



## THE FOSTER GROUP

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### MEMORANDUM

FY 2022 Cost of Service Study and Service  
Charge Recommendations

December 30, 2020  
*Updated January 12, 2021<sup>1</sup>*

To: Sue McCormick, Nickie Bateson

From: Bart Foster

This memorandum has been prepared to introduce the exhibits summarizing the cost of service allocations and recommended proposed service charges for FY 2022. 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 7, 2021, and are scheduled to be further discussed at a meeting on January 21, 2021. GLWA will be formally issuing notification of the proposed charges to Member Partners on January 22, 2021. A public hearing on the proposed Water and Sewer service charges for FY 2022 is scheduled for February 24, 2021.

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

The material presented herein employs a similar presentation and format to that included in studies from prior years. The proposed FY 2022 Water charges reflect application of a simplified, uniform approach to charge adjustments for Member Partners whose demands did not change for FY 2022. While the overall core Sewer charge methodology remains the same, the FY 2022 Sewer charges are the first to reflect an updated approach to establish SHARES, which was endorsed by the Board in November 2020.

The overall strategy for the FY 2022 Financial Plan and Service Charges has been communicated via the GLWA Customer Outreach Program and briefings to the GLWA Board of Directors in both

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<sup>1</sup> *This document reflects some minor calculation updates that emerged from review of the original charge recommendations proposed in the 12/30/2020 version. The specific adjustments are referenced herein.*

full meetings and the committee structure. Materials delineating this strategy, and the implementation of it, are disclosed at [glwater.org](http://glwater.org), and we encourage interested stakeholders to review that material, all of which is intended to be incorporated by reference to this concluding report. We have also included key documents as appendices to this report.

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

1. The FY 2022 BUDGET depicted herein represents the “budget request” as developed by GLWA, which was originally presented to the Audit Committee on December 18, 2020 and is scheduled to be formally reflected in the preliminary “FY 2020-2023 Biennial Budget and Five-Year Plan” document to be published in January 2021<sup>2</sup>.
  - *As further explained herein, the FY 2022 BUDGET included in these calculations reflects a 1.2% budgetary increase (for Water) and a 2.0% budgetary **decrease** (for Sewer) compared to the originally approved FY 2021 BUDGET. This is LESS THAN the full implementation of the 4% Revenue Requirement Increase set forth the Agreements.*
  - *It is our understanding that the final FY 2022 BUDGET 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 a final BUDGET that fits within the total “budget request” figures reflected in these calculations, and that these calculations reflect a reasonable depiction of the final BUDGET.*
2. The Capital Financing Plan reflects the preliminary updated plan presented to the Audit Committee on December 8, 2020.
  - *The capital revenue requirements (debt service, revenue financed capital, etc.) included in this analysis are identical to the budget request.*
  - *The GLWA financial policy includes a capital spend rate assumption. Capital financing plans are designed to generate capital funding sources equal to an amount of the total Capital Improvement Programs (“CIPs”) with what can realistically be spent due to limitations beyond GLWA’s control and/or delayed for non-budgetary reasons.*
  - *For purposes of the FY 2022 BUDGET, the spend rate assumption is 75%.*
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

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<sup>2</sup> ***The updated financial forecast included as Appendix B to this memorandum report.***

Wholesale Service Charges, they are important components to the overall FY 2022 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;*
  - *Recovery of existing budget shortfalls from the Local System.*
4. Application of suburban wholesale bad debt expense provisions in Sewer Service Agreement(s)
- *The proposed FY 2022 Sewer charges do not contain any amounts to recover prospective nor true-up amounts related to Highland Park bad debt expense. This matter is discussed at length in the appendix to this document.*
5. Finally, the overall charge adjustment strategies reflect proposed “System Charge Adjustments” to meet wholesale revenue requirements of:
- *A 2.0% increase for Water;*
  - *A 0.2% decrease for Sewer, which is designed to implement a commitment to no overall increase in the revenues from charges related to SHARES to Member Partners.*

These calculations follow the same cost allocation strategies, practices, and protocols that have been applied in these calculations without any major modifications from cost of service calculations for prior years. It is important to note that the existing FY 2021 Water and Sewer service charges were determined via “across the board” Wholesale Charge Adjustments (applied to the FY 2020 service charges) to all Member Partners. The FY 2020 service charges were the last charges determined via a detailed cost of service study.

