water Supply System
Allocation of FY 2025 Wholesale Revenue Requirement to Member Partners and Determination of Wholesale SHARES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Cost Pool Shares (from Table 4)			Unadjusted	Water	Adjusted	Allocated	Proforma	Adjustment	% Adjustment	MOD /
<i>Relative Cost Pool Weights -></i>	Commodity	Max Day	Peak Hour	Wholesale	Delivery	Wholesale	Wholesale	Wholesale	Required	Required	No MOD
	10.0%	50.0%	40.0%	SHARE	Factor	SHARE	Rev Req't	Revenue	\$		
				%	Table 4	%	\$	\$	\$		
1 Grosse Pt. Shores	0.109%	0.192%	0.230%	0.199%	0.875	0.174%	651,900	668,900	(17,000)	-2.54%	MOD
2 Highland Park	0.440%	0.322%	0.259%	0.308%	0.786	0.242%	908,200	1,073,500	(165,300)	-15.40%	MOD
3 Romeo	0.017%	0.034%	0.047%	0.038%	1.352	0.051%	190,500	221,100	(30,600)	-13.84%	MOD
3 Subtotal MOD Customers	0.566%	0.547%	0.536%	0.545%	0.858	0.467%	1,750,600	1,963,500	(212,900)	-10.84%	
85 No MOD Customers	99.434%	99.453%	99.464%	99.455%	1.001	99.533%	373,099,900	361,088,100	12,011,800	3.33%	No MOD
88 Total	100.000%	100.000%	100.000%	100.000%	1.000	100.000%	374,850,500	363,051,600	11,798,900	3.25%	

Table 6
Water Supply System
Application of Contract Adjustments to Allocated Revenue Requirements

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Proforma <i>Wholesale</i> <u>Revenue</u> <i>Table 3</i>	Mod/No Mod % Adjustment <u>Required</u> <i>Table 5</i>	Allocated <i>Wholesale</i> <u>Rev Req't</u> <i>(1) x [1+(2)]</i>	Allocated DWSO <u>Ownership Adj</u> <i>~ (3)</i>	Allocated Flint / KWA <u>Adjustment</u> <i>~ (3)</i>	Adjusted Allocated <u>Rev Req't</u> <i>(3) + (4) + (5)</i>	Proforma <i>Total</i> <u>Revenue</u> <i>Table 2</i>	Charge Adjustment <u>Required</u> <i>(6) - (7)</i>	% Charge Adjustment <u>Required</u> <i>(8) / (7)</i>	MOD / No MOD	
1	Allen Park	2,408,300	3.33%	2,488,400	157,100	45,500	2,691,000	2,611,200	79,800	3.06%	No MOD
2	Almont Village	243,000	3.33%	251,100	15,900	4,600	271,600	263,400	8,200	3.11%	No MOD
3	Ash Township	861,000	3.33%	889,600	56,200	16,300	962,100	933,500	28,600	3.06%	No MOD
4	Belleville	326,700	3.33%	337,600	21,300	6,200	365,100	354,200	10,900	3.08%	No MOD
5	Berlin Township	722,700	3.33%	746,700	47,100	13,600	807,400	783,500	23,900	3.05%	No MOD
6	Brownstown Township	3,861,100	3.33%	3,989,500	251,800	72,900	4,314,200	4,186,400	127,800	3.05%	No MOD
7	Bruce Township	323,500	3.33%	334,300	21,100	6,100	361,500	350,800	10,700	3.05%	No MOD
8	Burtchville Township	403,500	3.33%	416,900	26,300	7,600	450,800	437,500	13,300	3.04%	No MOD
9	Canton Township	10,661,800	3.33%	11,016,500	695,400	201,400	11,913,300	11,559,900	353,400	3.06%	No MOD
10	Center Line	499,800	3.33%	516,400	32,600	9,400	558,400	541,900	16,500	3.04%	No MOD
11	Chesterfield Township	4,517,600	3.33%	4,667,900	294,700	85,300	5,047,900	4,898,100	149,800	3.06%	No MOD
12	Clinton Township	7,828,500	3.33%	8,088,900	510,600	147,900	8,747,400	8,487,900	259,500	3.06%	No MOD
13	Commerce Township	3,550,000	3.33%	3,668,100	231,600	67,100	3,966,800	3,849,000	117,800	3.06%	No MOD
14	Dearborn	10,014,900	3.33%	10,348,100	653,200	189,200	11,190,500	10,858,500	332,000	3.06%	No MOD
15	Dearborn Heights	3,884,900	3.33%	4,014,100	253,400	73,400	4,340,900	4,212,100	128,800	3.06%	No MOD
16	Eastpointe	1,668,900	3.33%	1,724,400	108,900	31,500	1,864,800	1,809,400	55,400	3.06%	No MOD
17	Ecorse	1,169,700	3.33%	1,208,600	76,300	22,100	1,307,000	1,268,300	38,700	3.05%	No MOD
18	Farmington	1,021,100	3.33%	1,055,100	66,600	19,300	1,141,000	1,107,100	33,900	3.06%	No MOD
19	Farmington Hills	9,216,800	3.33%	9,523,400	601,200	174,100	10,298,700	9,993,100	305,600	3.06%	No MOD
20	Ferndale	1,099,500	3.33%	1,136,100	71,700	20,800	1,228,600	1,192,100	36,500	3.06%	No MOD
21	Flat Rock	1,458,400	3.33%	1,506,900	95,100	27,500	1,629,500	1,581,200	48,300	3.05%	No MOD
22	Flint	10,601,700	3.33%	10,954,400	691,500	(6,651,800)	4,994,100	4,628,400	365,700	7.90%	No MOD
23	Fraser	1,301,500	3.33%	1,344,800	84,900	24,600	1,454,300	1,411,200	43,100	3.05%	No MOD
24	Garden City	1,759,100	3.33%	1,817,600	114,700	33,200	1,965,500	1,907,300	58,200	3.05%	No MOD
25	Gibraltar	351,300	3.33%	363,000	22,900	6,600	392,500	380,900	11,600	3.05%	No MOD
26	Greenwood Township (DTE)	1,257,400	3.33%	1,299,200	82,000	23,700	1,404,900	1,363,300	41,600	3.05%	No MOD
27	Grosse Ile Township	1,211,200	3.33%	1,251,500	79,000	22,900	1,353,400	1,313,200	40,200	3.06%	No MOD
28	Grosse Pt. Park	1,385,400	3.33%	1,431,500	90,400	26,200	1,548,100	1,502,200	45,900	3.06%	No MOD
29	Grosse Pt. Shores	668,900	-2.54%	651,900	41,200	11,900	705,000	725,200	(20,200)	-2.79%	MOD
30	Grosse Pt. Woods	1,344,500	3.33%	1,389,200	87,700	25,400	1,502,300	1,457,800	44,500	3.05%	No MOD
31	Hamtramck	858,400	3.33%	887,000	56,000	16,200	959,200	930,700	28,500	3.06%	No MOD

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Table 6
Water Supply System
Application of Contract Adjustments to Allocated Revenue Requirements

	(1) Proforma <i>Wholesale</i> <u>Revenue</u> <i>Table 3</i>	(2) Mod/No Mod % Adjustment <u>Required</u> <i>Table 5</i>	(3) Allocated <i>Wholesale</i> <u>Rev Req't</u> <i>(1) x [1+(2)]</i>	(4) Allocated DWSO <u>Ownership Adj</u> <i>~ (3)</i>	(5) Allocated Flint / KWA <u>Adjustment</u> <i>~ (3)</i>	(6) Adjusted Allocated <u>Rev Req't</u> <i>(3) + (4) + (5)</i>	(7) Proforma <i>Total</i> <u>Revenue</u> <i>Table 2</i>	(8) Charge Adjustment <u>Required</u> <i>(6) - (7)</i>	(9) % Charge Adjustment <u>Required</u> <i>(8) / (7)</i>	(10) MOD / No MOD	
32	Harper Woods	921,900	3.33%	952,600	60,100	17,400	1,030,100	999,500	30,600	3.06%	No MOD
33	Harrison Township	1,744,200	3.33%	1,802,200	113,800	32,900	1,948,900	1,891,100	57,800	3.06%	No MOD
34	Hazel Park	786,700	3.33%	812,900	51,300	14,900	879,100	853,000	26,100	3.06%	No MOD
35	Highland Park	1,073,500	-15.40%	908,200	57,300	16,600	982,100	1,163,900	(181,800)	-15.62%	MOD
36	Huron Township	1,582,300	3.33%	1,634,900	103,200	29,900	1,768,000	1,715,600	52,400	3.05%	No MOD
37	Imlay City	1,562,300	3.33%	1,614,300	101,900	29,500	1,745,700	1,693,900	51,800	3.06%	No MOD
38	Imlay Township (Single User)	10,500	3.33%	10,800	700	200	11,700	11,400	300	2.63%	No MOD
39	Inkster	1,371,000	3.33%	1,416,600	89,400	25,900	1,531,900	1,486,500	45,400	3.05%	No MOD
40	Keego Harbor	312,200	3.33%	322,600	20,400	5,900	348,900	338,500	10,400	3.07%	No MOD
41	Lapeer	1,630,000	3.33%	1,684,200	106,300	30,800	1,821,300	1,767,300	54,000	3.06%	No MOD
42	Lenox Township	324,100	3.33%	334,900	21,100	6,100	362,100	351,400	10,700	3.04%	No MOD
43	Lincoln Park	2,387,000	3.33%	2,466,400	155,700	45,100	2,667,200	2,588,100	79,100	3.06%	No MOD
44	Livonia	12,073,100	3.33%	12,474,700	787,500	228,000	13,490,200	13,090,100	400,100	3.06%	No MOD
45	Macomb Township	12,801,900	3.33%	13,227,800	835,000	241,800	14,304,600	13,880,200	424,400	3.06%	No MOD
46	Madison Heights	2,181,800	3.33%	2,254,400	142,300	41,200	2,437,900	2,365,600	72,300	3.06%	No MOD
47	Mayfield Township (KAMAX)	52,000	3.33%	53,700	3,400	1,000	58,100	56,400	1,700	3.01%	No MOD
48	Melvindale	683,400	3.33%	706,100	44,600	12,900	763,600	741,000	22,600	3.05%	No MOD
49	New Haven, Village of	453,300	3.33%	468,400	29,600	8,600	506,600	491,500	15,100	3.07%	No MOD
50	NOCWA	22,994,700	3.33%	23,759,600	1,499,900	434,300	25,693,800	24,931,600	762,200	3.06%	No MOD
51	Northville	811,600	3.33%	838,600	52,900	15,300	906,800	879,900	26,900	3.06%	No MOD
52	Northville Township	5,657,800	3.33%	5,846,000	369,000	106,900	6,321,900	6,134,400	187,500	3.06%	No MOD
53	Novi	9,524,300	3.33%	9,841,100	621,200	179,900	10,642,200	10,326,600	315,600	3.06%	No MOD
54	Oak Park	1,463,200	3.33%	1,511,900	95,400	27,600	1,634,900	1,586,400	48,500	3.06%	No MOD
55	Oakland GWK Drain District	94,500	3.33%	97,600	6,200	1,800	105,600	102,500	3,100	3.02%	No MOD
56	Plymouth	1,148,600	3.33%	1,186,800	74,900	21,700	1,283,400	1,245,300	38,100	3.06%	No MOD
57	Plymouth Township	4,668,500	3.33%	4,823,800	304,500	88,200	5,216,500	5,061,700	154,800	3.06%	No MOD
58	Redford Township	3,096,600	3.33%	3,199,600	202,000	58,500	3,460,100	3,357,400	102,700	3.06%	No MOD
59	River Rouge	532,900	3.33%	550,600	34,800	10,100	595,500	577,700	17,800	3.08%	No MOD
60	Riverview	915,000	3.33%	945,400	59,700	17,300	1,022,400	992,100	30,300	3.05%	No MOD
61	Rockwood	259,200	3.33%	267,800	16,900	4,900	289,600	281,000	8,600	3.06%	No MOD
62	Romeo	221,100	-13.84%	190,500	12,000	3,500	206,000	239,700	(33,700)	-14.06%	MOD

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Table 6
Water Supply System
Application of Contract Adjustments to Allocated Revenue Requirements

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Proforma <i>Wholesale</i> <u>Revenue</u> <i>Table 3</i>	Mod/No Mod % Adjustment <u>Required</u> <i>Table 5</i>	Allocated <i>Wholesale</i> <u>Rev Req't</u> <i>(1) x [1+(2)]</i>	Allocated DWSO <u>Ownership Adj</u> <i>~ (3)</i>	Allocated Flint / KWA <u>Adjustment</u> <i>~ (3)</i>	Adjusted Allocated <u>Rev Req't</u> <i>(3) + (4) + (5)</i>	Proforma <i>Total</i> <u>Revenue</u> <i>Table 2</i>	Charge Adjustment <u>Required</u> <i>(6) - (7)</i>	% Charge Adjustment <u>Required</u> <i>(8) / (7)</i>	MOD / No MOD	
63	Romulus	3,878,700	3.33%	4,007,700	253,000	73,300	4,334,000	4,205,400	128,600	3.06%	No MOD
64	Roseville	2,692,800	3.33%	2,782,400	175,600	50,900	3,008,900	2,919,600	89,300	3.06%	No MOD
65	Royal Oak Township	217,600	3.33%	224,800	14,200	4,100	243,100	235,900	7,200	3.05%	No MOD
66	Shelby Township	11,665,200	3.33%	12,053,200	760,900	220,300	13,034,400	12,647,800	386,600	3.06%	No MOD
67	SOCWA	24,638,800	3.33%	25,458,400	1,607,100	465,400	27,530,900	26,714,200	816,700	3.06%	No MOD
68	South Rockwood	123,600	3.33%	127,700	8,100	2,300	138,100	134,100	4,000	2.98%	No MOD
69	Southgate	2,158,300	3.33%	2,230,100	140,800	40,800	2,411,700	2,340,100	71,600	3.06%	No MOD
70	St. Clair Shores	3,273,700	3.33%	3,382,600	213,500	61,800	3,657,900	3,549,500	108,400	3.05%	No MOD
71	Sterling Heights	15,458,100	3.33%	15,972,300	1,008,300	292,000	17,272,600	16,760,300	512,300	3.06%	No MOD
72	Sumpter Township	750,600	3.33%	775,600	49,000	14,200	838,800	813,800	25,000	3.07%	No MOD
73	Sylvan Lake	244,500	3.33%	252,600	15,900	4,600	273,100	265,100	8,000	3.02%	No MOD
74	Taylor	4,790,500	3.33%	4,949,900	312,500	90,500	5,352,900	5,194,000	158,900	3.06%	No MOD
75	Trenton	1,850,300	3.33%	1,911,900	120,700	34,900	2,067,500	2,006,200	61,300	3.06%	No MOD
76	Troy	14,251,300	3.33%	14,725,400	929,600	269,200	15,924,200	15,451,800	472,400	3.06%	No MOD
77	Utica	613,100	3.33%	633,500	40,000	11,600	685,100	664,800	20,300	3.05%	No MOD
78	Van Buren Township	3,594,200	3.33%	3,713,800	234,400	67,900	4,016,100	3,897,000	119,100	3.06%	No MOD
79	Walled Lake	828,400	3.33%	856,000	54,000	15,600	925,600	898,200	27,400	3.05%	No MOD
80	Warren	10,017,000	3.33%	10,350,200	653,400	189,200	11,192,800	10,860,800	332,000	3.06%	No MOD
81	Washington Township	2,446,100	3.33%	2,527,500	159,600	46,200	2,733,300	2,652,100	81,200	3.06%	No MOD
82	Wayne	1,874,000	3.33%	1,936,300	122,200	35,400	2,093,900	2,031,900	62,000	3.05%	No MOD
83	West Bloomfield Township	11,095,100	3.33%	11,464,200	723,700	209,600	12,397,500	12,029,700	367,800	3.06%	No MOD
84	Westland	6,371,300	3.33%	6,583,200	415,600	120,300	7,119,100	6,908,000	211,100	3.06%	No MOD
85	Wixom	2,576,800	3.33%	2,662,500	168,100	48,700	2,879,300	2,793,800	85,500	3.06%	No MOD
86	Woodhaven	1,541,500	3.33%	1,592,800	100,500	29,100	1,722,400	1,671,300	51,100	3.06%	No MOD
87	Ypsilanti Comm Util Auth	10,853,800	3.33%	11,214,900	708,000	205,000	12,127,900	11,768,100	359,800	3.06%	No MOD
88	Detroit	45,426,000	3.33%	46,937,100	(20,700,000)	858,000	27,095,100	25,537,200	1,557,900	6.10%	No MOD
	TOTAL	363,051,600	3.25%	374,850,300	100	300	374,850,700	363,051,300	11,799,400	3.25%	
3	MOD Customers	1,963,500	-10.84%	1,750,600	110,500	32,000	1,893,100	2,128,800	(235,700)	-11.07%	MOD
85	No MOD Customers	361,088,100	3.33%	373,099,700	(110,400)	(31,700)	372,957,600	360,922,500	12,035,100	3.33%	No MOD
88	Total	363,051,600	3.25%	374,850,300	100	300	374,850,700	363,051,300	11,799,400	3.25%	

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Table 7
Water Supply System
Calculation of FY 2025 Wholesale Water Service Charge Schedule and Illustration of Revenue Recovery

	(1) Allocated Total <u>Rev Req't</u> \$	(2) Projected Sales <u>Volume</u> Mcf	(3) <i>Net</i> <i>Allocated</i> <u>Unit Cost</u> \$/Mcf <i>(1) / (2)</i>	(4) Recover Via		(5) Recover Via		(6) Projected <u>Revenue</u> \$	(7) Revenue <u>Recovery</u> %	(8) MOD / No MOD <i>(7) / (6)</i>
				Fixed <u>Monthly</u> \$	Commodity <u>Charge</u> \$	Fixed <u>Monthly</u> \$/mo	Commodity <u>Charge</u> \$/Mcf			
	<i>Table 6</i>	<i>Table 3</i>	<i>(1) / (2)</i>	<i>60% of (1)</i>	<i>(1)-(6)*12</i>	<i>(4) / 12 mos</i>	<i>(5) / (2)</i>	<i>12 * (6)+(2)*(7)</i>	<i>(8)/(1)</i>	
1 Allen Park	2,691,000	116,700	23.06	1,614,600	1,075,800	134,600	9.22	2,691,200	100.0%	No MOD
2 Almont Village	271,600	9,000	30.18	163,000	108,400	13,600	12.04	271,600	100.0%	No MOD
3 Ash Township	962,100	38,700	24.86	577,300	384,900	48,100	9.95	962,300	100.0%	No MOD
4 Belleville	365,100	13,900	26.27	219,100	145,500	18,300	10.47	365,100	100.0%	No MOD
5 Berlin Township	807,400	27,100	29.79	484,400	322,600	40,400	11.90	807,300	100.0%	No MOD
6 Brownstown Township	4,314,200	139,100	31.02	2,588,500	1,725,800	215,700	12.41	4,314,600	100.0%	No MOD
7 Bruce Township	361,500	3,070	117.75	216,900	144,300	18,100	47.00	361,500	100.0%	No MOD
8 Burtchville Township	450,800	9,100	49.54	270,500	180,800	22,500	19.87	450,800	100.0%	No MOD
9 Canton Township	11,913,300	375,000	31.77	7,148,000	4,764,900	595,700	12.71	11,914,700	100.0%	No MOD
10 Center Line	558,400	32,200	17.34	335,000	223,600	27,900	6.94	558,300	100.0%	No MOD
11 Chesterfield Township	5,047,900	180,300	28.00	3,028,700	2,019,100	252,400	11.20	5,048,200	100.0%	No MOD
12 Clinton Township	8,747,400	385,000	22.72	5,248,400	3,498,600	437,400	9.09	8,748,500	100.0%	No MOD
13 Commerce Township	3,966,800	104,100	38.11	2,380,100	1,587,200	198,300	15.25	3,967,100	100.0%	No MOD
14 Dearborn	11,190,500	540,800	20.69	6,714,300	4,476,500	559,500	8.28	11,191,800	100.0%	No MOD
15 Dearborn Heights	4,340,900	195,700	22.18	2,604,500	1,736,900	217,000	8.88	4,341,800	100.0%	No MOD
16 Eastpointe	1,864,800	102,800	18.14	1,118,900	746,400	93,200	7.26	1,864,700	100.0%	No MOD
17 Ecorse	1,307,000	81,700	16.00	784,200	522,200	65,400	6.39	1,306,900	100.0%	No MOD
18 Farmington	1,141,000	44,100	25.87	684,600	455,800	57,100	10.34	1,141,200	100.0%	No MOD
19 Farmington Hills	10,298,700	350,400	29.39	6,179,200	4,119,900	514,900	11.76	10,299,500	100.0%	No MOD
20 Ferndale	1,228,600	64,500	19.05	737,200	491,800	61,400	7.62	1,228,300	100.0%	No MOD
21 Flat Rock	1,629,500	50,800	32.08	977,700	651,500	81,500	12.82	1,629,300	100.0%	No MOD
22 Flint	4,994,100	415,500	12.02	336,000	4,658,100	28,000	11.21	4,993,800	100.0%	No MOD
23 Fraser	1,454,300	56,500	25.74	872,600	581,900	72,700	10.30	1,454,400	100.0%	No MOD
24 Garden City	1,965,500	72,800	27.00	1,179,300	785,900	98,300	10.80	1,965,800	100.0%	No MOD
25 Gibraltar	392,500	16,100	24.38	235,500	157,300	19,600	9.77	392,500	100.0%	No MOD
26 Greenwood Township (DTE)	1,404,900	26,100	53.83	842,900	562,500	70,200	21.55	1,404,900	100.0%	No MOD
27 Grosse Ile Township	1,353,400	41,700	32.46	812,000	541,000	67,700	12.97	1,353,200	100.0%	No MOD
28 Grosse Pt. Park	1,548,100	52,700	29.38	928,900	619,300	77,400	11.75	1,548,000	100.0%	No MOD
29 Grosse Pt. Shores	705,000	18,900	37.30	423,000	281,400	35,300	14.89	705,000	100.0%	MOD
30 Grosse Pt. Woods	1,502,300	68,100	22.06	901,400	601,100	75,100	8.83	1,502,500	100.0%	No MOD
31 Hamtramck	959,200	62,000	15.47	575,500	383,200	48,000	6.18	959,200	100.0%	No MOD

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Table 7
Water Supply System
Calculation of FY 2025 Wholesale Water Service Charge Schedule and Illustration of Revenue Recovery

	(1) Allocated Total <u>Rev Req't</u> \$	(2) Projected Sales <u>Volume</u> Mcf	(3) <i>Net</i> <i>Allocated</i> <u>Unit Cost</u> \$/Mcf <i>(1) / (2)</i>	(4) Recover Via		(5) Recover Via		(6) Projected <u>Revenue</u> \$	(7) Revenue <u>Recovery</u> %	(8) MOD / No MOD <i>(7) / (6)</i>
				Fixed <u>Monthly</u> \$	Commodity <u>Charge</u> \$	Fixed <u>Monthly</u> \$/mo	Commodity <u>Charge</u> \$/Mcf			
	<i>Table 6</i>	<i>Table 3</i>	<i>(1) / (2)</i>	<i>60% of (1)</i>	<i>(1)-(6)*12</i>	<i>(4) / 12 mos</i>	<i>(5) / (2)</i>	<i>12 * (6)+(2)*(7)</i>	<i>(8)/(1)</i>	
32 Harper Woods	1,030,100	53,800	19.15	618,100	412,100	51,500	7.66	1,030,100	100.0%	No MOD
33 Harrison Township	1,948,900	97,700	19.95	1,169,300	780,100	97,400	7.98	1,948,400	100.0%	No MOD
34 Hazel Park	879,100	47,900	18.35	527,500	351,100	44,000	7.33	879,100	100.0%	No MOD
35 Highland Park	982,100	77,200	12.72	589,300	392,900	49,100	5.09	982,100	100.0%	MOD
36 Huron Township	1,768,000	65,600	26.95	1,060,800	707,200	88,400	10.78	1,768,000	100.0%	No MOD
37 Imlay City	1,745,700	47,100	37.06	1,047,400	698,100	87,300	14.82	1,745,600	100.0%	No MOD
38 Imlay Township (Single User)	11,700	10	1,170.00	7,000	4,500	600	450.00	11,700	100.0%	No MOD
39 Inkster	1,531,900	100,800	15.20	919,100	612,700	76,600	6.08	1,532,100	100.0%	No MOD
40 Keego Harbor	348,900	9,800	35.60	209,300	140,100	17,400	14.30	348,900	100.0%	No MOD
41 Lapeer	1,821,300	55,000	33.11	1,092,800	728,100	91,100	13.24	1,821,400	100.0%	No MOD
42 Lenox Township	362,100	14,800	24.47	217,300	144,900	18,100	9.79	362,100	100.0%	No MOD
43 Lincoln Park	2,667,200	171,600	15.54	1,600,300	1,066,400	133,400	6.21	2,666,400	100.0%	No MOD
44 Livonia	13,490,200	453,800	29.73	8,094,100	5,396,200	674,500	11.89	13,489,700	100.0%	No MOD
45 Macomb Township	14,304,600	329,900	43.36	8,582,800	5,722,200	715,200	17.35	14,306,200	100.0%	No MOD
46 Madison Heights	2,437,900	124,800	19.53	1,462,700	975,100	121,900	7.81	2,437,500	100.0%	No MOD
47 Mayfield Township (KAMAX)	58,100	510	113.92	34,900	23,300	2,900	45.69	58,100	100.0%	No MOD
48 Melvindale	763,600	45,400	16.82	458,200	305,200	38,200	6.72	763,500	100.0%	No MOD
49 New Haven, Village of	506,600	19,400	26.11	304,000	203,000	25,300	10.46	506,500	100.0%	No MOD
50 NOCWA	25,693,800	869,800	29.54	15,416,300	10,277,400	1,284,700	11.82	25,697,400	100.0%	No MOD
51 Northville	906,800	30,100	30.13	544,100	363,200	45,300	12.07	906,900	100.0%	No MOD
52 Northville Township	6,321,900	135,200	46.76	3,793,100	2,528,700	316,100	18.70	6,321,400	100.0%	No MOD
53 Novi	10,642,200	298,600	35.64	6,385,300	4,257,000	532,100	14.26	10,643,200	100.0%	No MOD
54 Oak Park	1,634,900	90,000	18.17	980,900	654,500	81,700	7.27	1,634,700	100.0%	No MOD
55 Oakland GWK Drain District	105,600	9,200	11.48	63,400	42,000	5,300	4.57	105,600	100.0%	No MOD
56 Plymouth	1,283,400	44,300	28.97	770,000	513,000	64,200	11.58	1,283,400	100.0%	No MOD
57 Plymouth Township	5,216,500	156,500	33.33	3,129,900	2,086,900	260,800	13.33	5,215,700	100.0%	No MOD
58 Redford Township	3,460,100	154,800	22.35	2,076,100	1,384,100	173,000	8.94	3,459,900	100.0%	No MOD
59 River Rouge	595,500	37,300	15.97	357,300	237,900	29,800	6.38	595,600	100.0%	No MOD
60 Riverview	1,022,400	46,200	22.13	613,400	409,200	51,100	8.86	1,022,500	100.0%	No MOD
61 Rockwood	289,600	9,500	30.48	173,800	115,600	14,500	12.17	289,600	100.0%	No MOD
62 Romeo	206,000	3,100	66.45	123,600	82,400	10,300	26.58	206,000	100.0%	MOD

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Table 7
Water Supply System
Calculation of FY 2025 Wholesale Water Service Charge Schedule and Illustration of Revenue Recovery

	(1) Allocated Total <u>Rev Req't</u> \$	(2) Projected Sales <u>Volume</u> Mcf	(3) Net Allocated <u>Unit Cost</u> \$/Mcf <i>(1) / (2)</i>	(4) Recover Via		(5) Recover Via		(6) Projected <u>Revenue</u> \$	(7) Revenue <u>Recovery</u> %	(8) MOD / No MOD <i>(7) / (6)</i>
				Fixed <u>Monthly</u> \$	Commodity <u>Charge</u> \$	Fixed <u>Monthly</u> \$/mo	Commodity <u>Charge</u> \$/Mcf			
	<i>Table 6</i>	<i>Table 3</i>	<i>(1) / (2)</i>	<i>60% of (1)</i>	<i>(1)-(6)*12</i>	<i>(4) / 12 mos</i>	<i>(5) / (2)</i>	<i>12 * (6)+(2)*(7)</i>	<i>(8)/(1)</i>	
63 Romulus	4,334,000	206,200	21.02	2,600,400	1,733,600	216,700	8.41	4,334,500	100.0%	No MOD
64 Roseville	3,008,900	172,100	17.48	1,805,300	1,204,100	150,400	7.00	3,009,500	100.0%	No MOD
65 Royal Oak Township	243,100	10,100	24.07	145,900	96,700	12,200	9.57	243,100	100.0%	No MOD
66 Shelby Township	13,034,400	414,700	31.43	7,820,600	5,214,000	651,700	12.57	13,033,200	100.0%	No MOD
67 SOCWA	27,530,900	1,234,200	22.31	16,518,500	11,012,900	1,376,500	8.92	27,527,100	100.0%	No MOD
68 South Rockwood	138,100	4,800	28.77	82,900	55,300	6,900	11.52	138,100	100.0%	No MOD
69 Southgate	2,411,700	113,900	21.17	1,447,000	964,500	120,600	8.47	2,411,900	100.0%	No MOD
70 St. Clair Shores	3,657,900	199,200	18.36	2,194,700	1,463,100	182,900	7.34	3,656,900	100.0%	No MOD
71 Sterling Heights	17,272,600	587,300	29.41	10,363,600	6,909,400	863,600	11.76	17,269,800	100.0%	No MOD
72 Sumpter Township	838,800	33,900	24.74	503,300	336,000	41,900	9.91	838,700	100.0%	No MOD
73 Sylvan Lake	273,100	6,700	40.76	163,900	108,700	13,700	16.22	273,100	100.0%	No MOD
74 Taylor	5,352,900	264,300	20.25	3,211,700	2,141,700	267,600	8.10	5,352,000	100.0%	No MOD
75 Trenton	2,067,500	83,000	24.91	1,240,500	826,700	103,400	9.96	2,067,500	100.0%	No MOD
76 Troy	15,924,200	435,100	36.60	9,554,500	6,369,800	796,200	14.64	15,924,300	100.0%	No MOD
77 Utica	685,100	23,600	29.03	411,100	273,500	34,300	11.59	685,100	100.0%	No MOD
78 Van Buren Township	4,016,100	132,200	30.38	2,409,700	1,606,500	200,800	12.15	4,015,800	100.0%	No MOD
79 Walled Lake	925,600	29,000	31.92	555,400	370,000	46,300	12.76	925,600	100.0%	No MOD
80 Warren	11,192,800	622,900	17.97	6,715,700	4,477,600	559,600	7.19	11,193,900	100.0%	No MOD
81 Washington Township	2,733,300	86,100	31.75	1,640,000	1,092,900	136,700	12.69	2,733,000	100.0%	No MOD
82 Wayne	2,093,900	101,700	20.59	1,256,300	837,500	104,700	8.24	2,094,400	100.0%	No MOD
83 West Bloomfield Township	12,397,500	277,900	44.61	7,438,500	4,958,700	619,900	17.84	12,396,500	100.0%	No MOD
84 Westland	7,119,100	319,900	22.25	4,271,500	2,847,100	356,000	8.90	7,119,100	100.0%	No MOD
85 Wixom	2,879,300	76,300	37.74	1,727,600	1,151,300	144,000	15.09	2,879,400	100.0%	No MOD
86 Woodhaven	1,722,400	56,700	30.38	1,033,400	689,200	86,100	12.16	1,722,700	100.0%	No MOD
87 Ypsilanti Comm Util Auth	12,127,900	488,200	24.84	7,276,700	4,851,100	606,400	9.94	12,129,500	100.0%	No MOD
88 Detroit	27,095,100	4,230,000	6.41	27,095,100		2,257,900		27,094,800	100.0%	No MOD
TOTAL	374,850,700	17,504,190	3,691.57	233,088,100	141,761,200	19,424,100	8.10	374,852,800	100.0%	
3 MOD Customers	1,893,100	99,200	116.47	1,135,900	756,700	94,700	7.63	1,893,100	100.0%	MOD
85 No MOD Customers	372,957,600	17,404,990	3,575.10	231,952,200	141,004,500	19,329,400	8.10	372,959,700	100.0%	No MOD
88 Total	374,850,700	17,504,190	3,691.57	233,088,100	141,761,200	19,424,100	8.10	374,852,800	100.0%	



Table 8
Water Supply System
Illustration of the Impact of Contract Adjustments to Detroit and Flint

	(1)	(2)	(3)	(4)	(5)	
	Proforma Revenue <u>Exit Charges</u> <i>Table 3</i>	FY 2025 <u>SHARE</u> <i>Table 4</i>	Adjusted Allocated <u>Rev Req't</u> <i>Table 6</i>	Charge Adjustment <u>Required</u> <i>(3) - (1)</i>	\$ Charge Adjustment <u>Required</u> <i>(4) / (1)</i>	
<u>Detroit</u>						
1	Allocated Wholesale Rev Req't	45,426,000	12.466%	46,937,100	1,511,100	3.33%
2	Flint KWA Adjustment	811,200		858,000	46,800	5.77%
3	Subtotal Wholesale	46,237,200		47,795,100	1,557,900	3.37%
4	Detroit Ownership Adjustment	(20,700,000)		(20,700,000)	0	0.00%
5	Adjusted Total	25,537,200		27,095,100	1,557,900	6.10%
<u>Flint</u>						
6	Allocated Wholesale Rev Req't	10,601,700	2.970%	10,954,400	352,700	3.33%
7	Detroit Ownership Adjustment	678,500		691,500	13,000	1.92%
8	Subtotal Wholesale	11,280,200		11,645,900	365,700	3.24%
9	Flint KWA Adjustment	(6,651,800)		(6,651,800)	0	0.00%
10	Adjusted Total	4,628,400		4,994,100	365,700	7.90%
<u>All Other Member Partners</u>						
11	Allocated Wholesale Rev Req't	307,023,900	84.564%	316,958,800	9,934,900	3.24%
12	Flint KWA Adjustment	5,840,400		5,793,800	(46,600)	-0.80%
13	Subtotal Wholesale	312,864,300		322,752,600	9,888,300	3.16%
14	Detroit Ownership Adjustment	20,021,400		20,008,500	(12,900)	-0.06%
15	Adjusted Total	332,885,700		342,761,100	9,875,400	2.97%
<u>Total System</u>						
16	Allocated Wholesale Rev Req't	363,051,600	100.000%	374,850,300	11,798,700	3.25%
17	Flint KWA Adjustment	(200)		300	500	
18	Subtotal Wholesale	363,051,400		374,850,600	11,799,200	3.25%
19	Detroit Ownership Adjustment	(100)		100	200	
20	Subtotal Wholesale	363,051,300		374,850,700	11,799,400	3.25%

Table 1
Sewage Disposal System
Recommended FY 2025 Revenue Requirement and Charge Adjustment Summary

	(1) Approved FY 2024 <u>Budget</u> \$	(2) Recommended FY 2025 <u>Budget</u> \$	(3) <u>Variance</u> \$	(4) <u>% Variance</u>	
<u>Revenues</u>					
1	Revenues from Charges	493,169,700	507,590,300	14,420,600	2.9%
2	Miscellaneous Revenues	400,000	700,000	300,000	75.0%
3	Investment Earnings	7,057,300	12,361,800	5,304,500	75.2%
4	Total Revenues	500,627,000	520,652,100	20,025,100	4.0%
<u>Revenue Requirements</u>					
5	Operations & Maintenance (O&M) Expense	205,643,700	228,934,000	23,290,300	11.3%
6	Debt Service - Regional System Allocation	228,328,300	226,279,400	(2,048,900)	-0.9%
7	General Retirement System Accelerated Pension	6,479,300	4,846,300	(1,633,000)	-25.2%
8	WRAP Contribution	2,503,100	2,651,700	148,600	5.9%
9	Lease Payment	27,500,000	27,500,000	0	0.0%
10	Receiving Fund Working Capital Requirement	0	2,300,000	2,300,000	0.0%
11	Deposit to Improvement & Extension (I&E) Fund	30,172,600	28,140,700	(2,031,900)	-6.7%
12	Total Revenue Requirements	500,627,000	520,652,100	20,025,100	4.0%
<u>Revenue Requirements</u>					
13	Adjustment Index		4.0%	<i>~ Baseline Revenue</i>	
14	Baseline Revenue		492,805,200		
15	Change in Annual Revenue Requirement		20,025,100	4.06%	
16	Change Attributable to <i>Non-Charge</i> Revenue		(5,604,500)	-1.14%	
17	Change Attributable to <i>Sales</i> Revenue		364,500	0.07%	
18	Wholesale Charge Adjustment		14,785,100	3.00%	

Table 2
Sewage Disposal System
Illustration of Cost Pool Allocation for FY 2025 Wholesale Revenue Requirements

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Cost Pool Allocation												
					WRRF Treatment					"Common" prior to Surcharge			
					<i>Separated for Purposes of Industrial Surcharge Calculations</i>								
	Budget to Allocate	OMID Contractual	Remaining Balance	Industrial Waste Control	Flow	BOD	TSS	PHOS	FOG	WRRF Treatment	Conveyance	CSO Facilities	"Common" TOTAL
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Revenue Requirements													
1 Operations & Maintenance (O&M) Expense	228,934,000	1,700,600	227,233,400	7,701,400	18,243,800	40,928,600	83,942,200	22,159,500	1,563,100	166,837,200	32,295,100	20,399,800	219,532,100
2 Debt Service - Regional System Allocation	226,279,400	0	226,279,400	414,700	63,593,700	21,108,800	32,811,100	6,452,500	1,349,700	125,315,800	51,467,400	49,081,500	225,864,700
3 General Retirement System Accelerated Pension	4,846,300	84,800	4,761,500	215,600	217,700	755,400	1,910,400	416,800	40,300	3,340,600	848,500	356,900	4,546,000
4 WRAP Contribution	2,651,700	9,800	2,641,900	45,500	488,600	355,300	666,700	162,000	17,000	1,689,600	494,300	412,500	2,596,400
5 Lease Payment	27,500,000	181,500	27,318,500	470,800	5,052,600	3,674,100	6,893,700	1,675,400	175,300	17,471,100	5,111,500	4,265,100	26,847,700
6 Receiving Fund Working Capital Requirement	2,300,000	0	2,300,000	39,600	425,400	309,300	580,400	141,100	14,800	1,470,900	430,300	359,100	2,260,300
7 Deposit to Improvement & Extension (I&E) Fund	28,140,700	0	28,140,700	51,600	7,908,700	2,625,200	4,080,500	802,500	167,800	15,584,700	6,400,600	6,103,900	28,089,200
8 Total Revenue Requirements	520,652,100	1,976,700	518,675,400	8,939,200	95,930,500	69,756,700	130,885,000	31,809,800	3,328,000	331,709,900	97,047,700	80,978,800	509,736,400
9 less: Miscellaneous and Non-Operating Revenue	(13,061,800)	0	(13,061,800)	(225,100)	(2,415,800)	(1,756,700)	(3,296,100)	(801,100)	(83,800)	(8,353,500)	(2,444,000)	(2,039,300)	(12,836,800)
10 Revenue Requirements from Charges	507,590,300	1,976,700	505,613,600	8,714,100	93,514,700	68,000,000	127,588,900	31,008,700	3,244,200	323,356,400	94,603,700	78,939,500	496,899,600
11 less: Surcharge Revenue										(5,434,400)			(5,434,400)
12 Wholesale Revenue Requirement for SHARES										317,922,000	94,603,700	78,939,500	491,465,200
13 Cost Pool Weights										64.7%	19.2%	16.1%	100.0%
14 Simplified Cost Pool Weights *										Sanitary Flow 32.5%	Total Flow 51.5%	CSO 83/17 16.0%	100.0%

* These Cost Pool weighting factors are rounded to the nearest 0.5% and become the basis for determination of SHARES in Table 4, and in the FY 2025 SHARES Period Memo

Table 3
Sewage Disposal System
FY 2025 Proforma Revenue Under Existing Charges

	(1)	(2)	(3)	(4)	(5)	(6)	
	FY 2024 Charges			Proforma FY 2025 Revenue			
	Wholesale Rev Req'ts	Contractual Adjustments (a)	Total	Wholesale Rev Req'ts	Contractual Adjustments (a)	Total	
<u>Suburban Wholesale</u>							
1	OMID Common *	5,802,900	116,300	5,919,200	69,634,800	1,395,600	71,030,400
2	Rouge Valley	4,695,200	94,100	4,789,300	56,342,400	1,129,200	57,471,600
3	Oakland GWK	3,893,300	78,000	3,971,300	46,719,600	936,000	47,655,600
4	Evergreen Farmington	3,038,500	60,900	3,099,400	36,462,000	730,800	37,192,800
5	SE Macomb San Dist	2,104,600	42,100	2,146,700	25,255,200	505,200	25,760,400
6	Dearborn	1,704,000	34,200	1,738,200	20,448,000	410,400	20,858,400
7	Grosse Pointe Farms	230,700	4,600	235,300	2,768,400	55,200	2,823,600
8	Grosse Pointe Park	159,900	3,200	163,100	1,918,800	38,400	1,957,200
9	Melvindale	132,100	2,600	134,700	1,585,200	31,200	1,616,400
10	Farmington	100,600	2,100	102,700	1,207,200	25,200	1,232,400
11	Center Line	87,500	1,800	89,300	1,050,000	21,600	1,071,600
12	Allen Park	71,200	1,400	72,600	854,400	16,800	871,200
13	Grosse Pointe	75,600	1,500	77,100	907,200	18,000	925,200
14	Highland Park	455,000	9,200	464,200	5,460,000	110,400	5,570,400
15	Hamtramck	339,300	6,800	346,100	4,071,600	81,600	4,153,200
16	Harper Woods	18,300	400	18,700	219,600	4,800	224,400
17	Redford Township	22,700	400	23,100	272,400	4,800	277,200
18	Wayne County #3	4,400	100	4,500	52,800	1,200	54,000
19	Subtotal Suburban Wholesale	22,935,800	459,700	23,395,500	275,229,600	5,516,400	280,746,000
20	Detroit Customers	16,840,500	(459,700)	16,380,800	202,086,000	(5,516,400)	196,569,600
21	Total Wholesale	39,776,300	0	39,776,300	477,315,600	0	477,315,600
22	OMID Direct *		161,800	161,800	0	1,941,600	1,941,600
23	Total Member Partner	39,776,300	161,800	39,938,100	477,315,600	1,941,600	479,257,200
24	OMID Total *	5,802,900	278,100	6,081,000	69,634,800	3,337,200	72,972,000
<u>Industrial Specific Charges</u>							
25	Industrial Waste Control				8,531,700		8,531,700
26	Industrial Surcharges				5,016,300		5,016,300
27	Subtotal				13,548,000	0	13,548,000
28	Total				490,863,600	1,941,600	492,805,200

(a) DWSD Ownership Benefit

Table 4
Sewage Disposal System
FY 2025 Sewer SHARES

	(1) Existing FY 2022 <u>SHARE</u>	(2) Proposed FY 2025 <u>SHARE</u>	(3) <u>Variance</u> (2) - (1)	(4) <u>% Variance</u> (3) / (1)	
<i>See 2nd "Triannual SHARES Report</i>					
	<u>Suburban Wholesale</u>				
1	OMID	14.589%	14.544%	-0.045%	-0.3%
2	Rouge Valley	11.804%	11.533%	-0.271%	-2.3%
3	Oakland GWK	9.788%	9.635%	-0.153%	-1.6%
4	Evergreen Farmington	7.639%	7.557%	-0.082%	-1.1%
5	SE Macomb San Dist	5.291%	5.204%	-0.087%	-1.6%
6	Dearborn	4.284%	4.284%	0.000%	0.0%
7	Grosse Pointe Farms	0.580%	0.555%	-0.025%	-4.3%
8	Grosse Pointe Park	0.402%	0.397%	-0.005%	-1.2%
9	Melvindale	0.332%	0.328%	-0.004%	-1.2%
10	Farmington	0.253%	0.250%	-0.003%	-1.2%
11	Center Line	0.220%	0.219%	-0.001%	-0.5%
12	Allen Park	0.179%	0.176%	-0.003%	-1.7%
13	Grosse Pointe	0.190%	0.244%	0.054%	28.4%
14	Highland Park	1.144%	0.987%	-0.157%	-13.7%
15	Hamtramck	0.853%	0.892%	0.039%	4.6%
16	Harper Woods	0.046%	0.034%	-0.012%	-26.1%
17	Redford Township	0.057%	0.070%	0.013%	22.8%
18	Wayne County #3	0.011%	0.010%	-0.001%	-9.1%
19	Subtotal Suburban Wholesale	57.662%	56.919%	-0.743%	-1.3%
20	Detroit Customers	42.338%	43.081%	0.743%	1.8%
21	Total	100.000%	100.000%	0.000%	

Table 5
Sewage Disposal System
Calculation of FY 2025 GLWA Pollutant Surcharge Rates

	(1)	(2)	(3)	(4)	(5)
	<u>WRRF Treatment Pollutant Cost Pools (from Table 4)</u>				
	<u>BOD</u>	<u>TSS</u>	<u>PHOS</u>	<u>FOG</u>	<u>Total</u>
	<u>\$</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>
1 Total Revenue Requirements (see Table 2)	68,000,000	127,588,900	31,008,700	3,244,200	229,841,800
<u>Loadings Analysis</u>					
2 Flow Reported @ WRRF - Mcf					29,276,000
3 Average Influent Strength Reported @ WRRF - mg/l	95.0	133.0	2.24	14.3	
4 Total Pollutant Loadings - lbs (2) * (3) * 0.0624	173,548,100	242,967,400	4,095,700	26,032,200	446,643,400
5 Unit Cost - \$/lb. (1) / (4)	0.392	0.525	7.571	0.125	
6 Existing Surcharge Rate - \$/lb	0.361	0.496	6.630	0.115	
7 Unit Rate Change - % [(5) - (6)] / (6)	8.6%	5.8%	14.2%	8.7%	8.3%
8 Surchargeable Loadings - lbs	8,678,800	2,713,000	65,000	927,500	12,384,300
9 Total Surcharge Revenue - Existing (8) * (6)	3,133,000	1,345,600	431,000	106,700	5,016,300
10 Total Surcharge Revenue - Proposed (8) * (5)	3,402,100	1,424,300	492,100	115,900	5,434,400
11 Relative Surcharge / Total (8) / (4)	5.0%	1.1%	1.6%	3.6%	2.8%

Table 6
Sewage Disposal System
Allocation of FY 2025 Revenue Requirements and Adjustments to Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	FY 2025 <u>SHARE</u>	Allocated Wholesale <u>Rev Reqt</u>	Detroit Capital Ownership <u>Adjustment</u>	Adjusted Allocated <u>Rev Reqt</u>	OMID <u>Specific</u>	Total Wholesale <u>Rev Reqt</u>	Additional <u>Elements</u>	Adjusted Total <u>Rev Reqt</u>	
	<i>Table 4</i>	<i>Table 2</i>	<i>5,516,000</i>	<i>(2) + (3)</i>	<i>Table 2</i>	<i>(4) + (5)</i>	<i>(a)</i>	<i>(6) + (7)</i>	
<u>Suburban Wholesale</u>									
1	OMID	14.544%	71,478,700	1,409,400	72,888,100	1,976,700	74,864,800	44,900	74,909,700
2	Rouge Valley	11.533%	56,680,700	1,117,700	57,798,400		57,798,400	50,100	57,848,500
3	Oakland GWK	9.635%	47,352,700	933,700	48,286,400		48,286,400	38,200	48,324,600
4	Evergreen Farmington	7.557%	37,140,000	732,300	37,872,300		37,872,300	25,100	37,897,400
5	SE Macomb San Dist	5.204%	25,575,800	504,300	26,080,100		26,080,100	19,900	26,100,000
6	Dearborn	4.284%	21,054,400	415,200	21,469,600		21,469,600	27,600	21,497,200
7	Grosse Pointe Farms	0.555%	2,727,600	53,800	2,781,400		2,781,400	8,500	2,789,900
8	Grosse Pointe Park	0.397%	1,951,100	38,500	1,989,600		1,989,600	1,000	1,990,600
9	Melvindale	0.328%	1,612,000	31,800	1,643,800		1,643,800	1,300	1,645,100
10	Farmington	0.250%	1,228,700	24,200	1,252,900		1,252,900	900	1,253,800
11	Center Line	0.219%	1,076,300	21,200	1,097,500		1,097,500	900	1,098,400
12	Allen Park	0.176%	865,000	17,100	882,100		882,100	500	882,600
13	Grosse Pointe	0.244%	1,199,200	23,600	1,222,800		1,222,800	3,900	1,226,700
14	Highland Park	0.987%	4,850,800	95,700	4,946,500		4,946,500	35,000	4,981,500
15	Hamtramck	0.892%	4,383,900	86,400	4,470,300		4,470,300	27,000	4,497,300
16	Harper Woods	0.034%	167,100	3,300	170,400		170,400	200	170,600
17	Redford Township	0.070%	344,000	6,800	350,800		350,800	2,300	353,100
18	Wayne County #3	0.010%	49,100	1,000	50,100		50,100	600	50,700
19	Subtotal Suburban Wholesale	56.919%	279,737,100	5,516,000	285,253,100	1,976,700	287,229,800	287,900	287,517,700
20	Detroit Customers	43.081%	211,728,100	(5,516,000)	206,212,100		206,212,100	(287,900)	205,924,200
21	Total	100.000%	491,465,200	0	491,465,200	1,976,700	493,441,900	0	493,441,900

(a) Reallocation of the \$347,000 budgeted Green Infrastructure O&M expense payment to DWSD, which is originally assigned to the CSO 83/17 Cost Pool. The adjustment reverses the 83% of that amount assigned to Detroit Customers and reallocates it to all other customers based on their 17% share.

Table 7
Sewage Disposal System
Proposed FY 2025 Wholesale Sewer Service Charge Schedule - Fixed Monthly Charges

	(1) Allocated Wholesale <u>Rev Req</u> \$	(2) Detroit Capital Ownership <u>Adjustment</u> \$	(3) Adjusted Allocated <u>Rev Req</u> \$	(4) OMID <u>Specific</u> \$	(5) Total Wholesale <u>Rev Reqs</u> \$	(6) Additional <u>Elements</u> \$	(7) Total Amount for <u>Charges</u> \$	
<u>Suburban Wholesale</u>								
1	OMID	5,956,600	117,500	6,074,100	164,700	6,238,800	3,700	6,242,500
2	Rouge Valley	4,723,400	93,100	4,816,500		4,816,500	4,200	4,820,700
3	Oakland GWK	3,946,100	77,800	4,023,900		4,023,900	3,200	4,027,100
4	Evergreen Farmington	3,095,000	61,000	3,156,000		3,156,000	2,100	3,158,100
5	SE Macomb San Dist	2,131,300	42,000	2,173,300		2,173,300	1,700	2,175,000
6	Dearborn	1,754,500	34,600	1,789,100		1,789,100	2,300	1,791,400
7	Grosse Pointe Farms	227,300	4,500	231,800		231,800	700	232,500
8	Grosse Pointe Park	162,600	3,200	165,800		165,800	100	165,900
9	Melvindale	134,300	2,700	137,000		137,000	100	137,100
10	Farmington	102,400	2,000	104,400		104,400	100	104,500
11	Center Line	89,600	1,800	91,400		91,400	100	91,500
12	Allen Park	72,200	1,400	73,600		73,600	0	73,600
13	Grosse Pointe	99,900	2,000	101,900		101,900	300	102,200
14	Highland Park	404,200	8,000	412,200		412,200	2,900	415,100
15	Hamtramck	365,300	7,200	372,500		372,500	2,300	374,800
16	Harper Woods	13,900	300	14,200		14,200	0	14,200
17	Redford Township	28,600	600	29,200		29,200	200	29,400
18	Wayne County #3	4,000	100	4,100		4,100	100	4,200
19	Subtotal Suburban Wholesale	23,311,200	459,800	23,771,000	164,700	23,935,700	24,100	23,959,800
20	Detroit Customers	17,644,100	(459,700)	17,184,400		17,184,400	(24,000)	17,160,400
21	Total	40,955,300	100	40,955,400	164,700	41,120,100	100	41,120,200

Table 8
Sewage Disposal System
Comparison of Existing and Proposed Wholesale Service Charges

	(1)	(2)	(3)	(4)	
	Existing	Proposed			
	FY 2024	FY 2025			
	<u>Charges</u>	<u>Charges</u>	<u>Variance</u>	<u>% Variance</u>	
	<i>\$/mo</i>	<i>\$/mo</i>	<i>\$/mo</i>		
	<i>Table 3</i>	<i>Table 7</i>			
<u>Suburban Wholesale</u>					
1	OMID	6,081,000	6,242,500	161,500	2.7%
2	Rouge Valley	4,789,300	4,820,700	31,400	0.7%
3	Oakland GWK	3,971,300	4,027,100	55,800	1.4%
4	Evergreen Farmington	3,099,400	3,158,100	58,700	1.9%
5	SE Macomb San Dist	2,146,700	2,175,000	28,300	1.3%
6	Dearborn	1,738,200	1,791,400	53,200	3.1%
7	Grosse Pointe Farms	235,300	232,500	(2,800)	-1.2%
8	Grosse Pointe Park	163,100	165,900	2,800	1.7%
9	Melvindale	134,700	137,100	2,400	1.8%
10	Farmington	102,700	104,500	1,800	1.8%
11	Center Line	89,300	91,500	2,200	2.5%
12	Allen Park	72,600	73,600	1,000	1.4%
13	Grosse Pointe	77,100	102,200	25,100	32.6%
14	Highland Park	464,200	415,100	(49,100)	-10.6%
15	Hamtramck	346,100	374,800	28,700	8.3%
16	Harper Woods	18,700	14,200	(4,500)	-24.1%
17	Redford Township	23,100	29,400	6,300	27.3%
18	Wayne County #3	4,500	4,200	(300)	-6.7%
19	Subtotal Suburban Wholesale	23,557,300	23,959,800	402,500	1.7%
20	Detroit Customers	16,380,800	17,160,400	779,600	4.8%
21	Total Member Partner Wholesale	39,938,100	41,120,200	1,182,100	3.0%
	* Detroit - Gross	16,840,500	17,620,100	779,600	4.6%
	less: Fixed Ownership Benefit	(459,700)	(459,700)	0	0.0%
	Detroit Net of Ownership Benefit	16,380,800	17,160,400	779,600	4.8%

Table 9
Sewage Disposal System
Comparison of *Revenues* from Existing and Proposed Charges

	(1)	(2)	(3)	(4)	
	Existing	Proposed			
	FY 2024	FY 2025			
	<u>Charges</u>	<u>Charges</u>	<u>Variance</u>	<u>% Variance</u>	
	\$	\$	\$		
<u>Suburban Wholesale</u>					
1	OMID	72,972,000	74,910,000	1,938,000	2.7%
2	Rouge Valley	57,471,600	57,848,400	376,800	0.7%
3	Oakland GWK	47,655,600	48,325,200	669,600	1.4%
4	Evergreen Farmington	37,192,800	37,897,200	704,400	1.9%
5	SE Macomb San Dist	25,760,400	26,100,000	339,600	1.3%
6	Dearborn	20,858,400	21,496,800	638,400	3.1%
7	Grosse Pointe Farms	2,823,600	2,790,000	(33,600)	-1.2%
8	Grosse Pointe Park	1,957,200	1,990,800	33,600	1.7%
9	Melvindale	1,616,400	1,645,200	28,800	1.8%
10	Farmington	1,232,400	1,254,000	21,600	1.8%
11	Center Line	1,071,600	1,098,000	26,400	2.5%
12	Allen Park	871,200	883,200	12,000	1.4%
13	Grosse Pointe	925,200	1,226,400	301,200	32.6%
14	Highland Park	5,570,400	4,981,200	(589,200)	-10.6%
15	Hamtramck	4,153,200	4,497,600	344,400	8.3%
16	Harper Woods	224,400	170,400	(54,000)	-24.1%
17	Redford Township	277,200	352,800	75,600	27.3%
18	Wayne County #3	54,000	50,400	(3,600)	-6.7%
19	Subtotal Suburban Wholesale	282,687,600	287,517,600	4,830,000	1.7%
20	Detroit Customers *	196,569,600	205,924,800	9,355,200	4.8%
21	Total Member Partner Wholesale	479,257,200	493,442,400	14,185,200	3.0%
<u>Industrial Specific Charges</u>					
22	Industrial Waste Control	8,531,700	8,719,300	187,600	2.2%
23	Industrial Surcharges	5,016,300	5,434,400	418,100	8.3%
24	Subtotal	13,548,000	14,153,700	605,700	4.5%
25	Total	492,805,200	507,596,100	14,790,900	3.0%
26	* Detroit - Gross	202,085,600	211,440,800	9,355,200	4.6%
27	less: Fixed Ownership Benefit	(5,516,000)	(5,516,000)	0	0.0%
28	Detroit Net of Ownership Benefit	196,569,600	205,924,800	9,355,200	4.8%

Table 10
 Sewage Disposal System
 Proposed FY 2025 Industrial Specific Charges

Industrial Waste Control Charges			Industrial Surcharges <i>from Table 5</i>			
Revenue Req't - \$ <i>from Table 2</i>		8,714,100	Revenue	Estimated	Unit	
Eq Mtrs		195,322	<u>Req't</u>	<u>Loadings</u>	<u>Rate</u>	
Unit Cost - \$/eq mtr		3.72	\$	lbs	\$/lb	
<u>Meter Size</u>	<u>Equivalency Ratio</u>	<u>Unit Rate</u>	BOD	68,000,000	173,548,100	0.392
5/8	1.0	3.72	SS	127,588,900	242,967,400	0.525
3/4	1.5	5.58	PHOS	31,008,700	4,095,700	7.571
1	2.5	9.30	FOG	3,244,200	26,032,200	0.125
1-1/2	5.5	20.46	SEPTAGE DISPOSAL FEE			
2	8.0	29.76	Per 500 gallons of disposal			\$38.00
3	14.5	53.94				
4	20.0	74.40				
6	30.0	111.60				
8	50.0	186.00				
10	70.0	260.40				
12	80.0	297.60				
14	100.0	372.00				
16	120.0	446.40				
18	140.0	520.80				
20	160.0	595.20				
24	180.0	669.60				
30	200.0	744.00				
36	220.0	818.40				
48	240.0	892.80				

Administrative Only Industrial Waste Control Charges

<u>Meter Size</u>	<u>Equivalency Ratio</u>	<u>Unit Rate</u>
5/8	1.0	0.93
3/4	1.5	1.40
1	2.5	2.33
1-1/2	5.5	5.12
2	8.0	7.44
3	14.5	13.49
4	20.0	18.60
6	30.0	27.90
8	50.0	46.50
10	70.0	65.10
12	80.0	74.40
14	100.0	93.00
16	120.0	111.60
18	140.0	130.20
20	160.0	148.80
24	180.0	167.40
30	200.0	186.00
36	220.0	204.60
48	240.0	223.20



Appendices

- A. December 12, 2023 memorandum, **Finalized** January 22, 2024: “Proposed FY 2025 Water and Sewer Charges”
- B. December 21, 2023 memorandum: “FY 2025 Cost of Service and Charges Study - Detailed Cost Allocation Schedules”
- C. December 21, 2023 memorandum, **Finalized** January 22, 2024: “SHAREs Period Memo – FY 2025 SHAREs Calculations”
- D. November 8, 2023 memorandum: “Preliminary FY 2025 Water Units of Service”
- E. November 13, 2023 memorandum: “Simplified Water Charge Methodology: 10/50/40 + Water Delivery Factors”
- F. November 13, 2023 memorandum, **Finalized** January 22, 2024: “Impact of Updated Flow Balance Data on Calculation of FY 2025 Sewer SHAREs”
- G. January 12, 2024 memorandum, **Finalized** January 22, 2024: “D+ Sewer Flow Allocation and SHAREs”
- H. January 12, 2024 memorandum: “Grosse Pointe Sewer Flows and SHAREs”
- I. January 22, 2024 memorandum: “Final Proposed FY 2025 Sewer Charges” – a “crosswalk” from preliminary to final Sewer Charge recommendations



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MEMORANDUM

Proposed FY 2025 Water and Sewer Charges

December 12, 2023
Finalized January 22, 2024

To: Sue Coffey, Nicolette Bateson

From: Bart Foster

This memorandum is intended to introduce recommended proposed GLWA Water and Sewer Charges for FY 2025. While these recommendations represent my advice to GLWA as an engaged advisor on business related matters, the context with which they are being provided reflect discussions with GLWA executive staff. As such, they should be received as my understanding of a collective recommendation, subject to ongoing review of certain evolving events and circumstances.

This memorandum was originally published on December 12, 2023. It has been updated to reflect developments since that date – most importantly to reflect modifications to certain data originally provided by the annual Sewer Flow Balance Report, which has the impact of moderately changing the originally proposed Sewer Charges to individual Member Partners.

Executive Summary

1. Both the Proposed FY 2025 Water Charges and the Proposed FY 2025 Sewer Charges reflect a budgeted Revenue Requirement increase of **4.0%**.¹
 - *The proposed FY System Charge Adjustments are **3.25%** for the Water System and **3.0%** for the Sewer System – increased budgeted investment earnings help address one percent of the budget increase, while the Water System Charge Adjustment must address lower projected baseline sales revenues.*
2. Proposed FY 2025 Water Charges reflect the simplified Water Charge Methodology recently endorsed at the One Water Partnership Meeting.
 - *This most directly impacts the three Member Partners whose contract demands are being changed outside the normal Contract Alignment Process (CAP) schedule.*
 - *Proposed charges for these three “MOD” customers directly reflect specific application of the FY 2025 Cost of Service Study embracing the simplified methodology.*
 - *Proposed charges for the other 85 “No MOD” customers reflect the uniform class average resulting from their consolidated units of service.*

¹ FY 2025 is the last year of the “4% Promise” in the GLWA foundational documents.

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3. Proposed FY 2025 Sewer Charges reflect updated Sewer SHARES.
- *There is a moderate (~ 1.5%) shift in cost responsibility from the **M** customer to the **D+** customer class.*
 - *This shift is the result of counterbalancing shifts in flow data and results of the FY 2025 Cost of Service Study.*

Proposed FY 2025 Water Charges

Budgeted Revenue Requirements and System Charge Adjustment:

- I am proposing a **System Charge Adjustment** of a 3.25% increase. As shown in the table below, this adjustment is the product of:
 1. 4.08% to address a \$14.8 million revenue requirement (4%) increase; offset by:
 2. Approximately 1.66% to reflect a \$5.8 million **increase** in budgeted investment earnings (See Line 16); but increased by:
 3. Approximately 0.83% to reflect a **decrease** in budgeted water sales volumes, creating a \$3.0 million negative sales revenue forecast. (See Line 17)

Recommended FY 2025 Revenue Requirement and Charge Adjustment Summary

	Approved FY 2024 <u>Budget</u> \$	Recommended FY 2025 <u>Budget</u> \$	<u>Variance</u> \$	<u>% Variance</u>
<u>Revenues</u>				
1 Revenues from Charges	366,077,800	374,850,500	8,772,700	2.4%
2 Miscellaneous Revenues	175,000	400,000	225,000	128.6%
3 Investment Earnings	4,061,700	9,876,600	5,814,900	143.2%
4 Total Revenues	370,314,500	385,127,100	14,812,600	4.0%
<u>Revenue Requirements</u>				
5 Operations & Maintenance (O&M) Expense	152,906,400	169,625,000	16,718,600	10.9%
6 Debt Service - Regional System Allocation	159,482,800	175,300,800	15,818,000	9.9%
7 General Retirement System Accelerated Pension	3,395,500	2,283,300	(1,112,200)	-32.8%
8 WRAP Contribution	1,851,600	1,947,800	96,200	5.2%
9 Lease Payment	22,500,000	22,500,000	0	0.0%
10 Receiving Fund Working Capital Requirement	0	6,200,000	6,200,000	0.0%
11 Deposit to Improvement & Extension (I&E) Fund	30,178,200	7,270,200	(22,908,000)	-75.9%
12 Total Revenue Requirements	370,314,500	385,127,100	14,812,600	4.0%
<u>Revenue Requirements</u>				
13 Adjustment Index		4.0%		<i>~ Baseline Revenue</i>
14 Baseline Revenue		363,051,300		
15 Change in Annual Revenue Requirement			14,812,600	4.08%
16 Change Attributable to Non-Charge Revenue			(6,039,900)	-1.66%
17 Change Attributable to Sales Revenue			<u>3,026,500</u>	<u>0.83%</u>
18 Wholesale Charge Adjustment			11,799,200	3.25%

- The negative budgeted revenue variance is slightly higher than that presented earlier in the charge planning process, including at the November 14 Charge Rollout meeting on proposed Units of Service. Subsequent to that meeting, I have made a change to Highland Park’s units of service, as further described herein – and more rigorously in the Cost of Service Study report.

Specific Member Partner Water Charge Proposals:

At the November 14 Charge Rollout meeting, I indicated that (as of that date) contract demands for ALL Member Partners remained constant at the FY 2024 levels. Since contract demands impact 90% of the cost allocation, changes in individual Member Partner charges are almost entirely related to changes in such contract demands. Absent any changes in contract demands I indicated that ALL Member Partners should expect to receive a uniform “across the board” System charge adjustment, which would not require application of a detailed cost of service methodology. I also indicated that this could change.

Developments subsequent to the November 14 meeting have resulted in likely changes in contract demands for three Member Partners.

1. Based on continued developments in the Highland Park matter, including GLWA’s review of documented leak repair, I am proposing to reduce Highland Park’s water usage from what was initially presented, by an amount envisioned by the recently negotiated Term Sheet.
2. The City of Grosse Pointe Shores has negotiated and approved a contract amendment with GLWA to lower its max day and peak hour demands.
3. A correction to the contract demands for Romeo is being made.

As a result of these developments, there is a need to specifically calculate proposed charges for these three “MOD” customers via a detailed cost of service methodology. All others can continue to be considered as members of the “No MOD” customer class and their charges can be uniformly adjusted based on the average of that class.

The “MOD” / “No MOD” strategy noted above was originally applied by GLWA (actually then DWSD) in determining the FY 2014 Water Charges. When originally implemented this notion recognized that the variance of “cost of service based” charge adjustments amongst those customers whose demands are not changing is not material, and emphasized a movement towards the rate simplification initiatives then being explored for both the Water and Sewer Systems. The “MOD” / “No MOD” approach was acknowledged and applied to varying degrees from FY 2015 through FY 2020. When the Contract Alignment Process (CAP) process was formally announced in 2019 the “MOD” / “No MOD” became standard practice in development of Water Charges for FYs 2021, 2022, and 2023.

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The CAP process resulted in the opportunity to change contract demands for ALL Member Partners every four years via a uniform “reset” schedule. The first application of the CAP was implemented last year for the FY 2024 Water Charges, and established the first complete “reset” of all Member Partner Charges in four years. When those charges were established the intent to maintain the uniformity (absent interim reopener adjustments) of annual charge adjustments during the ensuing three year period was signaled. We now have three interim “reopener adjustments” that need to be recognized in the FY 2025 Water Charges.

The need to conduct a detailed cost of service analysis for the FY 2025 Water Charges for the MOD customer class beckons another decision – whether to embrace the proposed “10/50/40 / Delivery Factor” Water Charge Simplification Methodology recommended by the Water Charge Methodology subgroup, or to maintain the detailed, complex hybrid methodology that produced the FY 2024 Water Charges. The proposed simplified methodology has been presented and discussed in several forums, most recently at the One Water Partnership meeting on December 5. At that meeting a roll call vote indicated a consensus of Member Partners in favor of the simplified methodology. ***It is my understanding and belief that the GLWA executive team is also in support of the simplified methodology, and the proposed FY 2025 Water Charges presented herein embrace that methodology – specifically for the three “MOD” customers.***

The recommended FY 2025 Water Service Charges have been developed by:

- Preparing a detailed Cost of Service study that implements the “10/50/40 / Delivery Factor” Water Charge Simplification Methodology to allocate the FY 2025 Wholesale Revenue Requirements to:
 1. *The three “MOD” Member Partners based on their modified contract demands².*
 2. *Universally as a class to the remaining 85 “No MOD” Member Partners.*
- The results of that detailed study will be published under separate cover in the coming days, and produce allocated wholesale revenue requirement (“SHARE”) responsibility for each Water Member Partner.
- The allocated wholesale costs of service are then adjusted to reflect two required contractual adjustments, both of which are “fixed” and not subject to adjustment in the FY 2025 revenue requirements:
 - *The Detroit Ownership Benefit of \$20.7 million, which is deducted from the Detroit wholesale revenue requirement and proportionally allocated to all other Member Partners based on their wholesale revenue requirements.*

² The specific adjustments will be documented in our Cost of Service Study Report Memorandum, to be published under separate cover,

- *The KWA Debt Service Credit of \$6.65 million, which is deducted from the Flint wholesale revenue requirement and proportionally allocated to all other Member Partners based on their wholesale revenue requirements.*
- The adjusted final revenue requirements are then compared to the projected revenue under existing charges in order to determine the required adjustment to individual Member Partner charges. See Table 1 for the results of that analysis.
 - *Since the contractual adjustments for Detroit and Flint account for ~ 7.3% of the overall revenues required from charges, and since these amounts are fixed, the 3.25% revenue increase from charges will result in an "average charge increase" to all customers other than Detroit and Flint that is less than the system average increase. In this instance, the average "charge increase" for all customers other than Detroit and Flint is just under 3.0%. The impact is somewhat lower for the 3 MOD customers, so the uniform increase for the "No MOD" customers is just a bit higher, at 3.06%*
 - *The specific charge schedules for each member partner will be published under separate cover. The proposed FY 2025 Water Charges will continue to follow the approach to collect 60% of each Member Partner's Allocated Revenue Requirement via fixed monthly charges and the remaining 40% via Commodity Charges.*

Proposed FY 2025 Sewer Charges

Budgeted Revenue Requirements and System Charge Adjustment:

- I am proposing a **System Charge Adjustment** of a 3.0% increase. As shown in the table below, this adjustment is the product of:
 1. 4.06% to address a \$20.0 million revenue requirement (4%) increase; offset by
 2. Approximately 1.14% to reflect a \$5.6 million **increase** in budgeted investment earnings (See Line 16); but increased by
 3. Approximately 0.07% to reflect a **decrease** in projected industrial specific service charge billings, creating a \$365,000 million negative revenue forecast. (See Line 17)

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Sewage Disposal System
 Recommended FY 2025 Revenue Requirement and Charge Adjustment Summary

	(1) Approved FY 2024 <u>Budget</u> \$	(2) Recommended FY 2025 <u>Budget</u> \$	(3) <u>Variance</u> \$	(4) <u>% Variance</u>	
<u>Revenues</u>					
1	Revenues from Charges	493,169,700	507,590,300	14,420,600	2.9%
2	Miscellaneous Revenues	400,000	700,000	300,000	75.0%
3	Investment Earnings	7,057,300	12,361,800	5,304,500	75.2%
4	Total Revenues	<u>500,627,000</u>	<u>520,652,100</u>	<u>20,025,100</u>	4.0%
<u>Revenue Requirements</u>					
5	Operations & Maintenance (O&M) Expense	205,643,700	228,934,000	23,290,300	11.3%
6	Debt Service - Regional System Allocation	228,328,300	226,279,400	(2,048,900)	-0.9%
7	General Retirement System Accelerated Pension	6,479,300	4,846,300	(1,633,000)	-25.2%
8	WRAP Contribution	2,503,100	2,651,700	148,600	5.9%
9	Lease Payment	27,500,000	27,500,000	0	0.0%
10	Receiving Fund Working Capital Requirement	0	2,300,000	2,300,000	0.0%
11	Deposit to Improvement & Extension (I&E) Fund	30,172,600	28,140,700	(2,031,900)	-6.7%
12	Total Revenue Requirements	<u>500,627,000</u>	<u>520,652,100</u>	<u>20,025,100</u>	4.0%
<u>Revenue Requirements</u>					
13	Adjustment Index		4.0%	<i>~ Baseline Revenue</i>	
14	Baseline Revenue		492,805,200		
15	Change in Annual Revenue Requirement			20,025,100	4.06%
16	Change Attributable to <i>Non-Charge</i> Revenue			(5,604,500)	-1.14%
17	Change Attributable to <i>Sales</i> Revenue			364,500	0.07%
18	Wholesale Charge Adjustment			14,785,100	3.00%

Specific Member Partner Sewer Charge Proposals:

The proposed FY 2025 Sewer Charges reflect updated Sewer SHARES for the 4th SHARES period established by the Sewer Rate Simplification initiative originally implemented for the FY 2015 Sewer Charges. At the November 14 Charge Rollout meeting the impact of updated contributed flow volumes on SHARE calculations was presented and indicated a moderate increase in cost responsibility for the suburban wholesale master metered customers (the “M” customer class) and a corresponding moderate decrease in cost responsibility for Detroit and the other inner ring communities that are not fully metered (the “D+” customer class). The shift in total was less than 1% at the overall customer class level. *The updated flow balance data reflected in these final proposed charges has the same basic effect as indicated in November.*

At that meeting I indicated that these preliminary findings only represented one element of the inputs to the SHARE process, and that the Cost of Service Study results would need to be considered in the final proposed SHARES. I commented that inflationary pressures on commodities and utilities would likely shift costs towards the Sanitary Cost Pool, but that

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further review of asset records used to allocate capital costs would likely shift costs towards Conveyance and CSO 83/17 Cost Pools.

I have completed the preliminary Cost of Service Study and utilized it to prepare the preliminary proposed FY 2025 SHARES and Sewer Charges presented herein. The specifics of the Cost of Service Study are documented and published under separate cover. As expected, there is a bit of movement in the Cost Pool weights compared to what was established four years ago for the existing SHARES. This is primarily the result of a shift in interpreted asset data from the Conveyance Cost Pool to the CSO 83/17 Cost Pool. See table below.

	<u>FY 2022</u>	<u>FY 2025</u>	<u>Change</u>
<u>TOTAL Revenue Req'ts</u>			
WRRF	65.8%	64.7%	-1.1%
Conveyance	20.9%	19.2%	-1.6%
CSO 83/17	13.4%	16.1%	2.7%
Sanitary Volume	32.5%	32.5%	0.0%
Total Volume	54.0%	51.5%	-2.5%
CSO 83/17	13.5%	16.0%	2.5%

The results of the FY 2025 Cost of Service Study shift the allocation of cost responsibility away from Total Volume and towards CSO 83/17 while holding the relative amount allocable by Sanitary Volume constant. This has the effect of shifting cost responsibility away from the **M** customer class and towards **D+** customer class – directionally opposite of the results of the flow inputs to the SHARE calculations. The individual and combined impact of these moving parts is shown below, and results in a slight increase in SHARES for the **D+** class at large and a slight reduction for the **M** class at large.

FY 2025 SHARE Calculation Summary	<u>M Class</u>	<u>D+ Class</u>
Impact of Flow Balance Update	0.9%	-1.1%
Impact of Cost of Service Study	-2.0%	2.5%
Combined Impact	-1.1%	1.4%

As announced at the November 14 meeting, I'm proposing a new approach to for SHARE allocations amongst the **D+** customer class, which allocates the "common" non-sanitary flow reduction based on inventory of "common use" sewers in each community - as identified in the annual flow balances. As such the variable impact on SHARES amongst the smaller communities within the **D+** customer class varies more than it has in prior years.

The SHARE changes amongst the various members of the **M** customer class are much less variable, and largely reflect the relative impacts of incorporating the new flow data into the analysis. There is one exception. As also noted at the November 14 meeting, the proposed FY 2025 SHAREs now include Grosse Pointe as a member of the **M** customer class, as there are five years of available metered data for that Member Partner. The meter data indicates much higher flow contributions than was assigned to Grosse Pointe in prior SHARE calculations when they were treated as a member of the **D+** class. The original flow calculations indicated a SHARE increase of approximately 56%.

Subsequent to the November 14 meeting representatives of GLWA and Grosse Pointe have had several conversations regarding the data being used for Grosse Pointe's SHARE. Those discussions have included several possible adjustments to the initial calculations, including:

- Potential modifications to raw meter data to reflect anomalous events related to main break repairs, etc.
- Whether to limit the Grosse Pointe data to the five years of metered data; and
- Potential consideration of the sewer separation project the city is pursuing

It is my understanding that Grosse Pointe has formally requested consideration of this information for the FY 2025 Sewer Charges. It is also my understanding that the GLWA executive team is receptive to some sort of consideration of Grosse Pointe's request – while recognizing that any adjustment must be supported by definitive data that validates the reasonableness of such a request. Recognizing that it may take time to secure and vet such data, I propose the following approach for determining Grosse Pointe's Sewer SHAREs for FY 2025:

- Compute the differences in Grosse Pointe flow inputs between:
 1. The average historical data assigned as a **D+** member;
 2. The 5-years of data indicated by the new master meter
- Use an average of the two data sets for Grosse Pointe's flow data for the FY 2025 SHAREs

In my opinion such an approach compels the parties to continue to review and monitor available data, and to commit to interim SHARE modifications (with the possibility of true-ups) during the next 3-year SHARE period based on results of that data review. I note that making this accommodation has the impact of increasing all other Member Partner SHAREs by 0.05% (approximately \$250,000 out of total Sewer Charge revenue of \$491 million).

The recommended FY 2025 Sewer Charges have been developed by:

- Determining and recognizing the OMID Specific revenue requirements. These contractual amounts are not subject to SHARE or cost of service adjustments and annual variances are negligible.

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- Preparing a detailed Cost of Service Study to allocate the FY 2025 Revenue Requirements to Cost Pools, and subsequently to individual Member Partners based on their updated units of service. That Cost of Service Study is published under separate cover.
 - *The summary findings are presented above.*
- Apply the required contractual adjustments related to the Detroit Ownership Benefit.
 - *Since the Detroit Ownership Benefit is fixed, the charge adjustment for Detroit is 4.6% expressed on a “gross” pre credit basis (Compared to the 4.8% budgeted revenue requirement increase).*
- Implementing a final adjustment related to budgeted “Green Infrastructure” programmatic operating expenses.
 - *These amounts (\$347,000 in the proposed FY 2025 budget) represent a payment to DWSD for its investment in green infrastructure improvements – which approximate \$2 million annually.*
 - *Under agreements between the parties, 17% of such amounts are the responsibility of GLWA suburban wholesale Member Partners.*
 - *The FY 2025 Cost of Service Study initially allocates the budgeted costs to the CSO 83/17 Cost Pool – thus assigning \$287,900 (83%) to Detroit.*
 - *The final adjustment in the Charge calculations removes this revenue requirement from Detroit and reallocates it to all others based on their relative 17% share.*
- Computing specific Industrial Waste Control and Industrial Surcharge rates for FY 2025 that align with the results of the Cost of Service Study.
- Table 2 summarizes the proposed Sewer Charges for FY 2024.

All of this material is covered in more detail in the Cost of Service Study report, which has appendices delineating updated SHAREs calculations, and discussions of data modifications reflected in the final proposed charges.

I am prepared to discuss this matter further at your convenience.

Table 1
GLWA Proposed FY 2025 Water Charge Summary
Comparison of Allocated Revenue Requirements and Revenues under Existing Charges

	(1) Revenue from Existing <u>Charges</u> \$	(2) Allocated Total <u>Rev Req't (a)</u> \$	(3) Charge Adjustment <u>Required</u> \$	(4) % Charge Adjustment <u>Required</u>	(5) MOD / <u>No MOD</u>	
1	Allen Park	2,611,200	2,691,000	79,800	3.06%	No MOD
2	Almont Village	263,400	271,600	8,200	3.11%	No MOD
3	Ash Township	933,500	962,100	28,600	3.06%	No MOD
4	Belleville	354,200	365,100	10,900	3.08%	No MOD
5	Berlin Township	783,500	807,400	23,900	3.05%	No MOD
6	Brownstown Township	4,186,400	4,314,200	127,800	3.05%	No MOD
7	Bruce Township	350,800	361,500	10,700	3.05%	No MOD
8	Burtchville Township	437,500	450,800	13,300	3.04%	No MOD
9	Canton Township	11,559,900	11,913,300	353,400	3.06%	No MOD
10	Center Line	541,900	558,400	16,500	3.04%	No MOD
11	Chesterfield Township	4,898,100	5,047,900	149,800	3.06%	No MOD
12	Clinton Township	8,487,900	8,747,400	259,500	3.06%	No MOD
13	Commerce Township	3,849,000	3,966,800	117,800	3.06%	No MOD
14	Dearborn	10,858,500	11,190,500	332,000	3.06%	No MOD
15	Dearborn Heights	4,212,100	4,340,900	128,800	3.06%	No MOD
16	Eastpointe	1,809,400	1,864,800	55,400	3.06%	No MOD
17	Ecorse	1,268,300	1,307,000	38,700	3.05%	No MOD
18	Farmington	1,107,100	1,141,000	33,900	3.06%	No MOD
19	Farmington Hills	9,993,100	10,298,700	305,600	3.06%	No MOD
20	Ferndale	1,192,100	1,228,600	36,500	3.06%	No MOD
21	Flat Rock	1,581,200	1,629,500	48,300	3.05%	No MOD
22	Flint *	4,628,400	4,994,100	365,700	7.90%	No MOD
23	Fraser	1,411,200	1,454,300	43,100	3.05%	No MOD
24	Garden City	1,907,300	1,965,500	58,200	3.05%	No MOD
25	Gibraltar	380,900	392,500	11,600	3.05%	No MOD
26	Greenwood Township (DTE)	1,363,300	1,404,900	41,600	3.05%	No MOD
27	Grosse Ile Township	1,313,200	1,353,400	40,200	3.06%	No MOD
28	Grosse Pt. Park	1,502,200	1,548,100	45,900	3.06%	No MOD
29	Grosse Pt. Shores	725,200	705,000	(20,200)	-2.79%	MOD
30	Grosse Pt. Woods	1,457,800	1,502,300	44,500	3.05%	No MOD
31	Hamtramck	930,700	959,200	28,500	3.06%	No MOD
32	Harper Woods	999,500	1,030,100	30,600	3.06%	No MOD
33	Harrison Township	1,891,100	1,948,900	57,800	3.06%	No MOD
34	Hazel Park	853,000	879,100	26,100	3.06%	No MOD
35	Highland Park	1,163,900	982,100	(181,800)	-15.62%	MOD
36	Huron Township	1,715,600	1,768,000	52,400	3.05%	No MOD
37	Imlay City	1,693,900	1,745,700	51,800	3.06%	No MOD
38	Imlay Township (Single User)	11,400	11,700	300	2.63%	No MOD
39	Inkster	1,486,500	1,531,900	45,400	3.05%	No MOD
40	Keego Harbor	338,500	348,900	10,400	3.07%	No MOD



Table 1
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Comparison of Allocated Revenue Requirements and Revenues under Existing Charges

	(1) Revenue from Existing <u>Charges</u> \$	(2) Allocated Total <u>Rev Req't (a)</u> \$	(3) Charge Adjustment <u>Required</u> \$	(4) % Charge Adjustment <u>Required</u>	(5) MOD / <u>No MOD</u>	
41	Lapeer	1,767,300	1,821,300	54,000	3.06%	No MOD
42	Lenox Township	351,400	362,100	10,700	3.04%	No MOD
43	Lincoln Park	2,588,100	2,667,200	79,100	3.06%	No MOD
44	Livonia	13,090,100	13,490,200	400,100	3.06%	No MOD
45	Macomb Township	13,880,200	14,304,600	424,400	3.06%	No MOD
46	Madison Heights	2,365,600	2,437,900	72,300	3.06%	No MOD
47	Mayfield Township (KAMAX)	56,400	58,100	1,700	3.01%	No MOD
48	Melvindale	741,000	763,600	22,600	3.05%	No MOD
49	New Haven, Village of	491,500	506,600	15,100	3.07%	No MOD
50	NOCWA	24,931,600	25,693,800	762,200	3.06%	No MOD
51	Northville	879,900	906,800	26,900	3.06%	No MOD
52	Northville Township	6,134,400	6,321,900	187,500	3.06%	No MOD
53	Novi	10,326,600	10,642,200	315,600	3.06%	No MOD
54	Oak Park	1,586,400	1,634,900	48,500	3.06%	No MOD
55	Oakland GWK Drain District	102,500	105,600	3,100	3.02%	No MOD
56	Plymouth	1,245,300	1,283,400	38,100	3.06%	No MOD
57	Plymouth Township	5,061,700	5,216,500	154,800	3.06%	No MOD
58	Redford Township	3,357,400	3,460,100	102,700	3.06%	No MOD
59	River Rouge	577,700	595,500	17,800	3.08%	No MOD
60	Riverview	992,100	1,022,400	30,300	3.05%	No MOD
61	Rockwood	281,000	289,600	8,600	3.06%	No MOD
62	Romeo	239,700	206,000	(33,700)	-14.06%	MOD
63	Romulus	4,205,400	4,334,000	128,600	3.06%	No MOD
64	Roseville	2,919,600	3,008,900	89,300	3.06%	No MOD
65	Royal Oak Township	235,900	243,100	7,200	3.05%	No MOD
66	Shelby Township	12,647,800	13,034,400	386,600	3.06%	No MOD
67	SOCWA	26,714,200	27,530,900	816,700	3.06%	No MOD
68	South Rockwood	134,100	138,100	4,000	2.98%	No MOD
69	Southgate	2,340,100	2,411,700	71,600	3.06%	No MOD
70	St. Clair Shores	3,549,500	3,657,900	108,400	3.05%	No MOD
71	Sterling Heights	16,760,300	17,272,600	512,300	3.06%	No MOD
72	Sumpter Township	813,800	838,800	25,000	3.07%	No MOD
73	Sylvan Lake	265,100	273,100	8,000	3.02%	No MOD
74	Taylor	5,194,000	5,352,900	158,900	3.06%	No MOD
75	Trenton	2,006,200	2,067,500	61,300	3.06%	No MOD
76	Troy	15,451,800	15,924,200	472,400	3.06%	No MOD
77	Utica	664,800	685,100	20,300	3.05%	No MOD
78	Van Buren Township	3,897,000	4,016,100	119,100	3.06%	No MOD
79	Walled Lake	898,200	925,600	27,400	3.05%	No MOD
80	Warren	10,860,800	11,192,800	332,000	3.06%	No MOD



Table 1
GLWA Proposed FY 2025 Water Charge Summary
Comparison of Allocated Revenue Requirements and Revenues under Existing Charges

	(1) Revenue from Existing <u>Charges</u> \$	(2) Allocated Total <u>Rev Req't (a)</u> \$	(3) Charge Adjustment <u>Required</u> \$	(4) % Charge Adjustment <u>Required</u>	(5) MOD / <u>No MOD</u>	
81	Washington Township	2,652,100	2,733,300	81,200	3.06%	No MOD
82	Wayne	2,031,900	2,093,900	62,000	3.05%	No MOD
83	West Bloomfield Township	12,029,700	12,397,500	367,800	3.06%	No MOD
84	Westland	6,908,000	7,119,100	211,100	3.06%	No MOD
85	Wixom	2,793,800	2,879,300	85,500	3.06%	No MOD
86	Woodhaven	1,671,300	1,722,400	51,100	3.06%	No MOD
87	Ypsilanti Comm Util Auth	11,768,100	12,127,900	359,800	3.06%	No MOD
88	Detroit **	25,537,200	27,095,100	1,557,900	6.10%	No MOD
	TOTAL	363,051,300	374,850,700	11,799,400	3.25%	
3	MOD Customers	2,128,800	1,893,100	(235,700)	-11.07%	MOD
85	No MOD Customers	360,922,500	372,957,600	12,035,100	3.33%	No MOD
88	Total	363,051,300	374,850,700	11,799,400	3.25%	
	Flint Gross *	11,280,200	11,645,900	365,700	3.24%	
	less: KWA Credit	<u>(6,651,800)</u>	<u>(6,651,800)</u>	<u>0</u>	0.00%	
	Flint Net * (see Line 22)	4,628,400	4,994,100	365,700	7.90%	
	Detroit Gross **	46,237,200	47,795,100	1,557,900	3.37%	
	less: KWA Credit	<u>(20,700,000)</u>	<u>(20,700,000)</u>	<u>0</u>	0.00%	
	Detroit Net * (see Line 88)	25,537,200	27,095,100	1,557,900	6.10%	

(a) Represents each Member Partner's Allocated SHARE of the GLWA Wholesale Revenue Requirement, adjusted to recognize the Detroit Ownership Benefit and the Flint KWA Debt Service Adjustment.

Table 2
Sewage Disposal System
Comparison of Allocated Revenue Requirements and Revenues under Existing Charges - *Revised 1/22/24*

	(1) Revenue Existing <u>Charges (b)</u> \$	FY 2025 <u>SHARE</u> (a)	(2) Allocated Total <u>Rev Req't (b)</u> \$	(3) Charge Adjustment <u>Required</u> \$	(4) % Charge Adjustment <u>Required</u>	
<u>Suburban Wholesale</u>						
1	OMID	72,972,000	14.544%	74,910,000	1,938,000	2.7%
2	Rouge Valley	57,471,600	11.533%	57,848,400	376,800	0.7%
3	Oakland GWK	47,655,600	9.632%	48,309,600	654,000	1.4%
4	Evergreen Farmington	37,192,800	7.560%	37,912,800	720,000	1.9%
5	SE Macomb San Dist	25,760,400	5.204%	26,100,000	339,600	1.3%
6	Dearborn	20,858,400	4.284%	21,496,800	638,400	3.1%
7	Grosse Pointe Farms	2,823,600	0.555%	2,790,000	(33,600)	-1.2%
8	Grosse Pointe Park	1,957,200	0.397%	1,990,800	33,600	1.7%
9	Melvindale	1,616,400	0.328%	1,645,200	28,800	1.8%
10	Farmington	1,232,400	0.250%	1,254,000	21,600	1.8%
11	Center Line	1,071,600	0.219%	1,098,000	26,400	2.5%
12	Allen Park	871,200	0.176%	883,200	12,000	1.4%
13	Grosse Pointe	925,200	0.244%	1,226,400	301,200	32.6%
14	Highland Park	5,570,400	0.987%	4,981,200	(589,200)	-10.6%
15	Hamtramck	4,153,200	0.892%	4,497,600	344,400	8.3%
16	Harper Woods	224,400	0.034%	170,400	(54,000)	-24.1%
17	Redford Township	277,200	0.070%	352,800	75,600	27.3%
18	Wayne County #3	54,000	0.010%	50,400	(3,600)	-6.7%
19	Subtotal Suburban Wholesale	282,687,600	56.919%	287,517,600	4,830,000	1.7%
20	Detroit Customers *	196,569,600	43.081%	205,924,800	9,355,200	4.8%
21	Total Member Partner Wholesale	479,257,200	100.000%	493,442,400	14,185,200	3.0%
22	Subtotal M Customer Class	272,408,400	54.926%	277,465,200	5,056,800	1.9%
23	Subtotal D+ Customer Class	206,848,800	45.074%	215,977,200	9,128,400	4.4%
<u>Industrial Specific Charges</u>						
24	Industrial Waste Control	8,531,700		8,719,300	187,600	2.2%
25	Industrial Surcharges	5,016,300		5,434,400	418,100	8.3%
26	Subtotal	13,548,000		14,153,700	605,700	4.5%
27	Total	492,805,200		507,596,100	14,790,900	3.0%
28	* Detroit - Gross	202,085,600		211,440,800	9,355,200	4.6%
29	less: Fixed Ownership Benefit	(5,516,000)		(5,516,000)	0	0.0%
30	Detroit Net of Ownership Benefit	196,569,600		205,924,800	9,355,200	4.8%

(a) Represents each Member Partner's Allocated SHARE of the GLWA Wholesale Revenue Requirement.

(b) Reflects final contractual adjustments, including the OMID specific costs, the Detroit Ownership Benefit and the reallocation of Green Infrastructure costs for FY 2025 originally allocated as a CSO 83/17 responsibility.

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MEMORANDUM

FY 2025 Cost of Service and Charges Study
Detailed Cost Allocation Schedules

December 21, 2023

To: Nicolette Bateson

From: Bart Foster

The attached exhibits are intended to delineate the process taken to allocate the FY 2025 Budgeted Revenue Requirements to cost pools as part of the FY 2025 Cost of Service and Charges Study. This material illustrates the detailed, step by step approach applied to get to the final cost pool allocations, which are summarized as “Table 2” in the cost of service and charges memorandum report submitted under separate cover.

The schedules in this package have been annotated to indicate the process followed to allocate costs to cost pools. I believe that the annotation provides a “road map” for interested parties to follow the allocation logic, and I’ll not elaborate in this introduction.

For the FY 2025 Cost of Service Study, significant review efforts continue to be applied towards accurately reflecting the manner by which budgeted operating expenses of the Centralized Services group are assigned to the Water and Sewer systems, and to individual Cost Pools within each system. This group includes major planning and asset management activities, some of which are discretely related to one utility or the other. For instance, the budget request for the Systems Analytics cost center includes several contracts to support sewer collection system modelling and wastewater metering analyses. These costs are appropriately directly assigned to the Sewer Fund. Similarly, the budget request for the Field Services cost center includes separate, specific contracts to address repairs to the Water Transmission system and the Sewer Collection system. The costs of those specific contracts are directly assigned to the appropriate fund and Cost Pool in these calculations.

The FY 2025 Cost of Service Study allocates costs to cost pools based on a detailed review of each of the major cost centers within the Centralized Services group, and assigns discrete activities directly to Water and Sewer budget responsibilities based on that review. These results are summarized at the bottom of page B-11 of the exhibits. All other “general” Centralized Services budgeted costs have been assigned 50% to Water and 50% to Sewer¹.

¹ With the exception of the System Control Center budgeted costs, which are assigned 55% to Water and 45% to Sewer as noted on exhibit page C-5. This allocation is based on discussions with System Control Center managers.

All Administrative Services budgeted costs have also been assigned 50% to Water and 50% to Sewer, with the exception of a more heavily weighted allocation to Sewer of Risk Management Insurance Fund requirements and a subtle adjustment in the Logistics and Materials cost center, as a portion these costs are related to a “Sewer only” function within that budget.

As noted in the exhibits, specific operating costs are allocated to cost pools in part based on judgment and experience applied to the historical cost information in prior reports.

The allocation of capital revenue requirements to cost pools continues to reflect information from the GLWA capital asset inventory. A detailed review of the thousands of individual asset records establishes a “fixed asset profile” by various functions. This updated information has been utilized to allocate capital revenue requirements to Cost Pools, as illustrated herein. With respect to the allocation of Sewer assets summarized on page B-20, there are two particular items of note in the analysis:

1. A detailed review has been conducted to allocate asset values related to the FY 2015 Oakwood CSO / Lift Station asset to CSO 83/17 and Conveyance Cost Pools. The foundational settlement agreements on this project listed the allocation as “TBD”. In the FY 2025 Cost of Service Study this asset is assigned 80% to the CSO 83/17 Cost Pool and 20% to the Lift Station function and the Conveyance Cost Pool.
2. Five specific construction work in progress (CWIP) projects that were originally assigned to the Conveyance Cost Pool have been treated as “TBD” based on questions raised by Member Partner representatives. As such these assets under construction have no impact on the FY 2025 Cost of Service Study nor the FY 2025 Sewer Charges.

The approach summarized above results in an allocation of the FY 2025 Budgeted Revenue Requirements to individual Cost Pools, as shown on exhibit page B-24 for the Water System and B-25 for the Sewer System. These figures are incorporated into the formal Cost of Service Study. One final note – the Simplified Water Charge Methodology is being embraced in the FY 2025 Water Cost of Service Study. This methodology establishes three cost pools that align with customer’s use of the System (Commodity, Max Day, and Peak Hour) and sets cost pool weights (10/50/40) at historical averages. As documented in the Water exhibits herein, the allocation analyses for the Water Cost of Service Study are solely intended to indicate general alignment with long term averages.

I am prepared to discuss this matter at your convenience.

Estimated allocation factors based on judgement and experience applied to historical information

Water Operations Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners. The first step in the process is to assign these items to specific Functional Categories, as illustrated below - first for the Water Plants, then for the supporting Divisions. The FY 2025 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 Cost of Service Study.

STEP 1 - ALLOCATION FACTORS	Water System Functional Categories								
	Water Treatment Plant Functional Categories					Water Delivery Facilities			
	Source of Supply	Low Lift Pumps	Purification	High Lift Pumps	Reservoirs	Booster Stations	Transmission Mains	Master Meters	General
Part 1 - Water Treatment Plants									
<u>Personnel Costs</u>									
9.3.1 Water Works Park	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.2 Lake Huron Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.3 Springwells Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.4 Northeast Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.5 Southwest Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
Total WTPs	6.0%	9.0%	70.0%	15.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<u>Contractual Services</u>									
9.3.1 Water Works Park	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.2 Lake Huron Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.3 Springwells Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.4 Northeast Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.5 Southwest Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
Total WTPs	2.5%	20.0%	25.0%	52.5%	0.0%	0.0%	0.0%	0.0%	0.0%
<u>Electricity</u>									
9.3.1 Water Works Park	2.5%	20.0%	25.0%	52.5%					0.0%
9.3.2 Lake Huron Water Plant	2.5%	20.0%	25.0%	52.5%					0.0%
9.3.3 Springwells Water Plant	2.5%	20.0%	25.0%	52.5%					0.0%
9.3.4 Northeast Water Plant	2.5%	20.0%	25.0%	52.5%					0.0%
9.3.5 Southwest Water Plant	2.5%	20.0%	25.0%	52.5%					0.0%
Total WTPs	2.5%	20.0%	25.0%	52.5%	0.0%	0.0%	0.0%	0.0%	0.0%
<u>Chemicals</u>									
9.3.1 Water Works Park	0.0%	0.0%	100.0%	0.0%					0.0%
9.3.2 Lake Huron Water Plant	0.0%	0.0%	100.0%	0.0%					0.0%
9.3.3 Springwells Water Plant	0.0%	0.0%	100.0%	0.0%					0.0%
9.3.4 Northeast Water Plant	0.0%	0.0%	100.0%	0.0%					0.0%
9.3.5 Southwest Water Plant	0.0%	0.0%	100.0%	0.0%					0.0%
Total WTPs	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<u>Other Utilities</u>									
9.3.1 Water Works Park	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.2 Lake Huron Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.3 Springwells Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.4 Northeast Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.5 Southwest Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
Total WTPs	6.0%	9.0%	70.0%	15.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Water Operations Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.

The first step in the process is to assign these items to specific Functional Categories, as illustrated below - first for the Water Plants, then for the supporting Divisions.

The FY 2025 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 Cost of Service Study.

STEP 1 - ALLOCATION FACTORS	Water System Functional Categories								
	Water Treatment Plant Functional Categories				Water Delivery Facilities				
	Source of Supply	Low Lift Pumps	Purification	High Lift Pumps	Reservoirs	Booster Stations	Transmission Mains	Master Meters	General
Other									
9.3.1 Water Works Park	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.2 Lake Huron Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.3 Springwells Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.4 Northeast Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
9.3.5 Southwest Water Plant	6.0%	9.0%	70.0%	15.0%					0.0%
Total WTPs	6.0%	9.0%	70.0%	15.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TOTAL WTP Budget									
9.3.1 Water Works Park	4.0%	9.8%	63.5%	20.7%					0.0%
9.3.2 Lake Huron Water Plant	3.3%	12.4%	54.7%	29.5%					0.0%
9.3.3 Springwells Water Plant	3.7%	9.9%	64.8%	21.6%					0.0%
9.3.4 Northeast Water Plant	4.0%	10.6%	62.4%	23.0%					0.0%
9.3.5 Southwest Water Plant	4.7%	9.2%	68.1%	18.0%					0.0%
Total WTPs	3.9%	10.5%	62.7%	23.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Part 2 - Booster Stations									
Personnel Costs						100.0%			0.0%
Contractual Services						100.0%			0.0%
Electricity						100.0%			0.0%
Chemicals						100.0%			0.0%
Other Utilities						100.0%			0.0%
Other						100.0%			0.0%
Total Booster Station Costs	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Part 3 - Support Services									
9.1 Chief Operating Officer Water Operations & F	5.6%	8.3%	66.7%	12.5%	1.0%	5.0%	1.0%	0.0%	0.0%
9.2.1 Water Director	10.0%	10.0%	70.0%	10.0%					0.0%
9.2.2 Water Quality			100.0%					0.0%	0.0%
9.5.1 Water Engineering	5.0%	15.0%	20.0%	15.0%	15.0%	15.0%	15.0%	0.0%	0.0%
9.7.1 Water Operations Unallocated Reserve	5.6%	8.3%	66.7%	12.5%	1.0%	5.0%	1.0%	0.0%	0.0%
Total Support Costs	5.4%	8.0%	67.4%	10.0%	2.4%	4.3%	2.4%	0.0%	0.0%
TOTAL GROUP	3.6%	8.7%	54.9%	17.9%	0.4%	14.2%	0.4%	0.0%	0.0%
Indirect Allocation Factors (Non Commodity)	5.6%	8.3%	66.7%	12.5%	1.0%	5.0%	1.0%	0.0%	0.0%

Aligns with FY 2025 Budget Request as of 12/21/2023. Subsequent modifications may occur.

Water Operations Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.

The first step in the process is to assign these items to specific Functional Categories, as illustrated below - first for the Water Plants, then for the supporting Divisions.

The FY 2025 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 Cost of Service Study.

STEP 2 - ALLOCATION OF BUDGET	Water System Functional Categories									
	Water Treatment Plant Functional Categories					Water Delivery Facilities				
	Source of Supply	Low Lift Pumps	Purification	High Lift Pumps	Reservoirs	Booster Stations	Transmission Mains	Master Meters	General	
Part 1 - Water Treatment Plants										
Personnel Costs										
9.3.1 Water Works Park	3,644,600	218,700	328,000	2,551,200	546,700	0	0	0	0	0
9.3.2 Lake Huron Water Plant	3,257,700	195,500	293,200	2,280,300	488,700	0	0	0	0	0
9.3.3 Springwells Water Plant	3,366,000	202,000	302,900	2,356,200	504,900	0	0	0	0	0
9.3.4 Northeast Water Plant	3,249,000	194,900	292,400	2,274,300	487,400	0	0	0	0	0
9.3.5 Southwest Water Plant	3,273,300	196,400	294,600	2,291,300	491,000	0	0	0	0	0
Total WTPs	16,790,600	1,007,500	1,511,100	11,753,300	2,518,700	0	0	0	0	0
Contractual Services										
9.3.1 Water Works Park	1,460,000	87,600	131,400	1,022,000	219,000	0	0	0	0	0
9.3.2 Lake Huron Water Plant	1,445,500	86,700	130,100	1,011,900	216,800	0	0	0	0	0
9.3.3 Springwells Water Plant	4,257,400	255,400	383,200	2,980,200	638,600	0	0	0	0	0
9.3.4 Northeast Water Plant	3,489,600	209,400	314,100	2,442,700	523,400	0	0	0	0	0
9.3.5 Southwest Water Plant	3,624,600	217,500	326,200	2,537,200	543,700	0	0	0	0	0
Total WTPs	14,277,100	856,600	1,285,000	9,994,000	2,141,500	0	0	0	0	0
Electricity										
9.3.1 Water Works Park	2,500,000	62,500	500,000	625,000	1,312,500	0	0	0	0	0
9.3.2 Lake Huron Water Plant	7,110,000	177,800	1,422,000	1,777,400	3,732,800	0	0	0	0	0
9.3.3 Springwells Water Plant	4,400,000	110,000	880,000	1,100,000	2,310,000	0	0	0	0	0
9.3.4 Northeast Water Plant	3,900,000	97,500	780,000	975,000	2,047,500	0	0	0	0	0
9.3.5 Southwest Water Plant	1,500,000	37,500	300,000	375,000	787,500	0	0	0	0	0
Total WTPs	19,410,000	485,300	3,882,000	4,852,400	10,190,300	0	0	0	0	0
Chemicals										
9.3.1 Water Works Park	2,131,500	0	0	2,131,500	0	0	0	0	0	0
9.3.2 Lake Huron Water Plant	2,752,300	0	0	2,752,300	0	0	0	0	0	0
9.3.3 Springwells Water Plant	3,735,000	0	0	3,735,000	0	0	0	0	0	0
9.3.4 Northeast Water Plant	2,351,800	0	0	2,351,800	0	0	0	0	0	0
9.3.5 Southwest Water Plant	1,537,500	0	0	1,537,500	0	0	0	0	0	0
Total WTPs	12,508,100	0	0	12,508,100	0	0	0	0	0	0
Other Utilities										
9.3.1 Water Works Park	290,000	17,400	26,100	203,000	43,500	0	0	0	0	0
9.3.2 Lake Huron Water Plant	220,000	13,200	19,800	154,000	33,000	0	0	0	0	0
9.3.3 Springwells Water Plant	300,000	18,000	27,000	210,000	45,000	0	0	0	0	0
9.3.4 Northeast Water Plant	340,500	20,400	30,600	238,400	51,100	0	0	0	0	0
9.3.5 Southwest Water Plant	651,000	39,100	58,600	455,600	97,700	0	0	0	0	0
Total WTPs	1,801,500	108,100	162,100	1,261,000	270,300	0	0	0	0	0

Water Operations Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.

The first step in the process is to assign these items to specific Functional Categories, as illustrated below - first for the Water Plants, then for the supporting Divisions.

The FY 2025 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 Cost of Service Study.

STEP 2 - ALLOCATION OF BUDGET		Water System Functional Categories								
		Water Treatment Plant Functional Categories					Water Delivery Facilities			
		Source of Supply	Low Lift Pumps	Purification	High Lift Pumps	Reservoirs	Booster Stations	Transmission Mains	Master Meters	General
Other										
9.3.1 Water Works Park	731,000	43,900	65,800	511,600	109,700	0	0	0	0	0
9.3.2 Lake Huron Water Plant	727,200	43,600	65,400	509,100	109,100	0	0	0	0	0
9.3.3 Springwells Water Plant	492,500	29,600	44,300	344,700	73,900	0	0	0	0	0
9.3.4 Northeast Water Plant	463,400	27,800	41,700	324,400	69,500	0	0	0	0	0
9.3.5 Southwest Water Plant	623,400	37,400	56,100	436,400	93,500	0	0	0	0	0
Total WTPs	3,037,500	182,300	273,300	2,126,200	455,700	0	0	0	0	0
TOTAL WTP Budget										
9.3.1 Water Works Park	10,757,100	430,100	1,051,300	7,044,300	2,231,400	0	0	0	0	0
9.3.2 Lake Huron Water Plant	15,512,700	516,800	1,930,500	8,485,000	4,580,400	0	0	0	0	0
9.3.3 Springwells Water Plant	16,550,900	615,000	1,637,400	10,726,100	3,572,400	0	0	0	0	0
9.3.4 Northeast Water Plant	13,794,300	550,000	1,458,800	8,606,600	3,178,900	0	0	0	0	0
9.3.5 Southwest Water Plant	11,209,800	527,900	1,035,500	7,633,000	2,013,400	0	0	0	0	0
Total WTPs	67,824,800	2,639,800	7,113,500	42,495,000	15,576,500	0	0	0	0	0
Part 2 - Booster Stations										
Personnel Costs	0	0	0	0	0	0	0	0	0	0
Contractual Services	0	0	0	0	0	0	0	0	0	0
Electricity	11,537,900	0	0	0	0	0	11,537,900	0	0	0
Chemicals	0	0	0	0	0	0	0	0	0	0
Other Utilities	112,400	0	0	0	0	0	112,400	0	0	0
Other	1,146,200	0	0	0	0	0	1,146,200	0	0	0
Total Booster Station Costs	12,796,500	0	0	0	0	0	12,796,500	0	0	0
Part 3 - Support Services										
9.1 Chief Operating Officer Water	1,399,200	78,000	116,300	933,100	174,700	13,600	69,900	13,600	0	0
9.2.1 Water Director	3,065,900	306,600	306,600	2,146,100	306,600	0	0	0	0	0
9.2.2 Water Quality	2,603,200	0	0	2,603,200	0	0	0	0	0	0
9.5.1 Water / Field Engineering	1,849,300	92,500	277,400	369,800	277,400	277,400	277,400	277,400	0	0
9.7.1 Water Operations Unallocat	5,131,000	286,100	426,500	3,421,200	640,800	50,000	256,400	50,000	0	0
Total Support Costs	14,048,600	763,200	1,126,800	9,473,400	1,399,500	341,000	603,700	341,000	0	0
TOTAL GROUP	94,669,900	3,403,000	8,240,300	51,968,400	16,976,000	341,000	13,400,200	341,000	0	0
Indirect Allocation Factors	28,492,700	1,588,900	2,368,400	18,998,600	3,558,400	277,400	1,423,600	277,400	0	0

Estimated allocation factors based on judgement and experience applied to historical information

Wastewater Operations Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners. The first step in the process is to assign these items to specific Functional Categories, as illustrated below - first for the WRRF, then for the supporting Divisions. The FY 2025 allocation factors are based on historical data and judgement.

1 - ALLOCATION FACTORS	Wastewater System Functional Categories											
	WRRF Functional Categories							Wastewater Collection Facilities				
	Primary Pumping	Rack & Grit	Primary Treatment	Aeration	Secondary Treatment	Dewatering	Sludge Disposal	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters
Part 1 - Water Reuse & Reclamation Facility												
Personnel Costs												
8.2.1 Wastewater Operations	7.5%	4.0%	8.0%	16.0%	12.0%	10.0%	35.00%				7.5%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	27.50%				0.0%	
8.2.4 Wastewater Primary Process	10.0%	15.0%	75.0%	0.0%	0.0%	0.0%	0.0%				0.0%	
8.2.4 Wastewater Secondary Process	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%				0.0%	
8.2.5 Wastewater Dewatering Process	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%				0.0%	
8.2.6 Wastewater Incineration Process	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%				0.0%	
8.2.7 Biosolids Dryer Facility and Hauling Contracts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%				0.0%	
Total WRRF	4.3%	3.9%	15.1%	13.7%	12.3%	17.2%	31.5%	0.0%	0.0%	0.0%	2.0%	0.0%
Contractual Services												
8.2.1 Wastewater Operations	7.5%	4.0%	8.0%	16.0%	12.0%	10.0%	35.00%				7.5%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	27.50%				0.0%	
8.2.4 Wastewater Primary Process	10.0%	15.0%	75.0%	0.0%	0.0%	0.0%	0.0%				0.0%	
8.2.4 Wastewater Secondary Process	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%				0.0%	
8.2.5 Wastewater Dewatering Process	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%				0.0%	
8.2.6 Wastewater Incineration Process	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%				0.0%	
8.2.7 Biosolids Dryer Facility and Hauling Contracts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%				0.0%	
Total WRRF	9.0%	9.0%	4.5%	18.0%	10.8%	22.5%	26.0%	0.0%	0.0%	0.0%	0.2%	0.0%
Electricity												
8.2.1 Wastewater Operations	10.0%	10.0%	5.0%	20.0%	12.0%	25.0%	17.75%				0.25%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	27.50%				0.0%	
8.2.4 Wastewater Primary Process	10.0%	15.0%	75.0%	0.0%	0.0%	0.0%	0.0%				0.0%	
8.2.4 Wastewater Secondary Process	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%				0.0%	
8.2.5 Wastewater Dewatering Process	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%				0.0%	
8.2.6 Wastewater Incineration Process	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%				0.0%	
8.2.7 Biosolids Dryer Facility and Hauling Contracts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%				0.0%	
Total WRRF	9.0%	9.0%	4.5%	18.0%	10.8%	22.5%	26.0%	0.0%	0.0%	0.0%	0.2%	0.0%
Chemicals												
8.2.1 Wastewater Operations	0.0%	0.0%	40.0%	10.0%	40.0%	0.0%	10.0%				0.0%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	25.0%				0.0%	
8.2.4 Wastewater Primary Process	10.0%	15.0%	75.0%	0.0%	0.0%	0.0%	0.0%				0.0%	
8.2.4 Wastewater Secondary Process	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%				0.0%	
8.2.5 Wastewater Dewatering Process	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%				0.0%	
8.2.6 Wastewater Incineration Process	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%				0.0%	
8.2.7 Biosolids Dryer Facility and Hauling Contracts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%				0.0%	
Total WRRF	3.1%	4.6%	23.0%	30.8%	30.8%	7.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Wastewater Operations Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.
 The first step in the process is to assign these items to specific Functional Categories, as illustrated below - first for the WRRF, then for the supporting Divisions.
 The FY 2025 allocation factors are based on historical data and judgement.