As previously introduced, the FY 2022 service charge calculations continue a simplified, uniform approach to Water charges and are the first to reflect an updated core methodology to establish Sewer SHARES. While the new SHARES approach simplifies the overall calculations, the core calculation approach remains for each system. 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 2022 do impact the cost pool allocations. Also, the FY 2022 Cost of Service Study continues to reflect results of the independent GLWA capital asset inventory and valuation project. We have utilized information provided by that project, including updates reflecting activity through FY 2020, to allocate capital revenue requirements to Cost Pools.

***A detailed discussion with accompanying material that delineates the specific process we have taken to allocate the FY 2022 BUDGET to cost pools as part of the FY 2022 Cost of Service and Charges Study is included as Appendix A to this memorandum report.***

The exhibits to this memorandum contain executive summary material on:

- The determination of the Proposed FY 2022 BUDGET;
- The allocation of Proposed FY 2022 BUDGET to cost pools;
- The proposed allocation of these costs to individual Member Partners;
- Proposed wholesale service charge schedules for each Member Partner;
- PRELIMINARY proposed allocated FY 2022 BUDGET to the Detroit Customer class.

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. As noted earlier, these individual calculation sheets will be distributed to Member Partners at a meeting on January 7, 2021, and GLWA is formally issuing notification of the proposed charges on January 22, 2021. We suggest publishing this memorandum to support review of the proposed charges. Additional material is being prepared to augment the proposals.

***Update: the originally proposed FY 2022 Water Charges from the December 30, 2020 version of this memorandum report did not fully implement the intended methodology regarding “meter related” units of service<sup>3</sup> for 17 Member Partners who had experienced recent changes in meter technology. The updated proposed FY 2022 Water Charges introduced in this version of the report fully embrace the intended methodology. The modifications are very minor and are discussed herein. See Page 6 for further details.***

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

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<sup>3</sup> Principally distance and elevation factors.

**Water Service Charge Calculation Tables:**

1. Establishes the “Units of Service” for each Member Partner, and establishes the FY 2022 Water charge adjustment strategy for “Mod” and “No Mod” Member Partners. Table 1 is actually 4 distinct tables, starting from basic data input (from contracts, etc.) that define basic characteristics regarding each Member Partner’s use of the System.
  - The annual sales volumes in Column 1 of Table 1a continue to reflect a uniform forecasting approach. For FY 2022 the projected volume was determined by averaging annual sales for each Member Partner over the most recent 36 months from October 2017 through September 2020. Sales data for “base” months (October through March) were reduced by 5% 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.
  - The max day and peak hour demand figures in Table 1a reflect figures from Exhibit B of the contract for the 82 master meter Member Partners served under the model contract. Max day and peak hour demands for most of these Member Partners are unchanged from FY 2020 and FY 2021 due to the Contract Alignment Process (“CAP”).
  - Demand figures for 5 of the master metered Member Partners have been updated to reflect “out of cycle” adjustments to their demands. ***These Member Partners are highlighted in yellow in the cost of service exhibits and become members of the “Mod” Customer Class.***
  - St. Clair County-Greenwood is served under a unique, older contract with variable demand charges. Their max day and peak hour demands have been adjusted based on data from the summer of 2020. ***St. Clair County-Greenwood also becomes a member of the “Mod” Customer Class.***
  - Dearborn, Highland Park, and Detroit are not served by master meters. Their units of service continue to be established via the phase 2 Units of Service (“UoS”) Study protocols initially established for the FY 2020 charges. ***These Member Partners are also part of the “Mod” Customer Class. They are highlighted in orange in the cost of service exhibits.***
  - As a result of the above specific demand changes, there are 9 “Mods” Member Partners.
  - ***The remaining 79 Member Partners will be treated as members of the “No Mod” Customer Class. The proposed charge strategy applies a uniform charge adjustment for these Member Partners.*** Their information is not “highlighted” in the cost of service exhibits.

- ***The distance, elevation, and equivalent meters units of service for 17 Member Partners in Table 1 have been modified from those in the original report. The December 30, 2020 version of the report erroneously updated these figures to reflect meter changeouts to different sizes. The intent of the FY 2022 Cost of Service Study was to hold all meter inventory, distance, and elevation units of service at existing levels pending the upcoming Water Charge Methodology Review. The updated units of service reflect that stated intent. The resulting variances from the originally calculated service charges to the final proposed charges are minor, and are discussed herein.***
  - Tables 1b and 1c then combine these basic characteristics into consolidated units of service that align with Cost Pools for each Member Partner.
  - Table 1d groups the No Mod Member Partners into a single Customer Class for purposes of conducting the FY 2022 Cost of Service Study. The Mod Member Partners continue to be treated individually.
2. Illustrates the calculation of proforma FY 2022 revenues under the existing<sup>4</sup> FY 2021 service charge schedule.
- Separates the proforma revenue projections into amounts related to:
    - “Common to All” (CTA) revenue requirements;
    - Implementation of the Detroit Ownership Adjustment;
    - Implementation of the KWA Debt Service Credit;
    - Adjustment to recover Highland Park bad debt expense
  - This is necessary to implement the charge adjustment strategy presented in Tables 6 and 7.
3. Presents an executive summary of the comprehensive Water Supply System BUDGET for FY 2022 compared to the originally approved FY 2021 BUDGET. The total revenue requirement is summarized on the first three lines of the table in summary format<sup>5</sup>. Of note:
- The total BUDGET increase is \$3.9 million, or 1.2%, as shown on Line 4 of the table.
  - The budgeted investment earnings and miscellaneous revenue for FY 2022 reflect a decrease of \$3.6 million as a result of historically low interest rates.
  - Proforma wholesale Water revenues under existing charges reflect a moderate (\$0.9 million) increase compared to originally forecasted FY 2021 amounts.
  - As a result, the “System Charge Adjustment” required from charges to Member Partners is 2.0%, designed to generate \$6.8 million more revenue than the existing charges.

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<sup>4</sup> The FY 2021 service charges were deferred from the original implementation date and are scheduled to become effective January 1, 2021.

<sup>5</sup> Note that this table presents information for both the Water and Sewer systems.

- ***The Cost of Service Study calculations delineated herein allocate responsibility for the “Revenue Requirement from Charges” totaling \$344.4 million as shown on Line 7 of Column 2 of the table.***
    - *Charges will have to be further adjusted to cover the projected Highland Park debt expense shown on Line 8, and to produce overall projected billed revenues of \$345.6 as shown on Line 9.*
4. Allocates the FY 2022 BUDGET from Table 3 to the Cost Pools necessary to assign costs to Member Partners and Customer classes. As noted earlier, the approach taken to prepare these allocations does not reflect any major methodology changes from prior studies. ***The detailed allocations are set forth in Appendix A 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 study the total operating expense budget for FY 2022 reflects material increases in commodity and max day Cost Pools and a more moderate increase in peak hour Cost Pools.
    - *This is principally related to increases in chemical expenses and contractual services at the water treatment plants.*
  - The capital revenue requirements reflect the detailed review of the fixed asset data that resulted from the capital asset inventory and valuation project. In general the result of this aspect of the study has a similar impact as the budget review of the operating expenses: a moderate increase in capital revenue requirements allocated to max day cost pools and a corresponding decrease in peak hour Cost Pools.
5. Calculates and allocates detailed SHARES for each Member Partner within the Mod Customer Class, and for the No Mod Customer Class at large, for each common-to-all (“CTA”) Cost Pool, based on the units of service information from Table 1d. Then applies the CTA SHARES Cost Pool totals from Table 4 to allocate the CTA BUDGET to each “Mod” Member Partner and the No Mod Customer Class.
- Each Member Partner’s SHARE of each Cost Pool is simply their individual units of service divided by the total for all Member Partners for that Cost Pool.
6. Conducts the same calculation for the Suburban Only Cost Pool (the Non Master Metered Member Partners are excluded from this Cost Pool) and:
- Consolidates the overall, comprehensive CTA revenue requirement to be recovered. *See Column 4.*
  - Compares this amount to the proforma CTA revenue under existing charges from Table 2. *See Column 5.*