1 - ALLOCATION FACTORS	Wastewater System Functional Categories											
	WRRF Functional Categories						Wastewater Collection Facilities					
	Primary Pumping	Rack & Grit	Primary Treatment	Aeration	Secondary Treatment	Dewatering	Sludge Disposal	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters
Other Utilities												
8.2.1 Wastewater Operations	5.0%	5.0%	5.0%	20.0%	5.0%	5.0%	54.75%				0.25%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	27.50%				0.0%	
8.2.4 Wastewater Primary Process	10.0%	15.0%	75.0%	0.0%	0.0%	0.0%	0.00%				0.0%	
8.2.4 Wastewater Secondary Process	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.00%				0.0%	
8.2.5 Wastewater Dewatering Process	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.00%				0.0%	
8.2.6 Wastewater Incineration Process	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%				0.0%	
8.2.7 Biosolids Dryer Facility and Hauling Contracts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%				0.0%	
Total WRRF	4.1%	4.1%	4.1%	16.4%	4.1%	4.1%	63.0%	0.0%	0.0%	0.0%	0.2%	0.0%
Other												
8.2.1 Wastewater Operations	7.5%	4.0%	8.0%	16.0%	12.0%	10.0%	35.00%				7.5%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	27.50%				0.0%	
8.2.4 Wastewater Primary Process	10.0%	15.0%	75.0%	0.0%	0.0%	0.0%	0.00%				0.0%	
8.2.4 Wastewater Secondary Process	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.00%				0.0%	
8.2.5 Wastewater Dewatering Process	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.00%				0.0%	
8.2.6 Wastewater Incineration Process	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%				0.0%	
8.2.7 Biosolids Dryer Facility and Hauling Contracts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.00%				0.0%	
Total WRRF	5.3%	5.3%	22.0%	14.2%	12.7%	16.0%	21.8%	0.0%	0.0%	0.0%	2.6%	0.0%
TOTAL WRRF Budget												
8.2.1 Wastewater Operations	7.4%	6.2%	6.0%	18.6%	9.6%	12.9%	36.5%	0.0%	0.0%	0.0%	2.7%	0.0%
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	27.5%	0.0%	0.0%	0.0%	0.0%	0.0%
8.2.4 Wastewater Primary Process	10.0%	15.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8.2.4 Wastewater Secondary Process	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8.2.5 Wastewater Dewatering Process	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8.2.6 Wastewater Incineration Process	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8.2.7 Biosolids Dryer Facility and Hauling Contracts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total WRRF	4.1%	4.1%	11.0%	15.1%	11.6%	11.2%	41.8%	0.0%	0.0%	0.0%	1.0%	0.0%
Part 2 - Lift Stations												
Personnel Costs								100.0%				
Contractual Services								100.0%				
Electricity								100.0%				
Chemicals								100.0%				
Other Utilities								100.0%				
Other								100.0%				
Total Lift Stations Costs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%

Wastewater Operations Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.
 The first step in the process is to assign these items to specific Functional Categories, as illustrated below - first for the WRRF, then for the supporting Divisions.
 The FY 2025 allocation factors are based on historical data and judgement.

1 - ALLOCATION FACTORS	Wastewater System Functional Categories											
	WRRF Functional Categories						Wastewater Collection Facilities					
	Primary Pumping	Rack & Grit	Primary Treatment	Aeration	Secondary Treatment	Dewatering	Sludge Disposal	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters
Part 3 - CSO Facilities												
Personnel Costs									100.0%			
Contractual Services									100.0%			
Electricity									100.0%			
Chemicals									100.0%			
Other Utilities									100.0%			
Other									100.0%			
Total CSO Costs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Part 4 - Industrial Waste Control												
Personnel Costs											100.0%	
Contractual Services											100.0%	
Electricity											100.0%	
Chemicals											100.0%	
Other Utilities											100.0%	
Other											100.0%	
Total IWC Costs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Part 5 - Support Services												
8.1 Chief Operating Officer Wastewater	3.6%	3.3%	12.7%	11.6%	10.4%	14.5%	26.6%	0.0%	8.7%	0.0%	8.8%	0.0%
8.2.8 Wastewater Fire Damage						100.0%						
8.5 Wastewater Engineering	5.0%	5.0%	10.0%	15.0%	10.0%	15.0%	20.0%	15.0%	5.0%		0.0%	
8.61 Analytical Laboratory			15.0%	15.0%	15.0%		25.0%				30.0%	
8.7 O&M Unallocated Reserve	3.6%	3.3%	12.7%	11.6%	10.4%	14.5%	26.6%	0.0%	8.7%	0.0%	8.8%	0.0%
Total Support Costs	3.0%	2.8%	12.6%	13.4%	11.5%	10.7%	24.4%	4.0%	5.4%	0.0%	12.2%	0.0%
TOTAL GROUP	3.4%	3.4%	9.5%	12.7%	9.9%	9.5%	33.9%	2.5%	11.3%	0.0%	3.8%	0.0%
Indirect Allocation Factors (Personnel)	3.6%	3.3%	12.7%	11.6%	10.4%	14.5%	26.6%	0.0%	8.7%	0.0%	8.8%	0.0%

Aligns with FY 2025 Budget Request as of 12/21/2023. Subsequent modifications may occur.

Wastewater Operations Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners. The first step in the process is to assign these items to specific Functional Categories, as illustrated below - first for the WRRF, then for the supporting Divisions. The FY 2025 allocation factors are based on historical data and judgement.

2 - FUNCTIONAL O&M ALLOCATION	Wastewater System Functional Categories												
	WRRF Functional Categories							Wastewater Collection Facilities					
	Primary Pumping	Rack & Grit	Primary Treatment	Aeration	Secondary Treatment	Dewatering	Sludge Disposal	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters	
Personnel Costs													
8.2.1 Wastewater Operations	7,416,500	556,200	296,700	593,300	1,186,600	890,000	741,700	2,595,800	0	0	0	556,200	0
8.2.2 Wastewater Process Control	2,347,100	176,000	93,900	187,700	375,500	281,700	586,800	645,500	0	0	0	0	0
8.2.4 Wastewater Primary Process	4,477,000	447,700	671,600	3,357,700	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	4,416,800	0	0	0	2,208,400	2,208,400	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	3,402,600	0	0	0	0	0	3,402,600	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	4,615,000	0	0	0	0	0	0	4,615,000	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	805,700	0	0	0	0	0	0	805,700	0	0	0	0	0
Total WRRF	27,480,700	1,179,900	1,062,200	4,138,700	3,770,500	3,380,100	4,731,100	8,662,000	0	0	0	556,200	0
Contractual Services													
8.2.1 Wastewater Operations	3,011,900	225,900	120,500	240,900	481,900	361,400	301,200	1,054,200	0	0	0	225,900	0
8.2.2 Wastewater Process Control	1,148,000	86,100	45,900	91,800	183,700	137,800	287,000	315,700	0	0	0	0	0
8.2.4 Wastewater Primary Process	255,000	25,500	38,300	191,200	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	376,400	0	0	0	188,200	188,200	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	193,800	0	0	0	0	0	193,800	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	622,700	0	0	0	0	0	0	622,700	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	18,807,000	0	0	0	0	0	0	18,807,000	0	0	0	0	0
Total WRRF	24,414,800	337,500	204,700	523,900	853,800	687,400	782,000	20,799,600	0	0	0	225,900	0
Electricity													
8.2.1 Wastewater Operations	12,749,000	1,274,900	1,274,900	637,400	2,549,800	1,529,900	3,187,300	2,262,900	0	0	0	31,900	0
8.2.2 Wastewater Process Control	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Primary Process	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	1,425,700	0	0	0	0	0	0	1,425,700	0	0	0	0	0
Total WRRF	14,174,700	1,274,900	1,274,900	637,400	2,549,800	1,529,900	3,187,300	3,688,600	0	0	0	31,900	0
Chemicals													
8.2.1 Wastewater Operations	5,200	0	0	2,100	500	2,100	0	500	0	0	0	0	0
8.2.2 Wastewater Process Control	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Primary Process	5,238,000	523,800	785,700	3,928,500	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	10,504,500	0	0	(100)	5,252,300	5,252,300	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	1,328,000	0	0	0	0	0	1,328,000	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	4,000	0	0	0	0	0	0	4,000	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	0	0	0	0	0	0	0	0	0	0	0	0	0
Total WRRF	17,079,700	523,800	785,700	3,930,500	5,252,800	5,254,400	1,328,000	4,500	0	0	0	0	0

Wastewater Operations Group Functional Allocation Matrix - FY 2025 Budget

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 The FY 2025 allocation factors are based on historical data and judgement.

2 - FUNCTIONAL O&M ALLOCATION	Wastewater System Functional Categories												
	WRRF Functional Categories							Wastewater Collection Facilities					
	Primary Pumping	Rack & Grit	Primary Treatment	Aeration	Secondary Treatment	Dewatering	Sludge Disposal	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters	
Other Utilities													
8.2.1 Wastewater Operations	14,213,700	710,700	710,700	710,700	2,842,700	710,700	710,700	7,782,000	0	0	0	35,500	0
8.2.2 Wastewater Process Control	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Primary Process	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	3,162,500	0	0	0	0	0	0	3,162,500	0	0	0	0	0
Total WRRF	17,376,200	710,700	710,700	710,700	2,842,700	710,700	710,700	10,944,500	0	0	0	35,500	0
Other													
8.2.1 Wastewater Operations	3,574,800	268,100	143,000	285,900	572,000	429,000	357,500	1,251,200	0	0	0	268,100	0
8.2.2 Wastewater Process Control	228,900	17,200	9,200	18,300	36,600	27,500	57,200	62,900	0	0	0	0	0
8.2.4 Wastewater Primary Process	2,585,800	258,600	387,900	1,939,300	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	1,675,500	0	0	(100)	837,800	837,800	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	1,214,000	0	0	0	0	0	1,214,000	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	910,600	0	0	0	0	0	0	910,600	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	0	0	0	0	0	0	0	0	0	0	0	0	0
Total WRRF	10,189,600	543,900	540,100	2,243,400	1,446,400	1,294,300	1,628,700	2,224,700	0	0	0	268,100	0
TOTAL WRRF Budget													
8.2.1 Wastewater Operations	40,971,100	3,035,800	2,545,800	2,470,300	7,633,500	3,923,100	5,298,400	14,946,600	0	0	0	1,117,600	0
8.2.2 Wastewater Process Control	3,724,000	279,300	149,000	297,800	595,800	447,000	931,000	1,024,100	0	0	0	0	0
8.2.4 Wastewater Primary Process	12,555,800	1,255,600	1,883,500	9,416,700	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	16,973,200	0	0	(200)	8,486,700	8,486,700	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	6,138,400	0	0	0	0	0	6,138,400	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	6,152,300	0	0	0	0	0	0	6,152,300	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	24,200,900	0	0	0	0	0	0	24,200,900	0	0	0	0	0
Total WRRF	110,715,700	4,570,700	4,578,300	12,184,600	16,716,000	12,856,800	12,367,800	46,323,900	0	0	0	1,117,600	0
Part 2 - Lift Stations													
Personnel Costs	0	0	0	0	0	0	0	0	0	0	0	0	0
Contractual Services	10,700	0	0	0	0	0	0	0	10,700	0	0	0	0
Electricity	2,505,600	0	0	0	0	0	0	0	2,505,600	0	0	0	0
Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Utilities	152,800	0	0	0	0	0	0	0	152,800	0	0	0	0
Other	389,300	0	0	0	0	0	0	0	389,300	0	0	0	0
Total Lift Stations Costs	3,058,400	0	0	0	0	0	0	0	3,058,400	0	0	0	0

Wastewater Operations Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.
 The first step in the process is to assign these items to specific Functional Categories, as illustrated below - first for the WRRF, then for the supporting Divisions.
 The FY 2025 allocation factors are based on historical data and judgement.

2 - FUNCTIONAL O&M ALLOCATION	Wastewater System Functional Categories												
	WRRF Functional Categories						Wastewater Collection Facilities						
	Primary Pumping	Rack & Grit	Primary Treatment	Aeration	Secondary Treatment	Dewatering	Sludge Disposal	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters	
Part 3 - CSO Facilities													
Personnel Costs	2,825,500	0	0	0	0	0	0	0	2,825,500	0	0	0	
Contractual Services	1,492,000	0	0	0	0	0	0	0	1,492,000	0	0	0	
Electricity	1,135,600	0	0	0	0	0	0	0	1,135,600	0	0	0	
Chemicals	4,850,000	0	0	0	0	0	0	0	4,850,000	0	0	0	
Other Utilities	2,046,600	0	0	0	0	0	0	0	2,046,600	0	0	0	
Other	3,529,700	0	0	0	0	0	0	0	3,529,700	0	0	0	
Total CSO Costs	15,879,400	0	0	0	0	0	0	0	15,879,400	0	0	0	
Part 4 - Industrial Waste Control													
Personnel Costs	2,300,300	0	0	0	0	0	0	0	0	0	2,300,300	0	
Contractual Services	258,400	0	0	0	0	0	0	0	0	0	258,400	0	
Electricity	0	0	0	0	0	0	0	0	0	0	0	0	
Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	
Other Utilities	0	0	0	0	0	0	0	0	0	0	0	0	
Other	140,900	0	0	0	0	0	0	0	0	0	140,900	0	
Total IWC Costs	2,699,600	0	0	0	0	0	0	0	0	0	2,699,600	0	
Part 5 - Support Services													
8.1 Chief Operating Officer Wastewater	2,684,300	97,100	87,400	340,700	310,400	278,300	389,500	713,100	0	232,600	0	235,200	0
8.2.8 Wastewater Fire Damage	0	0	0	0	0	0	0	0	0	0	0	0	0
8.5 Wastewater Engineering	3,949,700	197,500	197,500	395,000	592,500	395,000	592,500	789,900	592,500	197,500	0	0	0
8.61 Analytical Laboratory	4,006,600	0	0	601,000	601,000	601,000	0	1,001,700	0	0	0	1,202,000	0
8.7 O&M Unallocated Reserve	4,251,400	153,800	138,500	539,600	491,600	440,700	616,900	1,129,400	0	368,400	0	372,400	0
Total Support Costs	14,892,000	448,400	423,400	1,876,300	1,995,500	1,715,000	1,598,900	3,634,100	592,500	798,500	0	1,809,600	0
TOTAL GROUP	147,245,100	5,019,100	5,001,700	14,060,900	18,711,500	14,571,800	13,966,700	49,958,000	3,650,900	16,677,900	0	5,626,800	0



Centralized Services Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.
 The first step in the process is to establish direct cost pool allocation factors, then to recognize specific project / program allocations reflected in the FY 2025 Budget.
 The FY 2025 allocation factors are based on historical data and judgement.

Estimated allocation factors based on judgement and experience applied to historical information

Part 1 - General Cost Pool Allocation Factors	Cost Pool Allocation Factors												
	Water System Functional Categories						Wastewater System Functional Categories						
	Water Plants	Reservoirs	Booster Stations	Transmission Mains	Master Meters	General	WRRF	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters	General
Centralized Services													
4.1 Chief Planning Officer						50.00%							50.00%
4.2 System Planning	30.0%		10.00%	10.00%		0.00%	35.0%	5.00%	5.00%	5.00%		0.00%	
4.3 System Analytics	30.0%		10.00%	10.00%		0.00%	35.0%	5.00%	5.00%	5.00%		0.00%	
4.4 Asset Management & Capital Planning	30.0%		10.00%	10.00%		0.00%	35.0%	5.00%	5.00%	5.00%		0.00%	
4.5 Energy Management	30.0%		20.00%			0.00%	45.00%	5.00%				0.00%	
5.3 Field Service Operations		5.00%	10.00%	30.00%	5.00%	0.00%	0.0%	15.00%		35.00%		0.00%	
5.4 Facility Operations	40.00%		10.00%			0.00%	50.0%					0.00%	
5.5 Fleet Operations						50.00%						50.00%	
7.1 Systems Control	5.0%	5.0%	35.0%	5.0%	5.0%	0.00%	0.0%	35.0%	0.0%	10.0%	0.0%	0.00%	
6. Information Technology						50.00%						50.00%	
10.1 Security						50.00%	50.00%					0.00%	
11.1 HAZMAT						0.00%	100.00%					0.00%	
12.1 Centralized Services Unallocated Reserve						50.00%						50.00%	

Part 2 - Recognize Specific Project Allocations	Total Budget	Water System Functional Categories						Wastewater System Functional Categories						
		Water Plants	Reservoirs	Booster Stations	Transmission Mains	Master Meters	General	WRRF	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters	General
		Centralized Services												
4.1 Chief Planning Officer	330,500													
4.2 System Planning	8,140,900				530,000		30,000				500,000		700,000	250,000
4.3 System Analytics	5,574,500						327,800				0		1,458,400	
4.4 Asset Management & Capital Planning	2,612,800				1,014,500						403,800			
4.5 Energy Management	3,118,500						651,000							457,300
5.3 Field Service Operations	18,924,200				2,800,000						4,018,400			
5.4 Facility Operations	8,026,600													
5.5 Fleet Operations	2,751,900													
7.1 Systems Control	15,048,100			0				0			940,400			
6. Information Technology	43,067,000						0							0
10.1 Security	5,432,200													
11.1 HAZMAT	1,882,000													
12.1 Centralized Services Unallocated Reserve	2,071,000													
Total Centralized Services Specific	116,980,200	0	0	0	4,344,500	0	1,008,800	0	0	0	5,862,600	0	2,158,400	707,300
<i>Relative Cost Pool Allocation</i>		0.0%	0.0%	0.0%	30.9%	0.0%	7.2%	0.0%	0.0%	0.0%	41.6%	0.0%	15.3%	5.0%

Reflects analysis of specific contracts and programs in the FY 2022 GLWA Budget Request

Aligns with FY 2025 Budget Request as of 12/21/2023. Subsequent modifications may occur.

Centralized Services Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.
 The first step in the process is to establish direct cost pool allocation factors, then to recognize specific project / program allocations reflected in the FY 2025 Budget.
 The FY 2025 allocation factors are based on historical data and judgement.

		Cost Pool Allocation Factors													
Part 3 - Allocation of Non-Specific Budget		Water System Functional Categories						Wastewater System Functional Categories							
Non Specific Budget		Water Plants	Reservoirs	Booster Stations	Transmission Mains	Master Meters	General	WRRF	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters	General	
Centralized Services															
4.1 Chief Planning Officer	330,500	0	0	0	0	0	165,300	0	0	0	0	0	0	165,300	
4.2 System Planning	6,130,900	1,839,300	0	613,100	613,100	0	0	2,145,800	306,500	306,500	306,500	0	0	0	
4.3 System Analytics	3,788,300	1,136,500	0	378,800	378,800	0	0	1,325,900	189,400	189,400	189,400	0	0	0	
4.4 Asset Management & Capital Planning	1,194,500	358,400	0	119,500	119,500	0	0	418,100	59,700	59,700	59,700	0	0	0	
4.5 Energy Management	2,010,200	603,100	0	402,000	0	0	0	904,600	100,500	0	0	0	0	0	
5.3 Field Service Operations	12,105,800	0	605,300	1,210,600	3,631,700	605,300	0	0	1,815,900	0	4,237,000	0	0	0	
5.4 Facility Operations	8,026,600	3,210,600	0	802,700	0	0	0	4,013,300	0	0	0	0	0	0	
5.5 Fleet Operations	2,751,900	0	0	0	0	0	1,376,000	0	0	0	0	0	0	1,376,000	
7.1 Systems Control	14,107,700	705,400	705,400	4,937,700	705,400	705,400	0	0	4,937,700	0	1,410,800	0	0	0	
6. Information Technology	43,067,000	0	0	0	0	0	21,533,500	0	0	0	0	0	0	21,533,500	
10.1 Security	5,432,200	0	0	0	0	0	2,716,100	2,716,100	0	0	0	0	0	0	
11.1 HAZMAT	1,882,000	0	0	0	0	0	0	1,882,000	0	0	0	0	0	0	
12.1 Centralized Services Unallocated Reserve	2,071,000	0	0	0	0	0	1,035,500	0	0	0	0	0	0	1,035,500	
Total Centralized Services Non-Specific	102,898,600	7,853,300	1,310,700	8,464,400	5,448,500	1,310,700	26,826,400	13,405,800	7,409,700	555,600	6,203,400	0	0	24,110,300	
<i>Relative Cost Pool Allocation</i>		<i>7.6%</i>	<i>1.3%</i>	<i>8.2%</i>	<i>5.3%</i>	<i>1.3%</i>	<i>26.1%</i>	<i>13.0%</i>	<i>7.2%</i>	<i>0.5%</i>	<i>6.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>23.4%</i>	
Part 4 - Consolidated Centralized Services Budget		Water System Functional Categories						Wastewater System Functional Categories							
Consolidated Budget		Water Plants	Reservoirs	Booster Stations	Transmission Mains	Master Meters	General	WRRF	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters	General	
Centralized Services															
4.1 Chief Planning Officer	330,500	0	0	0	0	0	165,300	0	0	0	0	0	0	165,300	
4.2 System Planning	8,140,900	1,839,300	0	613,100	1,143,100	0	30,000	2,145,800	306,500	306,500	806,500	0	700,000	250,000	
4.3 System Analytics	5,574,500	1,136,500	0	378,800	378,800	0	327,800	1,325,900	189,400	189,400	189,400	0	1,458,400	0	
4.4 Asset Management & Capital Planning	2,612,800	358,400	0	119,500	1,134,000	0	0	418,100	59,700	59,700	463,500	0	0	0	
4.5 Energy Management	3,118,500	603,100	0	402,000	0	0	651,000	904,600	100,500	0	0	0	0	457,300	
5.3 Field Service Operations	18,924,200	0	605,300	1,210,600	6,431,700	605,300	0	0	1,815,900	0	8,255,400	0	0	0	
5.4 Facility Operations	8,026,600	3,210,600	0	802,700	0	0	0	4,013,300	0	0	0	0	0	0	
5.5 Fleet Operations	2,751,900	0	0	0	0	0	1,376,000	0	0	0	0	0	0	1,376,000	
7.1 Systems Control	15,048,100	705,400	705,400	4,937,700	705,400	705,400	0	0	4,937,700	0	2,351,200	0	0	0	
6. Information Technology	43,067,000	0	0	0	0	0	21,533,500	0	0	0	0	0	0	21,533,500	
10.1 Security	5,432,200	0	0	0	0	0	2,716,100	2,716,100	0	0	0	0	0	0	
11.1 HAZMAT	1,882,000	0	0	0	0	0	0	1,882,000	0	0	0	0	0	0	
12.1 Centralized Services Unallocated Reserve	2,071,000	0	0	0	0	0	1,035,500	0	0	0	0	0	0	1,035,500	
Total Centralized Services Consolidated	116,980,200	7,853,300	1,310,700	8,464,400	9,793,000	1,310,700	27,835,200	13,405,800	7,409,700	555,600	12,066,000	0	2,158,400	24,817,600	
<i>Relative Cost Pool Allocation</i>		<i>6.7%</i>	<i>1.1%</i>	<i>7.2%</i>	<i>8.4%</i>	<i>1.1%</i>	<i>23.8%</i>	<i>11.5%</i>	<i>6.3%</i>	<i>0.5%</i>	<i>10.3%</i>	<i>0.0%</i>	<i>1.8%</i>	<i>21.2%</i>	
Indirect Allocation Factors		<i>13.9%</i>	<i>2.3%</i>	<i>15.0%</i>	<i>17.3%</i>	<i>2.3%</i>		<i>22.2%</i>	<i>12.3%</i>	<i>0.9%</i>	<i>20.0%</i>	<i>0.0%</i>	<i>3.6%</i>		
Allocated Indirect	0	17,561,200	645,000	4,165,100	4,818,900	645,000	(27,835,200)	15,254,700	2,957,100	221,700	4,815,400	0	861,400	(24,110,300)	
Reallocated Total	116,980,400	25,414,500	1,955,700	12,629,500	14,611,900	1,955,700	0	28,660,500	10,366,800	777,300	16,881,400	0	3,019,800	707,300	
		<i>21.7%</i>	<i>1.7%</i>	<i>10.8%</i>	<i>12.5%</i>	<i>1.7%</i>	<i>0.0%</i>	<i>24.5%</i>	<i>8.9%</i>	<i>0.7%</i>	<i>14.4%</i>	<i>0.0%</i>	<i>2.6%</i>	<i>0.6%</i>	

Aligns with FY 2025 Budget Request as of 12/21/2023. Subsequent modifications may occur.

Administrative Services Group Functional Allocation Matrix - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners. For purposes of the FY 2025 Budget, these costs are *pimarily* equally allocated between Water and Sewer, and subsequently allocated as overhead amounts to other Cost Pools.

		Part 1 - Water / Sewer Allocation			
		Allocation Factor		Allocated Budget	
		<u>Water</u>	<u>Sewer</u>	<u>Water</u>	<u>Sewer</u>
Part 1 - Water / Sewer Allocation					
<u>Administrative and Other Services</u>					
1.1 Board of Directors	164,400	50.0%	50.0%	82,200	82,200
1.2 Chief Executive Officer	719,500	50.0%	50.0%	359,800	359,700
1.3 Public Affairs	1,772,600	50.0%	50.0%	886,300	886,300
2.1 Chief Administrative Officer	1,381,700	50.0%	50.0%	690,900	690,800
2.2 General Counsel	3,770,400	50.0%	50.0%	1,885,200	1,885,200
2.3 Organizational Development	5,885,900	50.0%	50.0%	2,943,000	2,942,900
2.4 Risk Management and Safety	1,888,800	50.0%	50.0%	944,400	944,400
2.5 Risk Management Insurance Fund	5,619,800	30.0%	70.0%	1,685,900	3,933,900
3.1 Chief Financial Officer	1,125,400	50.0%	50.0%	562,700	562,700
3.2 Finance	5,684,500	50.0%	50.0%	2,842,300	2,842,200
3.3 Treasury	947,800	50.0%	50.0%	473,900	473,900
3.4 Public Finance	2,912,000	50.0%	50.0%	1,456,000	1,456,000
3.5 Procurement	3,952,900	50.0%	50.0%	1,976,500	1,976,400
3.8 Logistics and Materials	3,086,100	39.6%	60.4%	1,223,300	1,862,800
13.1 Administrative Services O&M Unallocate	752,000	50.0%	50.0%	376,000	376,000
Total Administrative Services	39,663,800	46.4%	53.6%	18,388,400	21,275,400



Consolidated Allocation of Water Operating Costs to Cost Pools - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.

Based on the assignment to Groups, Functional Category allocation factors can be applied to allocate to the Simplified Cost Pools of Commodity, Max Day, and Peak Hour established by the recently implemented Simplified Water Charge Methodology, which ultimately locks in Cost Pool weights at historical averages of 10% Commodity, 50% Max Day, and 40% Peak Hour.

As the Cost Pool Weights are fixed, the purpose of this aspect of the Cost of Service Study is to solely to illustrate the extent to which the detailed analysis aligns with long-term averages.

Step 1 - Summarize Group Expenses

	Water System Functional Operating Cost Allocation											Grand Total O&M	
	Water Treatment Plant Allocation					Water Delivery Cost Allocation					Admin & General		
	Source of Supply	Low Lift Pumps	Purification	High Lift Pumps	General	Reservoirs	Booster Stations	Transmission Mains	Master Meters	General			
Water Operations Group													
Total	3,403,000	8,240,300	51,968,400	16,976,000	0	341,000	13,400,200	341,000	0	0			94,669,900
Power	485,300	3,882,000	4,852,400	10,190,300	0	0	11,537,900	0	0	0			30,947,900
Chemicals	0	0	12,508,100	0	0	0	0	0	0	0			12,508,100
Other Utilities	108,100	162,100	1,261,000	270,300	0	0	112,400	0	0	0			1,913,900
Subtotal w/o Commodities	2,809,600	4,196,200	33,346,900	6,515,400	0	341,000	1,749,900	341,000	0	0			49,300,000
WTP Allocation Factors	6.0%	9.0%	71.2%	13.9%									
Centralized Services													
Original Allocation					7,853,300	1,310,700	8,464,400	9,793,000	1,310,700	27,835,200			56,567,300
Allocation of Water Plant General	470,800	703,100	5,587,700	1,091,700	(7,853,300)								0
Allocated Subtotal	470,800	703,100	5,587,700	1,091,700	0	1,310,700	8,464,400	9,793,000	1,310,700	27,835,200			56,567,300
Treat Water General Centralized as A&G										(27,835,200)	27,835,200		
"Direct" Centralized Services	470,800	703,100	5,587,700	1,091,700	0	1,310,700	8,464,400	9,793,000	1,310,700	0			28,732,100
Subtotal "Direct" Total	3,873,800	8,943,400	57,556,100	18,067,700	0	1,651,700	21,864,600	10,134,000	1,310,700	0			123,402,000
Subtotal "Direct" w/o Commodities	3,280,400	4,899,300	38,934,600	7,607,100	0	1,651,700	10,214,300	10,134,000	1,310,700	0			78,032,100
Indirect Overhead Allocation Factors	4.2%	6.3%	49.9%	9.7%	0.0%	2.1%	13.1%	13.0%	1.7%	0.0%			
Administrative Services													
Group Budget											18,388,400		
Centralized A&G											27,835,200		
Total A&G to Allocate											46,223,600		46,223,600
Allocation of A&G	1,943,200	2,902,200	23,063,600	4,506,200	0	978,400	6,050,600	6,003,000	776,400	0	(46,223,600)		0
Allocated Total	1,943,200	2,902,200	23,063,600	4,506,200	0	978,400	6,050,600	6,003,000	776,400	0	0		46,223,600
ALLOCATED GRAND TOTAL	5,817,000	11,845,600	80,619,700	22,573,900	0	2,630,100	27,915,200	16,137,000	2,087,100	0	0		169,625,600

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Allocation factors embraced by the Simplified Water Charge Methodology recommendation

Consolidated Allocation of Water Operating Costs to Cost Pools - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.

Based on the assignment to Groups, Functional Category allocation factors can be applied to allocate to the Simplified Cost Pools of Commodity, Max Day, and Peak Hour established by the recently implemented Simplified Water Charge Methodology, which ultimately locks in Cost Pool weights at historical averages of 10% Commodity, 50% Max Day, and 40% Peak Hour.

As the Cost Pool Weights are fixed, the purpose of this aspect of the Cost of Service Study is to solely illustrate the extent to which the detailed analysis aligns with long-term averages.

Step 2 - Apply Allocation Factors

	Cost Pool Allocation Factors			Cost Pool Allocation		
	Commodity	Max Day	Peak Hour	Commodity	Max Day	Peak Hour
All Operating Costs						
Source of Supply Power	485,300	50.00%	50.00%	242,700	242,600	0
Source of Supply Other	5,331,700		100.00%	0	5,331,700	0
Low Lift Pumps Power	3,882,000	50.00%	50.00%	1,941,000	1,941,000	0
Low Lift Pumps Other	7,963,600		100.00%	0	7,963,600	0
Purification Chemicals	12,508,100	100.00%		12,508,100	0	0
Purification Other	68,111,600		100.00%	0	68,111,600	0
High Lift Pumps Power	10,190,300	50.00%	50.00%	5,095,200	0	5,095,200
High Lift Pumps Other	12,383,600		100.00%	0	12,383,600	0
Reservoirs	2,630,100		100.00%	0	0	2,630,100
Booster Stations	27,915,200	50.00%	50.00%	13,957,600	0	13,957,600
Transmission Mains	16,137,000		100.00%	0	0	16,137,000
Suburban Meters	2,087,100	100.00%		2,087,100	0	0
Total	169,625,600			35,831,700	95,974,100	37,819,900
<i>Cost Pool Allocation Factor - All Costs</i>				<i>21.1%</i>	<i>56.6%</i>	<i>22.3%</i>
Non-Commodity Costs						
Source of Supply Power		50.00%	50.00%	0	0	0
Source of Supply Other	3,280,400		100.00%	0	3,280,400	0
Low Lift Pumps Power		50.00%	50.00%	0	0	0
Low Lift Pumps Other	4,899,300		100.00%	0	4,899,300	0
Purification Chemicals		100.00%		0	0	0
Purification Other	38,934,600		100.00%	0	38,934,600	0
High Lift Pumps Power		50.00%	50.00%	0	0	0
High Lift Pumps Other	7,607,100		100.00%	0	7,607,100	0
Reservoirs	1,651,700		100.00%	0	0	1,651,700
Booster Stations	10,214,300	50.00%	50.00%	5,107,200	0	5,107,100
Transmission Mains	10,134,000		100.00%	0	0	10,134,000
Suburban Meters	1,310,700	100.00%		1,310,700	0	0
Total	78,032,100			6,417,900	54,721,400	16,892,800
<i>Cost Pool Allocation Factor - Non Commodity Costs</i>				<i>8.2%</i>	<i>70.1%</i>	<i>21.6%</i>

Consolidated Allocation of Wastewater Operating Costs to Cost Pools - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.

Based on the assignment to Groups, Functional Category allocation factors can be applied to allocate to Cost Pools.

The FY 2025 WRRF allocation factors are only necessary to establish pollutant surcharges, as the SHARES methodology treats all WRRF costs the same for purposes of determining Member Partner SHARES.

Step 1 - Summarize Group Expenses

from Page B-10

	Wastewater System Functional Categories															Grand Total O&M	
	WRRF Cost Allocation							Wastewater Collection Cost Allocation						Admin & General			
	Primary Pumping	Rack & Grit	Primary Treatment	Aeration	Secondary Treatment	Dewatering	Sludge Disposal	General WRRF	Lift Stations	CSO Facilities	Interceptors	Industrial Waste Control	Master Meters		General		
Wastewater Operations Group																	
Total	5,019,100	5,001,700	14,060,900	18,711,500	14,571,800	13,966,700	49,958,000		3,918,200	16,410,600	0	5,626,800	0	0			147,245,300
Power	1,274,900	1,274,900	637,400	2,549,800	1,529,900	3,187,300	3,688,600		2,772,900	868,300	0	31,900	0	0			17,815,900
Chemicals	523,800	785,700	3,930,500	5,252,800	5,254,400	1,328,000	4,500		0	4,850,000	0	0	0	0			21,929,700
Other Utilities	710,700	710,700	710,700	2,842,700	710,700	710,700	10,944,500		152,800	2,046,600	0	35,500	0	0			19,575,600
Subtotal w/o Commodities	2,509,700	2,230,400	8,782,300	8,066,200	7,076,800	8,740,700	35,320,400		992,500	8,645,700	0	5,559,400	0	0			87,924,100
WW Operations Allocation Factors	3.5%	3.1%	12.1%	11.1%	9.7%	12.0%	48.6%										100.0%
Centralized Services																	
Original Allocation								13,405,800									
Allocation of WRRF General	462,600	411,100	1,618,900	1,486,900	1,304,500	1,611,200	6,510,700	(13,405,800)	7,409,700	555,600	12,066,000	0	2,158,400	24,817,600			60,413,100
Allocated Subtotal	462,600	411,100	1,618,900	1,486,900	1,304,500	1,611,200	6,510,700	0	7,409,700	555,600	12,066,000	0	2,158,400	24,817,600			100
Treat Sewer General Centralized as A&G														(24,817,600)		24,817,600	60,413,200
"Direct" Centralized Services	462,600	411,100	1,618,900	1,486,900	1,304,500	1,611,200	6,510,700	0	7,409,700	555,600	12,066,000	0	2,158,400				35,595,600
Subtotal "Direct" Total	5,481,700	5,412,800	15,679,800	20,198,400	15,876,300	15,577,900	56,468,700	0	11,327,900	16,966,200	12,066,000	5,626,800	2,158,400	0			182,840,900
Subtotal "Direct" w/o Commodities	2,972,300	2,641,500	10,401,200	9,553,100	8,381,300	10,351,900	41,831,100	0	8,402,200	9,201,300	12,066,000	5,559,400	2,158,400	0			123,519,700
Indirect Overhead Allocation Factors	2.4%	2.1%	8.4%	7.7%	6.8%	8.4%	33.9%	0.0%	6.8%	7.4%	9.8%	4.5%	1.7%	0.0%			100.0%
Administrative Services																	
Group Budget																	
Centralized A&G																	
Total A&G to Allocate																	
Allocation of A&G	1,109,200	985,700	3,881,300	3,564,900	3,127,600	3,862,900	15,609,800	0	3,135,400	3,433,600	4,502,600	2,074,600	805,400	0			21,275,400
Allocated Total	1,109,200	985,700	3,881,300	3,564,900	3,127,600	3,862,900	15,609,800	0	3,135,400	3,433,600	4,502,600	2,074,600	805,400	0			24,817,600
ALLOCATED GRAND TOTAL	6,590,900	6,398,500	19,561,100	23,763,300	19,003,900	19,440,800	72,078,500	0	14,463,300	20,399,800	16,568,600	7,701,400	2,963,800	0			228,933,900

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Step 2 - Develop Allocation Factors

Based on Prior Simplified Assumptions

	Total System	OMID Contractual	Remaining Balance	WRRF Treatment					WRRF Treatment	Conveyance	CSO Facilities
				Separated for Purposes of Surcharge Calculations							
				Industrial Waste Control	Flow	BOD	TSS	PHOS			
Primary Pumping				100.00%							
Rack & Grit				100.00%							
Primary Chemical Addition							100.00%				
Primary Sedimentation							70.00%	20.00%	10.00%		
Aeration					100.00%						
Secondary Clarification					25.00%	65.00%	10.00%				
Chlorination				100.00%							
Dewatering					15.00%	70.00%	15.00%				
Sludge Treatment					15.00%	70.00%	15.00%				
Process Water & Outfall							100.00%				
Lift Stations									100.00%		
CSO Facilities										100.00%	
Interceptors										100.00%	
Industrial Waste Control				100.00%							
Suburban Meters										100.00%	

Traditional original Sewer Methodology allocation factors developed as part of the original Rate Settlement Agreements

Consolidated Allocation of Wastewater Operating Costs to Cost Pools - FY 2025 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member Partners.

Based on the assignment to Groups, Functional Category allocation factors can be applied to allocate to Cost Pools.

The FY 2025 WRRF allocation factors are only necessary to establish pollutant surcharges, as the SHAREs methodology treats all WRRF costs the same for purposes of determining Member Partner SHARES.

Step 3 - Apply Allocation Factors

	Cost Pool Allocation												
	Total System	OMID Contractual	Remaining Balance	Industrial Waste Control	WRRF Treatment					"Common" prior to Surcharge			
					Separated for Purposes of Surcharge Calculations					WRRF Treatment	Conveyance	CSO Facilities	"Common" TOTAL
				Flow	BOD	TSS	PHOS	FOG					
All Operating Costs													
Primary Pumping	6,590,900		6,590,900	0	6,590,900	0	0	0	0	6,590,900	0	0	6,590,900
Rack & Grit	6,398,500		6,398,500	0	6,398,500	0	0	0	0	6,398,500	0	0	6,398,500
Primary Chemical Addition	3,930,500		3,930,500	0	0	0	3,930,500	0	0	3,930,500	0	0	3,930,500
Primary Sedimentation	15,630,600		15,630,600	0	0	0	10,941,400	3,126,100	1,563,100	15,630,600	0	0	15,630,600
Aeration	23,763,300		23,763,300	0	0	23,763,300	0	0	0	23,763,300	0	0	23,763,300
Secondary Clarification	13,749,500		13,749,500	0	0	3,437,400	8,937,200	1,375,000	0	13,749,600	0	0	13,749,600
Chlorination	5,254,400		5,254,400	0	5,254,400	0	0	0	0	5,254,400	0	0	5,254,400
Dewatering	19,440,800		19,440,800	0	0	2,916,100	13,608,600	2,916,100	0	19,440,800	0	0	19,440,800
Sludge Treatment	72,078,500		72,078,500	0	0	10,811,800	50,455,000	10,811,800	0	72,078,600	0	0	72,078,600
Process Water & Outfall	0		0	0	0	0	0	0	0	0	0	0	0
Lift Stations	14,463,300	1,700,600	12,762,700	0	0	0	0	0	0	0	12,762,700	0	12,762,700
CSO Facilities	20,399,800		20,399,800	0	0	0	0	0	0	0	0	20,399,800	20,399,800
Interceptors	16,568,600		16,568,600	0	0	0	0	0	0	0	16,568,600	0	16,568,600
Industrial Waste Control	7,701,400		7,701,400	7,701,400	0	0	0	0	0	0	0	0	0
Suburban Meters	2,963,800		2,963,800	0	0	0	0	0	0	0	2,963,800	0	2,963,800
Total	228,933,900	1,700,600	227,233,300	7,701,400	18,243,800	40,928,600	83,942,200	22,159,500	1,563,100	166,837,200	32,295,100	20,399,800	219,532,100
<i>Cost Pool Allocation Factor - All Costs</i>					3.4%	8.0%	18.0%	36.9%	9.8%	0.7%	73.4%	14.2%	9.0%
<i>Cost Pool Allocation Factor - "Common" Costs</i>										76.0%	14.7%	9.3%	
Non-Commodity Costs													
Primary Pumping	2,972,300		2,972,300	0	2,972,300	0	0	0	0	2,972,300	0	0	2,972,300
Rack & Grit	2,641,500		2,641,500	0	2,641,500	0	0	0	0	2,641,500	0	0	2,641,500
Primary Chemical Addition	0		0	0	0	0	0	0	0	0	0	0	0
Primary Sedimentation	10,401,200		10,401,200	0	0	0	7,280,800	2,080,200	1,040,100	10,401,100	0	0	10,401,100
Aeration	9,553,100		9,553,100	0	0	9,553,100	0	0	0	9,553,100	0	0	9,553,100
Secondary Clarification	8,381,300		8,381,300	0	0	2,095,300	5,447,800	838,100	0	8,381,200	0	0	8,381,200
Chlorination	0		0	0	0	0	0	0	0	0	0	0	0
Dewatering	10,351,900		10,351,900	0	0	1,552,800	7,246,300	1,552,800	0	10,351,900	0	0	10,351,900
Sludge Treatment	41,831,100		41,831,100	0	0	6,274,700	29,281,800	6,274,700	0	41,831,200	0	0	41,831,200
Process Water & Outfall	0		0	0	0	0	0	0	0	0	0	0	0
Lift Stations	8,402,200	750,000	7,652,200	0	0	0	0	0	0	0	7,652,200	0	7,652,200
CSO Facilities	9,201,300		9,201,300	0	0	0	0	0	0	0	0	9,201,300	9,201,300
Interceptors	12,066,000		12,066,000	0	0	0	0	0	0	0	12,066,000	0	12,066,000
Industrial Waste Control	5,559,400		5,559,400	5,559,400	0	0	0	0	0	0	0	0	0
Suburban Meters	2,158,400		2,158,400	0	0	0	0	0	0	0	2,158,400	0	2,158,400
Total	123,519,700	750,000	122,769,700	5,559,400	5,613,800	19,475,900	49,256,700	10,745,800	1,040,100	86,132,300	21,876,600	9,201,300	117,210,200
<i>Cost Pool Allocation Factor - Non Commodity Costs</i>				4.5%	4.6%	15.9%	40.1%	8.8%	0.8%	70.2%	17.8%	7.5%	
<i>Cost Pool Allocation Factor - "Common" Costs</i>										73.5%	18.7%	7.9%	

Allocation of Water Capital Revenue Requirements to Cost Pools - FY 2025 Budget

Direct from GLWA
Capital Asset Records

Goal is to use recent GLWA asset inventory and valuation analysis to establish allocation of capital revenue requirements (debt service, etc) to Cost Pools and Member Partners.

Evaluate data from GLWA capital asset registry, and use this information to establish functional allocation of capital revenue requirements to the Simplified Cost Pools of Commodity, Max Day, and Peak Hour established by the Simplified Water Charge Methodology, which ultimately locks in Cost Pool weights at historical averages of 10% Commodity, 50% Max Day, and 40% Peak Hour.

As the Cost Pool Weights are fixed, the purpose of this aspect of the Cost of Service Study is to solely to illustrate the extent to which the detailed analysis aligns with long-term averages.

Step 1 - Interpret Fixed Asset Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Reported Asset Value by Function - 6/30/23 (Includes CWIP)				Reallocate General Items				Reallocated Total - 6/30/23			
	Acquisition Cost	Accumulated Depreciation	Net Book Value	Annual Depr Expense	Acquisition Cost	Accumulated Depreciation	Net Book Value	Annual Depr Expense	Acquisition Cost	Accumulated Depreciation	Net Book Value	Annual Depr Expense
1 Source of Supply	109,548,200	20,537,100	89,011,100	901,400	57,615,600	10,530,600	47,085,000	410,300	167,163,800	31,067,700	136,096,100	1,311,700
2 Low Lift Pumping	87,891,500	47,690,500	40,201,000	2,027,600	46,225,500	24,453,800	21,771,700	922,900	134,117,000	72,144,300	61,972,700	2,950,500
3 Purification	584,797,600	221,118,100	363,679,500	24,553,000	307,567,300	113,380,800	194,186,500	11,175,900	892,364,900	334,498,900	557,866,000	35,728,900
4 High Lift Pumping	114,662,000	57,167,100	57,494,900	3,198,300	60,305,100	29,313,000	30,992,100	1,455,700	174,967,100	86,480,100	88,487,000	4,654,000
5 Reservoirs	88,762,600	22,786,100	65,976,500	2,628,400	968,200	257,900	710,300	36,600	89,730,800	23,044,000	66,686,800	2,665,000
6 Water Booster Stations	364,375,000	162,960,000	201,415,000	13,070,100	3,974,500	1,844,400	2,130,100	181,800	368,349,500	164,804,400	203,545,100	13,251,900
7 Transmission Mains	1,025,110,500	278,091,300	747,019,200	12,715,900	11,181,500	3,147,500	8,034,000	176,900	1,036,292,000	281,238,800	755,053,200	12,892,800
8 Wholesale Master Meters	47,994,400	8,176,300	39,818,100	1,401,700	523,500	92,500	431,000	19,500	48,517,900	8,268,800	40,249,100	1,421,200
9 Subtotal	2,423,141,800	818,526,500	1,604,615,300	60,496,400	488,361,200	183,020,500	305,340,700	14,379,600	2,911,503,000	1,001,547,000	1,909,956,000	74,876,000
10 Water Treatment General	456,946,200	171,811,700	285,134,500	13,352,500	(456,946,200)	(171,811,700)	(285,134,500)	(13,352,500)	0	0	0	0
11 Water General	31,415,000	11,208,900	20,206,100	1,027,100	(31,415,000)	(11,208,900)	(20,206,100)	(1,027,100)	0	0	0	0
12 Total	2,911,503,000	1,001,547,100	1,909,955,900	74,876,000	0	(100)	100	0	2,911,503,000	1,001,547,000	1,909,956,000	74,876,000

Step 2 - Identify Capital Rev Req't

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	6/30/23 Asset Values				Capital Rev Req't Allocation		
	Acquisition Cost	Accumulated Depreciation	Net Book Value	Annual Depr Expense	Annual Depr Expense	Return on Rate Base	Total Capital Rev Req't
					~ (4)	~ rel (3)	
					122%	4.78%	
1 Source of Supply	167,163,800	31,067,700	136,096,100	1,311,700	1,599,200	6,504,700	8,103,900
2 Low Lift Pumping	134,117,000	72,144,300	61,972,700	2,950,500	3,597,100	2,962,000	6,559,100
3 Purification	892,364,900	334,498,900	557,866,000	35,728,900	43,559,100	26,663,000	70,222,100
4 High Lift Pumping	174,967,100	86,480,100	88,487,000	4,654,000	5,674,000	4,229,200	9,903,200
5 Reservoirs	89,730,800	23,044,000	66,686,800	2,665,000	3,249,000	3,187,300	6,436,300
6 Water Booster Stations	368,349,500	164,804,400	203,545,100	13,251,900	16,156,100	9,728,300	25,884,400
7 Transmission Mains	1,036,292,000	281,238,800	755,053,200	12,892,800	15,718,300	36,087,400	51,805,700
8 Wholesale Master Meters	48,517,900	8,268,800	40,249,100	1,421,200	1,732,700	1,923,700	3,656,400
9 Total	2,911,503,000	1,001,547,000	1,909,956,000	74,876,000	91,285,500	91,285,600	182,571,100
10 Debt Service	175,300,800						
11 Xfer to GLWA Regional I&E Account	7,270,200						
12 Total Capital Rev Req't	182,571,000				91,285,500	91,285,500	182,571,000
13 Relative "Utility Basis" Components					50.0%	50.0%	

Adjustment to "normalize" valuation study depreciation expense

Effective Utility Basis Rate of Return

In effect, approximately half of the capital revenue requirement is allocated to Cost Pools based on Depreciation Expense and the other half based on Net Book Value of the acquired assets



Allocation embraced by the Simplified Water Charge Methodology recommendation

Allocation of Water Capital Revenue Requirements to Cost Pools - FY 2025 Budget

Goal is to use recent GLWA asset inventory and valuation analysis to establish allocation of capital revenue requirements (debt service, etc) to Cost Pools and Member Partners.

Evaluate data from GLWA capital asset registry, and use this information to establish functional allocation of capital revenue requirements to the Simplified Cost Pools of Commodity, Max Day, and Peak Hour established by the Simplified Water Charge Methodology, which ultimately locks in Cost Pool weights at historical averages of 10% Commodity, 50% Max Day, and 40% Peak Hour.

As the Cost Pool Weights are fixed, the purpose of this aspect of the Cost of Service Study is to solely to illustrate the extent to which the detailed analysis aligns with long-term averages.

Step 3 - Allocate to Cost Pools	(1)	(2)	(3)	(4)	(5)
	Total Capital Rev Req't	Cost Pool Allocation	Cost Pool Allocation		
			Commod	Max Day	Peak Hour
1 Source of Supply	8,103,900	Max Day		8,103,900	
2 Low Lift Pumping	6,559,100	Max Day		6,559,100	
3 Purification	70,222,100	Max Day		70,222,100	
4 High Lift Pumping	9,903,200	Peak Hour			9,903,200
5 Reservoirs	6,436,300	Peak Hour			6,436,300
6 Water Booster Stations	25,884,400	Peak Hour			25,884,400
7 Transmission Mains	51,805,700	Peak Hour			51,805,700
8 Wholesale Master Meters	3,656,400	Commodity	3,656,400		
9 Total	182,571,100		3,656,400	84,885,100	94,029,600
10 Capital Revenue Req't Allocation Factor			2.0%	46.5%	51.5%

Direct from GLWA
Capital Asset Records

Allocation of Wastewater Capital Revenue Requirements to Cost Pools - FY 2025 Budget

Goal is to use recent GLWA asset inventory and valuation analysis to establish allocation of capital revenue requirements (debt service, etc) to Cost Pools and Member Partners.

First step: Evaluate data from recent capital asset inventory and valuation study, as reported by GLWA

Then: Utilize this information to establish functional allocation of capital revenue requirements.

Final: Allocate capital revenue requirements to Cost Pools based on existing methodology matrices.

Step 1 - Interpret Fixed Asset Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Reported Asset Value by Function - 6/30/23 (Includes CHWP)				Allocate WRRF General				Reallocated Subtotal			
	Acquisition Cost	Accumulated Depreciation	Net Book Value	FY 2025 Depr Expense	Acquisition Cost	Accumulated Depreciation	Net Book Value	FY 2024 Depr Expense	Acquisition Cost	Accumulated Depreciation	Net Book Value	FY 2024 Depr Expense
1 Primary Pumping	143,987,800	67,371,300	76,616,400	4,644,700	40,753,200	20,230,600	20,580,800	1,553,400	184,741,000	87,601,900	97,197,200	6,198,100
2 Rack & Grit	66,808,700	24,619,900	42,188,800	2,215,600	18,909,000	7,393,000	11,332,800	741,000	85,717,700	32,012,900	53,521,600	2,956,600
3 Primary Chemical Addition	0	0	0	0	0	0	0	0	0	0	0	0
4 Primary Sedimentation	250,120,400	122,755,700	127,364,700	16,088,800	70,792,200	36,861,700	34,212,900	5,380,900	320,912,600	159,617,400	161,577,600	21,469,700
5 Aeration	128,168,200	54,398,100	73,770,100	6,000,200	36,275,800	16,334,900	19,816,200	2,006,800	164,444,000	70,733,000	93,586,300	8,007,000
6 Secondary Clarification	194,274,800	90,721,800	103,553,000	7,310,000	54,986,100	27,242,400	27,816,500	2,444,800	249,260,900	117,964,200	131,369,500	9,754,800
7 Chlorination	0	0	0	0	0	0	0	0	0	0	0	0
8 Dewatering	123,370,800	72,253,900	51,116,800	6,340,000	34,917,900	21,696,800	13,731,100	2,120,400	158,288,700	93,950,700	64,847,900	8,460,400
9 Sludge Treatment	401,823,400	168,015,900	233,807,500	14,978,600	113,729,100	50,452,700	62,805,700	5,009,600	515,552,500	218,468,600	296,613,200	19,988,200
10 Process Water & Outfall	160,227,400	68,353,300	91,874,100	6,093,500	45,349,600	20,525,500	24,679,300	2,038,000	205,577,000	88,878,800	116,553,400	8,131,500
11 Lift Stations	194,425,800	63,634,300	130,791,500	5,521,000					194,425,800	63,634,300	130,791,500	5,521,000
12 CSO Facilities	757,739,600	171,988,300	585,751,300	24,195,700					757,739,600	171,988,300	585,751,300	24,195,700
13 Interceptors	613,510,800	70,152,400	543,358,400	9,695,900					613,510,800	70,152,400	543,358,400	9,695,900
14 Industrial Waste Control	3,300,100	869,000	2,431,200	332,600					3,300,100	869,000	2,431,200	332,600
15 Wastewater Meters	61,394,400	26,295,800	35,098,600	3,444,900					61,394,400	26,295,800	35,098,600	3,444,900
16 Subtotal	3,099,152,200	1,001,429,700	2,097,722,400	106,861,500	415,712,900	200,737,600	214,975,300	21,294,900	3,514,865,100	1,202,167,300	2,312,697,700	128,156,400
17 WRRF General	415,712,900	200,737,600	214,975,300	21,294,900	(415,712,900)	(200,737,600)	(214,975,300)	(21,294,900)	0	0	0	0
18 Wastewater General	64,555,800	25,521,400	39,034,400	2,814,300					64,555,800	25,521,400	39,034,400	2,814,300
19 Total	3,579,420,900	1,227,688,700	2,351,732,100	130,970,700	0	0	0	0	3,579,420,900	1,227,688,700	2,351,732,100	130,970,700

80% of the Oakwood CSO / Pump Station Asset placed "on the books" in FY 2016 is treated as a CSO Facility, the other 20% as a Lift Station

Allocation of Wastewater Capital Revenue Requirements to Cost Pools - FY 2025 Budget

Goal is to use recent GLWA asset inventory and valuation analysis to establish allocation of capital revenue requirements.

First step: Evaluate data from recent capital asset inventory and valuation study.

Then: Utilize this information to establish functional allocation of capital revenue requirements.

Final: Allocate capital revenue requirements to Cost Pools based on existing methodology matrices.

Step 1 - Interpret Fixed Asset Data

	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
	Allocate WW General				Reallocated Total - 6/30/23			
	Acquisition Cost	Accumulated Depreciation	Net Book Value	FY 2024 Depr Expense	Acquisition Cost	Accumulated Depreciation	Net Book Value	FY 2024 Depr Expense
1 Primary Pumping	4,325,600	2,170,200	2,155,400	167,800	189,066,600	89,772,100	99,352,600	6,365,900
2 Rack & Grit	2,007,000	793,100	1,213,900	80,000	87,724,700	32,806,000	54,735,500	3,036,600
3 Primary Chemical Addition	0	0	0	0	0	0	0	0
4 Primary Sedimentation	7,513,900	3,954,300	3,559,600	581,200	328,426,500	163,571,700	165,137,200	22,050,900
5 Aeration	3,850,300	1,752,300	2,098,000	216,800	168,294,300	72,485,300	95,684,300	8,223,800
6 Secondary Clarification	5,836,200	2,922,400	2,913,800	264,100	255,097,100	120,886,600	134,283,300	10,018,900
7 Chlorination	0	0	0	0	0	0	0	0
8 Dewatering	3,706,200	2,327,500	1,378,700	229,000	161,994,900	96,278,200	66,226,600	8,689,400
9 Sludge Treatment	12,071,200	5,412,300	6,658,900	541,100	527,623,700	223,880,900	303,272,100	20,529,300
10 Process Water & Outfall	4,813,400	2,201,900	2,611,500	220,100	210,390,400	91,080,700	119,164,900	8,351,600
11 Lift Stations	4,552,300	1,576,500	2,975,800	149,500	198,978,100	65,210,800	133,767,300	5,670,500
12 CSO Facilities	0	0	0	0	757,739,600	171,988,300	585,751,300	24,195,700
13 Interceptors	14,364,800	1,737,900	12,626,900	262,500	627,875,600	71,890,300	555,985,300	9,958,400
14 Industrial Waste Control	77,300	21,500	55,800	9,000	3,377,400	890,500	2,487,000	341,600
15 Wastewater Meters	1,437,500	651,400	786,100	93,300	62,831,900	26,947,200	35,884,700	3,538,200
16 Subtotal	64,555,700	25,521,300	39,034,400	2,814,400	3,579,420,800	1,227,688,600	2,351,732,100	130,970,800
17 WWRf General					0	0	0	0
18 Wastewater General	(64,555,800)	(25,521,400)	(39,034,400)	(2,814,300)	0	0	0	0
19 Total	(100)	(100)	0	100	3,579,420,800	1,227,688,600	2,351,732,100	130,970,800

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Allocation of Wastewater Capital Revenue Requirements to Cost Pools - FY 2025 Budget

Goal is to use recent GLWA asset inventory and valuation analysis to establish allocation of capital revenue requirements to Cost Pools and Member Partners.