- Calculates the charge adjustment required in Columns 6 and 7. ***The highlighted 2.58% for the No Mod Customer Class becomes the “uniform CTA charge adjustment to be applied to each member of the class.***
7. Applies the CTA charge adjustments from Table 6 to the proforma CTA revenue under existing charges from Table 2 to determine FY 2022 CTA revenue requirement responsibility for each Member Partner. ***The adjustment for all “No Mod” Member Partners is the uniform 2.58% calculated in Table 6.*** Then applies the adjustments necessary to reflect three special circumstances:
- The “Detroit capital ownership adjustment” of \$20.7 million annually, which is established in the Agreements must be recognized. This amount is reduced from Detroit and allocated to all other Member Partners to the allocation of CTA wholesale revenue requirements. *See Column 5.*
  - Similarly, the contractual credit to Flint related to KWA debt service must be recognized. Flint’s share of KWA debt service for FY 2022 is estimated to be \$6,652,800. This adjustment is accomplished similar to the Detroit adjustment. It is reduced from Flint’s allocated revenue requirement and allocated to all other Member Partners (including Detroit) in proportion to the allocation of CTA wholesale revenue requirements. *See Column 7. Note: while every Member Partner is allocated revenue requirements as a portion of the KWA credit as part of the contractual agreement between GLWA and Flint, it is important to recognize that each Member Partner is a “net beneficiary” of the agreement. All Member Partners receive lower revenue requirement allocation than they would absent the agreement, since the Water System experiences ~ \$4.7 million in annual revenues from Flint, which would not have been experienced without the agreement. The incremental costs of serving Flint under the agreement are not material, and incremental investments that may have been necessary to ensure water quality in the northern GLWA service area had the arrangement not been made are avoided.*
  - Finally, we make an adjustment to reflect the fact that Highland Park is not currently making any payments of wholesale water bills. While GLWA continues to pursue legal opportunities to remedy this performance, the FY 2022 BUDGET does not assume any collections. As such, we re-allocate the entirety of Highland Park’s revenue requirement to all other Member Partners (including Detroit) in proportion to the allocation of wholesale revenue requirements. Note the we still include the entire amount in Highland Park’s revenue requirement for charges, which has the result of increasing the “Revenue Requirements for Charges” by \$1.227 million. *See Column 9.*



- ***The total Detroit BUDGET allocation 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.***
8. Calculates the unadjusted proposed wholesale service charge structure for each Member Partner.
- The first four columns repeat the calculation of proforma revenues from Table 2.
  - Column 5 presents the total adjusted revenue requirement from Table 7.
  - Columns 6 and 7 indicate the charge adjustment necessary to meet allocated revenue requirements. The percentage charge adjustment figures in Column 7 for the No Mod Member Partners are uniformly 2.4%, with minor rounding variances. Note that this is lower than the “CTA revenue requirement” adjustment of 2.58% as the Detroit Ownership and KWA Debt Service Adjustments are fixed, and not subject to indexed increases.
    - ***Note that the pertinent percentage adjustment figures in Column 7 for Flint and Detroit are most appropriately reviewed on a “gross” basis at the bottom of the table, as their specific, fixed contractual adjustments reflect in recovery of less than the CTA revenue requirements allocated to them.***
  - The proposed FY 2022 Water service charges are calculated in Columns 8 through 11. The proposed service charge structure represents the same approach as the existing charge structure, which was originally implemented for the FY 2016 Service Charge Schedule. The fixed monthly charge for each Member Partner is designed to recover precisely 60% of the BUDGET 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.
    - ***The initially calculated charges for Mod Member Partners are adjusted. See discussion of Table 9 below.***
  - Column 12 calculates projected revenue under the proposed service charge schedule and Column 13 illustrates that the proposed charges recover the adjusted, allocated cost of service.
9. Calculates the **adjusted** proposed wholesale service charge structure for each Member Partner in the Mod class.
- ***Compared to the originally proposed service charges in the December 30, 2020 report, changing the meter related units of service results in a very minor decrease in the calculated charge adjustment for the No Mod class and a very minor increase in the calculated charge adjustment for the Mod class. GLWA has opted to forgo the minor increase for the Mod class and hold the proposed***

***FY 2022 Water Service charges for this class at the originally proposed amounts. Table 9 illustrates the mechanics of this adjustment, which will create the need to reduce the overall BUDGET by approximately \$50,000.***

### Sewer Service Charge Calculation Tables:

1. Presents the FY 2022 SHARES for each Member Partner. These SHARES reflect the FY 2022 Sewer units of service endorsed by the Board, which are scheduled to remain in effect through FY 2024. *Appendix C sets forth detailed SHARE calculations, originally presented in November 2020.*
2. Illustrates the calculation of proforma FY 2022 revenues under the existing<sup>6</sup> FY 2021 service charge schedule.
  - Separates the proforma revenue projections into amounts related to:
    - “Common to All” (CTA) revenue requirements;
    - Implementation of the Detroit Ownership Adjustment;
    - Recognition of OMID specific revenue requirements;
    - Adjustment to recover Highland Park bad debt expense.
  - The FY 2021 CTA revenue requirements shown in Column 6 reflect the estimated portion of existing revenue related to unadjusted, common to all revenue requirements. They were computed in development of the FY 2022 SHARES.
  - *As shown in Columns 8 and 9, the FY 2021 Sewer charges were established based on an assumption that prospective bad debt expense from Highland Park (which becomes a revenue requirement for Suburban Wholesale Member Partners) would be equal to the projected bad debt true-up “credit” amount. As such the existing charges do not contain any amounts related to Highland Park bad debt expense.*
3. Presents an executive summary of the comprehensive Sewage Disposal System BUDGET for FY 2022 compared to the originally approved FY 2021 BUDGET. The total revenue requirement is summarized on the first three lines of the table in summary format<sup>7</sup>. Of note:
  - The total BUDGET **decrease** is \$9.5 million, or 2.0%, as shown on Line 4 of the table.
  - The budgeted investment earnings and miscellaneous revenue for FY 2022 reflect a decrease of \$4.26 million as a result of historically low interest rates.

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<sup>6</sup> The FY 2021 service charges were deferred from the original implementation date and are scheduled to become effective January 1, 2021.

<sup>7</sup> Note that this table presents information for both the Water and Sewer systems.

- Proforma wholesale Sewer revenues under existing charges reflect a material decrease compared to FY 2021, which included the second and final year of recognition of the capital contribution from the Oakland Macomb Interceptor Drain District (“OMID”). This revenue recognition of ~ \$5.9 million is no longer available, and must be met from other Sewer charges.
  - As a result, the “System Charge Adjustment” required from charges is a 0.2% **decrease**. The slight decrease is primarily related to modified industrial surcharges, as . . .
  - *As noted earlier, the proposed FY 2022 Sewer BUDGET has been established to meet an objective of no overall increase in the revenues from charges related to SHARES to Member Partners.*
  - The Cost of Service Study calculations delineated herein allocate responsibility for the “Revenue Requirement from Charges” totaling \$475.8 million as shown on Line 7 of Column 6 of the table.
  - The FY 2022 Sewer Service Charges are proposed to continue the “holiday” of Highland Park bad debt expense recovery, similar to the approach in the existing charges. This is discussed in detail in Appendix D to this memorandum report.
4. Allocates the FY 2022 BUDGET from Table 3 to the Cost Pools necessary to assign costs to Member Partners and Customer classes. The Cost Pools are similar to those from prior studies, although simplified to match the new core method embraced by the FY 2022 SHARES, which eliminate “strength of flow” as a unit of service for Member Partners. As noted in Columns 5 through 9, it is still necessary to establish the various WRRF Cost Pools in order to evaluate industrial surcharges. The “common” cost pools prior to reflecting those reflecting revenues from those surcharges are summarized in Columns 10 through 14. *The detailed allocations are set forth in Appendix A to this memorandum report.* There are a few items of note:
- The OMID Contractual Cost Pool no longer contains any amounts related to the capital contribution.
  - In general there are not material changes to other Cost Pools.
  - The capital revenue requirements reflect the detailed review of the fixed asset data that resulted from the capital asset inventory and valuation project.
5. Presents the calculation of proposed FY 2022 Industrial Surcharges. Starting with the original Rate Simplification Initiative in FY 2015, over the past several years these surcharge rates have been adjusted “across the board” consistent with overall GLWA revenue requirement adjustments and with other charge adjustments. This was in part due to the ongoing changes in “strength of flow” opinions regarding SHARE calculations for Member Partners, and uncertainty regarding whether changes in the definition of “domestic” strength should be considered. With the elimination of strength of flow for

SHARE consideration for FY 2022, it is appropriate to review industrial surcharges more thoroughly.