First step: Evaluate data from recent capital asset inventory and valuation study, as reported by GLWA

Then: Utilize this information to establish functional allocation of capital revenue requirements.

Final: Allocate capital revenue requirements to Cost Pools based on existing methodology matrices.

Step 2 - Identify Capital Rev Req't

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	6/30/23 Asset Values				Capital Rev Req't Allocation		
	Acquisition Cost	Accumulated Depreciation	Net Book Value	FY 2025 Depr Expense	FY 2025 Depr Expense	Return on Rate Base	Total Capital Rev Req't
					~ (4) 97%	rel (3) 5.41%	
1 Primary Pumping	189,066,600	89,772,100	99,352,600	6,365,900	6,183,100	5,374,200	11,557,300
2 Rack & Grit	87,724,700	32,806,000	54,735,500	3,036,600	2,949,400	2,960,800	5,910,200
3 Primary Chemical Addition	0	0	0	0	0	0	0
4 Primary Sedimentation	328,426,500	163,571,700	165,137,200	22,050,900	21,417,700	8,932,600	30,350,300
5 Aeration	168,294,300	72,485,300	95,684,300	8,223,800	7,987,700	5,175,800	13,163,500
6 Secondary Clarification	255,097,100	120,886,600	134,283,300	10,018,900	9,731,200	7,263,700	16,994,900
7 Chlorination	0	0	0	0	0	0	0
8 Dewatering	161,994,900	96,278,200	66,226,600	8,689,400	8,439,900	3,582,300	12,022,200
9 Sludge Treatment	527,623,700	223,880,900	303,272,100	20,529,300	19,939,800	16,404,600	36,344,400
10 Process Water & Outfall	210,390,400	91,080,700	119,164,900	8,351,600	8,111,800	6,445,900	14,557,700
11 Lift Stations	198,978,100	65,210,800	133,767,300	5,670,500	5,507,700	7,235,700	12,743,400
12 CSO Facilities	757,739,600	171,988,300	585,751,300	24,195,700	23,500,900	31,684,500	55,185,400
13 Interceptors	627,875,600	71,890,300	555,985,300	9,958,400	9,672,500	30,074,400	39,746,900
14 Industrial Waste Control	3,377,400	890,500	2,487,000	341,600	331,800	134,500	466,300
15 Wastewater Meters	62,831,900	26,947,200	35,884,700	3,538,200	3,436,600	1,941,100	5,377,700
16 Total	3,579,420,800	1,227,688,600	2,351,732,100	130,970,800	127,210,100	127,210,100	254,420,200

Adjustment to "normalize" valuation study depreciation expense

Effective Utility Basis Rate of Return

17 <u>Capital Revenue Requirement</u>							
18 Debt Service	226,279,400						
18 Xfer to GLWA Regional I&E Account	28,140,700						
19 Total Capital Rev Req't	254,420,100	Allocate based on Utility Basis Concept -->			127,210,100	127,210,000	254,420,100
20 Relative "Utility Basis" Components					50.0%	50.0%	



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In effect, approximately half of the capital revenue requirement is allocated to Cost Pools based on Depreciation Expense and the other half based on Net Book Value of the acquired assets

Allocation of Wastewater Capital Revenue Requirements to Cost Pools - FY 2025 Budget

Goal is to use recent GLWA asset inventory and valuation analysis to establish allocation of capital revenue requirements (debt service, etc) to Cost Pools and Member Partners.

First step: Evaluate data from recent capital asset inventory and valuation study.

Then: Utilize this information to establish functional allocation of capital revenue requirements.

Final: Allocate capital revenue requirements to Cost Pools based on existing methodology matrices.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
Step 3 - Allocate to Cost Pools	Total Capital Rev Req't	Capital Revenue Requirement Allocation Factors					Cost Pool Allocation										
		WRRF Treatment					Industrial Waste Control	WRRF Treatment <i>Separated for Purposes of Surcharge Calculations</i>					"Common" prior to Surcharge				
		Flow	BOD	TSS	PHOS	FOG		Flow	BOD	TSS	PHOS	FOG	WRRF Treatment	Conveyance	CSO Facilities	"Common" TOTAL	
1	Primary Pumping	11,557,300	100%					11,557,300	0	0	0	0	11,557,300				11,557,300
2	Rack & Grit	5,910,200	100%					5,910,200	0	0	0	0	5,910,200				5,910,200
3	Primary Chemical Addition	0			100%			0	0	0	0	0	0				0
4	Primary Sedimentation	30,350,300	85%		10%	5%		25,797,800	0	3,035,000	0	1,517,500	30,350,300				30,350,300
5	Aeration	13,163,500	20%	80%				2,632,700	10,530,800	0	0	0	13,163,500				13,163,500
6	Secondary Clarification	16,994,900	65%	35%				11,046,700	5,948,200	0	0	0	16,994,900				16,994,900
7	Chlorination	0	100%					0	0	0	0	0	0				0
8	Dewatering	12,022,200		15%	70%	15%		0	1,803,300	8,415,500	1,803,300	0	12,022,100				12,022,100
9	Sludge Treatment	36,344,400		15%	70%	15%		0	5,451,700	25,441,100	5,451,700	0	36,344,500				36,344,500
10	Process Water & Outfall	14,557,700	100%					14,557,700	0	0	0	0	14,557,700				14,557,700
11	Lift Stations	12,743,400		Direct Cost Pool Allocation										12,743,400			12,743,400
12	CSO Facilities	55,185,400		Direct Cost Pool Allocation										55,185,400			55,185,400
13	Interceptors	39,746,900		Direct Cost Pool Allocation									39,746,900			39,746,900	
14	Industrial Waste Control	466,300		Direct Cost Pool Allocation					466,300								0
15	Suburban Meters	5,377,700		Direct Cost Pool Allocation										5,377,700			5,377,700
16	OMID Facilities	0		Direct Cost Pool Allocation										0			0
17	Total	254,420,200						466,300	71,502,400	23,734,000	36,891,600	7,255,000	1,517,500	140,900,500	57,868,000	55,185,400	253,953,900
18	Cost Pool Allocation Factor - All Costs							0.2%	28.1%	9.3%	14.5%	2.9%	0.6%	55.4%	22.7%	21.7%	
19	Cost Pool Allocation Factor - "Common" Costs													55.5%	22.8%	21.7%	

Traditional allocation factors developed in the late 1970s as part of the original Rate Settlement Agreements

Consolidated Water Revenue Requirement Allocated to Cost Pools

Goal is to use allocation factors resulting from detailed review to allocate the final 2025 BUDGET figures to the Simplified Cost Pools of Commodity, Max Day, and Peak Hour established by the Simplified Water Charge Methodology, which ultimately locks in Cost Pool weights at historical averages of 10% Commodity, 50% Max Day, and 40% Peak Hour.

As the Cost Pool Weights are fixed, the purpose of this aspect of the Cost of Service Study is to solely to illustrate the extent to which the detailed analysis aligns with long-term averages.

Allocation Factors from Detailed Review

	Allocation Basis	Cost Pool Allocation		
		Commod	Max Day	Peak Hour
O&M Expense - Total	1	21.1%	56.6%	22.3%
O&M Expense - Non-Commodity	2	8.2%	70.1%	21.6%
Capital Revenue Requirements	3	2.0%	46.5%	51.5%

O&M factors from page B-15

Capital factors from page B-19

Apply Allocation Factors to BUDGET

BUDGET Elements	Budget to Allocate	Allocation Basis	Cost Pool Allocation			Allocated TOTAL
			Commod	Max Day	Peak Hour	
1 Regional System O&M Expense	169,625,000	1	35,831,600	95,973,800	37,819,800	169,625,200
2 Debt Service	175,300,800	3	3,510,800	81,504,800	90,285,200	175,300,800
3 Non-Operating Portion of Pension Oblig	2,283,300	2	187,800	1,601,200	494,300	2,283,300
4 Transfer to WRAP Fund	1,947,800	4	218,000	1,003,100	726,500	1,947,600
5 Lease Payment - Transfer to Detroit Local I&E	22,500,000	4	2,518,400	11,587,500	8,392,500	22,498,400
6 Transfer to GLWA Regional I&E Account	7,270,200	3	145,600	3,380,200	3,744,400	7,270,200
7 Receiving Fund Working Capital Requirement	6,200,000	4	693,900	3,193,000	2,312,600	6,199,500
8 Total Gross BUDGET	385,127,100		43,106,100	198,243,600	143,775,300	385,125,000
9 less: Non-Operating Revenue	(10,276,600)	4	(1,150,200)	(5,292,400)	(3,833,200)	(10,275,800)
10 Net BUDGET Req'd from Charges	374,850,500		41,955,900	192,951,200	139,942,100	374,849,200
11 Subtotal Direct Elements			39,675,800	182,460,000	132,343,700	354,479,500
12 Allocation Factors for Indirect Elements		4	11.2%	51.5%	37.3%	
13 Simplified Cost Pool Weights *			10%	50%	40%	

THIS IS WATER TABLE 2 IN THE FY 2025 COST OF SERVICE STUDY MEMORANDUM

SIMPLIFIED WATER CHARGE METHDODOLOGY = "10/50/40" BASED ON HISTORICAL AVERAGES



O&M factors from page B-17

Consolidated Sewer Revenue Requirement Allocated to Cost Pools

Goal is to use allocation factors resulting from detailed review to allocate the final 2025 BUDGET figures for the FY 2025 Charges

Allocation Factors from Detailed Review

Capital factors from page B-23

O&M Expense - Total	1
O&M Expense - Non-Commodity	2
Capital Revenue Requirements	3

Industrial Waste Control	Cost Pool Allocation						"Common" prior to Surcharge			
	WRRF Treatment						WRRF Treatment	Conveyance	CSO Facilities	"Common" TOTAL
	Separated for Purposes of Surcharge Calculations									
Flow	BOD	TSS	PHOS	FOG						
3.4%	8.0%	18.0%	36.9%	9.8%	0.7%	73.4%	14.2%	9.0%	96.6%	
4.5%	4.6%	15.9%	40.1%	8.8%	0.8%	70.2%	17.8%	7.5%	95.5%	
0.2%	28.1%	9.3%	14.5%	2.9%	0.6%	55.4%	22.7%	21.7%	99.8%	

Apply Allocation Factors to BUDGET

BUDGET Elements	Budget to Allocate	OMID Contractual	Remaining Balance	Allocation Basis	Cost Pool Allocation						"Common" prior to Surcharge			
					Industrial Waste Control	WRRF Treatment					WRRF Treatment	Conveyance	CSO Facilities	"Common" TOTAL
						Separated for Purposes of Surcharge Calculations								
					Flow	BOD	TSS	PHOS	FOG					
1 Regional System O&M Expense	228,934,000	1,700,600	227,233,400	1	7,701,400	18,243,800	40,928,600	83,942,200	22,159,500	1,563,100	166,837,200	32,295,100	20,399,800	219,532,100
2 Debt Service	226,279,400	0	226,279,400	3	414,700	63,593,700	21,108,800	32,811,100	6,452,500	1,349,700	125,315,800	51,467,400	49,081,500	225,864,700
3 Non-Operating Portion of Pension Oblig	4,846,300	84,800	4,761,500	2	215,600	217,700	755,400	1,910,400	416,800	40,300	3,340,600	848,500	356,900	4,546,000
4 Transfer to WRAP Fund	2,651,700	9,800	2,641,900	4	45,500	488,600	355,300	666,700	162,000	17,000	1,689,600	494,300	412,500	2,596,400
5 Lease Payment - Transfer to Detroit Local I&E	27,500,000	181,500	27,318,500	4	470,800	5,052,600	3,674,100	6,893,700	1,675,400	175,300	17,471,100	5,111,500	4,265,100	26,847,700
6 Transfer to GLWA Regional I&E Account	28,140,700	0	28,140,700	3	51,600	7,908,700	2,625,200	4,080,500	802,500	167,800	15,584,700	6,400,600	6,103,900	28,089,200
7 Receiving Fund Working Capital Requirement	2,300,000		2,300,000	4	39,600	425,400	309,300	580,400	141,100	14,800	1,470,900	430,300	359,100	2,260,300
8 Total Gross BUDGET	520,652,100	1,976,700	518,675,400		8,939,200	95,930,500	69,756,700	130,885,000	31,809,800	3,328,000	331,709,900	97,047,700	80,978,800	509,736,400
9 less: Non-Operating Revenue	(13,061,800)	0	(13,061,800)	4	(225,100)	(2,415,800)	(1,756,700)	(3,296,100)	(801,100)	(83,800)	(8,353,500)	(2,444,000)	(2,039,300)	(12,836,800)
10 Net BUDGET Req'd from Charges	507,590,300	1,976,700	505,613,600		8,714,100	93,514,700	68,000,000	127,588,900	31,008,700	3,244,200	323,356,400	94,603,700	78,939,500	496,899,600
11 Subtotal Direct Elements					8,383,300	89,963,900	65,418,000	122,744,200	29,831,300	3,120,900	311,078,300	91,011,600	75,942,100	478,032,000
12 Allocation Factors for Indirect Elements				4	1.7%	18.5%	13.4%	25.2%	6.1%	0.6%	64.0%	18.7%	15.6%	

THIS IS SEWER TABLE 2 IN THE FY 2025 COST OF SERVICE STUDY MEMORANDUM

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MEMORANDUM

SHAREs Period Memo
FY 2025 SHAREs Calculations

December 21, 2023
Finalized January 22, 2024

To: Sue Coffey, Nicolette Bateson

From: Bart Foster

This memorandum was originally published on December 21, 2023. It has been updated to reflect developments since that date – most importantly to reflect modifications to certain data originally provided by the annual Sewer Flow Balance Report, which has the impact of moderately changing the originally proposed Sewer Charges to individual Member Partners.

This memorandum has been prepared to formally document the development of the FY 2025 SHAREs for purposes of computing GLWA wholesale wastewater charges. It is intended to serve as the second “**SHAREs Period Memo**” prepared to support documentation of the GLWA wholesale wastewater charge methodology. The **SHAREs Period Memos** are designed to illustrate the overall application of the GLWA Wastewater **Charge Methodology** to compute individual Member Partner SHAREs to be held constant for three consecutive fiscal years. The **Charge Methodology** is documented elsewhere, as is the **Annual Wastewater Charges Memo**¹, which illustrates the application of the FY 2025 SHAREs to calculate the FY 2025 Wastewater Charges.

This document serves as an update of the original SHAREs Period Memo, which was prepared in November 2020 to support the FY 2022 SHAREs and wastewater charges. Those SHAREs were based on seven years of data from annual flow balance studies, from FY 2013 through FY 2019, and remained in place for the current FY 2024 wastewater charges. The FY 2025 SHAREs introduced herein are being updated to include flow balance data for FYs 2020, 2021, 2022, and 2023 – and to drop FY 2013 from the data pool. The intent of this document is to set forth the specific, final calculations in a format that aligns with the **Charge Methodology** document.

This document aims to set forth the detailed SHARE calculations with the assistance of the attached tables and limited discussion. We note that the terms shown in **Bold Italics** in this introduction are intended to serve as defined terms addressed in the **Charge Methodology** and related documents pertaining to the GLWA Wastewater Charges.

¹ Essentially contained within the Annual Cost of Service Study report memorandum.

FY 2025 SHAREs Calculations Tables

1. Illustrates application of the **Charge Methodology** regarding cost pools and units of service “allocators” to the FY 2025 Cost of Service Study results, which are used to populate the **Charge Methodology** assumptions, and to assign the total revenue requirement to cost pools and units of service allocators. For purposes of SHARE calculations the **Allocator Factors** are simplified by rounding the nearest 0.5%. The figures shown on Line 8 become the key to establishing SHAREs. See the FY 2025 Cost of Service Study for details regarding the revenue requirement allocation to Cost Pools.

2. Presents historical results of the annual flow balances for the Member Partners served by master meters (the **M Member Partners**) for FYs 2014 through 2023, which represents the ten-year data period stipulate by the **Charge Methodology** for purposes of the FY 2025 SHAREs. The flow volume data is reflected in millions of gallons per day (mgd) as provided by the annual flow balance reports. Specific adjustments have been made to certain historical data to reflect prior SHARE modifications, most notably OMID’s diversion of flow to the Pontiac treatment facility². Table 2 presents total contributed volume as well as the Sanitary contributions. The ten-year averages shown in Column 11 become the relative flow volumes used to compute the FY 2025 SHAREs. Two final notes on the data in this table.
 - The Dearborn data includes the estimated flow balance data from the unmetered northeast district in order to facilitate SHARE calculations.
 - One additional modification is being proposed to accommodate the movement of Grosse Pointe into the **M Member Partner** customer class. The proposed FY 2025 SHAREs effectively set Grosse Pointe’s flow volume data inputs at the average of (a) what the five years of available meter data indicates; and (b) the effective prior average allocated volume from the period when they were treated as a **D+ Member Partner**. See the December 12, 2023 “Proposed FY 2025 Water and Sewer Charges” memorandum for a detailed explanation of this recommended adjustment.

3. Presents similar historical data for the **D+ Member Partners**, although limited to Sanitary contributions only. The flow balance protocol utilized for the SHARE calculations does not contain sufficient verifiable data to isolate Non-Sanitary flow volumes for individual **D+ Member Partners**, nor was any analysis available within

² Other minor modifications were made to historical data for Dearborn and Rouge Valley.

the flow balance reports to identify which *D+ Member Partners* should receive reductions related to the Regional flow assumptions. A few notes:

- Grosse Pointe has been removed from *D+ Member Partner* customer class, as noted above.
 - Highland Park’s sanitary flow estimate for FYs 2014 – 2016 reflects the average of FYs 2017 – 2019, and adjustment that was originally made in the FY 2022 SHAREs in order to honor new verified data.
 - Sanitary flow volumes reported as Water Treatment Backwash in flow balance reports are treated as Regional flow for purposes of SHAREs
4. Provides a summary of total contributed volume by flow type, deducts volumes contributed from *M Member Partners*, and displays the balance as being assignable to either the *D+ Member Partners* or the Regional System.
 5. Separates the “non-master metered” flow volumes into D+ (Local) and Regional components for purposes of SHARE calculations. The *Charge Methodology* assumes that 50% of such non-sanitary volumes should be assigned as Regional, and the other 50% as the Local responsibility of the *D+ Member Partners*.
 6. Serves as a summary of units of service for *M Member Partners* and the *D+ Member Partners* at large, in a format that aligns with the *Charge Methodology*. Flow volumes are summarized from Tables 2 and 5. The table also presents the historical CSO “83/17” cost allocation units of service, which are set forth in legal agreements. The bottom portion of the table shows the individual *Shares* of each unit of service.
 7. Illustrates application of the *Charge Methodology* to compute the FY 2025 SHAREs for each *M Member Partner* and for the *D+ Member Partners* at large. Each Member Partner’s relative share of each unit (from Table 6) is shown on Lines 2 through 17 and multiplied by the relative allocator factors on Line 1 to produce the weighted unit allocation factors shown on Lines 18 through 32. The sum of the individual unit allocations produces the FY 2025 SHARE for each Member Partner presented in Column 4.
 8. Presents the allocation of the flows amongst the *D+ Member Partners*. In the existing (and all prior) SHAREs all *D+ Member Partners* were proportionally assigned flow shares based on the original D+ SHARE calculations from the “pre-SHARE” period 10+ years ago, which took into consideration such elements as strength of flow and suburban only cost pools. In effect, non-sanitary flows from all members were *uniformly* reduced by 50%. With this update a more refined allocation amongst the *D+*

Member Partners is being applied, which utilizes data from the flow balances regarding the amount of “common use” sewers in each D+ community. For instance, 38% of the sewer inventory within Hamtramck is identified as either “common use interceptors” or “common use sewers.” Therefore the SHARE calculations assign 38% of Hamtramck’s DWII as “common” – as shown in Column 2 of the table. The same approach is applied to other members, with Detroit’s flows being adjusted to align with the overall 50% reduction for the D+ class. The same approach is applied to the wet weather flows in Column 4, although the reduction based on inch miles of sewers is reduced by 50%.

9. Presents the determination of SHAREs for the *D+ Member Partners*, which follows the same approach as that for the *M Member Partners*. Each *D+ Member Partner*’s relative share of each unit is multiplied by the relative allocator factors on Line 1 to produce the weighted unit allocation factors shown on Lines 17 through 23. The sum of the individual unit allocations produces the FY 2025 SHARE for each Member Partner presented in Column 4.

10. Summarizes the proposed FY 2025 SHAREs from Tables 8 and 9 into a consolidated summary for each Member Partner. These are the proposed SHAREs for the first *SHARE Period* envisioned by the *Charge Methodology*.

Table 1
Revenue Requirement Allocation to Cost Pools
Application of Core Methodology Assumptions

	(1)	(2)	(3)	(4)
	Allocators			
<u>Cost Pool</u>	<u>Total Contr</u>	<u>Sanitary</u>		<u>CSO</u>
	<u>Volume</u>	<u>Volume</u>		
1 WRRF Cost Pool	50%	50%		
2 Conveyance Cost Pool	100%			
3 CSO Cost Pool				100%
	Allocator Calculation			
	<u>FY 2025</u>	<u>Total Contr</u>	<u>Sanitary</u>	
	<u>Revenue</u>	<u>Volume</u>	<u>Volume</u>	<u>CSO</u>
	<u>Requirement</u>			
	(a)			
4 WRRF Cost Pool	317,922,000	158,961,000	158,961,000	
5 Conveyance Cost Pool	94,603,700	94,603,700	0	0
6 CSO Cost Pool	78,939,500	0	0	78,939,500
7 Total	491,465,200	253,564,700	158,961,000	78,939,500
8 Simplified Allocator Factors (b)		51.5%	32.5%	16.0%

(a) See FY 2025 Cost of Service Study

(b) Rounded to nearest 0.5%

Table 2
Flow Volume Data from Annual Flow Balances: FY 2014 - FY 2023 (mgd)

Master Metered Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Average</u>	
<u>Total Contributed Volume</u>												
1	OMID	60.829	60.781	60.899	63.053	64.909	63.483	66.100	58.849	68.372	58.493	62.577
2	Rouge Valley	61.323	57.774	54.795	62.032	56.939	65.223	58.984	47.913	70.491	46.201	58.168
3	Oakland GWK	52.317	54.128	50.963	58.605	54.885	61.558	55.460	44.811	64.087	50.069	54.688
4	Evergreen Farmington	35.325	37.054	34.791	37.673	37.230	39.474	37.616	31.843	42.135	32.296	36.544
5	SE Macomb San Dist	28.909	27.672	28.877	30.144	29.642	32.750	31.185	27.637	32.538	24.160	29.351
6	Dearborn (incl Dearborn NE)	25.254	23.419	22.672	29.086	26.898	27.629	24.374	21.984	28.239	20.296	24.985
7	Grosse Pointe Farms	3.048	2.891	2.983	3.296	3.320	3.452	2.761	2.726	3.831	2.542	3.085
8	Grosse Pointe Park	2.010	2.185	2.237	2.395	2.625	2.822	2.443	2.118	2.824	1.829	2.349
9	Melvindale	1.717	1.553	1.521	1.622	1.682	1.869	1.625	1.448	1.839	1.390	1.627
10	Farmington	1.233	1.343	1.195	1.304	1.407	1.548	1.353	1.082	1.710	1.061	1.324
11	Center Line	1.057	0.976	0.983	1.141	1.047	1.128	1.039	0.915	1.260	0.976	1.052
12	Allen Park	0.895	0.939	0.932	0.888	1.000	0.895	0.771	0.723	0.990	0.802	0.884
13	Grosse Pointe (a)					1.817	1.990	1.771	2.092	1.079		1.389
14	Total	273.918	270.715	262.847	291.240	281.586	303.648	285.701	243.821	320.407	241.194	278.023
<u>Sanitary Volume</u>												
1	OMID	45.985	44.591	43.363	42.658	42.959	42.627	40.879	44.295	43.599	42.956	43.391
2	Rouge Valley	31.883	29.317	28.341	28.199	29.043	28.535	26.914	27.535	28.119	25.258	28.314
3	Oakland GWK	21.523	21.173	19.373	20.093	20.525	20.317	19.339	19.181	19.777	19.322	20.062
4	Evergreen Farmington	21.224	20.891	19.127	19.851	20.296	20.103	19.477	19.315	19.913	19.451	19.965
5	SE Macomb San Dist	12.228	12.183	11.096	10.519	11.149	10.956	10.351	10.357	10.508	10.691	11.004
6	Dearborn (incl Dearborn NE)	8.470	8.783	8.578	8.157	8.299	7.710	7.725	7.643	6.916	6.978	7.925
7	Grosse Pointe Farms	1.366	0.950	0.871	0.783	0.839	0.893	0.721	0.718	0.635	0.727	0.850
8	Grosse Pointe Park	0.911	0.906	0.785	0.863	0.868	0.651	0.758	0.752	0.754	0.691	0.794
9	Melvindale	0.840	0.940	0.790	0.857	0.828	0.779	0.712	0.799	0.805	0.964	0.831
10	Farmington	0.646	0.577	0.616	0.587	0.587	0.572	0.551	0.573	0.563	0.544	0.582
11	Center Line	0.627	0.576	0.557	0.539	0.556	0.553	0.563	0.628	0.557	0.559	0.572
12	Allen Park	0.518	0.497	0.443	0.388	0.406	0.436	0.459	0.464	0.390	0.452	0.445
13	Grosse Pointe (a)	0.459	0.411	0.564	0.421	0.420	0.430	0.406	0.405	0.431	0.332	0.348
14	Total	146.681	141.794	134.505	133.914	136.775	134.563	128.857	132.664	132.968	128.925	135.083
(a) Adjustment for Grosse Pointe	Average	Effective	Use for									
	<u>from Above</u>	<u>Prior Avg</u>	<u>FY 2025</u>									
Total Annual Volume	1.750	1.028	1.389									
Sanitary Volume	0.428	0.268	0.348									

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Table 3
Flow Volume Data from Annual Flow Balances: FY 2014 - FY 2023 (mgd)
Sanitary Volume from D+ Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Average</u>
<u>Sanitary Volume</u>											
1 Highland Park (a)	0.594	0.594	0.594	0.622	0.571	0.591	0.518	0.523	0.548	0.517	0.567
2 Hamtramck	1.170	1.113	1.056	1.037	1.120	1.135	1.129	1.146	1.062	1.217	1.118
3 Harper Woods	0.116	0.111	0.104	0.105	0.105	0.084	0.083	0.098	0.106	0.102	0.101
4 Redford Township	0.031	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.085
5 Wayne County #3	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
6 Detroit	55.148	52.554	49.666	48.543	55.806	54.829	50.062	48.034	52.649	54.011	52.130
7 Total	57.064	54.469	51.518	50.403	57.699	56.736	51.889	49.897	54.461	55.944	54.007
8 Water Trtmt Plant Backwash (b)	8.953	8.186	7.512	7.580	8.089	8.708	7.601	8.016	7.130	6.976	7.875
9 Total	66.017	62.656	59.030	57.983	65.789	65.444	59.490	57.913	61.591	62.920	61.882

(a) Highland Park's sanitary contributions for FYs 2014 - 2016 based on a three-year average from FY 2017 - 2019.

(b) Water Treatment Plant Backwash is considered a Regional flow volume.

Table 4
Flow Volume Data from Annual Flow Balances: FY 2014 - FY 2023 (mgd)

		<i>Total System</i>										
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Average</u>
<u>Total Contributed Volume</u>												
1	Total Reported @ WRRF	639.334	611.987	580.371	658.043	620.835	671.893	599.725	532.070	685.977	523.067	612.330
2	Total Reported Overflow	36.292	37.377	17.617	27.668	35.777	26.577	32.656	32.427	52.003	10.610	30.900
3	Total Contributed Volume	<u>675.626</u>	<u>649.364</u>	<u>597.988</u>	<u>685.711</u>	<u>656.612</u>	<u>698.471</u>	<u>632.381</u>	<u>564.497</u>	<u>737.980</u>	<u>533.677</u>	643.230
4	Sanitary Volume	212.699	204.449	193.535	191.897	202.564	200.007	188.347	190.577	194.559	191.845	196.967
5	Non-Sanitary Volume (3) - (4)	462.927	444.915	404.453	493.814	454.049	498.464	444.035	373.920	543.421	341.832	446.263
<u>Master Metered Member Partners</u>												
6	Sanitary Volume (Table 2)	146.681	141.794	134.505	133.914	136.775	134.563	128.857	132.664	132.968	128.925	135.083
7	Non-Sanitary Volume (Table 2)	127.695	129.332	128.906	157.747	145.231	169.085	156.844	111.157	187.440	112.269	142.940
8	Total Contributed Volume	<u>274.376</u>	<u>271.126</u>	<u>263.411</u>	<u>291.661</u>	<u>282.006</u>	<u>303.648</u>	<u>285.701</u>	<u>243.821</u>	<u>320.407</u>	<u>241.194</u>	278.023
<u>Balance from D+ and Regional</u>												
9	Sanitary Volume (4) - (6)	66.017	62.656	59.030	57.983	65.789	65.444	59.490	57.913	61.591	62.920	61.884
10	Non-Sanitary Volume (5) - (7)	335.232	315.583	275.547	336.068	308.817	329.379	287.191	262.762	355.981	229.563	303.323
11	Total Contributed Volume	<u>401.249</u>	<u>378.239</u>	<u>334.577</u>	<u>394.050</u>	<u>374.606</u>	<u>394.823</u>	<u>346.681</u>	<u>320.676</u>	<u>417.572</u>	<u>292.482</u>	365.207

Table 5
 Determination and Allocation of D+ Flow Volumes (mgd)

Total System

	(1)	(2)	(3)	(4)
	10-Year <u>Average</u>	<u>Regional Flow</u> <u>Assumption</u>	<u>Amount</u>	Flow for D+ Member Partners <i>(1) - (3)</i>
<u>Total D+ and Regional Flow</u>				
1 Sanitary Volume	61.884	(a)	7.875	54.009
2 Non-Sanitary Volume	303.323	50%	151.662	151.662
3 Total Contributed Volume	365.207		159.537	205.671

(a) Water Treatment Plant Backwash

Table 6
Consolidated Units of Service Summary
Based on 10-Year Average Flow Contributions from FY 2014 through FY 2023

	(1)	(2)	(3)	
	Contributed Volume - mgd			
	<u>Total</u>	<u>Sanitary</u>	<u>CSO</u>	
			(a)	
<u>Member Partner Units</u>				
1	OMID	62.577	43.391	2.651%
2	Rouge Valley	58.168	28.314	2.956%
3	Oakland GWK	54.688	20.062	2.256%
4	Evergreen Farmington	36.544	19.965	1.485%
5	SE Macomb San Dist	29.351	11.004	1.174%
6	Dearborn (<i>incl Dearborn NE</i>)	24.986	7.925	1.631%
7	Grosse Pointe Farms	3.085	0.850	0.504%
8	Grosse Pointe Park	2.349	0.794	0.062%
9	Melvindale	1.627	0.831	0.074%
10	Farmington	1.324	0.582	0.052%
11	Center Line	1.052	0.572	0.056%
12	Allen Park	0.884	0.445	0.031%
13	Grosse Pointe	1.389	0.348	0.228%
14	M Member Partner Subtotal	278.024	135.083	13.160%
15	D+ Member Partners	205.670	54.009	86.840%
16	Total	483.694	189.092	100.000%
<u>Member Partner Shares of Each Unit</u>				
1	OMID	12.937%	22.947%	2.651%
2	Rouge Valley	12.026%	14.974%	2.956%
3	Oakland GWK	11.306%	10.610%	2.256%
4	Evergreen Farmington	7.555%	10.558%	1.485%
5	SE Macomb San Dist	6.068%	5.819%	1.174%
6	Dearborn (<i>incl Dearborn NE</i>)	5.166%	4.191%	1.631%
7	Grosse Pointe Farms	0.638%	0.450%	0.504%
8	Grosse Pointe Park	0.486%	0.420%	0.062%
9	Melvindale	0.336%	0.439%	0.074%
10	Farmington	0.274%	0.308%	0.052%
11	Center Line	0.217%	0.302%	0.056%
12	Allen Park	0.183%	0.235%	0.031%
13	Grosse Pointe	0.287%	0.184%	0.228%
14	M Member Partner Subtotal	57.479%	71.437%	13.160%
15	D+ Member Partners	42.521%	28.563%	86.840%
16	Total	100.000%	100.000%	100.000%

(a) Existing 83/17 allocation factors from legal agreements

Table 7
Determination of SHARES
Three-Year SHARE Period Beginning with FY 2025

	(1)	(2)	(3)	(4)
	<u>Contributed Avg Volume</u>	<u>Sanitary Volume</u>	<u>CSO</u>	
1 Allocator Factor (from Table 2)	51.5%	32.5%	16.0%	
<u>Individual Unit Shares</u> (from Table 6)				
2 OMID	12.937%	22.947%	2.651%	
3 Rouge Valley	12.026%	14.974%	2.956%	
4 Oakland GWK	11.306%	10.610%	2.256%	
5 Evergreen Farmington	7.555%	10.558%	1.485%	
6 SE Macomb San Dist	6.068%	5.819%	1.174%	
7 Dearborn (incl Dearborn NE)	5.166%	4.191%	1.631%	
8 Grosse Pointe Farms	0.638%	0.450%	0.504%	
9 Grosse Pointe Park	0.486%	0.420%	0.062%	
10 Melvindale	0.336%	0.439%	0.074%	
11 Farmington	0.274%	0.308%	0.052%	
12 Center Line	0.217%	0.302%	0.056%	
13 Allen Park	0.183%	0.235%	0.031%	
14 Grosse Pointe	0.287%	0.184%	0.228%	
15 M Member Partner Subtotal	57.479%	71.437%	13.160%	
16 D+ Member Partners	42.521%	28.563%	86.840%	
17 Total	100.000%	100.000%	100.000%	
<u>Weighted Allocation</u> (b)				
	<u>Unit Shares x Allocator Factors</u>			<u>(1) + (2) + (3)</u>
18 OMID	6.662%	7.458%	0.424%	14.544%
19 Rouge Valley	6.193%	4.867%	0.473%	11.533%
20 Oakland GWK	5.823%	3.448%	0.361%	9.632%
21 Evergreen Farmington	3.891%	3.431%	0.238%	7.560%
22 SE Macomb San Dist	3.125%	1.891%	0.188%	5.204%
23 Dearborn (incl Dearborn NE)	2.661%	1.362%	0.261%	4.284%
24 Grosse Pointe Farms	0.328%	0.146%	0.081%	0.555%
25 Grosse Pointe Park	0.250%	0.137%	0.010%	0.397%
26 Melvindale	0.173%	0.143%	0.012%	0.328%
27 Farmington	0.142%	0.100%	0.008%	0.250%
28 Center Line	0.112%	0.098%	0.009%	0.219%
29 Allen Park	0.095%	0.076%	0.005%	0.176%
30 Grosse Pointe	0.148%	0.060%	0.036%	0.244%
31 M Member Partner Subtotal	29.603%	23.217%	2.106%	54.926%
32 D+ Member Partners	21.897%	9.283%	13.894%	45.074%
33 Total	51.500%	32.500%	16.000%	100.000%

(a) From Table 7

(b) Individual Unit Shares * Allocator Factor on Line (1)

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Table 8
Allocation of Flows Amongst D+ Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)
	<u>Sanitary</u> <i>mgd</i>	<u>DWII</u> <i>mgd</i>	Total Dry <u>Weather</u> <i>mgd</i>	Wet <u>Weather</u> <i>mgd</i>	Total Non <u>Sanitary</u> <i>mgd</i>	<u>Total</u> <i>mgd</i>
<u>Data from Flow Balance</u>						
1 Total	196.967	255.944	452.911	189.957	445.901	642.868
2 less: M Class	<u>135.083</u>	<u>76.123</u>	<u>211.206</u>	<u>67.096</u>	<u>143.219</u>	<u>278.302</u>
3 Total D+ / Common	61.884	179.821	241.705	122.861	302.682	364.566
4 Common	<u>7.875</u>	<u>89.910</u>	<u>97.785</u>	<u>61.431</u>	<u>151.341</u>	<u>159.216</u>
5 D+	54.009	89.911	143.920	61.430	151.341	205.350
<u>Unadjusted D+</u>						
1 Highland Park	0.567	3.210	3.777	2.710	5.920	6.487
2 Hamtramck	1.118	2.133	3.251	2.141	4.274	5.392
3 Harper Woods	0.101	0.031	0.132	0.039	0.070	0.171
4 Redford Township	0.085	0.135	0.220	0.161	0.296	0.381
5 Wayne County #3	0.006	0.019	0.025	0.018	0.037	0.043
6 Detroit	60.006	174.293	234.299	117.792	292.085	352.091
7 D+ Total	61.883	179.821	241.704	122.861	302.682	364.565
<u>Common Flow Adjustment - %</u>						
	(b)	(c)		(d)		
1 Highland Park		27.0%	23.0%	13.5%	20.8%	19.0%
2 Hamtramck		38.0%	24.9%	19.0%	28.5%	22.6%
3 Harper Woods		93.0%	22.0%	0.0%	41.4%	17.0%
4 Redford Township		27.0%	16.4%	13.5%	19.6%	15.2%
5 Wayne County #3		38.0%	28.0%	19.0%	27.0%	23.3%
6 Detroit		50.6%	41.0%	51.5%	50.9%	44.5%
<u>Allocation of Common - mgd</u>						
1 Highland Park	0.000	0.867	0.867	0.366	1.233	1.233
2 Hamtramck	0.000	0.811	0.811	0.407	1.218	1.218
3 Harper Woods	0.000	0.029	0.029	0.000	0.029	0.029
4 Redford Township	0.000	0.036	0.036	0.022	0.058	0.058
5 Wayne County #3	0.000	0.007	0.007	0.003	0.010	0.010
6 Detroit	7.875	88.160	96.035	60.633	148.793	156.668
7 D+ Total	7.875	89.910	97.785	61.431	151.341	159.216
<u>Adjusted D+ Flows - mgd</u>						
1 Highland Park	0.567	2.343	2.910	2.344	4.687	5.254
2 Hamtramck	1.118	1.322	2.440	1.734	3.056	4.174
3 Harper Woods	0.101	0.002	0.103	0.039	0.041	0.142
4 Redford Township	0.085	0.099	0.184	0.139	0.238	0.323
5 Wayne County #3	0.006	0.012	0.018	0.015	0.027	0.033
6 Detroit	52.131	86.133	138.264	57.159	143.292	195.423
7 D+ Total	54.008	89.911	143.919	61.430	151.341	205.349

(a) Legacy allocation based on prior era flow balance analyses.

(b) Represents WTP Backwash, all of which occurs in Detroit.

(c) Based on relative inch-miles of "Common use" sewers in each non-Detroit District.

(d) Based on 50% of relative inch-miles of Common use sewers in each non-Detroit District.

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Table 9
Determination of SHARES for D+ Member Partners
Three-Year SHARE Period Beginning with FY 2025

	(1)	(2)	(3)	(4)
	<u>Allocated Volume</u>	<u>Sanitary Volume</u>	<u>CSO</u>	
1 Allocator Factor (from Table 2)	51.5%	32.5%	16.0%	
<u>Allocation Volumes - mgd</u> (from Table 8)				
2 Highland Park	5.254	0.567		
3 Hamtramck	4.174	1.118		
4 Harper Woods	0.142	0.101		
5 Redford Township	0.323	0.085		
6 Wayne County #3	0.033	0.006		
7 Detroit	195.423	52.131		
8 D+ Member Partner Subtotal	<u>205.349</u>	<u>54.008</u>		
9 Total Units (from Table 6)	483.694	189.092		
<u>Individual Unit Shares</u>				
10 Highland Park	<i>1.086%</i>	<i>0.300%</i>	<i>2.064%</i>	<i>(a)</i>
11 Hamtramck	<i>0.863%</i>	<i>0.591%</i>	<i>1.595%</i>	
12 Harper Woods	<i>0.029%</i>	<i>0.053%</i>	<i>0.013%</i>	
13 Redford Township	<i>0.067%</i>	<i>0.045%</i>	<i>0.133%</i>	
14 Wayne County #3	<i>0.007%</i>	<i>0.003%</i>	<i>0.035%</i>	
15 Detroit	<i>40.469%</i>	<i>27.570%</i>	<i>83.000%</i>	
16 D+ Member Partner Subtotal	<u>42.521%</u>	<u>28.563%</u>	<u>86.840%</u>	
<u>Weighted Allocation</u> (b)				
	<i>Unit Shares x Allocator Factors</i>			<i>(1) + (2) + (3)</i>
17 Highland Park	0.536%	0.097%	0.330%	0.963%
18 Hamtramck	0.426%	0.192%	0.255%	0.873%
19 Harper Woods	0.016%	0.017%	0.002%	0.035%
20 Redford Township	0.033%	0.015%	0.021%	0.069%
21 Wayne County #3	0.002%	0.001%	0.006%	0.009%
22 Detroit	19.777%	8.961%	13.280%	42.018%
23 D+ Member Partner Subtotal	<u>20.790%</u>	<u>9.283%</u>	<u>13.894%</u>	43.967%

(a) Existing 83/17 allocation factors from legal agreements

(b) Individual Unit Shares * Allocator Factor on Line (1)

Table 10
Summary of Proposed FY 2025 SHARES

	Proposed FY 2025 <u>SHARE</u> <i>from Tables 7 & 9</i>
<u>Member Partner Calculations</u>	
1 OMID	14.544%
2 Rouge Valley	11.533%
3 Oakland GWK	9.632%
4 Evergreen Farmington	7.560%
5 SE Macomb San Dist	5.204%
6 Dearborn (<i>incl Dearborn NE</i>)	4.284%
7 Grosse Pointe Farms	0.555%
8 Grosse Pointe Park	0.397%
9 Melvindale	0.328%
10 Farmington	0.250%
11 Center Line	0.219%
12 Allen Park	0.176%
13 Grosse Pointe	0.244%
14 M Member Partner Subtotal	----- 54.926%
15 Highland Park	0.963%
16 Hamtramck	0.873%
17 Harper Woods	0.035%
Redford Township	0.069%
18 Wayne County #3	0.009%
19 Detroit	42.018%
20 D+ Member Partner Subtotal	----- 43.967%
21 TOTAL	----- 98.893%

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MEMORANDUM

Preliminary FY 2025 Water Units of Service

November 8, 2023

To: Nicolette Bateson, Matt Lane

From: Bart Foster

The accompanying exhibits set forth the *preliminary* proposed Units of Service for each Member Partner for the upcoming FY 2025 Water Cost of Service Study. These exhibits are designed to be formally distributed to Member Partners at, or in advance of, the second FY 2025 Charges Rollout Meeting, scheduled for Thursday, November 14, 2023. 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 1.0% annually to reflect water use patterns.
 - *We note that in some cases, these data reflect our interpretation of billing adjustments for prior periods, and other related adjustments.*
 - *In these instances, forecasted sales are highlighted in yellow in the tables. We have provided specific documentation regarding such adjustments under separate cover.*
- The units of service for “non master metered” Member Partners (Detroit, Dearborn, Highland Park) include “wholesale proxy” volumes are determined based on the Black & Veatch Units of Service (UoS) Studies. The proposed max day and peak hour demands for these Member Partners continue to be presumed to be “locked in” for the four year Contract Alignment Process (“CAP”) period to put those customers on the same basis as the Master Metered customers.
- Pages 10 through 12 present a comparison of the projected wholesale volumes (from pages 7 – 9), converted into “average day demands” in millions of gallons per day (mgd) and also present the max day and peak hour demands, which are expressed in mgd. The max day and peak hour demands for ALL of the Master Metered Member

Partners reflect the current amounts that were used for the FY 2024 Water Cost of Service Study and the current water charges. Those amounts were negotiated via the CAP process during 2022, and are scheduled to remain in place through FY 2027. ***At this time, we are not aware of any changes in contract max day or peak hour demands for any Member Partner for the FY 2025 charges.***

- *Since contract demands impact 90% of the cost allocation model, changes to individual Water Member Partner charges are almost entirely related to changes in contract demands.*
- *Absent any changes in contract demands, there will be no meaningful difference in relative FY 2025 charge adjustments amongst Member Partners, and all Member Partners should expect a “uniform” charge adjustment.*
- We note that the conclusion above is preliminary pending developments on specific Member Partner demands.

We look forward to providing additional detail and context at the meeting on November 14.

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

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		<u>Base 2020</u> 10/19 - 3/20	<u>Base 2021</u> 10/20 - 3/21	<u>Base 2022</u> 10/21 - 3/22	<u>Base 2023</u> 10/22 - 3/23	Original FY 2024 Proj (1) ~ (3) Avg	Proposed FY 2025 Proj (2) ~ (4) Avg	<u>Variance from FY 2024 Proj</u> Volume	<u>Percent</u> (7) / (5)	<u>Variance from FY 2023 Actual</u> Volume	<u>Percent</u> (9) / (4)
	<i>Adjustment Factor:</i>					98.0%	98.0%				
1	Allen Park	54,621	81,831	65,102	52,891	53,200	51,500	(1,700)	-3.2%	(1,391)	-2.6%
2	Almont Village	4,082	4,164	4,266	4,129	4,100	4,100	0	0.0%	(29)	-0.7%
3	Ash Township	19,996	19,038	17,236	16,880	18,400	17,400	(1,000)	-5.4%	520	3.1%
4	Belleville	6,966	7,999	6,515	6,296	7,000	6,300	(700)	-10.0%	4	0.1%
5	Berlin Township	11,475	11,760	12,328	11,618	11,600	11,700	100	0.9%	82	0.7%
6	Brownstown Township	56,177	55,952	58,467	58,715	55,700	56,600	900	1.6%	(2,115)	-3.6%
7	Bruce Township	758	742	742	667	730	700	(30)	-4.1%	33	4.9%
8	Burtchville Township	2,563	3,533	2,407	3,068	2,800	2,900	100	3.6%	(168)	-5.5%
9	Canton Township	142,944	146,552	148,020	157,272	142,900	147,600	4,700	3.3%	(9,672)	-6.1%
10	Center Line	15,305	16,870	15,097	15,159	15,400	15,400	0	0.0%	241	1.6%
11	Chesterfield Township	68,713	76,746	77,581	75,908	72,900	75,200	2,300	3.2%	(708)	-0.9%
12	Clinton Township	168,106	165,468	167,627	171,551	163,700	164,900	1,200	0.7%	(6,651)	-3.9%
13	Commerce Township	37,212	43,707	37,508	38,621	38,700	36,900	(1,800)	-4.7%	(1,721)	-4.5%
14	Dearborn Heights	91,989	91,362	92,067	95,751	90,000	91,200	1,200	1.3%	(4,551)	-4.8%
15	Eastpointe	49,890	52,296	49,608	52,111	49,600	50,300	700	1.4%	(1,811)	-3.5%
16	Ecorse	62,663	52,151	46,618	42,926	45,700	42,000	(3,700)	-8.1%	(926)	-2.2%
17	Farmington	19,315	20,120	19,698	19,187	19,300	19,300	0	0.0%	113	0.6%
18	Farmington Hills	142,567	142,834	147,904	143,058	141,500	141,700	200	0.1%	(1,358)	-0.9%
19	Ferndale	33,452	36,834	35,165	30,843	34,500	32,300	(2,200)	-6.4%	1,457	4.7%
20	Flat Rock	25,088	22,799	22,456	24,284	23,000	22,700	(300)	-1.3%	(1,584)	-6.5%
21	Flint	229,442	250,282	240,991	193,303	223,600	204,100	(19,500)	-8.7%	10,797	5.6%
22	Fraser	26,207	25,617	26,562	25,517	26,100	25,500	(600)	-2.3%	(17)	-0.1%
23	Garden City	36,621	36,126	33,583	32,437	34,700	33,400	(1,300)	-3.7%	963	3.0%
24	Gibraltar	8,140	7,832	8,013	7,406	7,800	7,600	(200)	-2.6%	194	2.6%
25	Greenwood Township (DTE)	9,089	6,491	4,206	3,990	6,500	4,800	(1,700)	-26.2%	810	20.3%
26	Grosse Ile Township	15,900	15,628	17,411	22,126	16,000	18,000	2,000	12.5%	(4,126)	-18.6%
27	Grosse Pt. Park	22,984	21,538	20,797	19,796	21,300	20,300	(1,000)	-4.7%	504	2.5%
28	Grosse Pt. Shores	5,909	5,860	5,640	6,159	5,700	5,800	100	1.8%	(359)	-5.8%
29	Grosse Pt. Woods	28,447	26,123	27,292	27,906	26,700	26,600	(100)	-0.4%	(1,306)	-4.7%
30	Hamtramck	30,828	31,069	28,424	32,576	29,500	30,100	600	2.0%	(2,476)	-7.6%
31	Harper Woods	24,565	24,533	27,600	26,298	25,100	25,600	500	2.0%	(698)	-2.7%
32	Harrison Township	40,780	42,891	43,039	42,794	41,400	42,000	600	1.4%	(794)	-1.9%

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

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		<u>Base 2020</u> 10/19 - 3/20	<u>Base 2021</u> 10/20 - 3/21	<u>Base 2022</u> 10/21 - 3/22	<u>Base 2023</u> 10/22 - 3/23	Original FY 2024 Proj (1) ~ (3) Avg	Proposed FY 2025 Proj (2) ~ (4) Avg	<u>Variance from FY 2024 Proj</u> Volume	<u>Percent</u> (7) / (5)	<u>Variance from FY 2023 Actual</u> Volume	<u>Percent</u> (9) / (4)
	<i>Adjustment Factor:</i>					98.0%	98.0%				
33	Hazel Park	23,853	23,481	20,584	22,801	22,200	21,800	(400)	-1.8%	(1,001)	-4.4%
34	Huron Township	26,296	27,533	30,030	46,961	27,400	28,200	800	2.9%	(18,761)	-40.0%
35	Imlay City	18,741	18,639	20,230	19,949	18,800	19,200	400	2.1%	(749)	-3.8%
36	Imlay Township (Single User)	69	85	49	2	70	0	(70)	-100.0%	(2)	-100.0%
37	Inkster	43,132	53,615	49,404	52,334	47,700	49,600	1,900	4.0%	(2,734)	-5.2%
38	Keego Harbor	4,406	4,229	4,514	4,393	4,300	4,300	0	0.0%	(93)	-2.1%
39	Lapeer	23,842	25,157	27,308	23,922	24,900	25,000	100	0.4%	1,078	4.5%
40	Lenox Township	6,239	6,257	7,156	7,394	6,400	6,800	400	6.3%	(594)	-8.0%
41	Lincoln Park	82,371	80,423	84,762	85,779	80,900	82,000	1,100	1.4%	(3,779)	-4.4%
42	Livonia	188,822	181,296	183,814	181,263	181,000	178,500	(2,500)	-1.4%	(2,763)	-1.5%
43	Macomb Township	111,862	125,005	124,249	129,185	118,000	123,600	5,600	4.7%	(5,585)	-4.3%
44	Madison Heights	48,069	50,911	59,807	57,240	51,900	57,300	5,400	10.4%	60	0.1%
45	Mayfield Township (KAMAX)	225	126	195	238	180	180	0	0.0%	(58)	-24.4%
46	Melvindale	19,163	21,235	21,719	25,689	20,300	22,400	2,100	10.3%	(3,289)	-12.8%
47	New Haven, Village of	8,200	8,352	8,626	9,014	8,200	8,500	300	3.7%	(514)	-5.7%
48	NOCWA	360,981	358,032	351,425	360,528	349,700	349,500	(200)	-0.1%	(11,028)	-3.1%
49	Northville	12,137	12,214	14,076	12,889	12,600	12,800	200	1.6%	(89)	-0.7%
50	Northville Township	48,724	49,410	46,961	47,414	47,400	47,000	(400)	-0.8%	(414)	-0.9%
51	Novi	105,209	110,276	116,868	114,775	108,600	111,700	3,100	2.9%	(3,075)	-2.7%
52	Oak Park	47,691	42,629	44,771	44,089	44,100	43,000	(1,100)	-2.5%	(1,089)	-2.5%
53	Oakland GWK Drain District	3,210	2,291	4,044	2,875	3,100	3,000	(100)	-3.2%	125	4.3%
54	Plymouth	19,572	18,717	18,216	18,193	18,500	18,000	(500)	-2.7%	(193)	-1.1%
55	Plymouth Township	62,344	60,449	60,475	58,350	59,900	58,600	(1,300)	-2.2%	250	0.4%
56	Redford Township	73,846	73,322	73,109	73,280	72,000	71,800	(200)	-0.3%	(1,480)	-2.0%
57	River Rouge	22,971	16,696	19,116	16,606	19,200	17,100	(2,100)	-10.9%	494	3.0%
58	Riverview	22,047	21,926	20,826	21,754	21,200	21,100	(100)	-0.5%	(654)	-3.0%
59	Rockwood	4,540	4,804	4,652	4,362	4,600	4,500	(100)	-2.2%	138	3.2%
60	Romeo	2,352	2,305	2,578	1,628	2,400	1,300	(1,100)	-45.8%	(328)	-20.1%
61	Romulus	101,151	102,763	97,221	88,899	98,400	94,400	(4,000)	-4.1%	5,501	6.2%
62	Roseville	83,804	93,571	82,344	82,743	84,800	84,500	(300)	-0.4%	1,757	2.1%
63	Royal Oak Township	4,903	4,601	4,804	4,884	4,700	4,700	0	0.0%	(184)	-3.8%
64	Shelby Township	134,011	169,655	147,549	146,385	147,400	151,400	4,000	2.7%	5,015	3.4%

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

Line	Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Base 2020 10/19 - 3/20	Base 2021 10/20 - 3/21	Base 2022 10/21 - 3/22	Base 2023 10/22 - 3/23	Original FY 2024 Proj (1) ~ (3) Avg	Proposed FY 2025 Proj (2) ~ (4) Avg	Variance from FY 2024 Proj Volume (6) - (5)	Variance from FY 2024 Proj Percent (7) / (5)	Variance from FY 2023 Actual Volume (6) - (4)	Variance from FY 2023 Actual Percent (9) / (4)
	<i>Adjustment Factor:</i>					98.0%	98.0%				
65	SOCWA	501,228	495,528	514,408	515,974	493,600	498,500	4,900	1.0%	(17,474)	-3.4%
66	South Rockwood	2,115	2,168	2,279	2,206	2,100	2,200	100	4.8%	(6)	-0.3%
67	Southgate	56,246	51,769	56,331	53,546	53,700	52,800	(900)	-1.7%	(746)	-1.4%
68	St. Clair Shores	95,701	88,073	94,170	98,708	90,800	91,800	1,000	1.1%	(6,908)	-7.0%
69	Sterling Heights	218,100	262,667	255,436	232,510	240,500	245,200	4,700	2.0%	12,690	5.5%
70	Sumpter Township	13,663	14,495	17,950	14,935	15,100	15,500	400	2.6%	565	3.8%
71	Sylvan Lake	2,687	2,914	3,436	2,792	3,000	3,000	0	0.0%	208	7.4%
72	Taylor	121,189	114,826	120,875	125,878	116,600	118,100	1,500	1.3%	(7,778)	-6.2%
73	Trenton	41,080	37,841	37,761	39,250	38,100	37,500	(600)	-1.6%	(1,750)	-4.5%
74	Troy	189,101	184,123	169,406	167,123	177,300	170,100	(7,200)	-4.1%	2,977	1.8%
75	Utica	9,821	9,355	10,659	10,582	9,700	10,000	300	3.1%	(582)	-5.5%
76	Van Buren Township	55,084	58,942	55,299	54,097	55,300	55,000	(300)	-0.5%	903	1.7%
77	Walled Lake	12,928	13,388	13,210	12,534	12,900	12,800	(100)	-0.8%	266	2.1%
78	Warren	278,224	291,278	294,837	279,793	282,400	282,900	500	0.2%	3,107	1.1%
79	Washington Township	24,725	28,629	30,059	29,522	27,200	28,800	1,600	5.9%	(722)	-2.4%
80	Wayne	59,220	51,786	47,769	49,254	51,900	48,600	(3,300)	-6.4%	(654)	-1.3%
81	West Bloomfield Township	100,527	107,265	115,289	114,739	105,500	110,200	4,700	4.5%	(4,539)	-4.0%
82	Westland	144,327	150,650	150,153	153,113	145,400	148,300	2,900	2.0%	(4,813)	-3.1%
83	Wixom	29,462	30,511	28,968	28,355	29,100	28,700	(400)	-1.4%	345	1.2%
84	Woodhaven	24,842	25,335	25,798	22,938	24,800	24,200	(600)	-2.4%	1,263	5.5%
85	Ypsilanti Comm Util Auth	213,128	211,937	221,464	216,371	211,200	212,300	1,100	0.5%	(4,071)	-1.9%
86	Total Master Metered	5,400,976	5,550,227	5,527,009	5,451,282	5,352,180	5,352,780	600	0.0%	(98,502)	-1.8%
87	Dearborn Wholesale Proxy	285,232	277,604	265,708	261,336	270,700	262,900	(7,800)	-2.9%	1,564	0.6%
88	Highland Park Wholesale Proxy	49,021	48,282	48,790	48,698	47,700	47,600	(100)	-0.2%	(1,098)	-2.3%
89	Detroit Wholesale Proxy	1,986,454	1,941,135	2,046,440	2,111,707	1,951,500	2,006,700	55,200	2.8%	(105,007)	-5.0%
90	Subtotal Non Master Mtrd	13,122,659	13,367,476	13,414,956	13,324,305	12,974,260	13,022,760	48,500	0.4%	(301,545)	-2.3%
91	TOTAL	18,523,636	18,917,703	18,941,965	18,775,587	18,326,440	18,375,540	49,100	0.3%	(400,047)	-2.1%
92	Subtotal Sub Wholesale	16,537,182	16,976,568	16,895,525	16,663,880	16,374,940	16,368,840	(6,100)	0.0%	(295,040)	-1.8%