- The WRRF “pollutant” Cost Pool revenue requirements from Table 4 are shown on Lines 1 through 3.
  - Dividing these revenue requirements by the total estimated influent loadings at the WRRF (Line 6) yields the unit cost per pound for each pollutant, which become the proposed FY 2022 industrial surcharges. (Line 8).
  - Applying the estimated surcharge loadings to these surcharge rates indicate the total projected surcharge revenues at the bottom of the table.
    - ***The proposed FY 2022 industrial surcharge rates represent material reductions from the existing rates. This is a direct result of cumulative operating expense reductions at the WRRF during GLWA’s existence, and an increase in reported pollutant loadings at the WRRF.***
6. Establishes the FY 2022 CTA Revenue Requirements to be recovered from SHARES
- The surcharge revenues computed in Table 5 are reduced from the “common” WRRF Cost Pool revenue requirements to result in the figures in Columns 5 through 8.
  - ***The \$460.3 million figure in Column 8 becomes the amount to recover via SHARES and matches the figure from Column 6 in Table 2.***
7. Applies the SHAREs from Table 2 to the total CTA SHARE revenue requirement from Table 6 to allocate the FY 2022 CTA Revenue Requirements to individual Member Partners. Also allocates adjustments to the originally allocated Cost of Service, which include:
- Recognition of the “Detroit capital ownership adjustment” identified in the Agreements. *See Column 3.* This amount is reduced from Detroit and allocated to all other Member Partners to the allocation of CTA wholesale revenue requirements.
  - Recognition of the OMID specific contractual amounts.
  - As noted earlier, the FY 2022 Sewer service charges do not include any amounts related to Highland Park bad debt expense.
  - The total revenue requirement to be recovered from “net” charges is shown in Column 9. ***The figure for Detroit 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.***
8. Calculates the proposed FY 2022 Sewer Service Charges.
- The proposed charges for Member Partners continue to consist entirely of fixed monthly charges are simply the amounts from Table 7 divided by 12. Table 8

illustrates the CTA and adjusted portion of the charge, but the total figures in Column 8 are the charges to be considered by the Board.

9. Compares the existing and proposed Wholesale Sewer Service Charges.
  - As shown on Line 21, the total charges to be applied via SHAREs do not change from the existing charges.
  - Changes to individual Member Partner charges are consistent with those “CTA adjustments” indicated in materials developed in support of the FY 2022 SHAREs and originally presented in November 2020.
  - As noted in that material, there are minor variations associated with the adjustment calculations presented herein.
  
10. Presents the proposed FY 2020 “Industrial Specific” charges – the Industrial Waste Control service charges and the pollutant surcharges.