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 2020 4/20 - 9/20	Peak 2021 4/21 - 9/21	Peak 2022 4/22 - 9/22	Peak 2022 4/23 - 9/23	Original FY 2024 Proj (1) ~ (3) Avg	Proposed FY 2025 Proj (2) ~ (4) Avg	Variance from FY 2024 Proj Volume	Variance from FY 2024 Proj Percent	Variance from FY 2023 Actual Volume	Variance from FY 2023 Actual Percent
	<i>Adjustment Factor:</i>					100.0%	100.0%				
1	Allen Park	84,227	95,289	65,987	64,380	68,300	65,200	(3,100)	-4.5%	820	1.3%
2	Almont Village	5,538	5,063	4,925	4,569	5,200	4,900	(300)	-5.8%	331	7.3%
3	Ash Township	24,421	21,400	22,392	20,087	22,700	21,300	(1,400)	-6.2%	1,213	6.0%
4	Belleville	9,188	7,603	7,807	7,358	8,200	7,600	(600)	-7.3%	242	3.3%
5	Berlin Township	17,067	15,857	15,523	14,824	16,100	15,400	(700)	-4.3%	576	3.9%
6	Brownstown Township	86,794	80,134	86,529	80,879	84,500	82,500	(2,000)	-2.4%	1,621	2.0%
7	Bruce Township	2,082	2,374	2,425	2,311	2,290	2,370	80	3.5%	59	2.6%
8	Burtchville Township	6,411	6,064	6,027	6,458	6,200	6,200	0	0.0%	(258)	-4.0%
9	Canton Township	250,459	214,100	230,557	237,547	231,700	227,400	(4,300)	-1.9%	(10,147)	-4.3%
10	Center Line	17,185	16,760	16,722	16,785	16,900	16,800	(100)	-0.6%	15	0.1%
11	Chesterfield Township	107,832	107,485	107,295	100,502	107,500	105,100	(2,400)	-2.2%	4,598	4.6%
12	Clinton Township	248,202	225,176	217,027	218,063	230,100	220,100	(10,000)	-4.3%	2,037	0.9%
13	Commerce Township	73,101	64,276	70,920	66,313	69,400	67,200	(2,200)	-3.2%	887	1.3%
14	Dearborn Heights	113,342	103,460	109,609	100,282	108,800	104,500	(4,300)	-4.0%	4,218	4.2%
15	Eastpointe	55,063	53,272	54,888	49,358	54,400	52,500	(1,900)	-3.5%	3,142	6.4%
16	Ecorse	60,998	47,727	45,777	39,748	45,700	39,700	(6,000)	-13.1%	(48)	-0.1%
17	Farmington	27,269	24,140	25,462	24,673	25,600	24,800	(800)	-3.1%	127	0.5%
18	Farmington Hills	223,972	203,340	216,599	206,183	214,600	208,700	(5,900)	-2.7%	2,517	1.2%
19	Ferndale	41,397	35,703	30,957	33,468	31,000	32,200	1,200	3.9%	(1,268)	-3.8%
20	Flat Rock	30,129	23,276	32,959	27,966	28,800	28,100	(700)	-2.4%	134	0.5%
21	Flint	241,302	263,620	226,597	211,411	231,600	211,400	(20,200)	-8.7%	(11)	0.0%
22	Fraser	34,641	31,787	31,030	31,007	31,000	31,000	0	0.0%	(7)	0.0%
23	Garden City	44,543	39,210	39,706	39,276	41,200	39,400	(1,800)	-4.4%	124	0.3%
24	Gibraltar	8,901	8,369	8,625	8,509	8,600	8,500	(100)	-1.2%	(9)	-0.1%
25	Greenwood Township (DTE)	18,500	19,971	12,117	31,797	16,900	21,300	4,400	26.0%	(10,497)	-33.0%
26	Grosse Ile Township	22,728	21,429	23,229	26,335	22,500	23,700	1,200	5.3%	(2,635)	-10.0%
27	Grosse Pt. Park	36,476	32,795	33,564	30,752	34,300	32,400	(1,900)	-5.5%	1,648	5.4%
28	Grosse Pt. Shores	13,919	13,108	14,323	11,790	13,800	13,100	(700)	-5.1%	1,310	11.1%
29	Grosse Pt. Woods	44,884	40,020	44,771	39,781	43,200	41,500	(1,700)	-3.9%	1,719	4.3%
30	Hamtramck	34,083	30,035	30,797	34,931	31,600	31,900	300	0.9%	(3,031)	-8.7%
31	Harper Woods	24,551	26,555	30,361	27,644	27,200	28,200	1,000	3.7%	556	2.0%
32	Harrison Township	58,689	55,358	57,128	54,729	57,100	55,700	(1,400)	-2.5%	971	1.8%

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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 2020 4/20 - 9/20	Peak 2021 4/21 - 9/21	Peak 2022 4/22 - 9/22	Peak 2022 4/23 - 9/23	Original FY 2024 Proj (1) ~ (3) Avg	Proposed FY 2025 Proj (2) ~ (4) Avg	Variance from FY 2024 Proj Volume	Variance from FY 2024 Proj Percent	Variance from FY 2023 Actual Volume	Variance from FY 2023 Actual Percent
	<i>Adjustment Factor:</i>					100.0%	100.0%				
33	Hazel Park	28,079	25,587	26,931	25,670	26,900	26,100	(800)	-3.0%	430	1.7%
34	Huron Township	37,318	36,238	38,601	57,804	37,400	37,400	0	0.0%	(20,404)	-35.3%
35	Imlay City	28,251	27,032	25,446	31,086	26,900	27,900	1,000	3.7%	(3,186)	-10.2%
36	Imlay Township (Single User)	74	89	14	1	60	0	(60)	-100.0%	(1)	-100.0%
37	Inkster	45,277	62,633	52,322	50,133	53,400	51,200	(2,200)	-4.1%	1,067	2.1%
38	Keego Harbor	5,966	5,392	5,554	5,526	5,600	5,500	(100)	-1.8%	(26)	-0.5%
39	Lapeer	26,362	30,974	26,864	30,066	28,100	30,000	1,900	6.8%	(66)	-0.2%
40	Lenox Township	6,813	7,111	8,341	8,440	7,400	8,000	600	8.1%	(440)	-5.2%
41	Lincoln Park	90,926	87,143	92,622	88,969	90,200	89,600	(600)	-0.7%	631	0.7%
42	Livonia	303,969	277,424	276,574	272,001	286,000	275,300	(10,700)	-3.7%	3,299	1.2%
43	Macomb Township	232,977	188,033	218,589	212,250	213,200	206,300	(6,900)	-3.2%	(5,950)	-2.8%
44	Madison Heights	48,748	62,318	68,954	65,953	60,000	67,500	7,500	12.5%	1,547	2.3%
45	Mayfield Township (KAMAX)	157	285	364	331	270	330	60	22.2%	(1)	-0.4%
46	Melvindale	22,300	23,179	23,897	22,010	23,100	23,000	(100)	-0.4%	990	4.5%
47	New Haven, Village of	11,291	10,409	11,242	11,179	11,000	10,900	(100)	-0.9%	(279)	-2.5%
48	NOCWA	560,500	490,017	547,131	523,629	532,500	520,300	(12,200)	-2.3%	(3,329)	-0.6%
49	Northville	18,354	17,452	17,506	16,815	17,800	17,300	(500)	-2.8%	485	2.9%
50	Northville Township	103,286	86,864	87,914	89,698	92,700	88,200	(4,500)	-4.9%	(1,498)	-1.7%
51	Novi	199,654	181,861	203,991	174,714	195,200	186,900	(8,300)	-4.3%	12,186	7.0%
52	Oak Park	53,468	47,176	48,063	45,758	49,600	47,000	(2,600)	-5.2%	1,242	2.7%
53	Oakland GWK Drain District	5,009	7,623	4,989	5,955	5,900	6,200	300	5.1%	245	4.1%
54	Plymouth	27,234	26,114	26,799	25,946	26,700	26,300	(400)	-1.5%	354	1.4%
55	Plymouth Township	110,445	97,060	99,391	97,218	102,300	97,900	(4,400)	-4.3%	682	0.7%
56	Redford Township	91,241	83,217	83,057	82,621	85,800	83,000	(2,800)	-3.3%	379	0.5%
57	River Rouge	19,619	19,738	20,151	20,728	19,800	20,200	400	2.0%	(528)	-2.5%
58	Riverview	28,125	24,792	26,737	23,844	26,600	25,100	(1,500)	-5.6%	1,256	5.3%
59	Rockwood	5,931	4,804	5,173	4,990	5,300	5,000	(300)	-5.7%	10	0.2%
60	Romeo	3,817	3,777	3,408	1,789	3,700	1,800	(1,900)	-51.4%	11	0.6%
61	Romulus	129,538	115,357	112,150	107,782	119,000	111,800	(7,200)	-6.1%	4,018	3.7%
62	Roseville	109,325	87,488	87,830	87,474	94,900	87,600	(7,300)	-7.7%	126	0.1%
63	Royal Oak Township	5,410	5,298	5,467	5,554	5,400	5,400	0	0.0%	(154)	-2.8%
64	Shelby Township	320,833	251,852	275,781	262,191	282,800	263,300	(19,500)	-6.9%	1,109	0.4%

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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 2020 4/20 - 9/20	Peak 2021 4/21 - 9/21	Peak 2022 4/22 - 9/22	Peak 2022 4/23 - 9/23	Original FY 2024 Proj (1) ~ (3) Avg	Proposed FY 2025 Proj (2) ~ (4) Avg	Variance from FY 2024 Proj Volume (6) - (5)	Variance from FY 2024 Proj Percent (7) / (5)	Variance from FY 2023 Actual Volume (6) - (4)	Variance from FY 2023 Actual Percent (9) / (4)
	Adjustment Factor:					100.0%	100.0%				
65	SOCWA	792,532	705,538	773,397	728,279	757,200	735,700	(21,500)	-2.8%	7,421	1.0%
66	South Rockwood	2,524	2,645	2,535	2,471	2,600	2,600	0	0.0%	129	5.2%
67	Southgate	58,313	53,216	67,176	62,979	59,600	61,100	1,500	2.5%	(1,879)	-3.0%
68	St. Clair Shores	115,385	102,312	113,031	106,974	110,200	107,400	(2,800)	-2.5%	426	0.4%
69	Sterling Heights	384,597	350,654	347,431	328,150	360,900	342,100	(18,800)	-5.2%	13,950	4.3%
70	Sumpter Township	17,655	16,759	20,801	17,768	18,400	18,400	0	0.0%	632	3.6%
71	Sylvan Lake	3,891	3,400	3,929	3,643	3,700	3,700	0	0.0%	57	1.6%
72	Taylor	148,156	140,682	152,854	144,924	147,200	146,200	(1,000)	-0.7%	1,276	0.9%
73	Trenton	51,575	45,952	54,916	44,374	50,800	45,500	(5,300)	-10.4%	1,126	2.5%
74	Troy	326,162	267,758	265,092	262,160	286,300	265,000	(21,300)	-7.4%	2,840	1.1%
75	Utica	13,175	12,333	14,312	14,283	13,300	13,600	300	2.3%	(683)	-4.8%
76	Van Buren Township	85,475	81,350	77,053	73,313	81,300	77,200	(4,100)	-5.0%	3,887	5.3%
77	Walled Lake	17,303	16,157	16,346	16,023	16,600	16,200	(400)	-2.4%	177	1.1%
78	Warren	344,963	340,019	347,379	332,704	344,100	340,000	(4,100)	-1.2%	7,296	2.2%
79	Washington Township	63,670	55,383	58,902	57,721	59,300	57,300	(2,000)	-3.4%	(421)	-0.7%
80	Wayne	53,123	51,451	54,408	53,446	53,000	53,100	100	0.2%	(346)	-0.6%
81	West Bloomfield Township	179,229	166,181	174,870	162,149	173,400	167,700	(5,700)	-3.3%	5,551	3.4%
82	Westland	186,608	178,631	188,361	147,779	184,500	171,600	(12,900)	-7.0%	23,821	16.1%
83	Wixom	49,481	45,768	51,885	45,131	49,000	47,600	(1,400)	-2.9%	2,469	5.5%
84	Woodhaven	34,496	32,973	34,139	30,322	33,900	32,500	(1,400)	-4.1%	2,178	7.2%
85	Ypsilanti Comm Util Auth	282,572	270,763	283,465	273,610	278,900	275,900	(3,000)	-1.1%	2,290	0.8%
86	Total Master Metered	7,959,073	7,269,016	7,556,766	7,236,047	7,556,720	7,303,400	(253,320)	-3.4%	67,353	0.9%
87	Dearborn Wholesale Proxy	309,278	276,293	287,223	270,084	290,900	277,900	(13,000)	-4.5%	7,816	2.9%
88	Highland Park Wholesale Proxy	56,703	56,646	55,463	56,058	56,300	56,100	(200)	-0.4%	42	0.1%
89	Detroit Wholesale Proxy	2,155,807	2,211,517	2,244,945	2,212,325	2,204,100	2,222,900	18,800	0.9%	10,575	0.5%
90	Subtotal Non Master Mtrd	2,521,788	2,544,455	2,587,631	2,538,467	2,551,300	2,556,900	5,600	0.2%	153,139	6.0%
91	TOTAL	10,480,861	9,813,471	10,144,397	9,774,514	10,108,020	9,860,300	(247,720)	-2.5%	220,492	2.3%
92	Subtotal Sub Wholesale	8,325,054	7,601,954	7,899,452	7,562,189	7,903,920	7,637,400	(266,520)	-3.4%	209,917	2.8%

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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 2024 Proj		Variance from FY 2023 Actual	
		AFY 2020	AFY 2021	AFY 2022	AFY 2023	FY 2024 Proj	FY 2025 Proj	Volume	Percent	Volume	Percent
	10/19 - 9/20	10/20 - 9/21	10/21 - 9/22	10/22 - 9/23	(1) ~ (3) Avg	(2) ~ (4) Avg	(6) - (5)	(7) / (5)	(6) - (4)	(9) / (4)	
	Base Month Adjustment Factor:					98.0%	98.0%				
	Peak Month Adjustment Factor:					100.0%	100.0%				
1	Allen Park	138,848	177,120	131,089	117,271	121,500	116,700	(4,800)	-4.0%	(571)	-0.5%
2	Almont Village	9,620	9,227	9,191	8,698	9,300	9,000	(300)	-3.2%	302	3.5%
3	Ash Township	44,417	40,437	39,628	36,968	41,100	38,700	(2,400)	-5.8%	1,732	4.7%
4	Belleville	16,153	15,602	14,322	13,654	15,200	13,900	(1,300)	-8.6%	246	1.8%
5	Berlin Township	28,542	27,616	27,850	26,442	27,700	27,100	(600)	-2.2%	658	2.5%
6	Brownstown Township	142,971	136,086	144,996	139,594	140,200	139,100	(1,100)	-0.8%	(494)	-0.4%
7	Bruce Township	2,840	3,116	3,167	2,978	3,020	3,070	50	1.7%	92	3.1%
8	Burtchville Township	8,973	9,597	8,434	9,526	9,000	9,100	100	1.1%	(426)	-4.5%
9	Canton Township	393,403	360,652	378,577	394,819	374,600	375,000	400	0.1%	(19,819)	-5.0%
10	Center Line	32,490	33,630	31,818	31,944	32,300	32,200	(100)	-0.3%	256	0.8%
11	Chesterfield Township	176,546	184,231	184,876	176,410	180,400	180,300	(100)	-0.1%	3,890	2.2%
12	Clinton Township	416,307	390,644	384,654	389,614	393,800	385,000	(8,800)	-2.2%	(4,614)	-1.2%
13	Commerce Township	110,313	107,983	108,428	104,934	108,100	104,100	(4,000)	-3.7%	(834)	-0.8%
14	Dearborn Heights	205,331	194,822	201,676	196,033	198,800	195,700	(3,100)	-1.6%	(333)	-0.2%
15	Eastpointe	104,953	105,568	104,496	101,469	104,000	102,800	(1,200)	-1.2%	1,331	1.3%
16	Ecorse	123,662	99,878	92,395	82,675	91,500	81,700	(9,800)	-10.7%	(975)	-1.2%
17	Farmington	46,584	44,259	45,160	43,860	44,900	44,100	(800)	-1.8%	240	0.5%
18	Farmington Hills	366,539	346,173	364,503	349,241	356,100	350,400	(5,700)	-1.6%	1,159	0.3%
19	Ferndale	74,849	72,537	66,122	64,311	65,500	64,500	(1,000)	-1.5%	189	0.3%
20	Flat Rock	55,217	46,075	55,415	52,251	51,800	50,800	(1,000)	-1.9%	(1,451)	-2.8%
21	Flint	470,744	513,902	467,588	404,714	455,200	415,500	(39,700)	-8.7%	10,786	2.7%
22	Fraser	60,848	57,405	57,592	56,523	57,100	56,500	(600)	-1.1%	(23)	0.0%
23	Garden City	81,164	75,336	73,289	71,713	75,900	72,800	(3,100)	-4.1%	1,087	1.5%
24	Gibraltar	17,041	16,201	16,638	15,916	16,400	16,100	(300)	-1.8%	184	1.2%
25	Greenwood Township (DTE)	27,590	26,463	16,323	35,787	26,400	26,100	(300)	-1.1%	(9,687)	-27.1%
26	Grosse Ile Township	38,627	37,057	40,641	48,462	38,500	41,700	3,200	8.3%	(6,762)	-14.0%
27	Grosse Pt. Park	59,460	54,332	54,361	50,548	55,600	52,700	(2,900)	-5.2%	2,152	4.3%
28	Grosse Pt. Shores	19,828	18,969	19,963	17,950	19,500	18,900	(600)	-3.1%	950	5.3%
29	Grosse Pt. Woods	73,331	66,143	72,064	67,687	69,900	68,100	(1,800)	-2.6%	413	0.6%
30	Hamtramck	64,911	61,104	59,220	67,507	61,100	62,000	900	1.5%	(5,507)	-8.2%
31	Harper Woods	49,116	51,087	57,961	53,942	52,300	53,800	1,500	2.9%	(142)	-0.3%
32	Harrison Township	99,468	98,249	100,167	97,524	98,500	97,700	(800)	-0.8%	176	0.2%



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 2024 Proj		Variance from FY 2023 Actual	
		<u>AFY 2020</u>	<u>AFY 2021</u>	<u>AFY 2022</u>	<u>AFY 2023</u>	<u>FY 2024 Proj</u>	<u>FY 2025 Proj</u>	<u>Volume</u>	<u>Percent</u>	<u>Volume</u>	<u>Percent</u>
	10/19 - 9/20	10/20 - 9/21	10/21 - 9/22	10/22 - 9/23	(1) ~ (3) Avg	(2) ~ (4) Avg	(6) - (5)	(7) / (5)	(6) - (4)	(9) / (4)	
	Base Month Adjustment Factor:					98.0%	98.0%				
	Peak Month Adjustment Factor:					100.0%	100.0%				
33	Hazel Park	51,932	49,068	47,516	48,472	49,100	47,900	(1,200)	-2.4%	(572)	-1.2%
34	Huron Township	63,613	63,771	68,631	104,765	64,800	65,600	800	1.2%	(39,165)	-37.4%
35	Imlay City	46,992	45,671	45,676	51,035	45,700	47,100	1,400	3.1%	(3,935)	-7.7%
36	Imlay Township (Single User)	142	174	63	2	130	0	(130)	-100.0%	(2)	-100.0%
37	Inkster	88,409	116,248	101,727	102,467	101,100	100,800	(300)	-0.3%	(1,667)	-1.6%
38	Keego Harbor	10,373	9,621	10,068	9,919	9,900	9,800	(100)	-1.0%	(119)	-1.2%
39	Lapeer	50,204	56,130	54,172	53,988	53,000	55,000	2,000	3.8%	1,012	1.9%
40	Lenox Township	13,051	13,367	15,496	15,834	13,800	14,800	1,000	7.2%	(1,034)	-6.5%
41	Lincoln Park	173,298	167,566	177,384	174,748	171,100	171,600	500	0.3%	(3,148)	-1.8%
42	Livonia	492,791	458,720	460,387	453,263	467,000	453,800	(13,200)	-2.8%	537	0.1%
43	Macomb Township	344,839	313,038	342,838	341,435	331,200	329,900	(1,300)	-0.4%	(11,535)	-3.4%
44	Madison Heights	96,818	113,229	128,761	123,193	111,900	124,800	12,900	11.5%	1,607	1.3%
45	Mayfield Township (KAMAX)	382	410	558	570	450	510	60	13.3%	(60)	-10.5%
46	Melvindale	41,463	44,414	45,616	47,699	43,400	45,400	2,000	4.6%	(2,299)	-4.8%
47	New Haven, Village of	19,491	18,761	19,868	20,193	19,200	19,400	200	1.0%	(793)	-3.9%
48	NOCWA	921,480	848,049	898,556	884,157	882,200	869,800	(12,400)	-1.4%	(14,357)	-1.6%
49	Northville	30,491	29,666	31,581	29,704	30,400	30,100	(300)	-1.0%	396	1.3%
50	Northville Township	152,011	136,274	134,875	137,112	140,100	135,200	(4,900)	-3.5%	(1,912)	-1.4%
51	Novi	304,864	292,137	320,859	289,489	303,800	298,600	(5,200)	-1.7%	9,111	3.1%
52	Oak Park	101,159	89,805	92,834	89,847	93,700	90,000	(3,700)	-3.9%	153	0.2%
53	Oakland GWK Drain District	8,220	9,914	9,032	8,830	9,000	9,200	200	2.2%	370	4.2%
54	Plymouth	46,806	44,831	45,016	44,138	45,200	44,300	(900)	-2.0%	162	0.4%
55	Plymouth Township	172,788	157,509	159,866	155,568	162,200	156,500	(5,700)	-3.5%	932	0.6%
56	Redford Township	165,087	156,539	156,165	155,901	157,800	154,800	(3,000)	-1.9%	(1,101)	-0.7%
57	River Rouge	42,590	36,434	39,268	37,333	39,000	37,300	(1,700)	-4.4%	(33)	-0.1%
58	Riverview	50,172	46,718	47,563	45,599	47,800	46,200	(1,600)	-3.3%	601	1.3%
59	Rockwood	10,471	9,608	9,826	9,353	9,900	9,500	(400)	-4.0%	147	1.6%
60	Romeo	6,169	6,082	5,986	3,417	6,100	3,100	(3,000)	-49.2%	(317)	-9.3%
61	Romulus	230,690	218,120	209,371	196,681	217,400	206,200	(11,200)	-5.2%	9,519	4.8%
62	Roseville	193,128	181,059	170,174	170,217	179,700	172,100	(7,600)	-4.2%	1,883	1.1%
63	Royal Oak Township	10,314	9,899	10,271	10,437	10,100	10,100	0	0.0%	(337)	-3.2%
64	Shelby Township	454,844	421,506	423,330	408,576	430,200	414,700	(15,500)	-3.6%	6,124	1.5%



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 2024 Proj		Variance from FY 2023 Actual	
		AFY 2020	AFY 2021	AFY 2022	AFY 2023	FY 2024 Proj	FY 2025 Proj	Volume	Percent	Volume	Percent
10/19 - 9/20	10/20 - 9/21	10/21 - 9/22	10/22 - 9/23	(1) ~ (3) Avg	(2) ~ (4) Avg	(6) - (5)	(7) / (5)	(6) - (4)	(9) / (4)		
	Base Month Adjustment Factor:					98.0%	98.0%				
	Peak Month Adjustment Factor:					100.0%	100.0%				
65	SOCWA	1,293,760	1,201,066	1,287,805	1,244,254	1,250,800	1,234,200	(16,600)	-1.3%	(10,054)	-0.8%
66	South Rockwood	4,639	4,813	4,814	4,676	4,700	4,800	100	2.1%	124	2.6%
67	Southgate	114,559	104,985	123,507	116,525	113,300	113,900	600	0.5%	(2,625)	-2.3%
68	St. Clair Shores	211,085	190,385	207,201	205,681	201,000	199,200	(1,800)	-0.9%	(6,481)	-3.2%
69	Sterling Heights	602,696	613,321	602,867	560,661	601,400	587,300	(14,100)	-2.3%	26,639	4.8%
70	Sumpter Township	31,318	31,254	38,751	32,703	33,500	33,900	400	1.2%	1,197	3.7%
71	Sylvan Lake	6,578	6,314	7,365	6,435	6,700	6,700	0	0.0%	265	4.1%
72	Taylor	269,345	255,507	273,728	270,802	263,800	264,300	500	0.2%	(6,502)	-2.4%
73	Trenton	92,655	83,794	92,677	83,624	88,900	83,000	(5,900)	-6.6%	(624)	-0.7%
74	Troy	515,263	451,881	434,498	429,283	463,600	435,100	(28,500)	-6.1%	5,817	1.4%
75	Utica	22,995	21,689	24,971	24,865	23,000	23,600	600	2.6%	(1,265)	-5.1%
76	Van Buren Township	140,559	140,292	132,352	127,409	136,600	132,200	(4,400)	-3.2%	4,791	3.8%
77	Walled Lake	30,230	29,545	29,556	28,556	29,500	29,000	(500)	-1.7%	444	1.6%
78	Warren	623,187	631,298	642,215	612,497	626,500	622,900	(3,600)	-0.6%	10,403	1.7%
79	Washington Township	88,394	84,012	88,961	87,243	86,500	86,100	(400)	-0.5%	(1,143)	-1.3%
80	Wayne	112,344	103,237	102,177	102,700	104,900	101,700	(3,200)	-3.1%	(1,000)	-1.0%
81	West Bloomfield Township	279,756	273,445	290,158	276,887	278,900	277,900	(1,000)	-0.4%	1,013	0.4%
82	Westland	330,935	329,281	338,514	300,892	329,900	319,900	(10,000)	-3.0%	19,008	6.3%
83	Wixom	78,944	76,279	80,853	73,486	78,100	76,300	(1,800)	-2.3%	2,814	3.8%
84	Woodhaven	59,338	58,308	59,937	53,259	58,700	56,700	(2,000)	-3.4%	3,441	6.5%
85	Ypsilanti Comm Util Auth	495,700	482,700	504,929	489,981	490,100	488,200	(1,900)	-0.4%	(1,781)	-0.4%
86	Total Master Metered	13,360,049	12,819,243	13,083,775	12,687,329	12,912,000	12,656,180	(255,820)	-2.0%	(31,149)	-0.2%
87	Dearborn Wholesale Proxy	594,511	553,897	552,931	531,420	561,600	540,800	(20,800)	-3.7%	9,380	1.8%
88	Highland Park Wholesale Proxy	105,723	104,928	104,253	104,756	103,000	103,700	700	0.7%	(1,056)	-1.0%
89	Detroit Wholesale Proxy	4,142,261	4,152,652	4,291,385	4,324,032	4,170,000	4,230,000	60,000	1.4%	(94,032)	-2.2%
90	Subtotal Non Master Mtrd	4,842,495	4,811,476	4,948,569	4,960,208	4,834,600	4,874,500	39,900	0.8%	(85,708)	-1.7%
91	TOTAL	18,202,544	17,630,719	18,032,344	17,647,537	17,746,600	17,530,680	(215,920)	-1.2%	(116,857)	-0.7%
92	Subtotal Sub Wholesale	14,060,283	13,478,067	13,740,959	13,323,505	13,576,600	13,300,680	(275,920)	-2.0%	(22,825)	-0.2%



GLWA Water Cost of Service Study - FY 2025
 Summary of Baseline Units of Service - Volumes and Demands

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Customer	FY 2024 (Existing Charges)				FY 2025 (Proposed Charges)				Variance						
	Volume	Avg Day	Max Day	Peak Hour	Volume	Max Day	Max Day	Peak Hour	Volume	Avg Day	Max Day	Peak Hour	Avg Day	Max Day	Peak Hour
	Mcf	mgd	mgd	mgd	Mcf	mgd	mgd	mgd	Mcf	mgd	mgd	mgd	mgd	mgd	mgd
1 Allen Park	121,500	2.49	5.45	7.54	116,700	2.39	5.45	7.54	(4,800)	(0.10)	-	-	-4.0%	0.0%	0.0%
2 Almont Village	9,300	0.191	0.400	0.440	9,000	0.184	0.400	0.440	(300)	(0.007)	-	-	-3.7%	0.0%	0.0%
3 Ash Township	41,100	0.84	1.45	2.27	38,700	0.79	1.45	2.27	(2,400)	(0.05)	-	-	-6.0%	0.0%	0.0%
4 Belleville	15,200	0.312	0.548	0.762	13,900	0.285	0.548	0.762	(1,300)	(0.027)	-	-	-8.7%	0.0%	0.0%
5 Berlin Township	27,700	0.57	1.13	1.76	27,100	0.56	1.13	1.76	(600)	(0.01)	-	-	-1.8%	0.0%	0.0%
6 Brownstown Township	140,200	2.87	7.00	11.00	139,100	2.85	7.00	11.00	(1,100)	(0.02)	-	-	-0.7%	0.0%	0.0%
7 Bruce Township	3,020	0.062	0.456	0.830	3,070	0.063	0.456	0.830	50	0.001	-	-	1.6%	0.0%	0.0%
8 Burtchville Township	9,000	0.184	0.534	0.816	9,100	0.187	0.534	0.816	100	0.003	-	-	1.6%	0.0%	0.0%
9 Canton Township	374,600	7.68	20.00	23.50	375,000	7.69	20.00	23.50	400	0.01	-	-	0.1%	0.0%	0.0%
10 Center Line	32,300	0.66	1.13	1.60	32,200	0.66	1.13	1.60	(100)	-	-	-	0.0%	0.0%	0.0%
11 Chesterfield Township	180,400	3.70	8.24	12.50	180,300	3.70	8.24	12.50	(100)	-	-	-	0.0%	0.0%	0.0%
12 Clinton Township	393,800	8.07	19.70	22.00	385,000	7.89	19.70	22.00	(8,800)	(0.18)	-	-	-2.2%	0.0%	0.0%
13 Commerce Township	108,100	2.22	6.28	7.13	104,100	2.13	6.28	7.13	(4,000)	(0.09)	-	-	-4.1%	0.0%	0.0%
14 Dearborn Heights	198,800	4.07	8.00	12.00	195,700	4.01	8.00	12.00	(3,100)	(0.06)	-	-	-1.5%	0.0%	0.0%
15 Eastpointe	104,000	2.13	3.71	5.38	102,800	2.11	3.71	5.38	(1,200)	(0.02)	-	-	-0.9%	0.0%	0.0%
16 Ecorse	91,500	1.88	2.97	3.42	81,700	1.67	2.97	3.42	(9,800)	(0.21)	-	-	-11.2%	0.0%	0.0%
17 Farmington	44,900	0.92	2.10	2.31	44,100	0.90	2.10	2.31	(800)	(0.02)	-	-	-2.2%	0.0%	0.0%
18 Farmington Hills	356,100	7.30	18.00	21.30	350,400	7.18	18.00	21.30	(5,700)	(0.12)	-	-	-1.6%	0.0%	0.0%
19 Ferndale	65,500	1.34	2.89	3.10	64,500	1.32	2.89	3.10	(1,000)	(0.02)	-	-	-1.5%	0.0%	0.0%
20 Flat Rock	51,800	1.06	2.63	3.99	50,800	1.04	2.63	3.99	(1,000)	(0.02)	-	-	-1.9%	0.0%	0.0%
21 Flint	455,200	9.33	13.50	14.00	415,500	8.52	13.50	14.00	(39,700)	(0.81)	-	-	-8.7%	0.0%	0.0%
22 Fraser	57,100	1.17	2.81	4.25	56,500	1.16	2.81	4.25	(600)	(0.01)	-	-	-0.9%	0.0%	0.0%
23 Garden City	75,900	1.56	3.30	5.21	72,800	1.49	3.30	5.21	(3,100)	(0.07)	-	-	-4.5%	0.0%	0.0%
24 Gibraltar	16,400	0.336	0.649	0.836	16,100	0.330	0.649	0.836	(300)	(0.006)	-	-	-1.8%	0.0%	0.0%
25 Greenwood Township (DTE)	26,400	0.54	2.24	2.24	26,100	0.53	2.24	2.24	(300)	(0.01)	-	-	-1.9%	0.0%	0.0%
26 Grosse Ile Township	38,500	0.79	2.01	3.51	41,700	0.85	2.01	3.51	3,200	0.06	-	-	7.6%	0.0%	0.0%
27 Grosse Pt. Park	55,600	1.14	3.09	5.31	52,700	1.08	3.09	5.31	(2,900)	(0.06)	-	-	-5.3%	0.0%	0.0%
28 Grosse Pt. Shores	19,500	0.40	1.43	2.50	18,900	0.39	1.43	2.50	(600)	(0.01)	-	-	-2.5%	0.0%	0.0%
29 Grosse Pt. Woods	69,900	1.43	3.36	4.29	68,100	1.40	3.36	4.29	(1,800)	(0.03)	-	-	-2.1%	0.0%	0.0%
30 Hamtramck	61,100	1.25	1.77	2.74	62,000	1.27	1.77	2.74	900	0.02	-	-	1.6%	0.0%	0.0%
31 Harper Woods	52,300	1.07	2.09	2.99	53,800	1.10	2.09	2.99	1,500	0.03	-	-	2.8%	0.0%	0.0%
32 Harrison Township	98,500	2.02	3.90	4.75	97,700	2.00	3.90	4.75	(800)	(0.02)	-	-	-1.0%	0.0%	0.0%



GLWA Water Cost of Service Study - FY 2025
 Summary of Baseline Units of Service - Volumes and Demands

Customer	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	FY 2024 (Existing Charges)				FY 2025 (Proposed Charges)				Variance						
	Volume	Avg Day	Max Day	Peak Hour	Volume	Max Day	Max Day	Peak Hour	Volume	Avg Day	Max Day	Peak Hour	Avg Day	Max Day	Peak Hour
	Mcf	mgd	mgd	mgd	Mcf	mgd	mgd	mgd	Mcf	mgd	mgd	mgd	mgd	mgd	mgd
33 Hazel Park	49,100	1.01	1.76	2.41	47,900	0.98	1.76	2.41	(1,200)	(0.03)	-	-	-3.0%	0.0%	0.0%
34 Huron Township	64,800	1.33	3.10	3.91	65,600	1.34	3.10	3.91	800	0.01	-	-	0.8%	0.0%	0.0%
35 Imlay City	45,700	0.94	2.22	2.48	47,100	0.97	2.22	2.48	1,400	0.03	-	-	3.2%	0.0%	0.0%
36 Imlay Township (Single User)	130	0.003	0.012	0.024	0	0.000	0.012	0.024	(130)	(0.003)	-	-	-100.0%	0.0%	0.0%
37 Inkster	101,100	2.07	2.47	3.55	100,800	2.07	2.47	3.55	(300)	-	-	-	0.0%	0.0%	0.0%
38 Keego Harbor	9,900	0.203	0.450	0.671	9,800	0.201	0.450	0.671	(100)	(0.002)	-	-	-1.0%	0.0%	0.0%
39 Lapeer	53,000	1.09	1.75	2.50	55,000	1.13	1.75	2.50	2,000	0.04	-	-	3.7%	0.0%	0.0%
40 Lenox Township	13,800	0.283	0.510	0.704	14,800	0.303	0.510	0.704	1,000	0.02	-	-	7.1%	0.0%	0.0%
41 Lincoln Park	171,100	3.51	5.30	6.93	171,600	3.52	5.30	6.93	500	0.01	-	-	0.3%	0.0%	0.0%
42 Livonia	467,000	9.57	23.00	33.00	453,800	9.30	23.00	33.00	(13,200)	(0.27)	-	-	-2.8%	0.0%	0.0%
43 Macomb Township	331,200	6.79	23.00	40.00	329,900	6.76	23.00	40.00	(1,300)	(0.03)	-	-	-0.4%	0.0%	0.0%
44 Madison Heights	111,900	2.29	4.75	6.50	124,800	2.56	4.75	6.50	12,900	0.27	-	-	11.8%	0.0%	0.0%
45 Mayfield Township (KAMAX)	450	0.009	0.045	0.070	510	0.010	0.045	0.070	60	0.001	-	-	11.1%	0.0%	0.0%
46 Melvindale	43,400	0.89	1.41	1.97	45,400	0.93	1.41	1.97	2,000	0.04	-	-	4.5%	0.0%	0.0%
47 New Haven, Village of	19,200	0.393	0.785	1.20	19,400	0.398	0.785	1.20	200	0.005	-	-	1.3%	0.0%	0.0%
48 NOCWA	882,200	18.08	43.50	48.60	869,800	17.83	43.50	48.60	(12,400)	(0.25)	-	-	-1.4%	0.0%	0.0%
49 Northville	30,400	0.62	1.55	1.65	30,100	0.62	1.55	1.65	(300)	-	-	-	0.0%	0.0%	0.0%
50 Northville Township	140,100	2.87	9.00	13.50	135,200	2.77	9.00	13.50	(4,900)	(0.10)	-	-	-3.5%	0.0%	0.0%
51 Novi	303,800	6.23	17.00	19.00	298,600	6.12	17.00	19.00	(5,200)	(0.11)	-	-	-1.8%	0.0%	0.0%
52 Oak Park	93,700	1.92	3.90	3.90	90,000	1.84	3.90	3.90	(3,700)	(0.08)	-	-	-4.2%	0.0%	0.0%
53 Oakland GWK Drain District	9,000	0.184	0.204	0.204	9,200	0.189	0.204	0.204	200	0.005	-	-	2.7%	0.0%	0.0%
54 Plymouth	45,200	0.93	1.81	2.71	44,300	0.91	1.81	2.71	(900)	(0.02)	-	-	-2.2%	0.0%	0.0%
55 Plymouth Township	162,200	3.32	10.00	10.00	156,500	3.21	10.00	10.00	(5,700)	(0.11)	-	-	-3.3%	0.0%	0.0%
56 Redford Township	157,800	3.23	6.35	9.00	154,800	3.17	6.35	9.00	(3,000)	(0.06)	-	-	-1.9%	0.0%	0.0%
57 River Rouge	39,000	0.80	1.07	1.63	37,300	0.76	1.07	1.63	(1,700)	(0.04)	-	-	-5.0%	0.0%	0.0%
58 Riverview	47,800	0.98	1.79	2.67	46,200	0.95	1.79	2.67	(1,600)	(0.03)	-	-	-3.1%	0.0%	0.0%
59 Rockwood	9,900	0.203	0.432	0.659	9,500	0.195	0.432	0.659	(400)	(0.008)	-	-	-3.9%	0.0%	0.0%
60 Romeo	6,100	0.125	0.374	0.649	3,100	0.064	0.374	0.649	(3,000)	(0.061)	-	-	-48.8%	0.0%	0.0%
61 Romulus	217,400	4.46	7.71	9.73	206,200	4.23	7.71	9.73	(11,200)	(0.23)	-	-	-5.2%	0.0%	0.0%
62 Roseville	179,700	3.68	6.03	8.63	172,100	3.53	6.03	8.63	(7,600)	(0.15)	-	-	-4.1%	0.0%	0.0%
63 Royal Oak Township	10,100	0.207	0.473	0.649	10,100	0.207	0.473	0.649	-	-	-	-	0.0%	0.0%	0.0%
64 Shelby Township	430,200	8.82	26.60	30.00	414,700	8.50	26.60	30.00	(15,500)	(0.32)	-	-	-3.6%	0.0%	0.0%



GLWA Water Cost of Service Study - FY 2025
 Summary of Baseline Units of Service - Volumes and Demands

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Customer	FY 2024 (Existing Charges)				FY 2025 (Proposed Charges)				Variance						
	Volume	Avg Day	Max Day	Peak Hour	Volume	Max Day	Max Day	Peak Hour	Volume	Avg Day	Max Day	Peak Hour	Avg Day	Max Day	Peak Hour
	Mcf	mgd	mgd	mgd	Mcf	mgd	mgd	mgd	Mcf	mgd	mgd	mgd	mgd	mgd	mgd
65 SOCWA	1,250,800	25.63	60.50	60.50	1,234,200	25.29	60.50	60.50	(16,600)	(0.34)	-	-	-1.3%	0.0%	0.0%
66 South Rockwood	4,700	0.096	0.176	0.297	4,800	0.098	0.176	0.297	100	0.00	-	-	2.1%	0.0%	0.0%
67 Southgate	113,300	2.32	4.60	6.23	113,900	2.33	4.60	6.23	600	0.01	-	-	0.4%	0.0%	0.0%
68 St. Clair Shores	201,000	4.12	7.42	10.00	199,200	4.08	7.42	10.00	(1,800)	(0.04)	-	-	-1.0%	0.0%	0.0%
69 Sterling Heights	601,400	12.33	32.80	49.00	587,300	12.04	32.80	49.00	(14,100)	(0.29)	-	-	-2.4%	0.0%	0.0%
70 Sumpter Township	33,500	0.69	1.09	1.77	33,900	0.69	1.09	1.77	400	-	-	-	0.0%	0.0%	0.0%
71 Sylvan Lake	6,700	0.137	0.352	0.539	6,700	0.137	0.352	0.539	-	-	-	-	0.0%	0.0%	0.0%
72 Taylor	263,800	5.41	10.90	13.10	264,300	5.42	10.90	13.10	500	0.01	-	-	0.2%	0.0%	0.0%
73 Trenton	88,900	1.82	3.52	5.20	83,000	1.70	3.52	5.20	(5,900)	(0.12)	-	-	-6.6%	0.0%	0.0%
74 Troy	463,600	9.50	27.30	40.30	435,100	8.92	27.30	40.30	(28,500)	(0.58)	-	-	-6.1%	0.0%	0.0%
75 Utica	23,000	0.47	1.20	1.75	23,600	0.48	1.20	1.75	600	0.01	-	-	2.1%	0.0%	0.0%
76 Van Buren Township	136,600	2.80	6.90	8.17	132,200	2.71	6.90	8.17	(4,400)	(0.09)	-	-	-3.2%	0.0%	0.0%
77 Walled Lake	29,500	0.60	1.16	1.67	29,000	0.59	1.16	1.67	(500)	(0.01)	-	-	-1.7%	0.0%	0.0%
78 Warren	626,500	12.84	23.50	32.50	622,900	12.77	23.50	32.50	(3,600)	(0.07)	-	-	-0.5%	0.0%	0.0%
79 Washington Township	86,500	1.77	5.42	5.42	86,100	1.76	5.42	5.42	(400)	(0.01)	-	-	-0.6%	0.0%	0.0%
80 Wayne	104,900	2.15	3.95	4.71	101,700	2.08	3.95	4.71	(3,200)	(0.07)	-	-	-3.3%	0.0%	0.0%
81 West Bloomfield Township	278,900	5.72	15.00	26.40	277,900	5.70	15.00	26.40	(1,000)	(0.02)	-	-	-0.3%	0.0%	0.0%
82 Westland	329,900	6.76	12.00	17.00	319,900	6.56	12.00	17.00	(10,000)	(0.20)	-	-	-3.0%	0.0%	0.0%
83 Wixom	78,100	1.60	4.19	5.10	76,300	1.56	4.19	5.10	(1,800)	(0.04)	-	-	-2.5%	0.0%	0.0%
84 Woodhaven	58,700	1.20	2.85	4.40	56,700	1.16	2.85	4.40	(2,000)	(0.04)	-	-	-3.3%	0.0%	0.0%
85 Ypsilanti Comm Util Auth	490,100	10.04	19.50	21.00	488,200	10.01	19.50	21.00	(1,900)	(0.03)	-	-	-0.3%	0.0%	0.0%
86 Subtotal Master Metered	12,912,000	264.63	605.45	780.43	12,656,180	259.38	605.45	780.43	(255,820)	(5.25)	-	-	-2.0%	0.0%	0.0%
87 Dearborn	561,600	11.51	23.70	32.90	540,800	11.08	23.70	32.90	(20,800)	(0.43)	-	-	-3.7%	0.0%	0.0%
88 Highland Park	103,000	2.11	3.25	3.32	103,700	2.13	3.25	3.32	700	0.02	-	-	0.9%	0.0%	0.0%
89 Detroit	4,170,000	85.46	115.00	136.00	4,230,000	86.69	115.00	136.00	60,000	1.23	-	-	1.4%	0.0%	0.0%
90 Non-Master Metered	4,834,600	99.08	141.95	172.22	4,874,500	99.90	141.95	172.22	39,900	0.82	-	-	0.8%	0.0%	0.0%
91 TOTAL	17,746,600	363.71	747.40	952.65	17,530,680	359.28	747.40	952.65	(215,920)	(4.43)	-	-	-1.2%	0.0%	0.0%



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MEMORANDUM

Simplified Water Charge Methodology:
10/50/40 + Water Delivery Factors

September 1, 2023
Updated November 13, 2023

To: Matt Lane

From: Bart Foster

This memorandum has been prepared to introduce the simplified approach being recommended by the Water Charges Methodology Review Subgroup. It is intended to serve as an “addendum” to the FY 2024 Cost of Service Study and Service Charge Study documented in our report dated December 30, 2022. The exhibits presented in this document build off analyses in that report.

The notion being explored by the subgroup is to simplify the methodology by reducing the number of cost pools, fixing the relative weighting on those cost pools to those reflecting historical averages, and separating the impact that distance and elevation have on individual Member Partner charges from how usage characteristics impact charges. The existing methodology contains nine separate Cost Pools to assign allocate revenue requirement responsibility to each Member Partner. Only three are directly and independently related to the water use measures of average day, max day, and peak hour. Five of the cost pools reflect a combination (or “hybrid”) of one of the water use measures and distance and elevation.

The specific application of the existing charge methodology is illustrated in Tables 2, 4, and 5 of the FY 2024 Cost of Service Study, and set forth in detail in Appendix C of that report. We’ll not elaborate on the overall methodology herein, but cite the introduction to Table 5¹ from that report:

Table 5 calculates each Member Partner’s SHARE of the total FY 2024 Wholesale Revenue Requirement, and uses the SHARE to allocate responsibility for that revenue requirement. In Columns 1 through 10 each Member Partner’s Share of each specific cost pool is determined by simply dividing their individual units of service (from Table 4) by the System total. At the top of Table 5, the relative “Cost Pool Weighting Factors” determined in Table 2 are brought over. Each Member Partner’s SHARE is

¹ Table 5 is included as the first exhibit to this memorandum.

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simply the sum of the products of the individual Cost Pool Share times the Cost Pool Weighting Factors. This concept is illustrated for Allen Park below.

Cost Pool SHARE											
Commodity	Max Day Usage	Peak Hour Usage	Peak Hour Increment	Peak Hour Distance	Commodity Distance	Max Day Distance Elevation	Peak Hour Distance Elevation	PH Incr Distance Elevation	Master Meter Related		
	3.8%	43.5%	0.0%	2.5%	24.1%	4.9%	3.3%	13.9%	2.4%	1.6%	100.0%
Allen Park's Cost Pool Share:	0.674%	0.721%	0.782%	1.018%	0.663%	0.443%	0.452%	0.498%	0.690%	1.382%	
Allen Park's Weighted SHARE	0.026%	0.314%	0.000%	0.025%	0.160%	0.022%	0.015%	0.069%	0.017%	0.022%	0.669%
System Revenue Requirement											\$366,068,800
Allen Park's Revenue Requirement											\$2,449,000

- *The illustration above will be reflected on the “Charge Calculation Worksheets” that are being developed for each Member Partner and that will be distributed prior to the 3rd Charges Rollout Meeting on January 12.*
- *Note that the Cost Pool Weighting Factors are rounded to 0.1% and the individual Member Partner Cost Pool Shares are rounded to 0.001%.*

The subgroup’s deliberations have preliminarily concluded that:

- The existing methodology is difficult to explain to local stakeholders, particularly the complex “hybrid” Cost Pools;
- The overall relative Cost Pool weights do not materially change over time;
- It makes sense for the relative impact of distance and elevation on individual Member Partner charges to be static;
- Usage characteristics (Commodity, Max Day, Peak Hour) should continue to be the principal drivers of the methodology and are easily understandable and explainable as discrete cost pools.

The subgroup has recommended an approach that eliminates the hybrid cost pools impacted by distance and elevation, while continuing to reflect the current impacts that distance and elevations have on existing Member Partner charges, all while embracing desired stability objectives. The approach under consideration establishes a “Water Delivery Factor” that accomplishes these goals.

The mechanics of the approach being considered are fairly simple, and are illustrated in Table 5a included as an exhibit to this memorandum.

1. Eliminate all Cost Pools other than those that only reflect Water Usage characteristics - Commodity, Max Day, Peak Hour.
 - *These are shown in the first three columns of Table 5a. Note that these units and shares have been slightly modified from a prior version of this*

analysis, which included allocated system non-revenue water for each Member Partner's use. I've eliminated that aspect to more directly align with the raw "usage" inputs, and allowing the allocated non-revenue water units to impact the Water Delivery Factor, which is more appropriate.

2. Establish Cost Pool weightings for each of these that reflect how each impacts the current methodology.
 - *Allocation factors of 10% Commodity, 50% Max Day, and 40% Peak Hour embrace historical averages and are reasonable depictions of the GLWA overall cost structure over time.*
 - *We've ignored Master Meters – in essence that becomes part of the calculation of the Delivery Factor introduced below.*
3. Compute each Member Partner's **Unadjusted** (by distance and elevation) Allocated Wholesale Revenue Requirement by applying the simplified Cost Pool structure introduced above. See Column 4.
4. Compare the results to the application of the current methodology, as set forth in the FY 2024 Cost of Service Study. See Column 5.
5. The ratio of the final, detailed current methodology results to the **Unadjusted** (by distance and elevation) results becomes the Water Delivery Factor for each Member Partner, as shown in Column 6.

Under the approach being considered, all delivery factors would remain constant, unless a change were to be otherwise agreed upon. Updates to commodity, max day, and peak hour would still be made via actual water sales data and contract negotiations via the CAP, just as they are today.

An illustration of how this concept would be **implemented** in future charges is shown in Table 5b. In this simplified example I've used the FY 2024 Cost of Service Study results to show the application. The "unadjusted" revenue requirements are calculated in the first four columns. The Water Delivery Factors calculated in Table 5a are applied to this unadjusted revenue requirement to produce the final, delivery adjusted revenue requirements shown in the final column. (In effect, this is simply the same as Table 5a with the final two columns swapped.)

The subgroup recognizes that this approach is more of a communication tool² than a true methodology change – as it relates to current charges. If fully embraced and implemented for

² We've attached an exhibit designed to illustrate the Delivery Factor for Member Partners with similar usage characteristics in different locations in the System. We believe similar exhibits will be helpful as communication tools if this approach is embraced.

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future charges, it will have the impact of moderately stabilizing future changes in charges amongst Member Partners, as the current “hybrid” impact of distance and elevation will be eliminated.

The final pages of the attached exhibits (Table 5c) summarizes and compares hypothetically calculated delivery factors for prior Cost of Service Studies. We note the general stability each year for most Member Partners. The few cases for material changes over the years are associated with material changes in contract demands – as the current methodology combines those with distance and elevation via the hybrid approach.

We look forward to further discussions on this matter.

Table 5a
Water Supply System
Calculation of Water Delivery Factors Based on FY 2024 Wholesale Revenue Requirements and SHARES

	(1)	(2)	(3)	(4)	(5)	(6)
	<u>Undadjusted Cost Pool SHARE</u>			<u>Unadjusted</u>	Distance/ Elevation	Water
	<u>Commodity</u>	<u>Max Day Usage</u>	<u>Peak Hour Usage</u>	<u>Wholesale Rev Req't</u>	<u>Adjusted Rev Req't</u>	<u>Delivery Factor</u>
<i>Relative Cost Pool Weights -></i>	10.0%	50.0%	40.0%	(a)	Table 5	(5) / (4)
1 Allen Park	0.685%	0.729%	0.791%	2,744,200	2,449,000	0.892
2 Almont Village	0.053%	0.054%	0.046%	184,800	246,300	1.333
3 Ash Township	0.231%	0.194%	0.238%	788,600	882,500	1.119
4 Belleville	0.086%	0.073%	0.080%	282,700	338,500	1.197
5 Berlin Township	0.157%	0.151%	0.185%	604,600	729,600	1.207
6 Brownstown Township	0.789%	0.937%	1.155%	3,693,900	3,876,700	1.049
7 Bruce Township	0.017%	0.061%	0.087%	245,500	321,700	1.310
8 Burtchville Township	0.051%	0.071%	0.086%	274,700	402,200	1.464
9 Canton Township	2.112%	2.676%	2.467%	9,283,000	10,665,800	1.149
10 Center Line	0.181%	0.151%	0.168%	589,100	500,800	0.850
11 Chesterfield Township	1.017%	1.102%	1.312%	4,311,700	4,522,600	1.049
12 Clinton Township	2.219%	2.636%	2.309%	9,018,200	7,906,200	0.877
13 Commerce Township	0.610%	0.840%	0.748%	2,857,300	3,606,700	1.262
14 Dearborn	3.165%	3.171%	3.454%	12,019,400	10,174,700	0.847
15 Dearborn Heights	1.119%	1.070%	1.260%	4,213,300	3,913,000	0.929
16 Eastpointe	0.586%	0.496%	0.565%	1,949,900	1,678,000	0.861
17 Ecorse	0.517%	0.397%	0.359%	1,442,200	1,222,900	0.848
18 Farmington	0.253%	0.281%	0.242%	961,900	1,029,300	1.070
19 Farmington Hills	2.007%	2.408%	2.236%	8,416,800	9,283,500	1.103
20 Ferndale	0.368%	0.387%	0.325%	1,319,100	1,107,400	0.840
21 Flat Rock	0.291%	0.352%	0.419%	1,364,000	1,470,900	1.078
22 Flint	2.565%	1.806%	1.470%	6,397,000	10,979,700	1.716
23 Fraser	0.322%	0.376%	0.446%	1,459,200	1,307,900	0.896
24 Garden City	0.429%	0.442%	0.547%	1,766,000	1,790,100	1.014
25 Gibraltar	0.092%	0.087%	0.088%	321,300	354,300	1.103
26 Greenwood Township (DTE)	0.148%	0.300%	0.235%	947,200	1,264,300	1.335
27 Grosse Ile Township	0.217%	0.269%	0.368%	1,111,300	1,173,200	1.056
28 Grosse Pt. Park	0.313%	0.413%	0.557%	1,687,600	1,416,300	0.839
29 Grosse Pt. Shores	0.110%	0.191%	0.262%	774,700	677,900	0.875
30 Grosse Pt. Woods	0.393%	0.450%	0.450%	1,626,200	1,359,800	0.836

Table 5a
Water Supply System
Calculation of Water Delivery Factors Based on FY 2024 Wholesale Revenue Requirements and SHARES

	(1)	(2)	(3)	(4)	(5)	(6)
	<u>Undadjusted Cost Pool SHARE</u>			<u>Unadjusted</u>	Distance/ Elevation	Water
	<u>Commodity</u>	Max Day <u>Usage</u>	Peak Hour <u>Usage</u>	Wholesale <u>Rev Req't</u>	<u>Adjusted</u> <u>Rev Req't</u>	Delivery <u>Factor</u>
<i>Relative Cost Pool Weights -></i>	10.0%	50.0%	40.0%	(a)	Table 5	(5) / (4)
31 Hamtramck	0.344%	0.237%	0.288%	980,400	853,900	0.871
32 Harper Woods	0.294%	0.280%	0.314%	1,079,100	912,200	0.845
33 Harrison Township	0.555%	0.522%	0.499%	1,888,500	1,751,500	0.927
34 Hazel Park	0.278%	0.235%	0.253%	903,100	795,300	0.881
35 Highland Park	0.580%	0.435%	0.349%	1,518,600	1,193,700	0.786
36 Huron Township	0.366%	0.415%	0.410%	1,494,000	1,576,000	1.055
37 Imlay City	0.258%	0.297%	0.260%	1,019,500	1,544,900	1.515
38 Imlay Township (Single User)	0.001%	0.002%	0.003%	6,900	17,600	2.551
39 Inkster	0.569%	0.330%	0.373%	1,358,900	1,373,500	1.011
40 Keego Harbor	0.056%	0.060%	0.070%	233,800	313,600	1.341
41 Lapeer	0.300%	0.234%	0.262%	922,500	1,606,900	1.742
42 Lenox Township	0.078%	0.068%	0.074%	261,600	315,400	1.206
43 Lincoln Park	0.965%	0.709%	0.727%	2,716,400	2,386,400	0.879
44 Livonia	2.631%	3.077%	3.464%	11,668,100	12,221,900	1.047
45 Macomb Township	1.867%	3.077%	4.199%	12,464,200	12,833,400	1.030
46 Madison Heights	0.630%	0.636%	0.682%	2,392,800	2,087,000	0.872
47 Mayfield Township (KAMAX)	0.002%	0.006%	0.007%	22,700	49,600	2.185
48 Melvindale	0.245%	0.189%	0.207%	737,700	671,500	0.910
49 New Haven, Village of	0.108%	0.105%	0.126%	416,200	451,900	1.086
50 NOCWA	4.971%	5.820%	5.102%	19,942,700	23,142,400	1.160
51 Northville	0.170%	0.207%	0.173%	695,600	815,300	1.172
52 Northville Township	0.789%	1.204%	1.417%	4,567,900	5,743,300	1.257
53 Novi	1.713%	2.275%	1.994%	7,710,700	9,598,400	1.245
54 Oak Park	0.528%	0.522%	0.409%	1,747,800	1,487,800	0.851
55 Oakland GWK Drain District	0.051%	0.027%	0.021%	99,800	93,900	0.941
56 Plymouth	0.256%	0.242%	0.284%	953,400	1,158,800	1.215
57 Plymouth Township	0.913%	1.338%	1.050%	4,320,200	4,739,700	1.097
58 Redford Township	0.888%	0.850%	0.945%	3,263,500	3,122,600	0.957
59 River Rouge	0.220%	0.143%	0.171%	593,100	542,600	0.915
60 Riverview	0.269%	0.239%	0.280%	947,400	928,200	0.980

Table 5a
Water Supply System
Calculation of Water Delivery Factors Based on FY 2024 Wholesale Revenue Requirements and SHARES

	(1)	(2)	(3)	(4)	(5)	(6)
	<u>Undadjusted Cost Pool SHARE</u>			<u>Unadjusted</u>	Distance/ Elevation	Water
	<u>Commodity</u>	Max Day <u>Usage</u>	Peak Hour <u>Usage</u>	Wholesale <u>Rev Req't</u>	<u>Adjusted</u> <u>Rev Req't</u>	Delivery <u>Factor</u>
<i>Relative Cost Pool Weights -></i>	10.0%	50.0%	40.0%	(a)	Table 5	(5) / (4)
61 Rockwood	0.056%	0.058%	0.069%	227,500	263,700	1.159
62 Romeo	0.034%	0.050%	0.068%	203,900	275,600	1.352
63 Romulus	1.226%	1.032%	1.021%	3,832,600	3,962,900	1.034
64 Roseville	1.012%	0.807%	0.906%	3,173,600	2,740,700	0.864
65 Royal Oak Township	0.057%	0.063%	0.068%	236,400	217,700	0.921
66 Shelby Township	2.425%	3.559%	3.149%	12,013,100	11,847,900	0.986
67 SOCWA	7.047%	8.095%	6.351%	26,695,000	24,789,100	0.929
68 South Rockwood	0.026%	0.024%	0.031%	98,400	122,700	1.247
69 Southgate	0.638%	0.615%	0.654%	2,317,600	2,156,000	0.930
70 St. Clair Shores	1.133%	0.993%	1.050%	3,768,800	3,287,500	0.872
71 Sterling Heights	3.390%	4.389%	5.144%	16,805,100	15,620,100	0.929
72 Sumpter Township	0.190%	0.146%	0.186%	608,400	747,600	1.229
73 Sylvan Lake	0.038%	0.047%	0.057%	182,800	244,800	1.339
74 Taylor	1.487%	1.458%	1.375%	5,227,400	4,790,300	0.916
75 Trenton	0.500%	0.471%	0.546%	1,844,500	1,902,400	1.031
76 Troy	2.612%	3.653%	4.230%	13,836,100	14,622,700	1.057
77 Utica	0.129%	0.161%	0.184%	610,200	607,500	0.996
78 Van Buren Township	0.770%	0.923%	0.858%	3,227,400	3,644,100	1.129
79 Walled Lake	0.165%	0.155%	0.175%	601,200	835,000	1.389
80 Warren	3.530%	3.144%	3.412%	12,042,800	10,049,400	0.834
81 Washington Township	0.487%	0.725%	0.569%	2,338,600	2,453,000	1.049
82 Wayne	0.591%	0.528%	0.494%	1,907,700	1,898,600	0.995
83 West Bloomfield Township	1.573%	2.007%	2.771%	8,307,000	11,120,200	1.339
84 Westland	1.859%	1.606%	1.784%	6,232,100	6,454,500	1.036
85 Wixom	0.440%	0.561%	0.535%	1,971,000	2,602,600	1.320
86 Woodhaven	0.330%	0.381%	0.462%	1,495,000	1,564,000	1.046
87 Ypsilanti Comm Util Auth	2.760%	2.609%	2.204%	9,013,800	10,880,000	1.207
88 Detroit	23.497%	15.387%	14.276%	57,668,300	45,387,000	0.787
TOTAL	100.000%	100.000%	100.000%	366,068,800	366,068,600	1.000

(a) Result of applying Relative Cost Pool Weights for each Cost Pool to each Member Partner's Share of each Cost Pool to each Member Partner's Share of each Cost Pool, then multiplying by total revenue requirement.

(b) From FY 2024 Cost of Service Study, Table 5.



Table 5b
Water Supply System
Application of Delivery Factors on Future Water Charge Calculations (Using Current Revenue Requirements)

	(1)	(2)	(3)	(4)	(6)	(5)
	Undadjusted Cost Pool SHARE			Unadjusted		Delivery
	Commodity	Max Day Usage	Peak Hour Usage	Allocated Wholesale Rev Req't	Water Delivery Factor	Adjusted Wholesale Rev Req't
<i>Relative Cost Pool Weights -></i>	10.0%	50.0%	40.0%	<i>(a)</i>	<i>from Table 5a</i>	<i>(4) * (5)</i>
1 Allen Park	0.685%	0.729%	0.791%	2,744,200	0.892	2,449,000
2 Almont Village	0.053%	0.054%	0.046%	184,800	1.333	246,300
3 Ash Township	0.231%	0.194%	0.238%	788,600	1.119	882,500
4 Belleville	0.086%	0.073%	0.080%	282,700	1.197	338,500
5 Berlin Township	0.157%	0.151%	0.185%	604,600	1.207	729,600
6 Brownstown Township	0.789%	0.937%	1.155%	3,693,900	1.049	3,876,700
7 Bruce Township	0.017%	0.061%	0.087%	245,500	1.310	321,700
8 Burtchville Township	0.051%	0.071%	0.086%	274,700	1.464	402,200
9 Canton Township	2.112%	2.676%	2.467%	9,283,000	1.149	10,665,800
10 Center Line	0.181%	0.151%	0.168%	589,100	0.850	500,800
11 Chesterfield Township	1.017%	1.102%	1.312%	4,311,700	1.049	4,522,600
12 Clinton Township	2.219%	2.636%	2.309%	9,018,200	0.877	7,906,200
13 Commerce Township	0.610%	0.840%	0.748%	2,857,300	1.262	3,606,700
14 Dearborn	3.165%	3.171%	3.454%	12,019,400	0.847	10,174,700
15 Dearborn Heights	1.119%	1.070%	1.260%	4,213,300	0.929	3,913,000
16 Eastpointe	0.586%	0.496%	0.565%	1,949,900	0.861	1,678,000
17 Ecorse	0.517%	0.397%	0.359%	1,442,200	0.848	1,222,900
18 Farmington	0.253%	0.281%	0.242%	961,900	1.070	1,029,300
19 Farmington Hills	2.007%	2.408%	2.236%	8,416,800	1.103	9,283,500
20 Ferndale	0.368%	0.387%	0.325%	1,319,100	0.840	1,107,400
21 Flat Rock	0.291%	0.352%	0.419%	1,364,000	1.078	1,470,900
22 Flint	2.565%	1.806%	1.470%	6,397,000	1.716	10,979,700
23 Fraser	0.322%	0.376%	0.446%	1,459,200	0.896	1,307,900
24 Garden City	0.429%	0.442%	0.547%	1,766,000	1.014	1,790,100
25 Gibraltar	0.092%	0.087%	0.088%	321,300	1.103	354,300
26 Greenwood Township (DTE)	0.148%	0.300%	0.235%	947,200	1.335	1,264,300
27 Grosse Ile Township	0.217%	0.269%	0.368%	1,111,300	1.056	1,173,200
28 Grosse Pt. Park	0.313%	0.413%	0.557%	1,687,600	0.839	1,416,300
29 Grosse Pt. Shores	0.110%	0.191%	0.262%	774,700	0.875	677,900
30 Grosse Pt. Woods	0.393%	0.450%	0.450%	1,626,200	0.836	1,359,800

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Table 5b
Water Supply System
Application of Delivery Factors on Future Water Charge Calculations (Using Current Revenue Requirements)

	(1)	(2)	(3)	(4)	(6)	(5)
	Undadjusted Cost Pool SHARE			Unadjusted		Delivery
	Commodity	Max Day Usage	Peak Hour Usage	Allocated Wholesale Rev Req't	Water Delivery Factor	Adjusted Wholesale Rev Req't
<i>Relative Cost Pool Weights -></i>	10.0%	50.0%	40.0%	<i>(a)</i>	<i>from Table 5a</i>	<i>(4) * (5)</i>
31 Hamtramck	0.344%	0.237%	0.288%	980,400	0.871	853,900
32 Harper Woods	0.294%	0.280%	0.314%	1,079,100	0.845	912,200
33 Harrison Township	0.555%	0.522%	0.499%	1,888,500	0.927	1,751,500
34 Hazel Park	0.278%	0.235%	0.253%	903,100	0.881	795,300
35 Highland Park	0.580%	0.435%	0.349%	1,518,600	0.786	1,193,700
36 Huron Township	0.366%	0.415%	0.410%	1,494,000	1.055	1,576,000
37 Imlay City	0.258%	0.297%	0.260%	1,019,500	1.515	1,544,900
38 Imlay Township (Single User)	0.001%	0.002%	0.003%	6,900	2.551	17,600
39 Inkster	0.569%	0.330%	0.373%	1,358,900	1.011	1,373,500
40 Keego Harbor	0.056%	0.060%	0.070%	233,800	1.341	313,600
41 Lapeer	0.300%	0.234%	0.262%	922,500	1.742	1,606,900
42 Lenox Township	0.078%	0.068%	0.074%	261,600	1.206	315,400
43 Lincoln Park	0.965%	0.709%	0.727%	2,716,400	0.879	2,386,400
44 Livonia	2.631%	3.077%	3.464%	11,668,100	1.047	12,221,900
45 Macomb Township	1.867%	3.077%	4.199%	12,464,200	1.030	12,833,400
46 Madison Heights	0.630%	0.636%	0.682%	2,392,800	0.872	2,087,000
47 Mayfield Township (KAMAX)	0.002%	0.006%	0.007%	22,700	2.185	49,600
48 Melvindale	0.245%	0.189%	0.207%	737,700	0.910	671,500
49 New Haven, Village of	0.108%	0.105%	0.126%	416,200	1.086	451,900
50 NOCWA	4.971%	5.820%	5.102%	19,942,700	1.160	23,142,300
51 Northville	0.170%	0.207%	0.173%	695,600	1.172	815,300
52 Northville Township	0.789%	1.204%	1.417%	4,567,900	1.257	5,743,300
53 Novi	1.713%	2.275%	1.994%	7,710,700	1.245	9,598,400
54 Oak Park	0.528%	0.522%	0.409%	1,747,800	0.851	1,487,800
55 Oakland GWK Drain District	0.051%	0.027%	0.021%	99,800	0.941	93,900
56 Plymouth	0.256%	0.242%	0.284%	953,400	1.215	1,158,800
57 Plymouth Township	0.913%	1.338%	1.050%	4,320,200	1.097	4,739,700
58 Redford Township	0.888%	0.850%	0.945%	3,263,500	0.957	3,122,600
59 River Rouge	0.220%	0.143%	0.171%	593,100	0.915	542,600
60 Riverview	0.269%	0.239%	0.280%	947,400	0.980	928,200

Table 5b
Water Supply System
Application of Delivery Factors on Future Water Charge Calculations (Using Current Revenue Requirements)

	(1)	(2)	(3)	(4)	(6)	(5)
	Undadjusted Cost Pool SHARE			Unadjusted		Delivery
	Commodity	Max Day Usage	Peak Hour Usage	Allocated Wholesale Rev Req't	Water Delivery Factor	Adjusted Wholesale Rev Req't
<i>Relative Cost Pool Weights -></i>	10.0%	50.0%	40.0%	<i>(a)</i>	<i>from Table 5a</i>	<i>(4) * (5)</i>
61 Rockwood	0.056%	0.058%	0.069%	227,500	1.159	263,700
62 Romeo	0.034%	0.050%	0.068%	203,900	1.352	275,600
63 Romulus	1.226%	1.032%	1.021%	3,832,600	1.034	3,962,900
64 Roseville	1.012%	0.807%	0.906%	3,173,600	0.864	2,740,700
65 Royal Oak Township	0.057%	0.063%	0.068%	236,400	0.921	217,700
66 Shelby Township	2.425%	3.559%	3.149%	12,013,100	0.986	11,847,900
67 SOCWA	7.047%	8.095%	6.351%	26,695,000	0.929	24,789,000
68 South Rockwood	0.026%	0.024%	0.031%	98,400	1.247	122,700
69 Southgate	0.638%	0.615%	0.654%	2,317,600	0.930	2,156,000
70 St. Clair Shores	1.133%	0.993%	1.050%	3,768,800	0.872	3,287,500
71 Sterling Heights	3.390%	4.389%	5.144%	16,805,100	0.929	15,620,200
72 Sumpter Township	0.190%	0.146%	0.186%	608,400	1.229	747,600
73 Sylvan Lake	0.038%	0.047%	0.057%	182,800	1.339	244,800
74 Taylor	1.487%	1.458%	1.375%	5,227,400	0.916	4,790,300
75 Trenton	0.500%	0.471%	0.546%	1,844,500	1.031	1,902,400
76 Troy	2.612%	3.653%	4.230%	13,836,100	1.057	14,622,700
77 Utica	0.129%	0.161%	0.184%	610,200	0.996	607,500
78 Van Buren Township	0.770%	0.923%	0.858%	3,227,400	1.129	3,644,100
79 Walled Lake	0.165%	0.155%	0.175%	601,200	1.389	835,000
80 Warren	3.530%	3.144%	3.412%	12,042,800	0.834	10,049,400
81 Washington Township	0.487%	0.725%	0.569%	2,338,600	1.049	2,453,000
82 Wayne	0.591%	0.528%	0.494%	1,907,700	0.995	1,898,600
83 West Bloomfield Township	1.573%	2.007%	2.771%	8,307,000	1.339	11,120,200
84 Westland	1.859%	1.606%	1.784%	6,232,100	1.036	6,454,500
85 Wixom	0.440%	0.561%	0.535%	1,971,000	1.320	2,602,600
86 Woodhaven	0.330%	0.381%	0.462%	1,495,000	1.046	1,564,000
87 Ypsilanti Comm Util Auth	2.760%	2.609%	2.204%	9,013,800	1.207	10,880,000
88 Detroit	23.497%	15.387%	14.276%	57,668,300	0.787	45,387,300
TOTAL	100.000%	100.000%	100.000%	366,068,800	1.000	366,068,800

(a) Result of applying Relative Cost Pool Weights for each Cost Pool to each Member Partner's Share of each Cost Pool to each Member Partner's Share of each Cost Pool, then multiplying by total revenue requirement.

(b) From FY 2024 Cost of Service Study, Table 5.

Table 5c
Water Supply System
Illustration of Calculated Hypothetical Water Delivery Factors Based on Prior Cost of Service Studies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>
				(a)	(b)	(b)	(b)	(c)
1 Allen Park	0.903	0.916	0.904	0.893	0.895	0.894	0.886	0.904
2 Almont Village	1.276	1.355	1.355	1.337	1.342	1.339	1.345	1.281
3 Ash Township	1.076	1.095	1.097	1.116	1.118	1.117	1.121	1.095
4 Belleville	1.211	1.234	1.239	1.217	1.221	1.220	1.232	1.161
5 Berlin Township	1.202	1.225	1.226	1.210	1.209	1.207	1.219	1.178
6 Brownstown Township	1.061	1.077	1.075	1.059	1.060	1.058	1.067	1.052
7 Bruce Township	1.316	1.734	1.516	1.459	1.452	1.271	1.296	1.361
8 Burtchville Township	1.443	1.471	1.465	1.439	1.442	1.444	1.474	1.431
9 Canton Township	1.229	1.254	1.117	1.107	1.106	1.106	1.114	1.139
10 Center Line	0.850	0.861	0.860	0.850	0.853	0.851	0.840	0.858
11 Chesterfield Township	1.022	1.039	1.038	1.025	1.028	1.026	1.032	1.046
12 Clinton Township	0.890	0.903	0.899	0.884	0.886	0.885	0.881	0.885
13 Commerce Township	1.450	1.482	1.300	1.268	1.269	1.266	1.283	1.259
14 Dearborn	0.844	0.856	0.846	0.846	0.848	0.847	0.845	0.857
15 Dearborn Heights	0.925	0.939	0.942	0.930	0.932	0.930	0.929	0.934
16 Eastpointe	0.865	0.877	0.876	0.865	0.867	0.865	0.848	0.871
17 Ecorse	0.844	0.860	0.860	0.852	0.854	0.852	0.834	0.845
18 Farmington	1.064	1.083	1.081	1.069	1.069	1.065	1.064	1.065
19 Farmington Hills	1.049	1.066	1.060	1.073	1.075	1.071	1.071	1.103
20 Ferndale	0.835	0.846	0.854	0.846	0.849	0.849	0.831	0.853
21 Flat Rock	1.057	1.077	1.082	1.082	1.080	1.075	1.080	1.077
22 Flint	1.569	1.569	1.773	1.753	1.725	1.699	1.706	1.506
23 Fraser	0.906	0.920	0.913	0.901	0.904	0.902	0.900	0.912
24 Garden City	1.021	1.037	1.037	1.020	1.021	1.018	1.018	1.018
25 Gibraltar	1.113	1.133	1.132	1.115	1.115	1.110	1.106	1.078
26 Greenwood Township (DTE)	1.426	1.467	1.474	1.463	1.474	1.351	1.337	1.325
27 Grosse Ile Township	1.027	1.043	1.039	1.058	1.061	1.058	1.062	1.066
28 Grosse Pt. Park	0.840	0.850	0.845	0.833	0.837	0.835	0.833	0.864
29 Grosse Pt. Shores	0.889	0.901	0.896	0.882	0.885	0.884	0.883	0.906
30 Grosse Pt. Woods	0.799	0.809	0.800	0.824	0.827	0.838	0.828	0.852

Table 5c
Water Supply System
Illustration of Calculated Hypothetical Water Delivery Factors Based on Prior Cost of Service Studies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>
				(a)	(b)	(b)	(b)	(c)
31 Hamtramck	0.877	0.890	0.886	0.872	0.874	0.873	0.850	0.878
32 Harper Woods	0.841	0.853	0.849	0.847	0.848	0.846	0.836	0.858
33 Harrison Township	0.892	0.906	0.901	0.928	0.929	0.938	0.933	0.923
34 Hazel Park	0.893	0.905	0.902	0.890	0.893	0.891	0.871	0.890
35 Highland Park	0.846	0.846	0.819	0.816	0.818	0.788	0.774	0.788
36 Huron Township	1.076	1.095	1.094	1.056	1.057	1.055	1.060	1.047
37 Imlay City	1.515	1.505	1.494	1.485	1.494	1.495	1.518	1.442
38 Imlay Township (Single User)	2.667	2.667	2.667	2.557	2.565	2.571	2.369	2.708
39 Inkster	0.941	0.954	0.951	1.003	1.005	1.003	0.993	0.978
40 Keego Harbor	1.361	1.381	1.381	1.347	1.350	1.345	1.355	1.334
41 Lapeer	1.676	1.708	1.703	1.776	1.762	1.756	1.786	1.594
42 Lenox Township	1.247	1.267	1.273	1.216	1.217	1.214	1.183	1.176
43 Lincoln Park	0.887	0.899	0.897	0.872	0.875	0.874	0.862	0.874
44 Livonia	1.035	1.052	1.047	1.051	1.053	1.051	1.055	1.053
45 Macomb Township	0.993	1.009	1.004	1.023	1.027	1.024	1.038	1.052
46 Madison Heights	0.864	0.876	0.873	0.875	0.877	0.873	0.865	0.885
47 Mayfield Township (KAMAX)	2.949	2.974	2.677	2.371	2.320	2.323	2.192	2.224
48 Melvindale	0.898	0.911	0.907	0.909	0.911	0.909	0.889	0.911
49 New Haven, Village of	1.112	1.116	1.110	1.156	1.153	1.083	1.074	1.072
50 NOCWA	1.131	1.160	1.151	1.156	1.157	1.154	1.157	1.156
51 Northville	1.160	1.183	1.194	1.242	1.244	1.177	1.182	1.159
52 Northville Township	1.280	1.263	1.243	1.224	1.228	1.226	1.244	1.270
53 Novi	1.185	1.212	1.207	1.248	1.250	1.246	1.257	1.239
54 Oak Park	0.852	0.864	0.859	0.853	0.856	0.855	0.843	0.858
55 Oakland Co. Drain Comm.	0.973	0.991	1.003	0.955	0.963	0.961	0.911	0.911
56 Plymouth	1.201	1.223	1.225	1.208	1.210	1.208	1.219	1.195
57 Plymouth Township	1.095	1.117	1.114	1.104	1.103	1.100	1.107	1.096
58 Redford Township	0.963	0.978	0.963	0.950	0.952	0.949	0.944	0.960
59 River Rouge	0.875	0.887	0.882	0.866	0.868	0.867	0.853	0.911
60 Riverview	0.975	0.987	0.983	0.992	0.995	0.995	0.995	0.973

Table 5c
Water Supply System
Illustration of Calculated Hypothetical Water Delivery Factors Based on Prior Cost of Service Studies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>
				(a)	(b)	(b)	(b)	(c)
61 Rockwood	1.159	1.180	1.176	1.106	1.104	1.101	1.108	1.143
62 Romeo	1.242	1.295	1.287	1.279	1.284	1.285	1.291	1.360
63 Romulus	1.017	1.035	1.033	1.019	1.023	1.023	1.022	1.013
64 Roseville	0.861	0.873	0.872	0.862	0.864	0.863	0.851	0.869
65 Royal Oak Township	0.898	0.949	0.948	0.924	0.934	0.925	0.910	0.936
66 Shelby Township	1.094	1.113	1.108	1.090	1.093	1.098	1.115	0.997
67 SOCWA	0.927	0.942	0.937	0.932	0.933	0.932	0.925	0.936
68 South Rockwood	1.240	1.270	1.274	1.262	1.264	1.250	1.250	1.222
69 Southgate	0.935	0.950	0.947	0.934	0.936	0.934	0.932	0.930
70 St. Clair Shores	0.839	0.850	0.886	0.875	0.871	0.876	0.865	0.878
71 Sterling Heights	0.932	0.946	0.952	0.939	0.942	0.940	0.943	0.947
72 Sumpter Township	1.202	1.224	1.231	1.212	1.213	1.213	1.222	1.185
73 Sylvan Lake	1.345	1.370	1.357	1.345	1.349	1.346	1.361	1.342
74 Taylor	0.929	0.943	0.934	0.924	0.925	0.923	0.918	0.916
75 Trenton	1.008	1.024	1.021	1.041	1.043	1.040	1.029	1.026
76 Troy	1.042	1.061	1.076	1.061	1.063	1.061	1.068	1.076
77 Utica	1.024	1.041	1.013	1.000	1.003	0.999	1.000	1.008
78 Van Buren Township	1.092	1.111	1.142	1.128	1.131	1.131	1.135	1.115
79 Walled Lake	1.365	1.393	1.393	1.398	1.399	1.394	1.411	1.356
80 Warren	0.806	0.816	0.812	0.823	0.827	0.825	0.818	0.844
81 Washington Township	1.195	1.056	1.052	1.044	1.047	1.047	1.054	1.052
82 Wayne	0.921	0.934	0.925	0.918	0.924	0.925	0.925	0.982
83 West Bloomfield Township	1.295	1.323	1.346	1.321	1.325	1.321	1.342	1.350
84 Westland	1.032	1.049	1.043	1.034	1.035	1.033	1.030	1.024
85 Wixom	1.207	1.238	1.323	1.307	1.307	1.304	1.323	1.305
86 Woodhaven	1.041	1.058	1.062	1.047	1.049	1.046	1.057	1.046
87 Ypsilanti Comm Util Auth	1.156	1.180	1.198	1.187	1.184	1.180	1.183	1.157
88 Detroit	0.777	0.788	0.796	0.788	0.789	0.788	0.774	0.787

(a) FY 2020 was the last year prior to FY 2024 that "Full Cost of Service Study" Charges were implemented for all Member Partners.

(b) Charges for Member Partners without changes in Contract Demands were uniformly adjusted in FYs 2021, 2022, & 2023.

(c) FY 2024 Cost of Service Study reflects first full implementation of CAP for Contract Demands.



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MEMORANDUM

Impact of Updated Flow Balance Data on
Calculation of FY 2025 Sewer SHARES

Finalized January 22, 2024

To: Nicolette Bateson, Matt Lane

From: Bart Foster

The accompanying exhibits set forth the *final* proposed Units of Service for each Member Partner for the FY 2025 Sewer Cost of Service Study. These exhibits represent updated, final information that was originally documented in a memorandum dated November 13, 2023 – and presented to Member Partners at the second FY 2025 Charges Rollout Meeting on Thursday, November 14, 2023. At that meeting detailed commentary on this content was presented, and the memorandum indicated that the FY 2023 data reflected that from the preliminary FY 2023 Flow Balance Report, which remained under review via the Wastewater Analytics Task Force. This memorandum is intended to introduce the final Sewer Units of Service, which represent some modifications made to the annual Sewer Flow Balance report subsequent to the November meeting as part of that final review.

The specific changes that emerged from that review included:

- Changes in sanitary and total dry weather volumes FY 2022 and FY 2023 for five individual Member Partners in the M customer class, including Oakland County GWK, Evergreen Farmington, OMID, Rouge Valley, and SE Macomb Sanitary District.
- Changes in the allocation of a small amount of FY 2023 flow within the D+ area, from Detroit to Hamtramck and Highland Park.
- Recognition of a small amount of FY 2020 sanitary flow volumes had been shifted (from what I had in my records) between the two large Oakland County districts. While the change had been made to the historical records in the subsequent Flow Balance Reports, my calculation files for SHARES did not reflect such change.
- A moderate shift in dry weather and wet weather flows for Center Line and Farmington for FY 2023. These shifts did not impact SHARE calculations as DWII and wet weather flows are treated the same for the M customer class.

This material is designed to present the impact of updated flow balance data on the calculations of the FY 2025 SHARES. The accompanying tables illustrate the results of my analysis. The existing FY 2022 SHARES are based on 7 years of flow balance data from FY 2013 through FY 2019, which remained in place for the current FY 2024 wastewater charges. The FY 2025 SHARES and wastewater charges are being updated to include flow balance data for FYs 2020, 2021, 2022, and 2023 – and to drop FY 2013 from the data pool. The calculations introduced herein are intended to illustrate the impact on SHARE calculations of evaluating the new 10-year data set for each Member Partner. ***I emphasize that none of these calculations reflect analysis of cost pool changes, which are the other key input element in calculating SHARES. That analysis is documented elsewhere and has been incorporated into the final FY 2025 Cost of Service Study and the proposed FY 2025 Sewer Charges.***

The presentation I delivered on this topic on November 14 includes some perspective on how the flow balances are interpreted for purposes of calculating SHARES. I'll not elaborate on that here, other than to indicate that the only inputs required for SHARE calculations are:

- Total “influent” volume to the System, including that which reaches the WRRF and that handled by CSO facilities;
- Total metered volume for the **M** Member Partners;
- Estimated sanitary volume contributions from all Member Partners

Herewith a brief introduction of the attached tables that perform the units of service calculations.

- Table 1 provides a summary of how the existing CSO 83/17 allocation factors were calculated. ***In the current charge methodology, these allocations are not impacted by flow balance updates.***
- Table 2 presents the flow data inputs for the calculations of the proposed FY 2025 SHARES. The data reflects the average of flow balance data for ten years from FY 2014 through FY 2023. The inputs from the flow balances are highlighted in blue. As shown in Column 4, 50% of the unmetered, non-sanitary volumes are assigned to the System at large (and ignored as “common”) and the remaining 50% are assigned to the **D+** Member Partners. The volumes used for SHARE calculations are shown in Columns 6 and 7.
 - *The Dearborn figures include the small amount of flow from the unmetered Dearborn NE district.*
 - *Note that we've reassigned the city of Grosse Pointe to the M class. In the prior SHARE calculations only one year of metered data existed for Grosse Pointe. Now that there are five years of data, it is appropriate to reassign Grosse Pointe to the M class. Also note that the Grosse Pointe flow volumes have been*

adjusted to reflect an implementation plan to transition their movement from the D+ Class to the M class. This matter is discussed in greater detail in an Appendix to the annual cost of service study report.

- Table 2a follows the same format, but reflects the average of flow balance data for seven years from FY 2013 through FY 2019. These average contributions are the basis of the existing (FY 2022) SHARES, which remain in place today.
- Table 3 performs the calculation of the proposed FY 2025 SHARES reflective of flow balance inputs only. ***Again - note that for purposes of this calculation illustration, I have not made any changes to the relative cost pool allocation results in the blue shaded figures in Columns 7 through 9. The FY 2025 cost of service analyses further impacts the FY 2025 SHARES and Charges – as discussed elsewhere.*** The volume data inputs from Table 2 are shown in the first 2 columns, and (along with the CSO Cost Pool Share in Column 3) applied via the cost pool allocator factors to produce individual cost pool *Shares* in Columns 7 through 9. When added together, these individual *Shares* produce the total FY 2025 SHARE for each Member Partner shown in Column 10.
 - *Note the “Table 4” reference to the allocation amongst D+ members. That will be discussed momentarily.*
- Table 3a illustrates the same calculation for the *existing* SHARES using the seven-year average flow data from Table 2a as inputs.
- Table 4 presents the allocation amongst members of the D+ class. In the existing (and all prior) SHARES all D+ members were proportionally assigned flow shares based on the original D+ SHARE calculations from the “pre-SHARE” period 10+ years ago, which took into consideration such elements as strength of flow and suburban only cost pools. In effect, non-sanitary flows from all members were in effect uniformly reduced by 50%. With this update we are proposing a more refined allocation amongst the D+ members, which utilizes data from the flow balances¹ regarding the amount of “common use” sewers in each D+ community. For instance, 38% of the sewer inventory within Hamtramck is identified as either “common use interceptors” or “common use sewers.” Therefore the SHARE calculations assign 38% of Hamtramck’s DWII as “common.” The same approach is applied to other members, with Detroit’s flows being adjusted to align with the overall 50% reduction for the D+ class. The same approach is applied to the wet weather flows, although the reduction based on inch miles of sewers is reduced by 50%. ***This matter is discussed in greater detail in an Appendix to the annual cost of service study report.***
- The chart following Table 4 graphically impacts the comparison of the original seven-year average flow balance used for the FY 2022 SHARES and the ten-year average to

¹ From Table 4 of the annual CDM Flow Balance Reports.

be used for the FY 2025 SHARES. In general, the updated data indicates lower sanitary volumes for both the M and D+ customer classes, but an increase in non-sanitary volumes for the M class and a decrease in non-sanitary volumes for the D+ class. This has a direct impact on the SHARE calculations.

- Table 5 compares the existing FY 2022 SHARES with the preliminary calculations of FY 2025 SHARES *representing flow inputs only*. In general, the increase in the updated ten-year average non-sanitary flow volumes for the M Member Partner class results in a moderate increase in calculated M SHARES, and a corresponding moderate reduction in calculated D+ SHARES. The calculations vary for individual M Member Partners, and directionally correspond with their relative change in volumes, as shown in Columns 5 and 6. The changes amongst D+ Member Partners are a more variable, representing the updated allocation approach noted in Table 4.
 - *The impact on Grosse Pointe reflects the first use of metered data in SHARE calculations for that Member Partner, and the implementation plan introduced elsewhere.*

The appendix contains detailed charts for each Member Partner and additional comparative exhibits designed to support the general shift in SHARES related to flow balance inputs.

GLWA Wastewater Charge Methodology / SHAREs Development

Table 1 - Historical CSO 83/17 Allocation Factors

	APE	% of Total	Bathub Factor	DCIA Component Allocation Share				Component Factor	Total Participation	Override Detroit	Prorated Suburban		
				Area	Factor	Units	% of Total				APE	DCIA	Share
			23.30%					76.700%		83.000%	11.918%	5.082%	
<u>Member Partner Units</u>													
1	OMID	558,178	12.926%	3.012%		0.00	0.000%	0.000%	3.012%		2.651%	0.000%	2.651%
2	Rouge Valley	622,302	14.411%	3.358%		0.00	0.000%	0.000%	3.358%		2.956%	0.000%	2.956%
3	Oakland GWK	474,968	10.999%	2.563%		0.00	0.000%	0.000%	2.563%		2.256%	0.000%	2.256%
4	Evergreen Farmington	312,661	7.240%	1.687%		0.00	0.000%	0.000%	1.687%		1.485%	0.000%	1.485%
5	SE Macomb San Dist	247,163	5.724%	1.334%		0.00	0.000%	0.000%	1.334%		1.174%	0.000%	1.174%
6	Dearborn E/W	134,122	3.106%	0.724%	899	0.51	458.49	1.164%	0.893%	1.616%	0.637%	0.994%	1.631%
7	Grosse Pointe Farms	12,270	0.284%	0.066%	623	0.33	205.59	0.522%	0.400%	0.466%	0.058%	0.446%	0.504%
8	Grosse Pointe Park	12,997	0.301%	0.070%			0.00	0.000%	0.000%	0.070%	0.062%	0.000%	0.062%
9	Melvindale	15,564	0.360%	0.084%			0.00	0.000%	0.000%	0.084%	0.074%	0.000%	0.074%
10	Farmington	11,031	0.255%	0.060%			0.00	0.000%	0.000%	0.060%	0.052%	0.000%	0.052%
11	Center Line	11,687	0.271%	0.063%			0.00	0.000%	0.000%	0.063%	0.056%	0.000%	0.056%
12	Allen Park	6,492	0.150%	0.035%			0.00	0.000%	0.000%	0.035%	0.031%	0.000%	0.031%
13	Dearborn Unmetered	0	0.000%	0.000%	0	0	0.00	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
14	Highland Park	43,213	1.001%	0.233%	1,906	0.45	857.70	2.177%	1.670%	1.903%	0.205%	1.860%	2.064%
15	Hamtramck	33,988	0.787%	0.183%	1,349	0.49	661.01	1.678%	1.287%	1.470%	0.161%	1.433%	1.595%
16	Grosse Pointe	6,630	0.154%	0.036%	275	0.33	90.75	0.230%	0.177%	0.212%	0.031%	0.197%	0.228%
17	Harper Woods	2,691	0.062%	0.015%			0.00	0.000%	0.000%	0.015%	0.013%	0.000%	0.013%
18	Redford Township	2,854	0.066%	0.015%	143	0.39	55.31	0.140%	0.108%	0.123%	0.014%	0.120%	0.133%
19	Wayne County #3	388	0.009%	0.002%	49	0.31	15.19	0.039%	0.030%	0.032%	0.002%	0.033%	0.035%
20	Subtotal Suburban Wholesale	2,509,199	58.107%	13.539%	5,244		2,344	5.950%	4.564%	18.103%	17.000%	11.918%	5.082%
21	Detroit	1,809,048	41.893%	9.761%	84,203	0.44	37,049.32	94.050%	72.136%	81.897%	83.000%		83.000%
22	Total	4,318,247	100.000%	23.300%	89,447		39,393.36	100.000%	76.700%	100.000%	100.000%		100.000%

GLWA Wastewater Charge Methodology / SHARES Development

Table 2 - Flow Volume Data Summary: Average FY 2014 - FY 2023 (mgd) - To Be Used for Proposed (FY 2025) SHARES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Raw Flow Balance Data		Non Sanitary			Adjusted Volumes for SHARES		
	Contributed	Sanitary	Initial Data <i>(1) - (2)</i>	CTA Allocation <i>50% of Other</i>	Net Contrib <i>(3) - (4)</i>	Total <i>(7) + (8)</i>	Sanitary <i>(2)</i>	Non-Sanitary <i>(5)</i>
1 Total Reported @ WRRF	612.3300	196.9670						
2 Total Reported Overflow	30.9000							
3 Total Influent to System	643.2300	196.9670	446.263					
M Member Partners								
4 OMID	62.5770	43.3910	19.186		19.186	62.577	43.391	19.186
5 Rouge Valley	58.1680	28.3140	29.854		29.854	58.168	28.314	29.854
6 Oakland GWK	54.6880	20.0620	34.626		34.626	54.688	20.062	34.626
7 Evergreen Farmington	36.5440	19.9650	16.579		16.579	36.544	19.965	16.579
8 SE Macomb San Dist	29.3510	11.0040	18.347		18.347	29.351	11.004	18.347
9 Dearborn (<i>incl Dearborn NE</i>)	24.9860	7.9250	17.061		17.061	24.986	7.925	17.061
10 Grosse Pointe Farms	3.0850	0.8500	2.235		2.235	3.085	0.850	2.235
11 Grosse Pointe Park	2.3490	0.7940	1.555		1.555	2.349	0.794	1.555
12 Melvindale	1.6270	0.8310	0.796		0.796	1.627	0.831	0.796
13 Farmington	1.3240	0.5820	0.742		0.742	1.324	0.582	0.742
14 Center Line	1.0520	0.5720	0.480		0.480	1.052	0.572	0.480
15 Allen Park	0.8840	0.4450	0.439		0.439	0.884	0.445	0.439
16 Grosse Pointe	1.3890	0.3480	1.041		1.041	1.389	0.348	1.041
17 Subtotal Master Metered	278.0240	135.0830	142.941	0.000	142.941	278.024	135.083	142.941
18 D+ Member Partners *		54.0090		151.661	151.661	205.670	54.009	151.661
19 Subtotal / Total	278.0240	189.0920	142.941	151.661	294.602	483.694	189.092	294.602
20 Other / Common	365.2060	7.8750		151.661	151.661	159.536	7.875	151.661
21 Subtotal D+ & Regional	365.206	61.884	303.322	303.322	303.322	365.206	61.884	303.322
22 Total	643.230	196.967	446.263	303.322	446.263	643.230	196.967	446.263

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GLWA Wastewater Charge Methodology / SHARES Development

Table 2a - Flow Volume Data Summary: Average FY 2013 - FY 2019 (mgd) - Used for Existing (FY 2022) SHARES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Raw Flow Balance Data		Non Sanitary			Adjusted Volumes for SHARES		
	Contributed	Sanitary	Initial Data <i>(1) - (2)</i>	CTA Allocation <i>50% of Other</i>	Net Contrib <i>(3) - (4)</i>	Total <i>(7) + (8)</i>	Sanitary <i>(2)</i>	Non-Sanitary <i>(5)</i>
1 Total Reported @ WRRF	626.286	201.490						
2 Total Reported Overflow	28.922							
3 Total Influent to System	655.208	201.490	453.718					
<u>M Member Partners</u>								
4 OMID	62.068	43.867	18.201		18.201	62.068	43.867	18.201
5 Rouge Valley	58.755	29.226	29.529		29.529	58.755	29.226	29.529
6 Oakland GWK	54.556	20.548	34.008		34.008	54.556	20.548	34.008
7 Evergreen Farmington	36.452	20.289	16.164		16.164	36.452	20.289	16.164
8 SE Macomb San Dist	29.175	11.354	17.821		17.821	29.175	11.354	17.821
9 Dearborn (<i>incl Dearborn NE</i>)	24.087	8.339	15.747		15.747	24.087	8.339	15.747
10 Grosse Pointe Farms	3.143	0.981	2.163		2.163	3.143	0.981	2.163
11 Grosse Pointe Park	2.303	0.827	1.476		1.476	2.303	0.827	1.476
12 Melvindale	1.634	0.842	0.792		0.792	1.634	0.842	0.792
13 Farmington	1.308	0.603	0.705		0.705	1.308	0.603	0.705
14 Center Line	1.053	0.570	0.483		0.483	1.053	0.570	0.483
15 Allen Park	0.897	0.449	0.447		0.447	0.897	0.449	0.447
16 Grosse Pointe	1.028	0.268	0.760		0.760	1.028	0.268	0.760
17 Subtotal Master Metered	276.459	138.164	138.295	0.000	138.295	276.459	138.164	138.295
18 D+ Member Partners *		55.149		<i>156.837</i>	156.837	211.986	55.149	<i>156.837</i>
19 Subtotal / Total	276.459	193.314	138.295	156.837	295.132	488.445	193.314	295.132
20 Other / Common	378.749	8.176		158.587	158.587	166.763	8.176	158.587
21 Subtotal D+ & Regional	378.749	63.325	315.423	315.423	315.423	378.749	63.325	315.423
22 Total	655.208	201.490	453.718	315.423	453.718	655.208	201.490	453.718

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GLWA Wastewater Charge Methodology / SHAREs Development

Table 3 - "Units of Service" and Allocator Shares Updated for Proposed FY 2025 SHAREs to Include FY 2023 Flow Balance Data (FY 2014 - FY 2023 Average)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Contributed Volume - mgd		CSO Cost	Allocator Share			SHARE Calculation				
	Total	Sanitary	Pool Share	Avg Vol	Sanitary	CSO	Avg Vol	Sanitary	CSO	SHARE	
	Table 2	Table 2	Table 1	~ (1)	~ (2)	~ (3)	51.5%	32.5%	16.0%	100.0%	
M Member Partners											
1	OMID	62.577	43.391	2.651%	12.937%	22.947%	2.651%	6.662%	7.458%	0.424%	14.544%
2	Rouge Valley	58.168	28.314	2.956%	12.026%	14.974%	2.956%	6.193%	4.867%	0.473%	11.533%
3	Oakland GWK	54.688	20.062	2.256%	11.306%	10.610%	2.256%	5.823%	3.448%	0.361%	9.632%
4	Evergreen Farmington	36.544	19.965	1.485%	7.555%	10.558%	1.485%	3.891%	3.431%	0.238%	7.560%
5	SE Macomb San Dist	29.351	11.004	1.174%	6.068%	5.819%	1.174%	3.125%	1.891%	0.188%	5.204%
6	Dearborn (incl Dearborn NE)	24.986	7.925	1.631%	5.166%	4.191%	1.631%	2.661%	1.362%	0.261%	4.284%
7	Grosse Pointe Farms	3.085	0.850	0.504%	0.638%	0.450%	0.504%	0.328%	0.146%	0.081%	0.555%
8	Grosse Pointe Park	2.349	0.794	0.062%	0.486%	0.420%	0.062%	0.250%	0.137%	0.010%	0.397%
9	Melvindale	1.627	0.831	0.074%	0.336%	0.439%	0.074%	0.173%	0.143%	0.012%	0.328%
10	Farmington	1.324	0.582	0.052%	0.274%	0.308%	0.052%	0.142%	0.100%	0.008%	0.250%
11	Center Line	1.052	0.572	0.056%	0.217%	0.302%	0.056%	0.112%	0.098%	0.009%	0.219%
12	Allen Park	0.884	0.445	0.031%	0.183%	0.235%	0.031%	0.095%	0.076%	0.005%	0.176%
13	Grosse Pointe	1.389	0.348	0.228%	0.287%	0.184%	0.228%	0.148%	0.060%	0.036%	0.244%
14	Subtotal Master Metered	278.024	135.083	13.160%	57.479%	71.437%	13.160%	29.603%	23.217%	2.106%	54.926%
15	D+ Member Partners (a)	205.670	54.009	86.840%	42.521%	28.563%	86.840%	21.897%	9.283%	13.894%	45.074%
16	Total	483.694	189.092	100.000%	100.000%	100.000%	100.000%	51.500%	32.500%	16.000%	100.000%
(a) D+ Details											
	Table 4	Table 4									
17	Highland Park	5.254	0.567	2.064%	1.086%	0.300%	2.064%	0.559%	0.098%	0.330%	0.987%
18	Hamtramck	4.174	1.118	1.595%	0.863%	0.591%	1.595%	0.445%	0.192%	0.255%	0.892%
19	Harper Woods	0.142	0.101	0.013%	0.029%	0.053%	0.013%	0.015%	0.017%	0.002%	0.034%
20	Redford Township	0.323	0.085	0.133%	0.067%	0.045%	0.133%	0.034%	0.015%	0.021%	0.070%
21	Wayne County #3	0.033	0.006	0.035%	0.007%	0.003%	0.035%	0.003%	0.001%	0.006%	0.010%
22	Detroit	195.744	52.132	83.000%	40.469%	27.570%	83.000%	20.841%	8.960%	13.280%	43.081%
23	D+ Total	205.670	54.009	86.840%	42.521%	28.562%	86.840%	21.897%	9.283%	13.894%	45.074%

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GLWA Wastewater Charge Methodology / SHAREs Development

Table 3a - "Units of Service" and Allocator Shares for Existing FY 2022 SHAREs (FY 2013 - FY 2019 Average)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Contributed Volume - mgd		CSO Cost	Allocator Share			SHARE Calculation				
	Total	Sanitary	Pool Share	Avg Vol	Sanitary	CSO	Avg Vol	Sanitary	CSO	SHARE	
	Table 2a	Table 2a	Table 1	~ (1)	~ (2)	~ (3)	54.0%	32.5%	13.5%	100.0%	
M Member Partners											
1	OMID	62.068	43.867	2.651%	12.707%	22.692%	2.651%	6.856%	7.375%	0.358%	14.589%
2	Rouge Valley	58.755	29.226	2.956%	12.029%	15.118%	2.956%	6.492%	4.913%	0.399%	11.804%
3	Oakland GWK	54.556	20.548	2.256%	11.169%	10.629%	2.256%	6.029%	3.454%	0.305%	9.788%
4	Evergreen Farmington	36.452	20.289	1.485%	7.463%	10.495%	1.485%	4.028%	3.411%	0.200%	7.639%
5	SE Macomb San Dist	29.175	11.354	1.174%	5.973%	5.874%	1.174%	3.224%	1.909%	0.158%	5.291%
6	Dearborn (incl Dearborn NE)	24.087	8.339	1.631%	4.931%	4.314%	1.631%	2.662%	1.402%	0.220%	4.284%
7	Grosse Pointe Farms	3.143	0.981	0.504%	0.644%	0.507%	0.504%	0.347%	0.165%	0.068%	0.580%
8	Grosse Pointe Park	2.303	0.827	0.062%	0.472%	0.428%	0.062%	0.255%	0.139%	0.008%	0.402%
9	Melvindale	1.634	0.842	0.074%	0.335%	0.436%	0.074%	0.180%	0.142%	0.010%	0.332%
10	Farmington	1.308	0.603	0.052%	0.268%	0.312%	0.052%	0.145%	0.101%	0.007%	0.253%
11	Center Line	1.053	0.570	0.056%	0.216%	0.295%	0.056%	0.116%	0.096%	0.008%	0.220%
12	Allen Park	0.897	0.449	0.031%	0.184%	0.232%	0.031%	0.100%	0.075%	0.004%	0.179%
13	Grosse Pointe	1.028	0.268	0.228%	0.210%	0.139%	0.228%	0.114%	0.045%	0.031%	0.190%
14	Subtotal Master Metered	276.459	138.164	13.160%	56.601%	71.471%	13.160%	30.548%	23.227%	1.776%	55.551%
15	D+ Member Partners (a)	211.986	55.149	86.840%	43.400%	28.528%	86.840%	23.452%	9.273%	11.724%	44.449%
16	Total	488.445	193.314	100.000%	100.001%	99.999%	100.000%	54.000%	32.500%	13.500%	100.000%
(a) D+ Details											
		Historical Allocation									
17	Highland Park	5.608	1.463	2.064%	1.148%	0.757%	2.064%	0.619%	0.246%	0.279%	1.144%
18	Hamtramck	4.132	1.078	1.595%	0.846%	0.558%	1.595%	0.457%	0.181%	0.215%	0.853%
19	Harper Woods	0.288	0.075	0.013%	0.059%	0.039%	0.013%	0.031%	0.013%	0.002%	0.046%
20	Redford Township	0.254	0.066	0.133%	0.052%	0.034%	0.133%	0.028%	0.011%	0.018%	0.057%
21	Wayne County #3	0.042	0.011	0.035%	0.009%	0.006%	0.035%	0.004%	0.002%	0.005%	0.011%
22	Detroit	201.664	52.611	83.000%	41.287%	27.215%	83.000%	22.313%	8.820%	11.205%	42.338%
23	D+ Total	211.988	55.304	86.840%	43.401%	28.609%	86.840%	23.452%	9.273%	11.724%	44.449%

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Table 4 - Updated Allocation of D+ Flow Inputs - mgd

	(1)	(2)	(3)	(4)	(5)	(6)
	<u>Sanitary</u> mgd	<u>DWII</u> mgd	Total Dry <u>Weather</u> mgd	Wet <u>Weather</u> mgd	Total Non <u>Sanitary</u> mgd	<u>Total</u> mgd
<u>Data from Flow Balance</u>				(a)		
1 Total	196.967	255.944	452.911	189.957	445.901	642.868
2 less: M Class	<u>135.083</u>	<u>76.123</u>	<u>211.206</u>	<u>67.096</u>	<u>143.219</u>	<u>278.302</u>
3 Total D+ / Common	61.884	179.821	241.705	122.861	302.682	364.566
4 Common	<u>7.875</u>	<u>89.910</u>	<u>97.785</u>	<u>61.431</u>	<u>151.341</u>	<u>159.216</u>
5 D+	54.009	89.911	143.920	61.430	151.341	205.350
<u>Unadjusted D+</u>						
1 Highland Park	0.567	3.210	3.777	2.710	5.920	6.487
2 Hamtramck	1.118	2.133	3.251	2.141	4.274	5.392
3 Harper Woods	0.101	0.031	0.132	0.039	0.070	0.171
4 Redford Township	0.085	0.135	0.220	0.161	0.296	0.381
5 Wayne County #3	0.006	0.019	0.025	0.018	0.037	0.043
6 Detroit	<u>60.006</u>	<u>174.293</u>	<u>234.299</u>	<u>117.792</u>	<u>292.085</u>	<u>352.091</u>
7 D+ Total	61.883	179.821	241.704	122.861	302.682	364.565
<u>Common Flow Adjustment - %</u>						
	(b)	(c)		(d)		
1 Highland Park		27.0%	23.0%	13.5%	20.8%	19.0%
2 Hamtramck		38.0%	24.9%	19.0%	28.5%	22.6%
3 Harper Woods		93.0%	22.0%	0.0%	41.4%	17.0%
4 Redford Township		27.0%	16.4%	13.5%	19.6%	15.2%
5 Wayne County #3		38.0%	28.0%	19.0%	27.0%	23.3%
6 Detroit		50.6%	41.0%	51.5%	50.9%	44.5%
<u>Allocation of Common - mgd</u>						
1 Highland Park	0.000	0.867	0.867	0.366	1.233	1.233
2 Hamtramck	0.000	0.811	0.811	0.407	1.218	1.218
3 Harper Woods	0.000	0.029	0.029	0.000	0.029	0.029
4 Redford Township	0.000	0.036	0.036	0.022	0.058	0.058
5 Wayne County #3	0.000	0.007	0.007	0.003	0.010	0.010
6 Detroit	<u>7.875</u>	<u>88.160</u>	<u>96.035</u>	<u>60.633</u>	<u>148.793</u>	<u>156.668</u>
7 D+ Total	7.875	89.910	97.785	61.431	151.341	159.216
<u>Adjusted D+ Flows - mgd</u>						
1 Highland Park	0.567	2.343	2.910	2.344	4.687	5.254
2 Hamtramck	1.118	1.322	2.440	1.734	3.056	4.174
3 Harper Woods	0.101	0.002	0.103	0.039	0.041	0.142
4 Redford Township	0.085	0.099	0.184	0.139	0.238	0.323
5 Wayne County #3	0.006	0.012	0.018	0.015	0.027	0.033
6 Detroit	<u>52.131</u>	<u>86.133</u>	<u>138.264</u>	<u>57.159</u>	<u>143.292</u>	<u>195.423</u>
7 D+ Total	54.008	89.911	143.919	61.430	151.341	205.349

(a) Legacy allocation based on prior era flow balance analyses.

(b) Represents WTP Backwash, all of which occurs in Detroit.

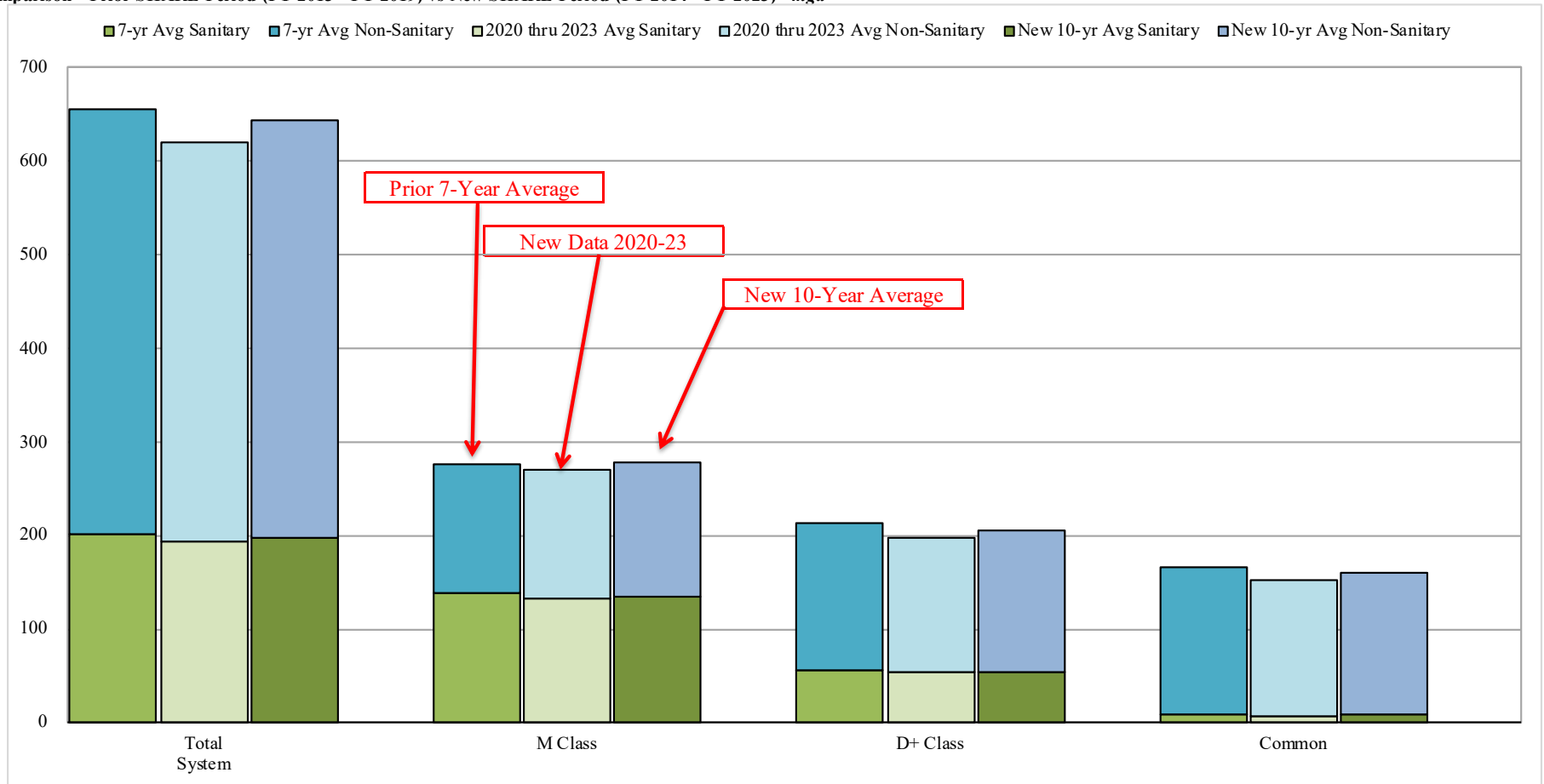
(c) Based on relative inch-miles of "Common use" sewers in each non-Detroit District.

(d) Based on 50% of relative inch-miles of Common use sewers in each non-Detroit District.



GLWA Wastewater Charge Methodology / SHAREs Development

Flow Balance Comparison - Prior SHARE Period (FY 2013 - FY 2019) vs New SHARE Period (FY 2014 - FY 2023) - mgd



Relative Change	7-yr Avg Sanitary	7-yr Avg Non-Sanitary	2020 thru 2023 Avg Sanitary	2020 thru 2023 Avg Non-Sanitary	New 10-yr Avg Sanitary	New 10-yr Avg Non-Sanitary	Total	M Class	D+ Class	Common
Total	-5.4%	-1.8%	-2.4%	0.6%	-6.8%	-3.0%	-8.7%	-4.3%		
Sanitary	-4.0%	-2.2%	-4.1%	-2.2%	-2.9%	-2.1%	-8.8%	-3.7%		
Non-Sanitary	-6.0%	-1.6%	-0.6%	3.4%	-8.1%	-3.3%	-8.7%	-4.4%		

GLWA Wastewater Charge Methodology / SHAREs Development
Table 5 - SHARE Comparison - Impact of Updated Flows Only

	(1)	(2)	(3)	(4)	(5)		(6)
	FY 2022	Prelim FY 2025			Change in Flow Inputs		
	<u>SHARE</u>	<u>SHARE</u>	<u>Variance</u>	<u>% Variance</u>	<u>Total</u>	<u>Sanitary</u>	
	<i>Table 3a</i>	<i>Table 3</i>	<i>(2) - (1)</i>	<i>(3) / (1)</i>			
<u>M Member Partners</u>							
1	OMID	14.589%	14.802%	0.213%	1.5%	0.8%	-1.1%
2	Rouge Valley	11.804%	11.760%	-0.044%	-0.4%	-1.0%	-3.1%
3	Oakland GWK	9.788%	9.858%	0.070%	0.7%	0.2%	-2.4%
4	Evergreen Farmington	7.639%	7.712%	0.073%	1.0%	0.3%	-1.6%
5	SE Macomb San Dist	5.291%	5.326%	0.035%	0.7%	0.6%	-3.1%
6	Dearborn	4.284%	4.372%	0.088%	2.1%	3.7%	-5.0%
7	Grosse Pointe Farms	0.580%	0.559%	-0.021%	-3.6%	-1.9%	-13.3%
8	Grosse Pointe Park	0.402%	0.407%	0.005%	1.2%	2.0%	-4.0%
9	Melvindale	0.332%	0.334%	0.002%	0.6%	-0.4%	-1.3%
10	Farmington	0.253%	0.255%	0.002%	0.8%	1.3%	-3.5%
11	Center Line	0.220%	0.223%	0.003%	1.4%	-0.1%	0.4%
12	Allen Park	0.179%	0.179%	-	-	-1.4%	-1.0%
13	Grosse Pointe	0.190%	0.246%	0.056%	29.5%	35.1%	29.9%
14	Subtotal Master Metered	55.551%	56.033%	0.482%	0.9%	0.6%	-2.2%
15	D+ Member Partners (a)	44.449%	43.967%	-0.482%	-1.1%	-3.0%	-2.1%
16	Total	100.000%	100.000%	-	-	-1.0%	-2.2%
<u>(a) D+ Details (see Table 4)</u>							
17	Highland Park	1.144%	0.963%	-0.181%	-15.8%		
18	Hamtramck	0.853%	0.873%	0.020%	2.3%		
19	Harper Woods	0.046%	0.035%	-0.011%	-23.9%		
20	Redford Township	0.057%	0.069%	0.012%	21.1%		
21	Wayne County #3	0.011%	0.009%	-0.002%	-18.2%		
22	Detroit	42.338%	42.018%	-0.320%	-0.8%		
23	D+ Total	44.449%	43.967%	-0.482%	-1.1%		

Additional Flow Volume Exhibits

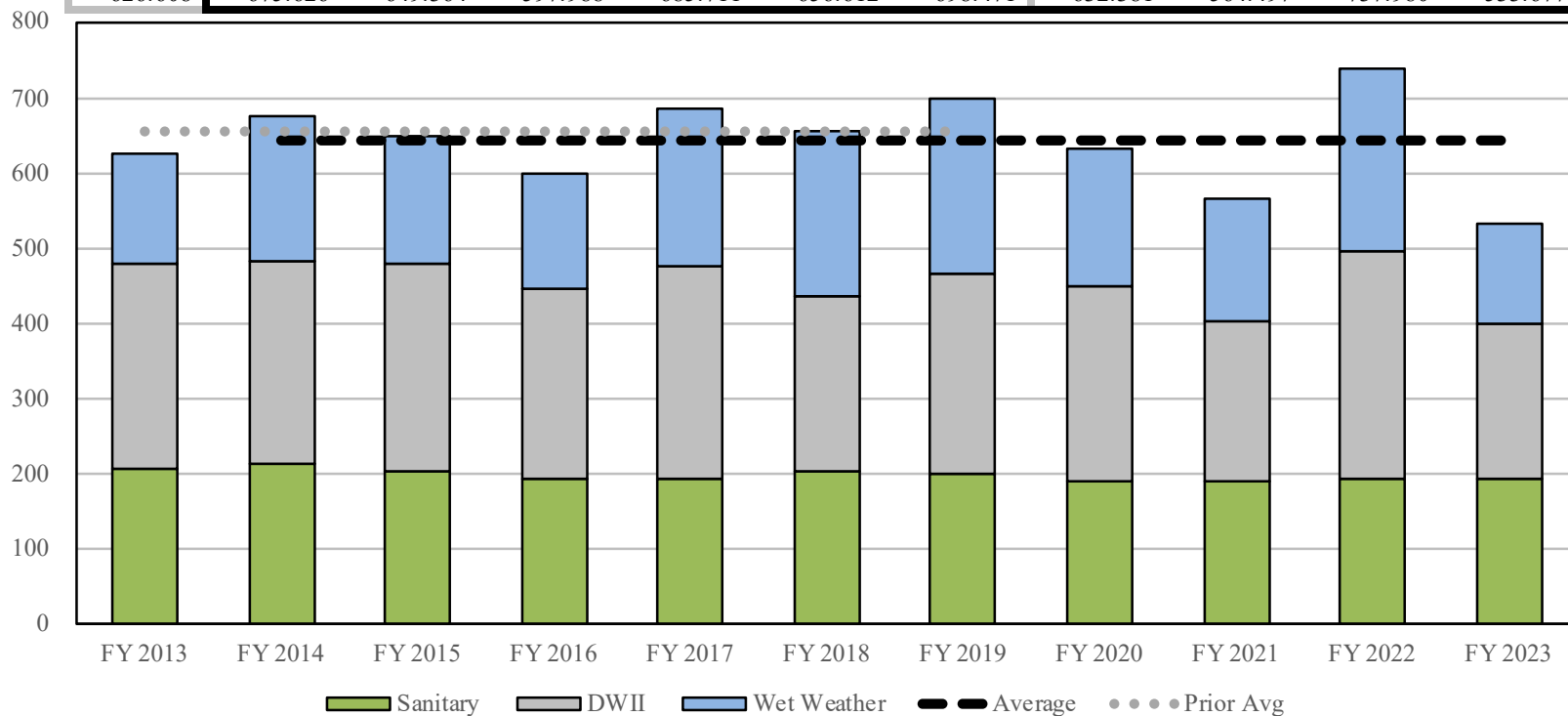
GLWA Wastewater Charge Methodology / SHAREs Development

Flow Volume Data: FY 2013 - FY 2023 (mgd)

Total

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	201.490	193.448	197.048	-4.0%	-2.2%
2	DWII	264.639	244.932	256.056	-7.4%	-3.2%
3	Wet Weather	189.079	181.465	190.127	-4.0%	0.6%
4	Total	655.208	619.846	643.231	-5.4%	-1.8%

Contributed Volume - mgd											
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	206.364	212.699	204.449	193.535	191.897	202.564	200.007	188.347	190.577	194.559	191.845
2 DWII	271.644	268.525	273.442	253.892	285.171	234.099	265.701	260.953	210.487	301.487	206.801
3 Wet Weather	148.601	194.402	171.473	150.560	208.643	219.949	232.763	183.081	163.432	241.934	135.031
4 Total	626.608	675.626	649.364	597.988	685.711	656.612	698.471	632.381	564.497	737.980	533.677

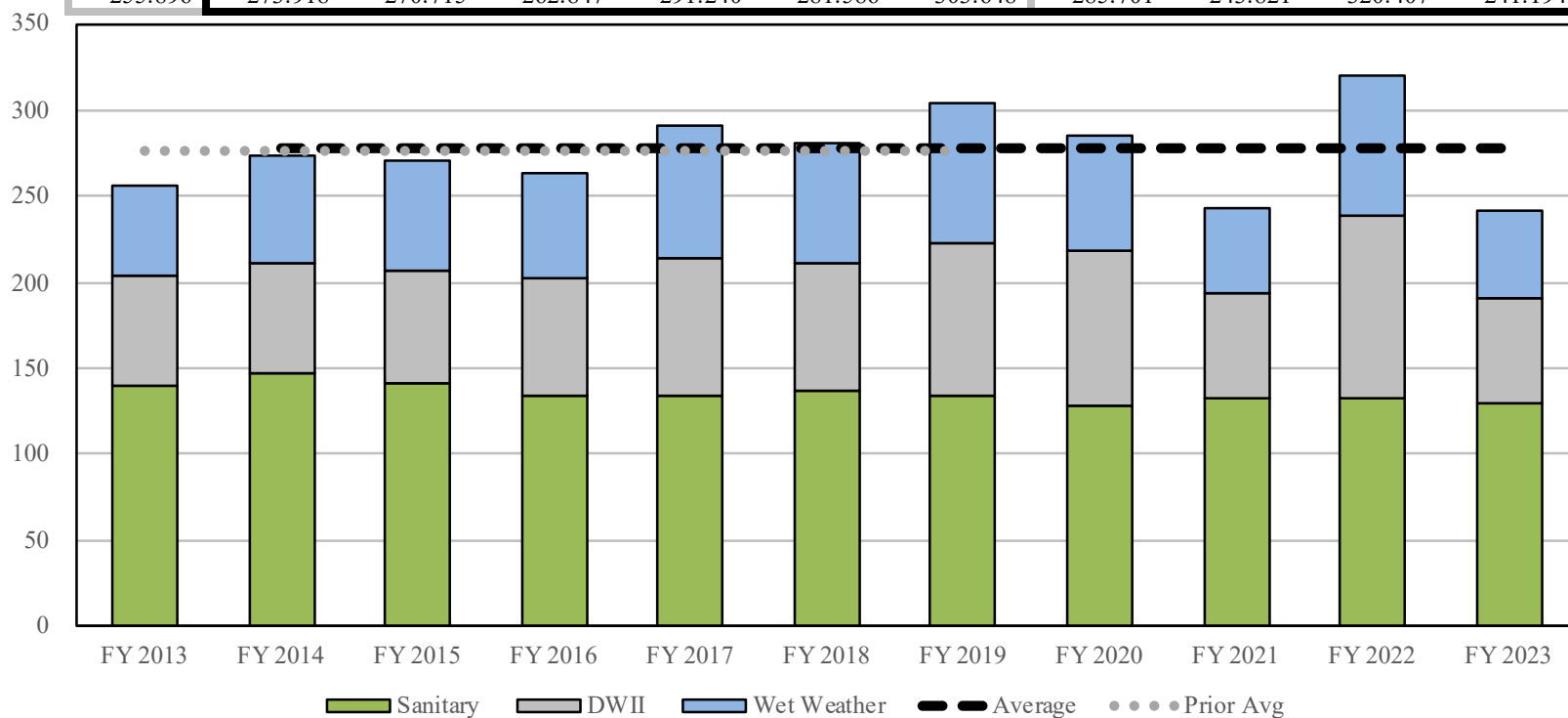


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GLWA Wastewater Charge Methodology / SHAREs Development
Flow Volume Data: FY 2013 - FY 2023 (mgd)
Subtotal Master Metered

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	138.164	132.433	135.083	-4.1%	-2.2%
2	DWII	71.969	79.790	75.873	10.9%	5.4%
3	Wet Weather	66.326	57.670	67.068	-13.1%	1.1%
4	Total	276.459	269.893	278.024	-2.4%	0.6%

Contributed Volume - mgd											
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	140.003	146.681	141.794	134.505	133.914	136.775	134.563	128.857	132.664	132.968	128.925
2 DWII	64.213	64.631	64.816	67.881	79.653	73.706	88.881	89.870	61.697	105.142	62.452
3 Wet Weather	51.680	62.605	64.106	60.461	77.674	71.105	80.203	66.974	49.461	82.298	49.817
4 Total	255.896	273.918	270.715	262.847	291.240	281.586	303.648	285.701	243.821	320.407	241.194



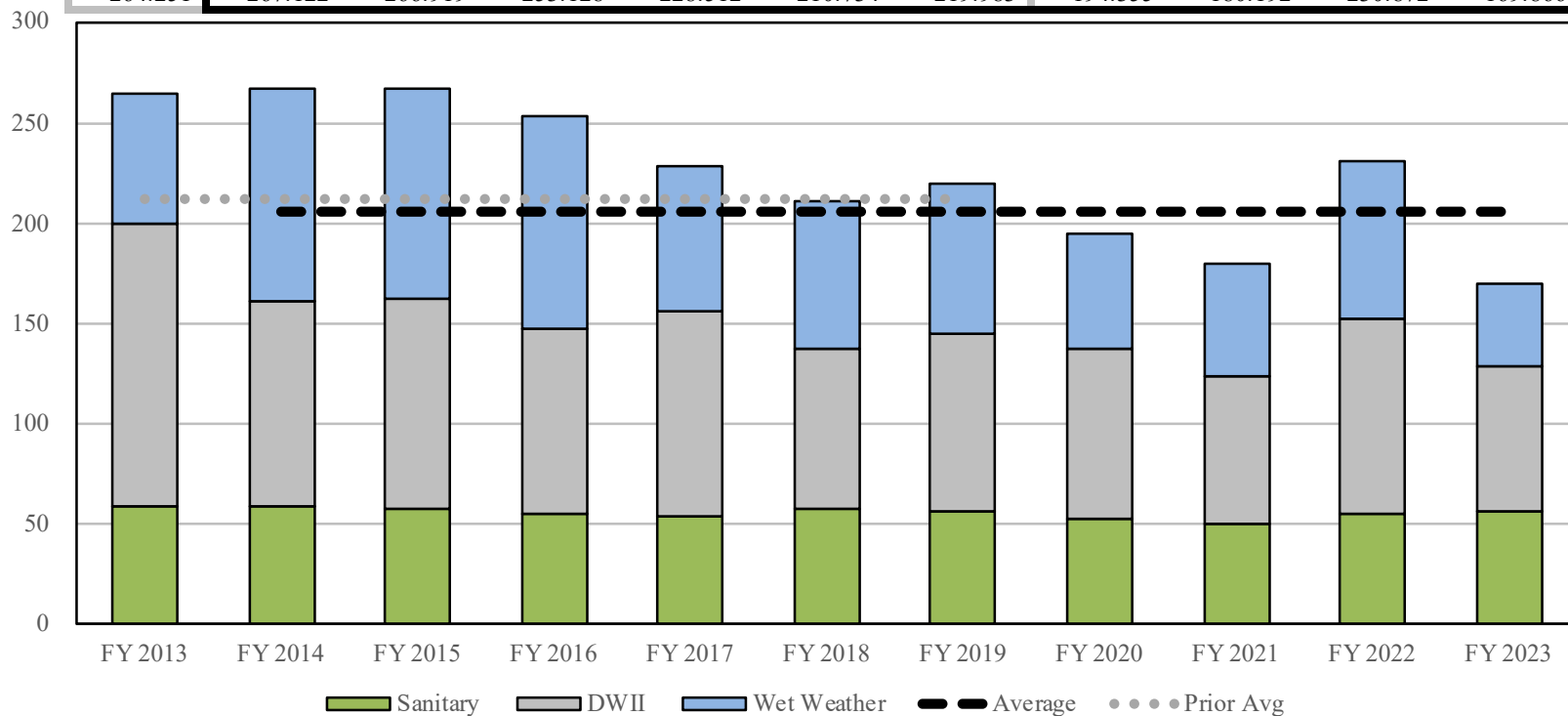
GLWA Wastewater Charge Methodology / SHAREs Development

Flow Volume Data: FY 2013 - FY 2023 (mgd)

D+ Member Partners

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	55.149	53.555	54.009	-2.9%	-2.1%
2	DWII	101.561	82.387	89.926	-18.9%	-11.5%
3	Wet Weather	55.275	61.695	61.735	11.6%	11.7%
4	Total	211.986	197.637	205.670	-6.8%	-3.0%

	Contributed Volume - mgd										
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	58.347	58.576	57.605	54.706	53.707	57.699	56.736	51.889	49.897	54.461	55.944
2 DWII	141.218	101.813	104.163	92.863	102.598	80.048	88.227	85.372	74.248	97.910	72.018
3 Wet Weather	64.686	106.734	105.151	105.560	72.208	72.987	75.021	57.095	56.046	78.501	41.904
4 Total	264.251	267.122	266.919	253.128	228.512	210.734	219.983	194.355	180.192	230.872	169.866

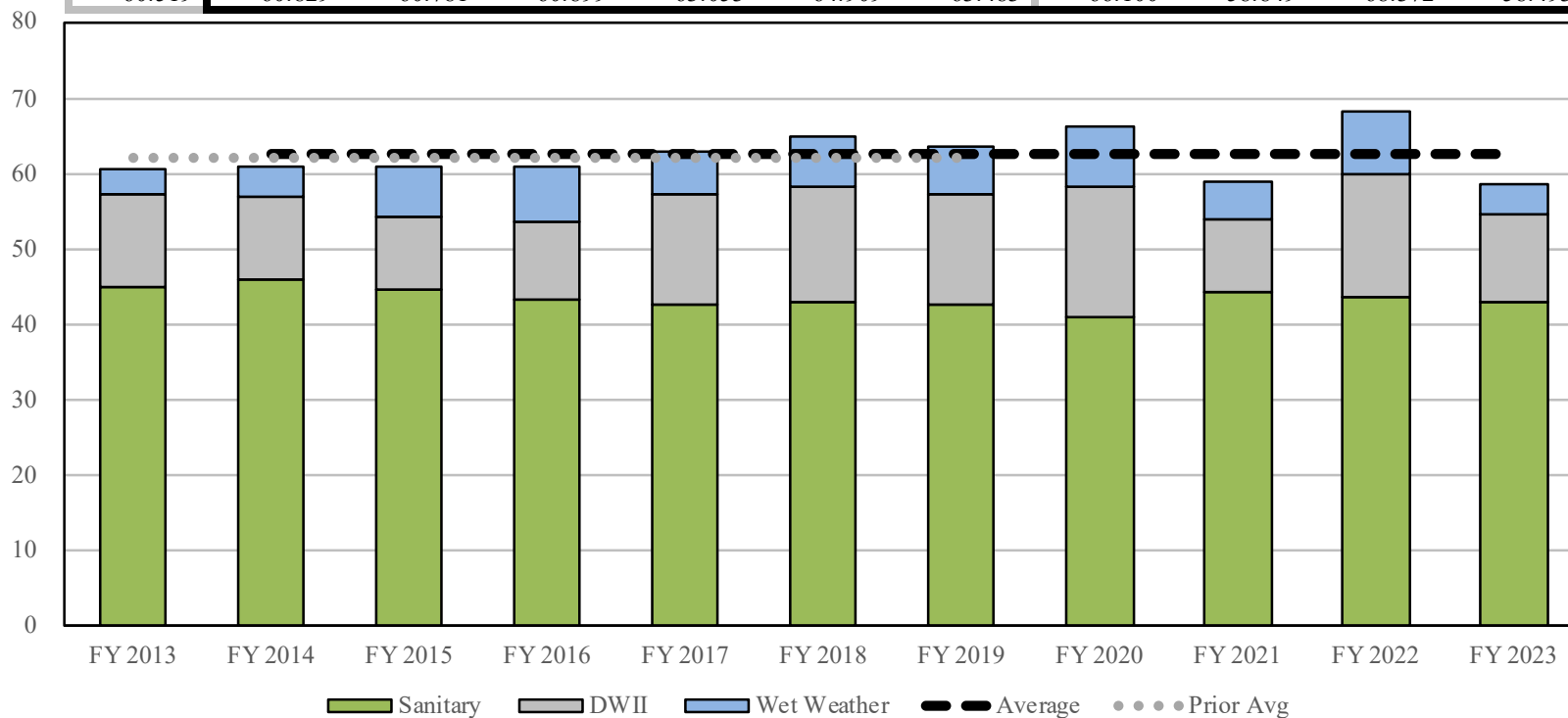


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GLWA Wastewater Charge Methodology / SHAREs Development
Flow Volume Data: FY 2013 - FY 2023 (mgd)
OMID

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	43.867	42.932	43.391	-2.1%	-1.1%
2	DWII	12.471	13.720	12.974	10.0%	4.0%
3	Wet Weather	5.730	6.301	6.212	10.0%	8.4%
4	Total	62.068	62.954	62.577	1.4%	0.8%

Contributed Volume - mgd											
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	44.885	45.985	44.591	43.363	42.658	42.959	42.627	40.879	44.295	43.599	42.956
2 DWII	12.438	10.768	9.551	10.260	14.486	15.183	14.610	17.242	9.571	16.404	11.664
3 Wet Weather	3.196	4.077	6.639	7.276	5.909	6.768	6.246	7.979	4.983	8.369	3.873
4 Total	60.519	60.829	60.781	60.899	63.053	64.909	63.483	66.100	58.849	68.372	58.493



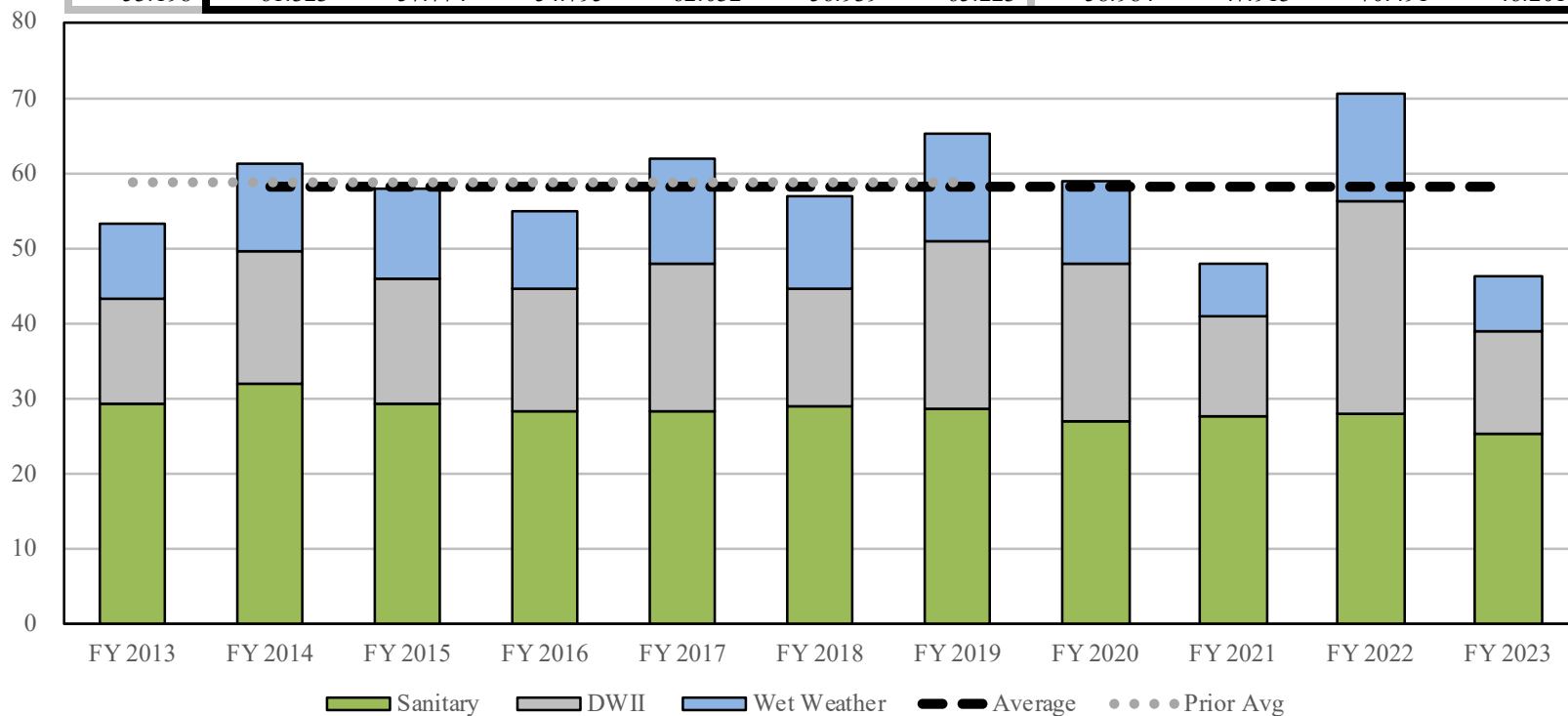
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Flow Volume Data: FY 2013 - FY 2023 (mgd)

Rouge Valley

	Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1 Sanitary	29.226	26.956	28.314	-7.8%	-3.1%
2 DWII	17.447	19.127	18.454	9.6%	5.8%
3 Wet Weather	12.082	9.814	11.399	-18.8%	-5.7%
4 Total	58.755	55.897	58.168	-4.9%	-1.0%

Contributed Volume - mgd											
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1 Sanitary	29.265	31.883	29.317	28.341	28.199	29.043	28.535	26.914	27.535	28.119	25.258
2 DWII	14.090	17.664	16.487	16.255	19.800	15.512	22.319	21.132	13.495	28.175	13.705
3 Wet Weather	9.843	11.776	11.970	10.199	14.033	12.384	14.369	10.937	6.883	14.197	7.238
4 Total	53.198	61.323	57.774	54.795	62.032	56.939	65.223	58.984	47.913	70.491	46.201



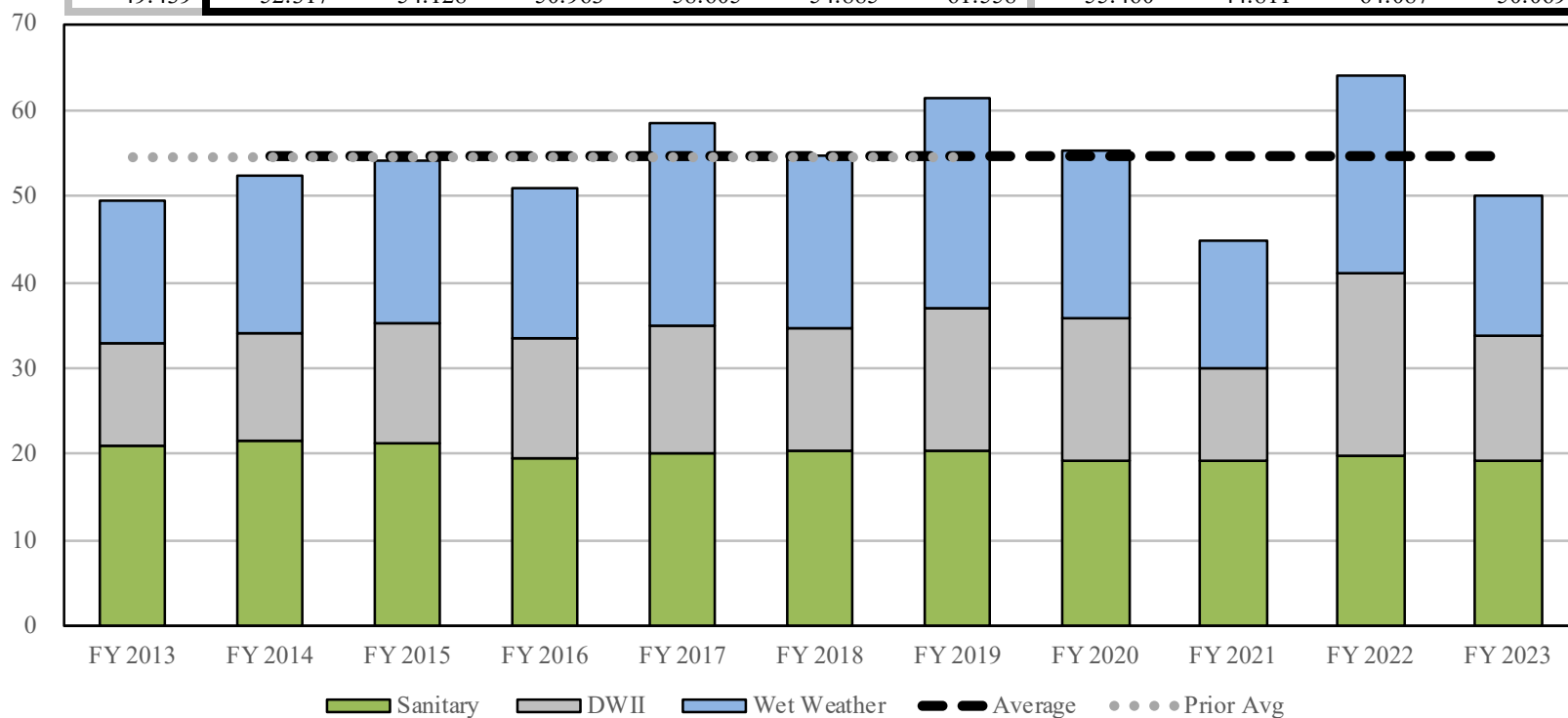
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GLWA Wastewater Charge Methodology / SHAREs Development
Flow Volume Data: FY 2013 - FY 2023 (mgd)
Oakland GWK

	Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1 Sanitary	20.548	19.404	20.062	-5.6%	-2.4%
2 DWII	14.079	15.707	14.917	11.6%	6.0%
3 Wet Weather	19.929	18.496	19.709	-7.2%	-1.1%
4 Total	54.556	53.607	54.688	-1.7%	0.2%

	Contributed Volume - mgd										
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1 Sanitary	20.833	21.523	21.173	19.373	20.093	20.525	20.317	19.339	19.181	19.777	19.322
2 DWII	12.213	12.564	13.982	14.167	14.922	14.120	16.585	16.349	10.736	21.343	14.399
3 Wet Weather	16.393	18.230	18.973	17.423	23.590	20.240	24.656	19.773	14.895	22.967	16.348
4 Total	49.439	52.317	54.128	50.963	58.605	54.885	61.558	55.460	44.811	64.087	50.069



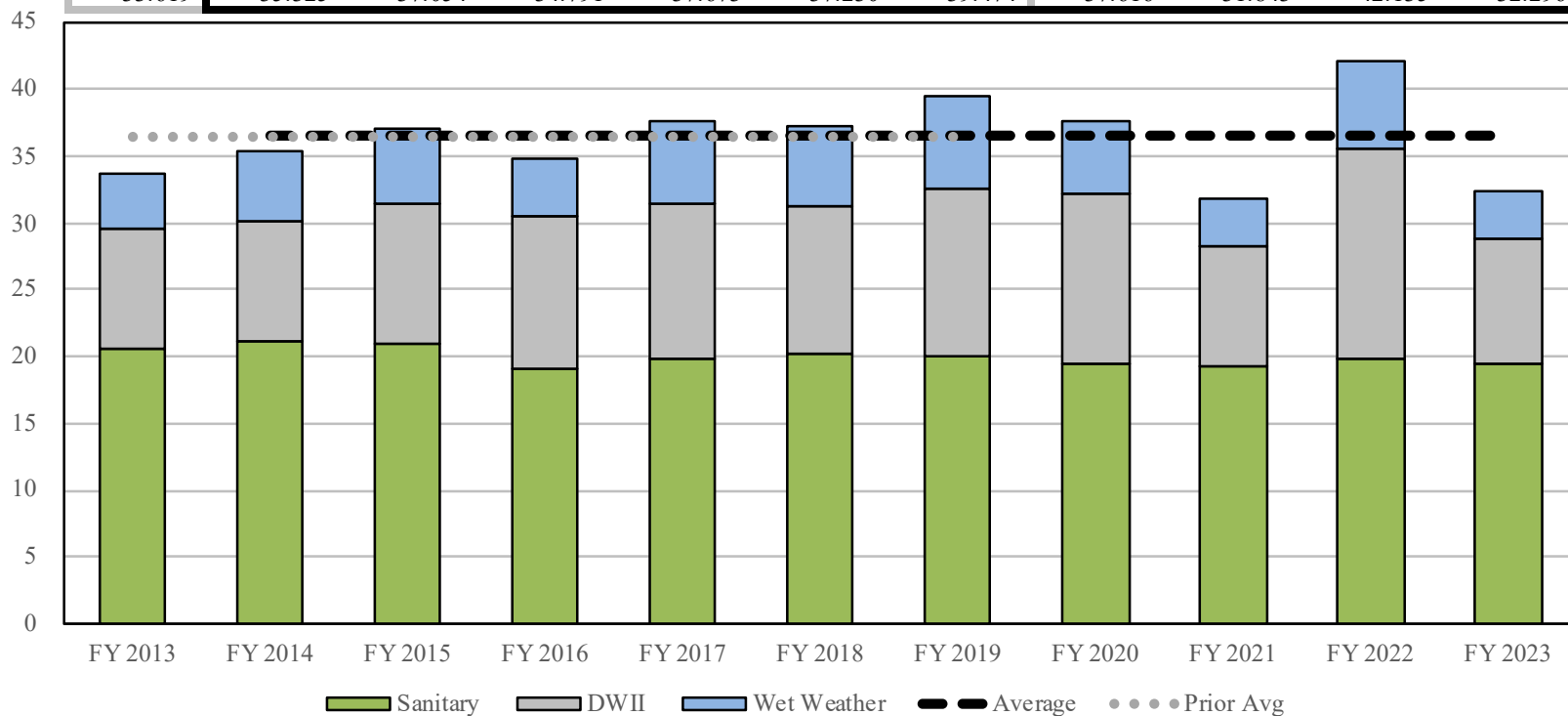
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Flow Volume Data: FY 2013 - FY 2023 (mgd)

Evergreen Farmington

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	20.289	19.539	19.965	-3.7%	-1.6%
2	DWII	10.675	11.694	11.245	9.5%	5.3%
3	Wet Weather	5.489	4.739	5.334	-13.7%	-2.8%
4	Total	36.452	35.972	36.544	-1.3%	0.3%

Contributed Volume - mgd											
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	20.530	21.224	20.891	19.127	19.851	20.296	20.103	19.477	19.315	19.913	19.451
2 DWII	9.048	8.972	10.477	11.303	11.507	10.894	12.521	12.654	9.045	15.651	9.427
3 Wet Weather	4.040	5.129	5.686	4.361	6.316	6.040	6.851	5.485	3.483	6.572	3.418
4 Total	33.619	35.325	37.054	34.791	37.673	37.230	39.474	37.616	31.843	42.135	32.296



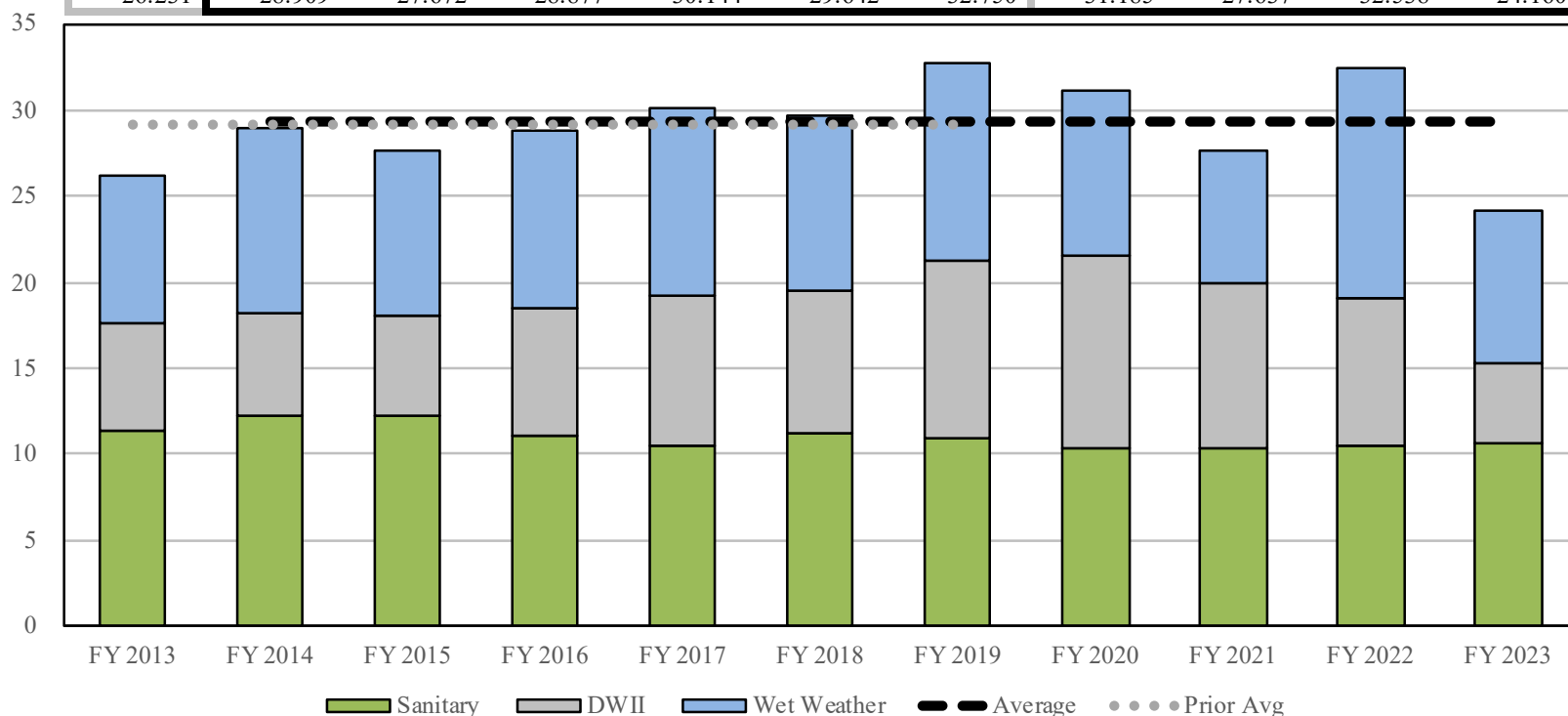
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GLWA Wastewater Charge Methodology / SHAREs Development
Flow Volume Data: FY 2013 - FY 2023 (mgd)
SE Macomb San Dist

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	11.354	10.477	11.004	-7.7%	-3.1%
2	DWII	7.554	8.497	8.059	12.5%	6.7%
3	Wet Weather	10.266	9.906	10.289	-3.5%	0.2%
4	Total	29.175	28.880	29.351	-1.0%	0.6%

Contributed Volume - mgd											
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	11.348	12.228	12.183	11.096	10.519	11.149	10.956	10.351	10.357	10.508	10.691
2 DWII	6.281	5.909	5.930	7.359	8.724	8.356	10.322	11.265	9.573	8.606	4.545
3 Wet Weather	8.602	10.772	9.559	10.422	10.901	10.137	11.472	9.569	7.707	13.424	8.925
4 Total	26.231	28.909	27.672	28.877	30.144	29.642	32.750	31.185	27.637	32.538	24.160



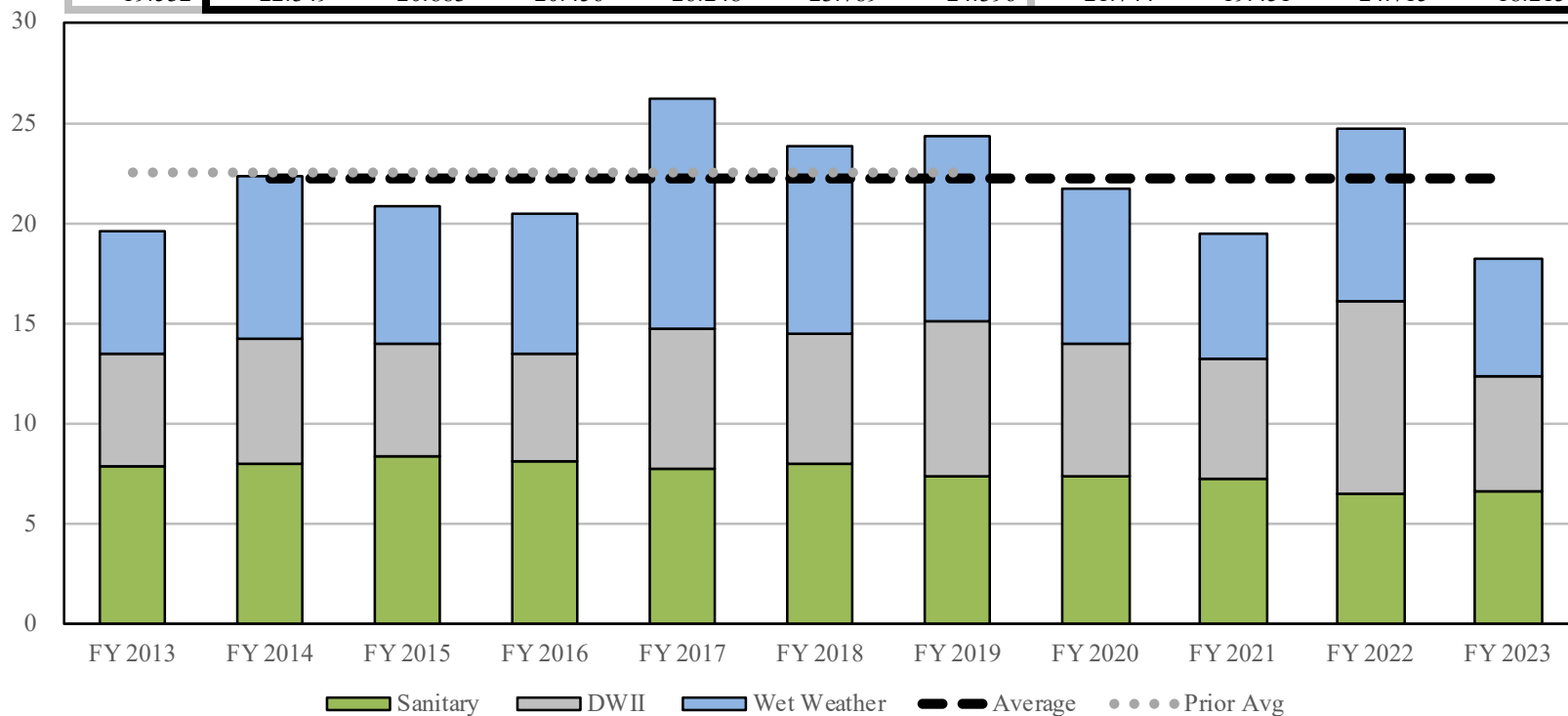
GLWA Wastewater Charge Methodology / SHAREs Development

Flow Volume Data: FY 2013 - FY 2023 (mgd)

Dearborn

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	7.919	6.951	7.533	-12.2%	-4.9%
2	DWII	6.305	6.963	6.641	10.4%	5.3%
3	Wet Weather	8.297	7.118	8.050	-14.2%	-3.0%
4	Total	22.522	21.031	22.225	-6.6%	-1.3%

Contributed Volume - mgd											
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	7.904	8.001	8.312	8.124	7.795	7.937	7.362	7.350	7.284	6.553	6.617
2 DWII	5.581	6.242	5.636	5.416	6.972	6.533	7.756	6.646	5.978	9.502	5.726
3 Wet Weather	6.047	8.106	6.935	6.916	11.480	9.319	9.278	7.749	6.189	8.661	5.873
4 Total	19.532	22.349	20.883	20.456	26.248	23.789	24.396	21.744	19.451	24.715	18.215



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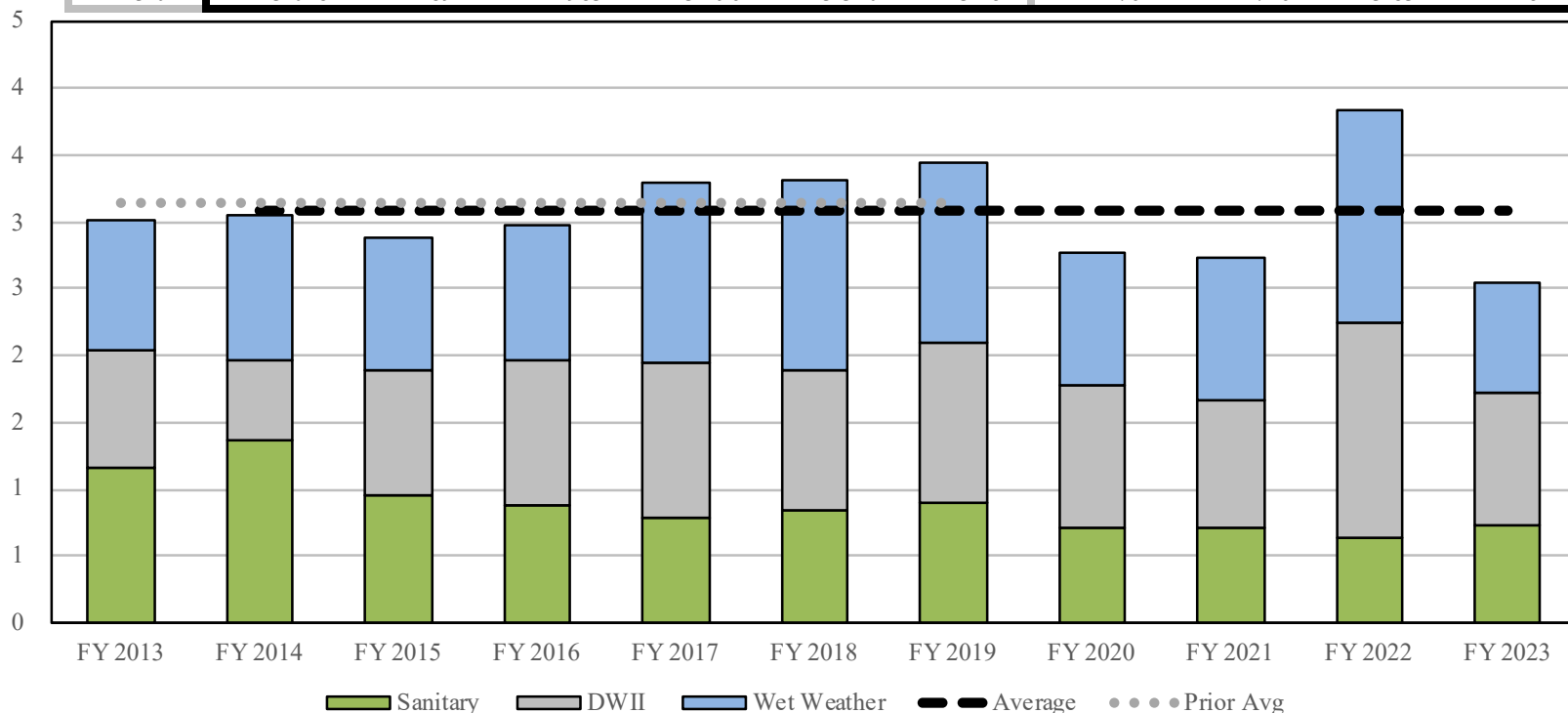
GLWA Wastewater Charge Methodology / SHAREs Development

Flow Volume Data: FY 2013 - FY 2023 (mgd)

Grosse Pointe Farms

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	0.981	0.700	0.850	-28.6%	-13.3%
2	DWII	0.993	1.151	1.067	15.9%	7.5%
3	Wet Weather	1.170	1.114	1.168	-4.8%	-0.2%
4	Total	3.143	2.965	3.085	-5.7%	-1.8%

Contributed Volume - mgd											
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	1.163	1.366	0.950	0.871	0.783	0.839	0.893	0.721	0.718	0.635	0.727
2 DWII	0.884	0.602	0.947	1.101	1.156	1.053	1.208	1.061	0.942	1.603	0.999
3 Wet Weather	0.965	1.080	0.994	1.010	1.357	1.428	1.351	0.980	1.067	1.593	0.816
4 Total	3.012	3.048	2.891	2.983	3.296	3.320	3.452	2.761	2.726	3.831	2.542



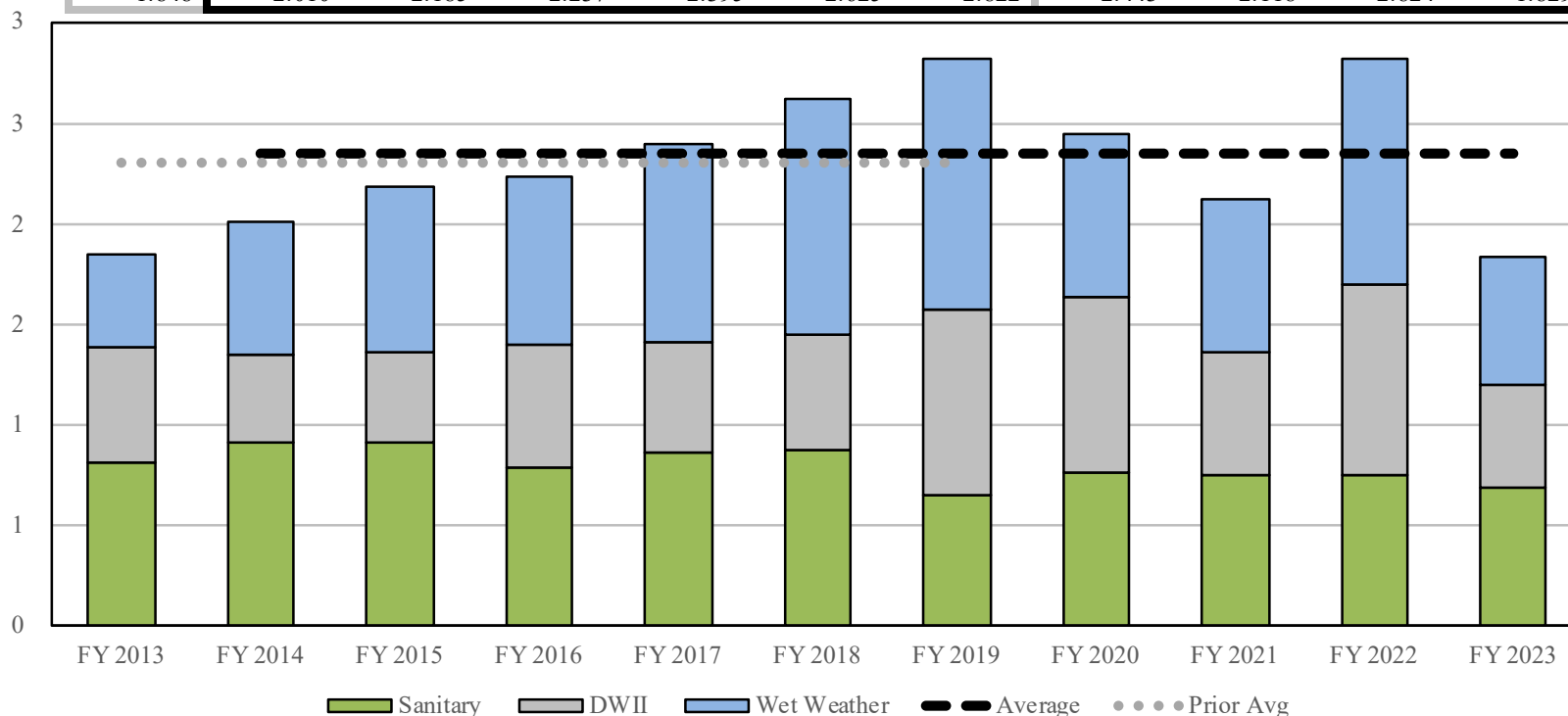
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GLWA Wastewater Charge Methodology / SHAREs Development
Flow Volume Data: FY 2013 - FY 2023 (mgd)
Grosse Pointe Park

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	0.827	0.739	0.794	-10.7%	-4.0%
2	DWII	0.590	0.735	0.649	24.7%	10.1%
3	Wet Weather	0.887	0.829	0.905	-6.4%	2.1%
4	Total	2.303	2.304	2.349	0.0%	2.0%

	Contributed Volume - mgd										
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	0.805	0.911	0.906	0.785	0.863	0.868	0.651	0.758	0.752	0.754	0.691
2 DWII	0.575	0.441	0.451	0.612	0.550	0.582	0.916	0.883	0.612	0.939	0.507
3 Wet Weather	0.469	0.657	0.828	0.840	0.982	1.176	1.255	0.802	0.754	1.130	0.631
4 Total	1.848	2.010	2.185	2.237	2.395	2.625	2.822	2.443	2.118	2.824	1.829



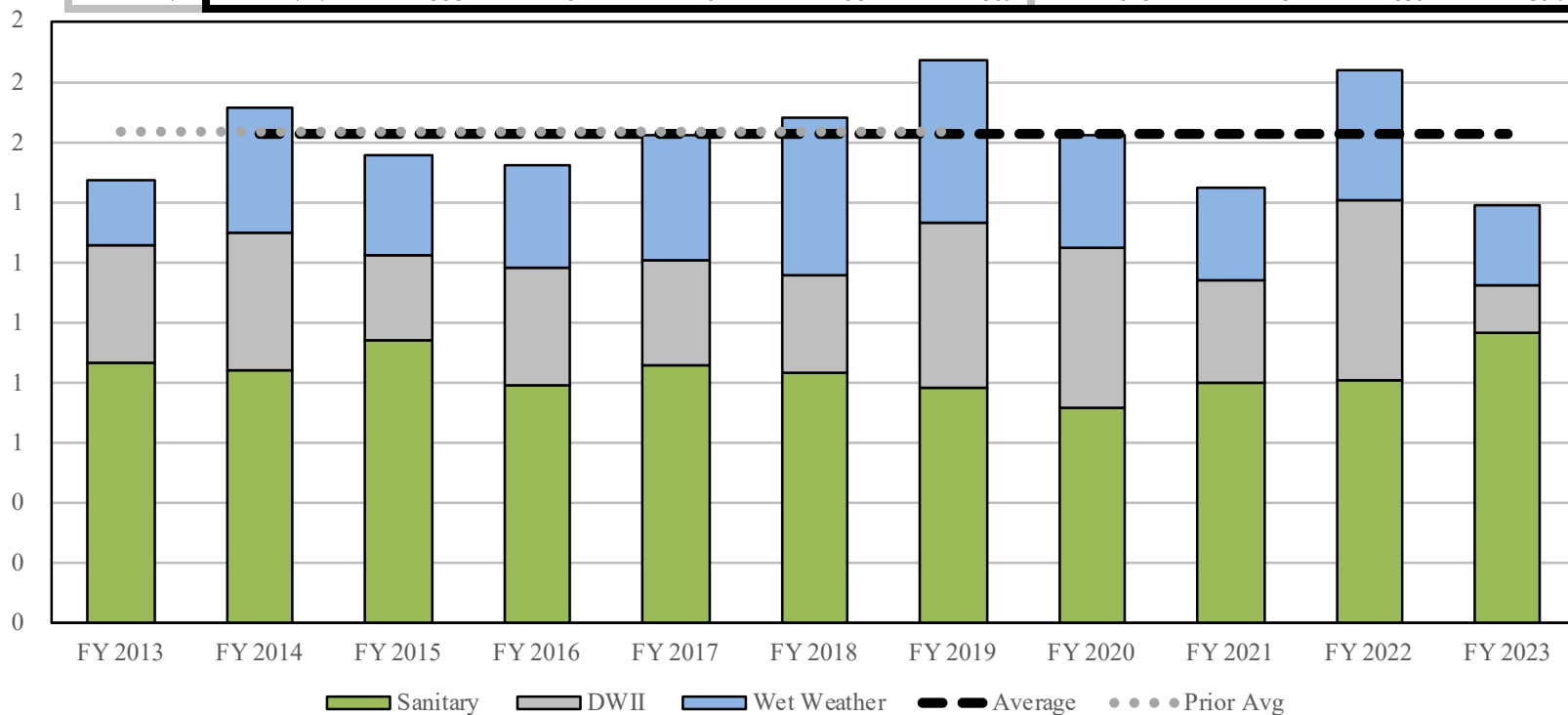
GLWA Wastewater Charge Methodology / SHAREs Development

Flow Volume Data: FY 2013 - FY 2023 (mgd)

Melvindale

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	0.842	0.820	0.831	-2.7%	-1.3%
2	DWII	0.394	0.409	0.400	4.0%	1.6%
3	Wet Weather	0.398	0.346	0.395	-13.1%	-0.8%
4	Total	1.634	1.575	1.627	-3.6%	-0.5%

Contributed Volume - mgd											
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1 Sanitary	0.861	0.840	0.940	0.790	0.857	0.828	0.779	0.712	0.799	0.805	0.964
2 DWII	0.393	0.455	0.284	0.391	0.348	0.332	0.553	0.533	0.343	0.603	0.160
3 Wet Weather	0.220	0.422	0.330	0.339	0.416	0.523	0.537	0.380	0.306	0.431	0.266
4 Total	1.474	1.717	1.553	1.521	1.622	1.682	1.869	1.625	1.448	1.839	1.390



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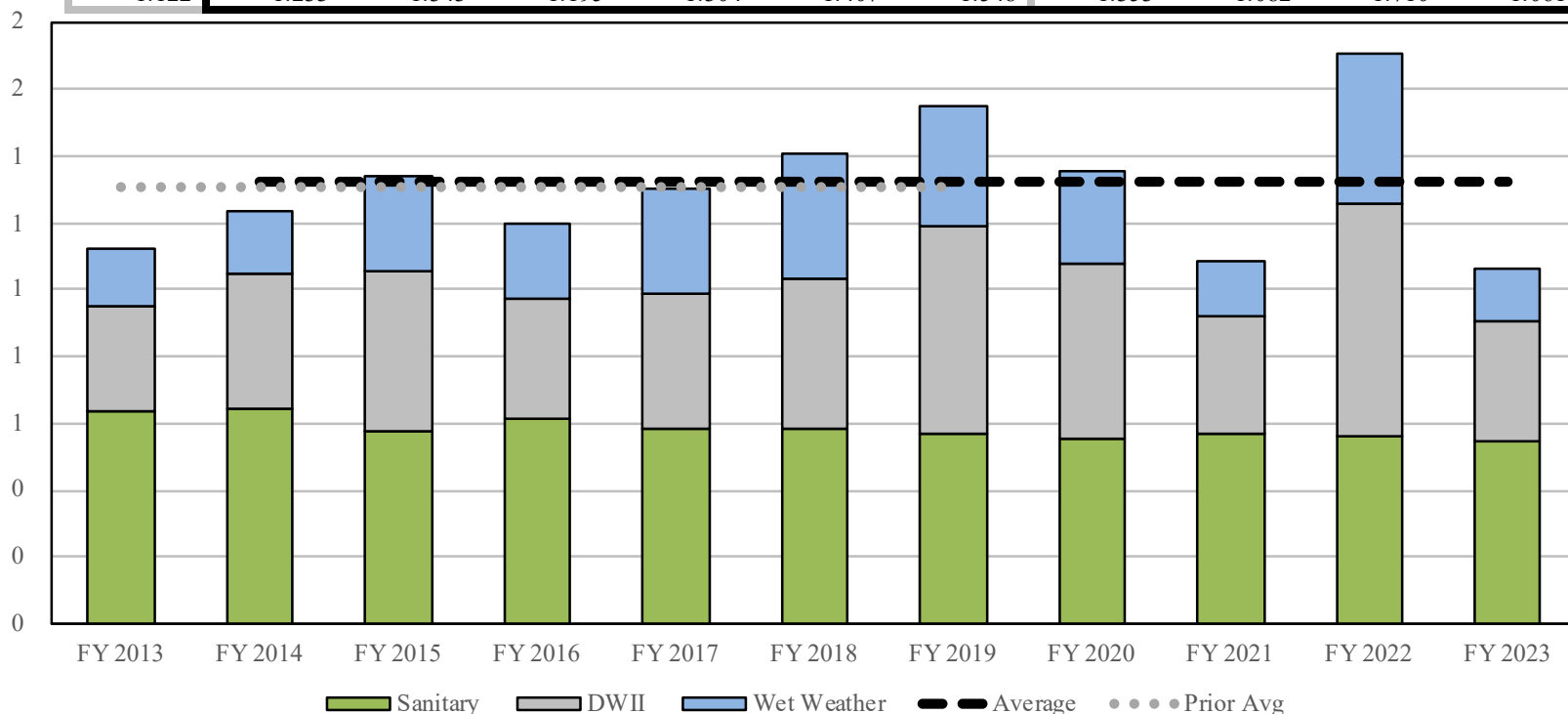
GLWA Wastewater Charge Methodology / SHAREs Development

Flow Volume Data: FY 2013 - FY 2023 (mgd)

Farmington

	Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1 Sanitary	0.603	0.558	0.582	-7.5%	-3.5%
2 DWII	0.431	0.483	0.463	12.1%	7.6%
3 Wet Weather	0.274	0.261	0.279	-4.8%	1.8%
4 Total	1.308	1.301	1.324	-0.5%	1.2%

	Contributed Volume - mgd										
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1 Sanitary	0.636	0.646	0.577	0.616	0.587	0.587	0.572	0.551	0.573	0.563	0.544
2 DWII	0.312	0.399	0.477	0.355	0.403	0.448	0.620	0.524	0.351	0.697	0.359
3 Wet Weather	0.174	0.188	0.289	0.223	0.314	0.373	0.356	0.277	0.159	0.450	0.157
4 Total	1.122	1.233	1.343	1.195	1.304	1.407	1.548	1.353	1.082	1.710	1.061



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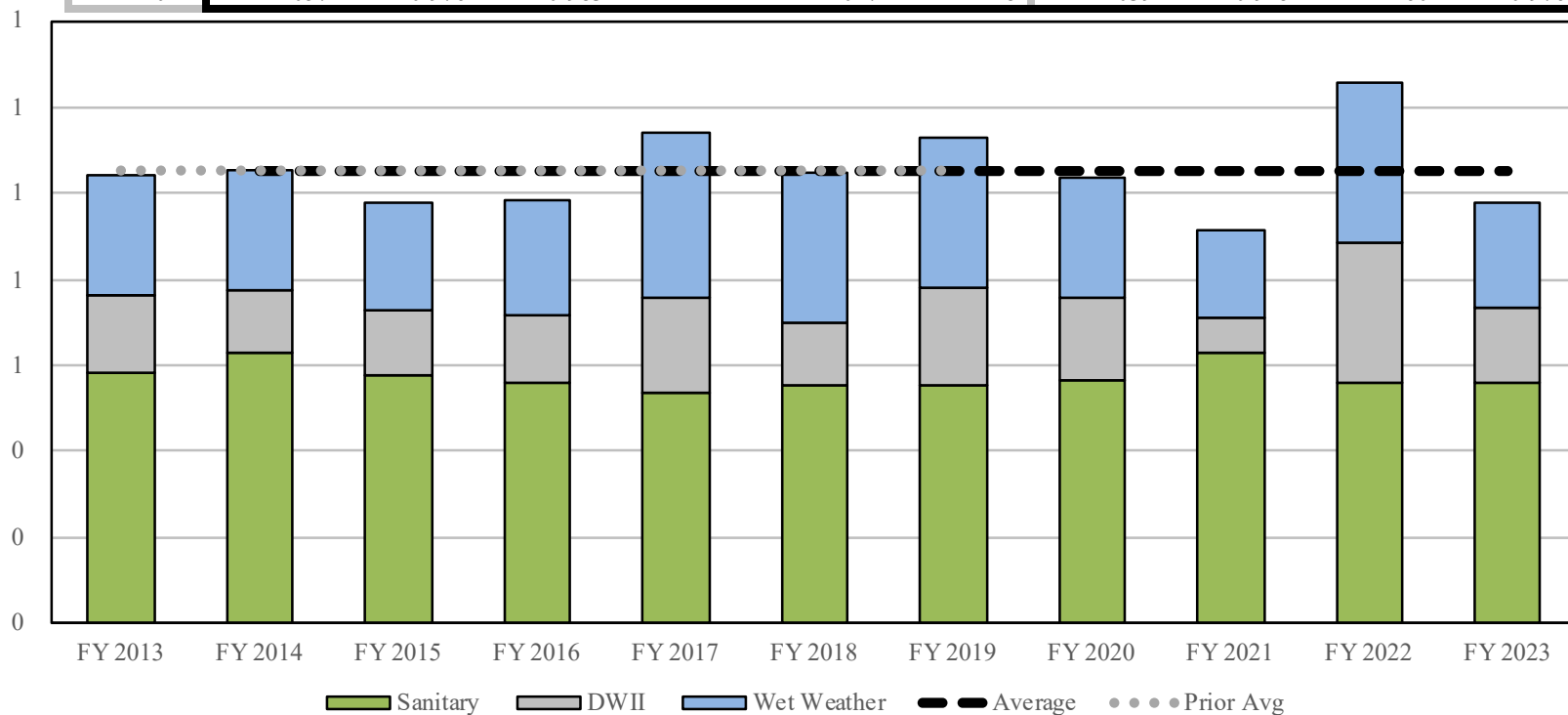
GLWA Wastewater Charge Methodology / SHAREs Development

Flow Volume Data: FY 2013 - FY 2023 (mgd)

Center Line

	Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1 Sanitary	0.570	0.577	0.572	1.3%	0.3%
2 DWII	0.176	0.195	0.183	10.7%	3.9%
3 Wet Weather	0.307	0.275	0.297	-10.4%	-3.2%
4 Total	1.053	1.047	1.052	-0.6%	-0.1%

	Contributed Volume - mgd										
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1 Sanitary	0.582	0.627	0.576	0.557	0.539	0.556	0.553	0.563	0.628	0.557	0.559
2 DWII	0.183	0.149	0.152	0.162	0.217	0.143	0.227	0.195	0.082	0.331	0.174
3 Wet Weather	0.277	0.281	0.248	0.264	0.385	0.348	0.347	0.280	0.205	0.372	0.243
4 Total	1.042	1.057	0.976	0.983	1.141	1.047	1.128	1.039	0.915	1.260	0.976



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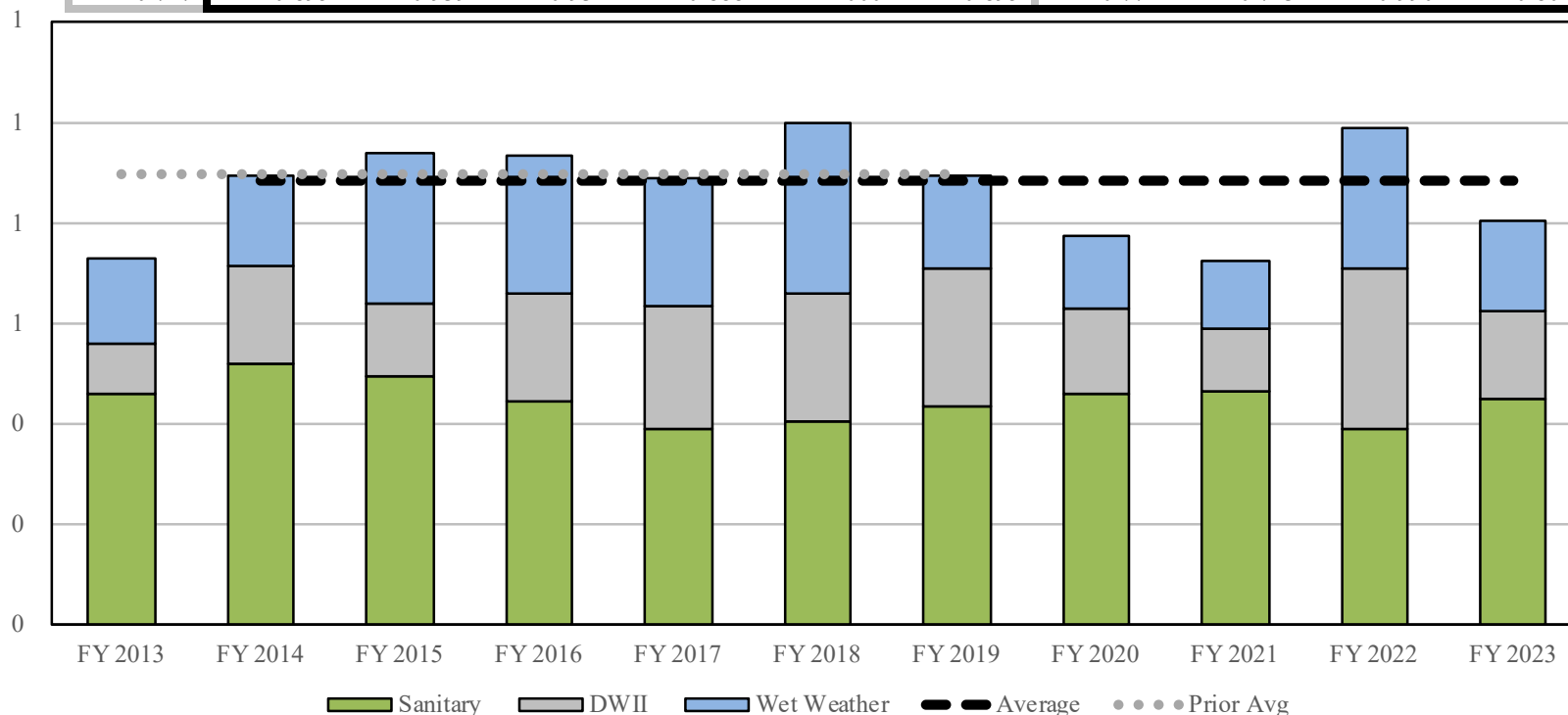
GLWA Wastewater Charge Methodology / SHAREs Development

Flow Volume Data: FY 2013 - FY 2023 (mgd)

Allen Park

		Prior Avg 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	0.449	0.441	0.445	-1.8%	-0.9%
2	DWII	0.203	0.198	0.212	-2.6%	4.0%
3	Wet Weather	0.244	0.182	0.227	-25.3%	-7.0%
4	Total	0.897	0.822	0.884	-8.4%	-1.5%

	Contributed Volume - mgd										
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	0.459	0.518	0.497	0.443	0.388	0.406	0.436	0.459	0.464	0.390	0.452
2 DWII	0.101	0.199	0.140	0.215	0.245	0.252	0.273	0.170	0.127	0.321	0.175
3 Wet Weather	0.167	0.178	0.302	0.275	0.256	0.341	0.186	0.142	0.132	0.279	0.176
4 Total	0.727	0.895	0.939	0.932	0.888	1.000	0.895	0.771	0.723	0.990	0.802



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GLWA Wastewater Charge Methodology / SHARES Development

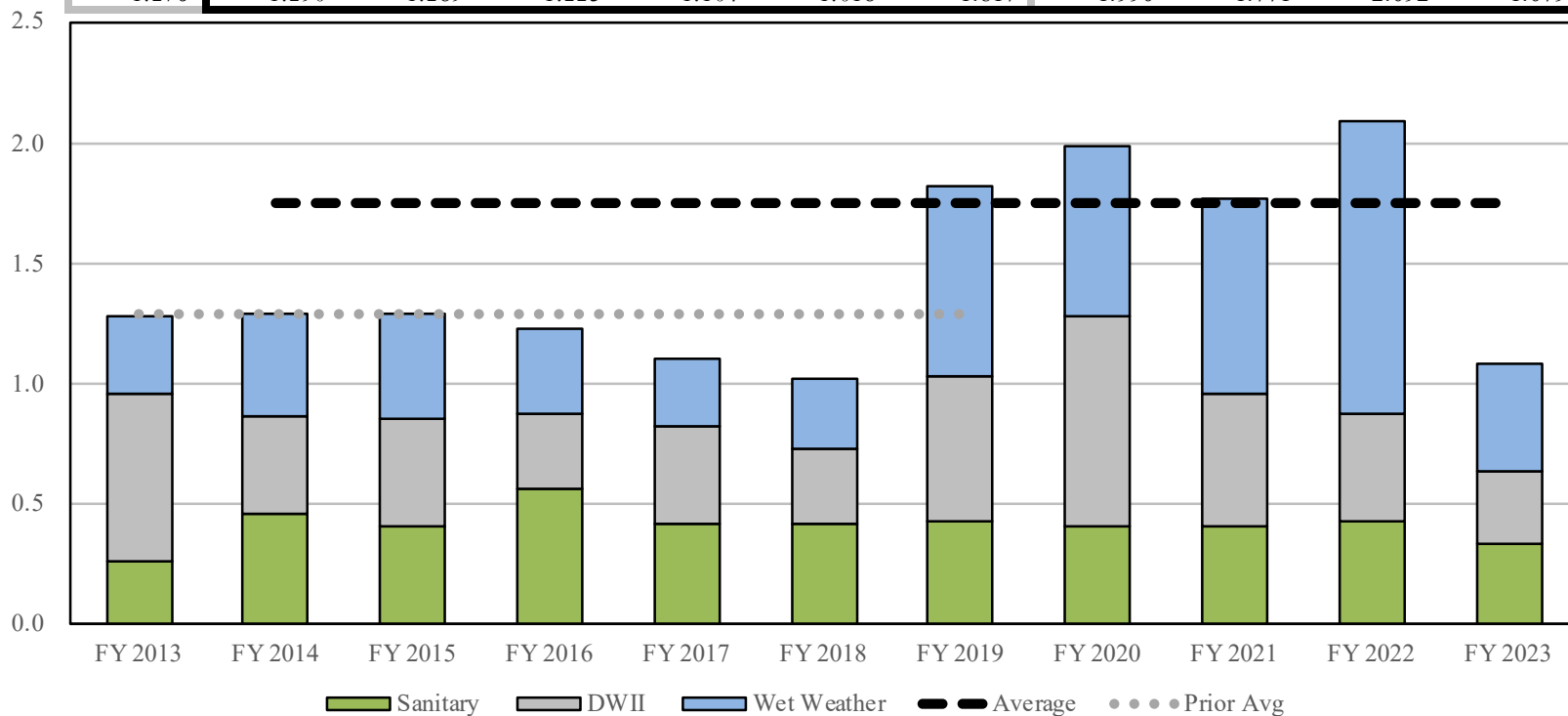
Flow Volume Data: FY 2013 - FY 2023 (mgd)

Grosse Pointe

* *Grosse Pointe's prior SHARES prorated as .483% of D+ Total*

		Prior Avg * 2013 - 2019	New Data 2020 - 2023	New Avg 2014 - 2023	New Data Change	New Avg Change
1	Sanitary	0.268	0.393	0.401	46.8%	49.6%
2	DWII	0.467	0.542	0.554	16.0%	18.7%
3	Wet Weather	0.293	0.798	0.795	172.3%	171.2%
4	Total	1.028	1.733	1.750	68.6%	70.2%

	Contributed Volume - mgd										
	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
1 Sanitary	0.256	0.459	0.411	0.564	0.421	0.420	0.430	0.406	0.405	0.431	0.332
2 DWII	0.700	0.406	0.437	0.308	0.401	0.313	0.604	0.877	0.547	0.442	0.301
3 Wet Weather	0.321	0.425	0.441	0.350	0.282	0.285	0.783	0.707	0.819	1.219	0.447
4 Total	1.276	1.290	1.289	1.223	1.104	1.018	1.817	1.990	1.771	2.092	1.079



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MEMORANDUM

D+ Sewer Flow Allocation and SHARES

January 12, 2024
Finalized January 22, 2024

To: Sue Coffey

From: Bart Foster

As the FY 2025 Charge Rollout process has progressed, I've presented a proposed new approach for allocating the raw flow data reported for the D+ Customer Class amongst the specific D+ members for purposes of developing proposed Sewer SHARES for FY 2025. This concept was originally presented at the November 14 Rollout #2 meeting on Units of Service, as documented in my November 13, 2023 "Impact of Updated Flow Balance Data on Calculation of FY 2025 Sewer SHARES" memorandum. It was further presented in my December 21, 2023 "SHAREs Period Memo – FY 2025 SHAREs Calculations" memorandum¹ and presented at the January 10 Rollout #3 meeting on the proposed FY 2025 Charges.

The intent of this memorandum is to set forth some additional historical background regarding how Sewer SHARES have been determined for all GLWA Member Partner communities, with specific focus on how data regarding flows in the D+ area have been incorporated into that process. This memorandum contains updated exhibits that reflects new flow balance information for certain members of the M Customer Class, which indirectly impacts the D+ calculations.

This memorandum, and its exhibits, has been updated from the original version published on January 12 to reflect some final minor modifications to flow balance data reported for individual D+ Member Partners.

Background

The fundamentals of the existing Sewer charge methodology have been in place for decades, but specifics have evolved over the years. All customers are assigned cost responsibility based on measures of their contributed flow to the GLWA Sewer System. The majority of the flows from suburban customers are directly measured at their points of connection to the system. These customer communities are referred to as members of the **M Customer Class**. It is not feasible to directly measure all flow volumes entering the system from Detroit and other areas

¹ These documents are included as Appendix F and Appendix C, respectively, to the FY 2025 Cost of Service Study and Charges Report.

close to the urban core. Those flows are estimated based on total reported flow to the system less the directly metered flow. These indirectly estimated flows are either treated as a common, regional system responsibility, or are assigned to customers that are not directly metered. These customers are referred to as members of the **D+ Customer Class**.

It is noteworthy that flows are not treated uniformly in the Sewer charge methodology. Rather, sewer flows are separated into their various components. Sanitary flow volumes are estimated based on winter quarter water sales **for all customers**. Non-sanitary flows – dry weather infiltration and inflow (DWII) and wet weather – are either directly measured for the M class or estimated for the D+ class.

The existing Sewer SHARES were established for the FY 2022 Sewer Charges, and represented the third SHARE period that emerged from the Sewer Rate Simplification initiative that was first embraced for the FY 2015 Sewer Charges. Under this initiative the objectives were to allocate SHARES of responsibility for GLWA sewer revenue requirements based long-term averages of contributed flow volumes, and to hold such SHARES constant for multi-year periods. The FY 2015 SHARES remained in effect through the FY 2017 Sewer Charges. The second SHARE period was in place for Sewer charges from FY 2018 through FY 2021, and the third SHARE period remains in place today. SHARES are being updated for the FY 2025 Sewer Charges. The flow volume inputs to that process are based on a ten-year average of data from FY 2014 through FY 2023.

The charge methodology has traditionally placed more emphasis on sanitary flows than non-sanitary flows, recognizing the relative additional treatment requirements for sanitary flow, and the associated additional costs. The manner by which this concept has been implemented has evolved over the years, as has the amount of non-sanitary flows in the D+ region that are assigned to regional system responsibility vs. specific D+ Customer Class responsibility. For instance:

- The initial SHARES established for the FY 2015 Sewer Charges continued a “strength of flow” concept in the existing charge methodology that assumed that all non-sanitary flow in the system carried 33% of the relative amount of pollutants as sanitary flow, and allocated treatment costs accordingly. Those SHARES also applied a complex review of flow data that resulted in 14.87% of the total flow to the System being treated as “System” non-sanitary flow responsibility. This amounted to approximately 33% of the non-sanitary flow in the D+ area.
- The second SHARES established for the FY 2018 Sewer Charges further complicated these efforts. The strength of flow concept was extended to different strengths for all 3 types of flow (sanitary, DWII, wet weather) and all 4 pollutant cost pools in the charge methodology. Further, the flow balance protocol attempted to refine the determination of what should be considered “System” flow and extend that concept to certain members of the M Customer Class.

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- The existing SHARES established for the FY 2022 Sewer Charges acknowledged that the continued movements away from the original Rate Simplification Initiative towards more complex analyses were inconsistent with the desired outcomes. The strength of flow concept was abandoned, but replaced by an approach that assigned 50% of the treatment costs to customers based on sanitary volumes, and the other 50% based on total volumes. The approach to “System” flows was simplified and now assumes 50% of the unmetered, non-sanitary flow volumes in the system should be treated as “system” responsibility - meaning that it is effectively the proportional responsibility of all customers, including the M Customer Class - and the other 50% allocated to the D+ class at large.

All of these efforts at “precision” were primarily designed to determine allocations between the M Class customers and the D+ Customer Class at large. With respect to the D+ Customer Class, the existing annual flow balances do not report specific information on wet weather flows by communities. Further, the reported DWII flows are based on indirect metering and sewer inventory data. In prior SHARE analysis it was deemed that sufficient information was not available to isolate (amongst D+ communities) from where specific total non-sanitary flows emerged, nor how much of each D+ customer’s non-sanitary flow should be considered a “System” responsibility. Rather, the allocation amongst D+ communities was determined via legacy flow balance data from pre-Rate Simplification era flow balance data and analyses – which did include estimates of wet weather by individual D+ customer.

The concept is illustrated for in the table below, which indicates how the prior protocol would have been applied to the updated D+ flow balance data absent the proposed new approach.

Prior Approach for D+ Allocation (*Applied to Updated Flow Balance Data*) - Flow Data in mgd

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Legacy D+ Allocation%	Sanitary	DWII	Total Dry Weather	Wet Weather	Total Non Sanitary	Total	"System" Non-Sanitary	Adjusted Total
	(a)	~ (1)	~ (1)	~ (1)	~ (1)	~ (1)	~ (1)	50% of (6)	(7) - (8)
Total D+ Flow Balance		54.009	89.911	143.920	61.430	151.341	205.350	(75.671)	129.679
<u>Allocation to D+ Customers</u>									
Highland Park	2.65%	1.429	2.379	3.808	1.625	4.004	5.433	(2.002)	3.431
Hamtramck	1.95%	1.053	1.753	2.806	1.197	2.950	4.003	(1.475)	2.528
Harper Woods	0.14%	0.073	0.122	0.195	0.083	0.205	0.278	(0.103)	0.175
Redford Township	0.12%	0.065	0.108	0.173	0.074	0.182	0.247	(0.091)	0.156
Wayne County #3	0.02%	0.011	0.018	0.029	0.012	0.030	0.041	(0.015)	0.026
Detroit	95.13%	51.378	85.531	136.909	58.439	143.970	195.348	(71.985)	123.363
D+ Total	100.00%	54.009	89.911	143.920	61.430	151.341	205.350	(75.671)	129.679

(a) All D+ members were proportionally assigned flow shares based on the original D+ SHARE calculations, and the impact of those calculations taking such elements as strength of flow into consideration. As a result, Hamtramck was assigned 1.95% of the D+ flow in all flow categories, etc. All D+ customers received a uniform 50% reduction in their allocated Non-Sanitary contributions, which were treated as "common" responsibility of the System.

The legacy D+ allocation percentages in the first column represent the original D+ SHARE calculations from the Rate Simplification Initiative for the FY 2015 SHARES.² The analyses that produced these allocation factors took into consideration such elements as strength of flow and suburban only cost pools. Because of the relative importance of the various flow components in the charge methodology at the time, the overall Hamtramck responsibility of D+ revenue requirements was 1.95%, as noted by footnote (a). The other D+ members relative responsibility has also been held constant at the figures indicated in the table. In prior SHARE calculations for D+ customers these allocation factors were applied *uniformly* to all flow inputs to assign the total D+ class flows to individual D+ customers. As shown in Column 8, non-sanitary flows from all D+ members were also *uniformly* reduced by 50%. To reiterate, this approach was applied because there was not sufficient information available to isolate (amongst D+ communities) from where specific total non-sanitary flows emerged, nor how much of each D+ customer's non-sanitary flow should be considered a "System" responsibility.

New Approach

With this update a more refined allocation approach amongst the *D+ Member Partners* is being proposed and applied, which utilizes data from the flow balances regarding the amount of "common use" sewer inventory in each D+ community. The application of this approach is illustrated in Table 8 of the "SHAREs Period Memo" – and an updated version of that table is attached to this memorandum³.

The analysis in Table 8 begins with a calculation of the flows to the D+ Class at large, which – after treating 50% of the non-sanitary flows as a common "System" responsibility - totals 205.35 mgd for the average of the ten-year data period. The "unadjusted" individual D+ data in the next section comes directly from the Flow Balance Reports, except for the wet weather flows in Column 4. The annual Flow Balance Reports do not provide any information regarding individual community wet weather flows within the D+ area. For purposes of these calculations, I've reverted to prior analyses from several years ago that attempted to estimate wet weather flows in each community based on total area served, relative area served by combined sewers, runoff coefficients, and average rainfall amounts. Those analyses indicated that Hamtramck produced ~ 1.74% of the wet weather flow in the (remaining) D+ area, and therefore the Unadjusted D+ wet weather flow assigned to Hamtramck in Column 4 is initially 1.74% of the total D+ wet weather flow.

² I note that this presentation is limited to those customers that remain in the D+ class. Grosse Pointe Farms was removed prior to the second SHARE period for FY 2018 and the minor portion of Dearborn in D+ is excluded in this illustration. Also – this table reflects a modification to the originally reported Highland Park flow volumes to reallocate dry weather flow contributions between sanitary and DWII. That adjustment was made for the FY 2022 SHARES.

³ The update is necessary to reflect recent corrections to flow balance information for certain M Class customers, which impact the overall amounts assigned to the D+ Class at large – and for additional minor final adjustments to flow balance data amongst individual D+ customers. The Cost of Service Study report and all pertinent Appendices have been updated to reflect these data modifications.

D+ Sewer Flow Allocation and SHARES

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Next, the new approach seeks to use sewer inventory data from the Flow Balance Reports to assign amounts of non-sanitary flows that should be treated as common “System” flow. For instance, the Flow Balance Reports indicate that 38% of the sewer inventory within Hamtramck is identified as either “common use interceptors” or “common use sewers.” Therefore the proposed SHARE calculations assign 38% of Hamtramck’s DWII as “common” – as shown in Column 2 of the table. The same approach is applied to other members, with Detroit’s flows being adjusted to align with the overall 50% reduction for the D+ class. The same approach is applied to the wet weather flows in Column 4, although the reduction based on inch miles of sewers is reduced by 50%.

The adjusted flows at the bottom of Table 8 become the basis for the proposed FY 2025 SHARES by individual D+ community. The table below compares the results of the new approach with those that would have emerged had the legacy approach been maintained.

Relative D+ Allocations of Updated Flow Balance Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Prior Approach Legacy	Proposed New Approach							
Allocation%	Sanitary	DWII	Wet Weather	Total	Effective * ~(2) & ~(5)	Change (6) - (1)	% Change (7) / (1)	
<u>Allocation to D+ Customers</u>								
Highland Park	2.65%	1.05%	2.61%	3.82%	2.56%	1.99%	-0.65%	-24.7%
Hamtramck	1.95%	2.07%	1.47%	2.82%	2.03%	2.05%	0.10%	5.0%
Harper Woods	0.14%	0.19%	0.00%	0.06%	0.07%	0.11%	-0.02%	-16.5%
Redford Township	0.12%	0.16%	0.11%	0.23%	0.16%	0.16%	0.04%	31.3%
Wayne County #3	0.02%	0.01%	0.01%	0.02%	0.02%	0.01%	-0.01%	-28.3%
Detroit	95.13%	96.52%	95.80%	93.05%	95.17%	95.68%	0.55%	0.6%
D+ Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	0.0%

* Recognizes that ~ 40% of flow based costs are allocated based on Sanitary and ~60% based on total flow.

I note that this entire analysis and discussion is designed to address the portions of the SHARES and Sewer Charges that are directly related to flow balance inputs. It does not address the CSO 83/17 cost allocation impacts on SHARES.

In closing I emphasize that this is only one approach towards more accurately allocating flow responsibility to individual members of the D+ class that reflects the best available, verifiable information available from the Flow Balance analyses. I believe it is a sound and reasonable approach to doing so, but I acknowledge that alternative approaches towards achieving that objective are possible.

I am available to discuss this matter at your convenience.

Table 8
Allocation of Flows Amongst D+ Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)
	<u>Sanitary</u> <i>mgd</i>	<u>DWII</u> <i>mgd</i>	Total Dry <u>Weather</u> <i>mgd</i>	Wet <u>Weather</u> <i>mgd</i>	Total Non <u>Sanitary</u> <i>mgd</i>	<u>Total</u> <i>mgd</i>
<u>Data from Flow Balance</u>						
1 Total	196.967	255.944	452.911	189.957	445.901	642.868
2 less: M Class	<u>135.083</u>	<u>76.123</u>	<u>211.206</u>	<u>67.096</u>	<u>143.219</u>	<u>278.302</u>
3 Total D+ / Common	61.884	179.821	241.705	122.861	302.682	364.566
4 Common	<u>7.875</u>	<u>89.910</u>	<u>97.785</u>	<u>61.431</u>	<u>151.341</u>	<u>159.216</u>
5 D+	54.009	89.911	143.920	61.430	151.341	205.350
<u>Unadjusted D+</u>						
1 Highland Park	0.567	3.210	3.777	2.710	5.920	6.487
2 Hamtramck	1.118	2.133	3.251	2.141	4.274	5.392
3 Harper Woods	0.101	0.031	0.132	0.039	0.070	0.171
4 Redford Township	0.085	0.135	0.220	0.161	0.296	0.381
5 Wayne County #3	0.006	0.019	0.025	0.018	0.037	0.043
6 Detroit	60.006	174.293	234.299	117.792	292.085	352.091
7 D+ Total	61.883	179.821	241.704	122.861	302.682	364.565
<u>Common Flow Adjustment - %</u>						
	(b)	(c)		(d)		
1 Highland Park		27.0%	23.0%	13.5%	20.8%	19.0%
2 Hamtramck		38.0%	24.9%	19.0%	28.5%	22.6%
3 Harper Woods		93.0%	22.0%	0.0%	41.4%	17.0%
4 Redford Township		27.0%	16.4%	13.5%	19.6%	15.2%
5 Wayne County #3		38.0%	28.0%	19.0%	27.0%	23.3%
6 Detroit		50.6%	41.0%	51.5%	50.9%	44.5%
<u>Allocation of Common - mgd</u>						
1 Highland Park	0.000	0.867	0.867	0.366	1.233	1.233
2 Hamtramck	0.000	0.811	0.811	0.407	1.218	1.218
3 Harper Woods	0.000	0.029	0.029	0.000	0.029	0.029
4 Redford Township	0.000	0.036	0.036	0.022	0.058	0.058
5 Wayne County #3	0.000	0.007	0.007	0.003	0.010	0.010
6 Detroit	7.875	88.160	96.035	60.633	148.793	156.668
7 D+ Total	7.875	89.910	97.785	61.431	151.341	159.216
<u>Adjusted D+ Flows - mgd</u>						
1 Highland Park	0.567	2.343	2.910	2.344	4.687	5.254
2 Hamtramck	1.118	1.322	2.440	1.734	3.056	4.174
3 Harper Woods	0.101	0.002	0.103	0.039	0.041	0.142
4 Redford Township	0.085	0.099	0.184	0.139	0.238	0.323
5 Wayne County #3	0.006	0.012	0.018	0.015	0.027	0.033
6 Detroit	52.131	86.133	138.264	57.159	143.292	195.423
7 D+ Total	54.008	89.911	143.919	61.430	151.341	205.349

(a) Legacy allocation based on prior era flow balance analyses.

(b) Represents WTP Backwash, all of which occurs in Detroit.

(c) Based on relative inch-miles of "Common use" sewers in each non-Detroit District.

(d) Based on 50% of relative inch-miles of Common use sewers in each non-Detroit District.

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MEMORANDUM

Grosse Pointe Sewer Flows and SHARES

January 12, 2024

To: Sue Coffey

From: Bart Foster

You have asked for a summary of how the existence of metered wastewater flow data for the City of Grosse Pointe is impacting the calculation of their proposed SHARES for FY 2025. The intent of this memorandum is to set forth some historical background regarding how Sewer SHARES have been determined for all GLWA Member Partner communities, and specifically how data regarding flows from Grosse Pointe have been incorporated into that process.

This discussion was originally introduced in late November, and has been updated to reflect a modified approach being proposed for Grosse Pointe's FY 2025 Sewer SHARE and charges. It has also been updated to reflect new flow balance information for other customers, which (while not directly related to Grosse Pointe) impacts the overall analysis. Additionally, parts of this discussion will be repeated in a separate document designed to illustrate the new approach for allocating non-sanitary flows amongst the members of the D+ Customer Class.

The fundamentals of the existing Sewer charge methodology have been in place for decades, but specifics have evolved over the years. All customers are assigned cost responsibility based on measures of their contributed flow to the GLWA Sewer System. The majority of the flows from suburban customers are directly measured at their points of connection to the system. These customer communities are referred to as members of the **M Customer Class**. It is not feasible to directly measure all flow volumes entering the system from Detroit and other areas close to the urban core. Those flows are estimated based on total reported flow to the system less the directly metered flow. These indirectly estimated flows are either treated as a common, regional system responsibility, or are assigned to customers that are not directly metered. These customers are referred to as members of the **D+ Customer Class**.

It is noteworthy that flows are not treated uniformly in the Sewer charge methodology. Rather, sewer flows are separated into their various components. Sanitary flow volumes are estimated based on winter quarter water sales **for all customers**. Non-sanitary flows – dry weather infiltration and inflow (DWII) and wet weather – are either directly measured for the M class or estimated for the D+ class.

The existing Sewer SHARES were established for the FY 2022 Sewer Charges, and represented the third SHARE period that emerged from the Sewer Rate Simplification initiative that was first embraced for the FY 2015 Sewer Charges. Under this initiative the objectives were to allocate SHARES of responsibility for GLWA sewer revenue requirements based long-term averages of contributed flow volumes, and to hold such SHARES constant for multi-year periods. The FY 2015 SHARES remained in effect through the FY 2017 Sewer Charges. The second SHARE period was in place for Sewer charges from FY 2018 through FY 2021, and the third SHARE period remains in place today. SHARES are being updated for the FY 2025 Sewer Charges. The flow volume inputs to that process are based on a ten-year average of data from FY 2014 through FY 2023.

The charge methodology has traditionally placed more emphasis on sanitary flows than non-sanitary flows, recognizing the relative additional treatment requirements for sanitary flow, and the associated additional costs. The manner by which this concept has been implemented has evolved over the years, as has the amount of non-sanitary flows in the D+ region that are assigned to regional system responsibility vs. specific D+ Customer Class responsibility. The existing protocol assigns 50% of the “unmetered” non-sanitary flows to the D+ Customer Class, and treats the remaining 50% as a common “system” responsibility, meaning that it is effectively the proportional responsibility of all customers, including the M Customer Class.

With respect to the D+ Customer Class, the existing annual flow balances do not report specific information on wet weather flows by communities. Further, the reported DWII flows are based on indirect metering and sewer inventory data. In prior SHARE analysis it was deemed that sufficient information was not available to isolate (amongst D+ communities) from where specific total non-sanitary flows emerged, nor how much of each D+ customer’s non-sanitary flow should be considered a “system” responsibility. Rather, the allocation amongst D+ communities was determined via legacy flow balance data from pre-Rate Simplification era flow balance data and analyses – which did include estimates of wet weather by individual D+ customer.

The concept is illustrated for Grosse Pointe in the table below.

D+ Flow Balance Data for SHARES - mgd

	Legacy Flow Balance Data (2007-11)			FY 2022 SHARES Data (2013-19)		
	Grosse Pointe	D+ Total	Grosse Pte Share	Grosse Pointe	D+ Total	Grosse Pte Share
Sanitary	0.599	80.413	0.745%	0.268	55.573	0.482%
DWII	0.285	121.088	0.235%	0.467	96.779	0.483%
Subtotal Dry Weather	0.885	201.501	0.439%	0.735	152.351	0.482%
Wet Weather	0.228	69.869	0.327%	0.293	60.663	0.483%
Total	1.113	271.370	0.410%	1.028	213.014	0.483%
<i>Subtotal Non-Sanitary</i>	<i>0.513</i>	<i>190.957</i>	<i>0.269%</i>	<i>0.760</i>	<i>157.442</i>	<i>0.483%</i>
Grosse Pointe Rev Req't Share		(a) ->	0.483%			0.483%

The legacy data illustrates the inputs of estimated flow for Grosse Pointe and the D+ Class at large. Grosse Pointe represented varying D+ shares of individual flow components, ranging from 0.745% of sanitary flows to 0.235% of DWII flows¹. Because of the relative importance of the various flow components in the charge methodology at the time, the overall Grosse Pointe responsibility of D+ revenue requirements was 0.483%, as noted by footnote (a).

With respect to ALL SHAREs in the first three SHARE periods, Grosse Pointe's relative "share" of D+ customer class responsibility was held constant (at the 0.483% level), as was the allocation for all other D+ customers. The FY 2022 SHAREs data in the table illustrates this concept for the existing Sewer Charges. Rather than use specific D+ customer flow data, the effective flow inputs to the charge process simply reflected full stability within the D+ Customer Class. Note that the existing SHAREs are based on flow balance data from FY 2013 through FY 2019. That data includes 6 years of "indirectly estimated" data for Grosse Pointe and one year (FY 2019) that was directly measured by the new wastewater flow meter installed prior to FY 2019. When the FY 2022 SHAREs were established it was determined that one year of meter data was not sufficient to treat Grosse Pointe as a member of the M Class.

As we prepared the updated SHAREs for FY 2025, there are now five full years of metered data available for Grosse Pointe, and it was deemed appropriate to establish their SHARE based on that metered data. The impact is illustrated in the table below. The effective legacy data in the first three columns indicates the effect of reducing the allocated non-sanitary flow to reflect the 50% "system" allocation. The figures in the third column indicate the basis used for Grosse Pointe's existing Sewer charges. The figures originally proposed for FY 2025 reflect metered data, and as a metered customer no such flow is treated as a "common" responsibility. The bottom line is that the metered flow data indicates significant increases in each flow type for Grosse Pointe compared to the effective flow assignments under the existing D+ allocation approach.

City of Grosse Pointe Flow Balance Data for SHAREs - mgd

	FY 2022 SHAREs (D+ Member) *			FY 2025 SHAREs (M Member)			Change in Flow	
	Raw Flow Balance	less: Common Non-Sanitary	Net for SHAREs	Raw Flow Balance	less: Common Non-Sanitary	Net for SHAREs	Flow	%
Sanitary	0.268		0.268	0.428		0.428	0.160	60%
DWII	0.934	(0.467)	0.467	0.527	NA	0.527	0.060	13%
Subtotal Dry Weather	1.202	(0.467)	0.735	0.955	0.000	0.955	0.220	30%
Wet Weather	0.586	(0.293)	0.293	0.795	NA	0.795	0.502	171%
Total	1.788	(0.760)	1.028	1.750	0.000	1.750	0.722	70%
<i>Subtotal Non-Sanitary</i>	<i>1.520</i>	<i>(0.760)</i>	<i>0.760</i>	<i>1.322</i>	<i>NA</i>	<i>1.322</i>	<i>0.562</i>	<i>74%</i>

Finally, I thought it important to compare the "unadjusted" legacy data from the old unmetered flow balances with that from the FY 2025 analysis. That comparison is illustrated in the table below for both Grosse Pointe and the D+ customer class at large.

¹ I note that this presentation is limited to those customers that remain in the D+ class. Grosse Pointe Farms was removed prior to the first SHARE period and the minor portion of Dearborn in D+ is excluded in this illustration.

Grosse Pointe Sewer Flows and SHARES

January 12, 2024

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Comparison of Legacy and Updated Flow Balance Data - mgd

	Grosse Pointe Data				D+ Data			
	Legacy Data <i>Unmetered Est</i> ~ 2007-10	New FB Data <i>Metered</i> 2019-23	Effective Change	Relative ~ Original	Legacy Data <i>Unmetered Est</i> ~ 2007-10	New FB Data <i>Unmetered Est</i> 2014-23	Effective Change	Relative ~ Original
Sanitary	0.599	0.268	(0.331)	45%	80.413	54.010	(26.403)	67%
DWII	0.285	0.467	0.182	164%	121.088	90.132	(30.957)	74%
Subtotal Dry Weather	0.885	0.735	(0.150)	83%	201.501	144.142	(57.359)	72%
Wet Weather	0.228	0.293	0.065	128%	69.869	61.529	(8.340)	88%
Total	1.113	1.028	(0.085)	92%	271.370	205.670	(65.700)	76%
<i>Subtotal Non-Sanitary</i>	<i>0.513</i>	<i>0.760</i>	<i>0.247</i>	<i>148%</i>	<i>190.957</i>	<i>151.660</i>	<i>(39.297)</i>	<i>79%</i>

The new metered data for Grosse Pointe indicates material increases in estimated non-sanitary flow compared to the raw data estimates from the unmetered flow balance data used for prior SHARES. Overall estimated non-sanitary flow contributions from Grosse Pointe are almost 50% higher from what was estimated based on that older protocol. Meanwhile the similar comparison for the D+ class at large indicates almost a 20% reduction in such non-sanitary flows. While a reduction in sanitary volumes is evident for Grosse Pointe, similar reductions have been experienced throughout the system, and the reduction for the D+ class at large is materially greater. In effect the new metered data indicates a larger share of Grosse Pointe flow contributions for all flow types compared to what was reflected in prior flow balance estimates, both with respect to the raw legacy flow balance data and the proportional manner by which it was applied in SHARE calculations. The increase in reported flow data is the driver for the originally proposed large increase in Grosse Pointe's FY 2025 Sewer SHARE and charges.

Subsequent to the originally proposed SHARES representatives of GLWA and Grosse Pointe have had several conversations regarding the data being used for Grosse Pointe's SHARE. Those discussions have included several possible adjustments to the initial calculations, including:

- Potential modifications to raw meter data to reflect anomalous events related to main break repairs, etc.
- Whether to limit the Grosse Pointe data to the five years of metered data; and
- Potential consideration of the sewer separation project the city is pursuing

You asked for a recommendation to consider regarding how the FY 2025 Sewer Charges might be computed in consideration of these potential adjustments. I proposed the approach below, which was originally documented in a memorandum dated December 12, 2023 and formally presented to the Audit Committee on December 15. It is the basis for the proposed FY 2025 Sewer Charges that have been submitted for consideration by the Board, and that each Member Partner has been notified of via correspondence earlier this week.

Proposed following approach for determining Grosse Pointe's Sewer SHARES for FY 2025:

- Compute the differences in Grosse Pointe flow inputs between:
 1. The average historical data assigned to Grosse Pointe as a D+ member, including the reduction for "System" non-sanitary flows;
 2. The 5-years of data indicated by the new master meter
- Use an average of the two data sets for Grosse Pointe's flow data for the FY 2025 SHARES

The resulting flow inputs to the SHARES calculations are shown in the table below.

City of Grosse Pointe Flow Balance Data for FY 2025 SHARES - mgd

	(1)	(2)	(3)	(4)
	Effective Existing Data	New Metered Data	Difference	Use for FY 2025 SHARES
	(a)	(b)	(2) - (1)	Avg (1) & (2)
Sanitary	0.268	0.428	0.160	0.348
DWII	<u>0.467</u>	<u>0.527</u>	<u>0.060</u>	<u>0.497</u>
Subtotal Dry Weather	0.735	0.955	0.220	0.845
Wet Weather	<u>0.293</u>	<u>0.795</u>	<u>0.502</u>	<u>0.544</u>
Total	1.028	1.750	0.722	1.389
Subtotal Non-Sanitary	0.760	1.322	0.562	1.041

(a) 0.483% of total D+ data from FY 2013 - 2019, after consideration of "System" non-sanitary flow

(b) Metered data from FY 2019 - 2023 - no consideration of "System" non-sanitary flow

In my opinion such an approach compels the parties to continue to review and monitor available data, and to commit to interim SHARE modifications (with the possibility of true-ups) during the next 3-year SHARE period based on results of that data review. I note that making this accommodation has the impact of reducing Grosse Pointe's charge increase by approximately 50%, and increasing all other Member Partner SHARES for FY 2025 by 0.05%.

Two final notes in closing:

1. The new manner proposed for FY 2025 to specifically allocate "system" non-sanitary flows within the D+ communities credits such estimated flow contributions based on "common" sewer infrastructure within each community. Since data from the flow balance reports does not identify any such infrastructure within Grosse Pointe, none of the credit would be assigned to Grosse Pointe should they remain a D+ Customer. Put

another way, Grosse Point's proposed FY 2025 SHARE would be increasing materially even if they remained a D+ Customer.

2. This entire analysis is designed to reflect the portions of the SHARES and Sewer Charges that are directly related to flow balance inputs. It does not address the impact of the CSO 83/17 cost allocation impacts on SHARES.

I trust that this material is responsive to your request and I look forward to participating in further discussions on this matter.

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MEMORANDUM

Final Proposed FY 2025 Sewer Charges

January 22, 2024

To: Sue Coffey, Nicolette Bateson

From: Bart Foster

This intent of this memorandum is to serve as an executive summary “crosswalk” between the originally proposed FY 2025 Sewer Charges last month and those that are being formally submitted to the GLWA Board this month for their consideration. The originally proposed charges were documented in a December 12, 2023 memorandum presented to the Audit Committee at their meeting on December 15, 2023. Those originally proposed charges were designed to support an overall 3.0% increase in revenue from sewer charges. As noted in that document, the impact on individual Sewer Member Partners varied somewhat from the overall System charge adjustment, based on the FY 2025 Sewer SHARES, which were being updated for the first time in three years.

Changes in Sewer SHARES reflect the results of two separate analyses:

1. Interpretation of updated inputs from Sewer Flow Balance Reports to identify contributed wastewater volumes from each Member Partner;
2. Results of the FY 2025 Cost of Service Study to determine relative cost pool weightings.

The December 12, 2023 memorandum identified the preliminary results of each of these analyses, and set forth proposed Sewer Charge schedules that were designed to support the combined results. As noted in that document, the results of the Flow Balance (units of service) analysis indicated a moderate increase in cost responsibility for the suburban wholesale master metered customers (the “**M**” customer class) and a corresponding moderate decrease in cost responsibility for Detroit and the other inner ring communities that are not fully metered (the “**D+**” customer class). The shift in total was less than 1% at the overall customer class level.

The results of the Cost of Service Study were directionally opposite to the Flow Balance analyses, and shifted cost responsibility away from the **M** customer class and towards **D+** customer class. With one exception, the overall changes in Sewer Charges to individual Member Partners varied slightly from the overall System Charge Adjustment of 3.0%.

On January 9, 2024 GLWA sent (via email) notification of the originally proposed Sewer Charges to each Member Partner in the form of individual charge calculation sheets specific to their community.

Subsequently (as described below) I have been made aware of modifications to the originally published FY 2023 Sewer Flow Balance Report, and I have been asked to compute and propose modified proposed FY 2025 Sewer Charges. There are three sets of modifications to the Sewer Flow Balance that are addressed herein.

1. Also on January 9 GLWA was advised by its sewer flow balance consultant that it had just discovered an error in the flow balance calculations for FY 2022 and FY 2023 for five individual Member Partners. I was asked to compute new proposed Sewer Charge schedules reflecting this information, which moderately changed the charges for individual Member Partners. The updated charges were “published” on January 10 via revised charge calculation sheets that GLWA sent (via email) to each Member Partner, and were included in material presented at the January 11 Charges Rollout #3 meeting.
2. On January 18 I became aware of an additional modification in the FY 2023 Flow Balance Report that moved a small amount of FY 2023 flow within the D+ area, from Detroit to Hamtramck and Highland Park.
3. On January 19 I was provided with the final FY 2023 Flow Balance Report. As part of my diligence review of that final report, I discovered that a small amount of FY 2020 sanitary flow volumes had been shifted (from what I had in my records) between the two large Oakland County districts. While the change had been made to the historical records in the subsequent Flow Balance Reports, my calculation files for SHARES did not reflect such change.

I have prepared final proposed FY 2025 Sewer Charge schedules, including individual Member Partner Sewer Charge Calculation sheets. It is my understanding that these schedules represent the proposed Sewer Charges for Board consideration, and that the individual charge calculation sheets will be transmitted later this week.

The attached exhibit serves as a “crosswalk” the relative changes to individual Sewer Charges (expressed in terms of allocated annual revenue requirements) associated with the modifications introduced above. As noted in the exhibit, Member Partner representatives have already been made aware of the first change, as the figures in Column 3 have already been “published” in Charges Rollout #3 meeting and individual charge calculation sheets. The changes associated with the other two changes are minor, and the changes is limited to four individual Member Partners.

I note that these changes are limited to the Flow Balance inputs to the charge calculations. The proposed budget, including the overall 3.0% System Charge Adjustment, and cost of service study inputs are unchanged from the original charge proposals.

I am prepared to discuss this matter further at your convenience.

Sewage Disposal System
Revised Proposed FY Charges Based on Modified Flow Balance Inputs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
	12/15/23	Initial FB	01/10/24	Subsequent FB	01/18/24	Final FB	01/22/24	Total Chgs	Total Chgs	
	<u>Audit Com</u>	<u>Changes</u>	<u>Rollout #3</u>	<u>Changes</u>	<u>Rollout #3</u>	<u>Changes</u>	<u>Final</u>	<u>from Orig</u>	<u>from Orig</u>	
	\$	\$	\$	\$	\$	\$	\$	\$	\$	
		(a) thru (e)		(f)		(g)		(7) - (1)	(8) / (1)	
Suburban Wholesale										
1	OMID	75,046,800	(136,800)	74,910,000	0	74,910,000	0	74,910,000	(136,800)	-0.2%
2	Rouge Valley	57,153,600	694,800	57,848,400	0	57,848,400	0	57,848,400	694,800	1.2%
3	Oakland GWK	48,255,600	69,600	48,325,200	0	48,325,200	(15,600)	48,309,600	54,000	0.1%
4	Evergreen Farmington	37,828,800	68,400	37,897,200	0	37,897,200	15,600	37,912,800	84,000	0.2%
5	SE Macomb San Dist	26,211,600	(111,600)	26,100,000	0	26,100,000	0	26,100,000	(111,600)	-0.4%
6	Dearborn	21,567,600	(70,800)	21,496,800	0	21,496,800	0	21,496,800	(70,800)	-0.3%
7	Grosse Pointe Farms	2,799,600	(9,600)	2,790,000	0	2,790,000	0	2,790,000	(9,600)	-0.3%
8	Grosse Pointe Park	1,995,600	(4,800)	1,990,800	0	1,990,800	0	1,990,800	(4,800)	-0.2%
9	Melvindale	1,650,000	(4,800)	1,645,200	0	1,645,200	0	1,645,200	(4,800)	-0.3%
10	Farmington	1,258,800	(4,800)	1,254,000	0	1,254,000	0	1,254,000	(4,800)	-0.4%
11	Center Line	1,108,800	(10,800)	1,098,000	0	1,098,000	0	1,098,000	(10,800)	-1.0%
12	Allen Park	888,000	(4,800)	883,200	0	883,200	0	883,200	(4,800)	-0.5%
13	Grosse Pointe	1,232,400	(6,000)	1,226,400	0	1,226,400	0	1,226,400	(6,000)	-0.5%
14	Highland Park	4,992,000	(10,800)	4,981,200	0	4,981,200	0	4,981,200	(10,800)	-0.2%
15	Hamtramck	4,502,400	(15,600)	4,486,800	10,800	4,497,600	0	4,497,600	(4,800)	-0.1%
16	Harper Woods	175,200	(4,800)	170,400	0	170,400	0	170,400	(4,800)	-2.7%
17	Redford Township	357,600	(4,800)	352,800	0	352,800	0	352,800	(4,800)	-1.3%
18	Wayne County #3	50,400	0	50,400	0	50,400	0	50,400	0	0.0%
19	Subtotal Suburban Wholesale	287,074,800	432,000	287,506,800	10,800	287,517,600	0	287,517,600	442,800	0.2%
20	Detroit Customers *	206,366,400	(432,000)	205,934,400	(9,600)	205,924,800	0	205,924,800	(441,600)	-0.2%
21	Total Member Partner Wholesale	493,441,200	0	493,441,200	1,200	493,442,400	0	493,442,400	1,200	0.0%
22	Subtotal M Customer Class	276,997,200	468,000	277,465,200	0	277,465,200	0	277,465,200	468,000	0.2%
23	Subtotal D+ Customer Class	216,444,000	(468,000)	215,976,000	1,200	215,977,200	0	215,977,200	(466,800)	-0.2%

Items of Note Emerging from Final Flow Balance Adjustments

- (a) Rouge Valley's Sanitary flows for FY 2022 and FY 2023 increased by **5.6** mgd, increasing 10-yr avg by **4.5%**
(b) Oakland GWK's Sanitary flows for FY 2022 and FY 2023 increased by **1.5** mgd, increasing 10-yr avg by **1.5%**
(c) Evergreen Farmington's Sanitary flows for FY 2022 and FY 2023 increased by **1.5** mgd, increasing 10-yr avg by **1.5%**
(d) OMID's Sanitary flows for FY 2022 and FY 2023 increased by **1.5** mgd, increasing 10-yr avg by **0.8%**
(e) Minor adjustments to total flows for Rouge Valley and SEMSD that do not impact charges materially
(f) Reallocation of DWII flows for FY 2023 between Hamtramck and Detroit (Also small Highland Park DWII adjustment with no impact on SHARES)
(g) Reallocation of Sanitary volumes for FY 2020 between Oakland GWK and Evergreen Farmington

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