Table 1a  
Water Supply System  
FY 2022 Units of Service Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Units of Service Input Data										
	<u>Volume</u>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Distance</u>	<u>Elevation</u>	<u>Eq Mtrs</u>	<u>Avg Day Use</u>	<u>Dist x Sales</u>	<u>Allo NRW</u>	<u>Avg Day Prod</u>	
	<i>mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>miles</i>	<i>feet</i>	<i>5/8" proxies</i>	<i>mcf/day</i> <i>(1) / 365</i>	<i>mcf</i> <i>(1) * (4)</i>	<i>mcf/day</i> <i>~ (8)</i>	<i>mcf/day</i> <i>(7) + (9)</i>	
1	Allen Park	129,300	5.70	7.90	21.0	602	928	354.2	2,715,300	44.4	398.6
2	Almont Village	9,500	0.40	0.44	37.9	802	115	26.0	360,100	5.8	31.8
3	Ash Township	42,400	1.44	2.19	29.9	635	160	116.2	1,267,800	20.8	137.0
4	Belleville	13,600	0.50	0.75	32.5	676	115	37.3	442,000	7.1	44.4
5	Berlin Township	26,600	1.20	1.90	34.6	598	211	72.9	920,400	15.0	87.9
6	Brownstown Township	137,500	6.80	11.00	28.5	601	523	376.7	3,918,800	64.1	440.8
7	Bruce Twp	2,180	0.526	0.875	32.8	767	115	6.0	71,500	1.1	7.1
8	Canton Township	349,500	22.50	23.50	32.2	742	1,770	957.5	11,253,900	183.9	1,141.4
9	Center Line	31,200	1.13	1.60	18.4	623	1,155	85.5	574,100	9.3	94.8
10	Chesterfield Township	171,900	8.75	12.00	28.3	617	725	471.0	4,864,800	79.4	550.4
11	Clinton Township	403,100	19.70	22.90	22.8	607	1,218	1,104.4	9,190,700	150.1	1,254.5
12	Commerce Township	102,000	6.54	7.58	31.4	967	520	279.5	3,202,800	52.3	331.8
13	Dearborn	<b>596,300</b>	<b>25.23</b>	<b>34.95</b>	20.1	597	<b>0</b>	1,633.7	11,985,600	195.9	1,829.6
14	Dearborn Heights	197,400	8.00	12.00	22.4	624	617	540.8	4,421,800	72.4	613.2
15	Eastpointe	104,000	3.70	5.50	18.1	612	1,013	284.9	1,882,400	30.7	315.6
16	Ecorse	141,800	3.80	4.40	20.1	591	285	388.5	2,850,200	46.6	435.1
17	Farmington	44,600	2.25	2.45	27.1	765	315	122.2	1,208,700	19.7	141.9
18	Farmington Hills	352,600	20.00	21.30	27.4	784	2,754	966.0	9,661,200	157.8	1,123.8
19	Ferndale	69,800	2.80	3.10	18.2	643	568	191.2	1,270,400	20.9	212.1
20	Flat Rock	57,200	2.63	3.83	30.1	601	235	156.7	1,721,700	28.2	184.9
21	Flint	478,700	14.50	14.50	52.0	866	3,600	1,311.5	24,892,400	406.9	1,718.4
22	Fraser	59,100	2.77	4.28	21.0	617	296	161.9	1,241,100	20.3	182.2
23	Garden City	80,900	3.30	5.21	25.0	638	491	221.6	2,022,500	33.2	254.8
24	Gibraltar	16,300	0.65	0.86	30.9	588	176	44.7	503,700	8.2	52.9
25	Grosse Ile Township	38,300	2.01	3.51	27.0	584	400	104.9	1,034,100	17.0	121.9
26	Grosse Pt. Park	55,600	3.60	6.07	18.0	583	291	152.3	1,000,800	16.5	168.8
27	Grosse Pt. Shores	20,200	1.43	2.67	18.9	587	283	55.3	381,800	6.3	61.6
28	Grosse Pt. Woods	72,200	3.36	4.29	18.9	587	461	197.8	1,364,600	22.2	220.0
29	Hamtramck	62,200	1.77	2.74	16.7	633	658	170.4	1,038,700	17.0	187.4
30	Harper Woods	47,600	2.09	2.99	18.4	598	357	130.4	875,800	14.3	144.7
31	Harrison Township	94,400	3.70	4.75	24.0	587	440	258.6	2,265,600	37.0	295.6
32	Hazel Park	50,500	1.70	2.44	18.1	639	538	138.4	914,100	15.0	153.4
33	Highland Park	<b>105,700</b>	<b>3.34</b>	<b>3.41</b>	17.3	639	<b>0</b>	289.6	1,828,600	29.9	319.5
34	Huron Township	60,300	3.10	3.91	29.9	635	278	165.2	1,803,000	29.6	194.8
35	Imlay City	45,700	2.22	2.35	45.9	908	155	125.2	2,097,600	34.3	159.5

Table 1a  
Water Supply System  
FY 2022 Units of Service Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Units of Service Input Data										
	<u>Volume</u>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Distance</u>	<u>Elevation</u>	<u>Eq Mtrs</u>	<u>Avg Day Use</u>	<u>Dist x Sales</u>	<u>Allo NRW</u>	<u>Avg Day Prod</u>	
	<i>mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>miles</i>	<i>feet</i>	<i>5/8" proxies</i>	<i>mcf/day</i>	<i>mcf</i>	<i>mcf/day</i>	<i>mcf/day</i>	
							<i>(1) / 365</i>	<i>(1) * (4)</i>	<i>~ (8)</i>	<i>(7) + (9)</i>	
36	Imlay Twp	160	0.012	0.024	42.7	825	80	0.4	6,800	0.0	0.4
37	Inkster	93,600	2.44	3.34	24.4	638	443	256.4	2,283,800	37.3	293.7
38	Keego Harbor	9,900	0.45	0.67	29.1	934	123	27.1	288,100	4.7	31.8
39	Lapeer	52,100	1.72	2.50	49.1	850	400	142.7	2,558,100	42.0	184.7
40	Lenox Township	14,900	0.51	0.70	30.5	619	400	40.8	454,500	7.4	48.2
41	Lincoln Park	160,200	5.50	7.00	20.4	594	813	438.9	3,268,100	53.4	492.3
42	Livonia	480,300	23.00	33.00	26.2	687	2,386	1,315.9	12,583,900	205.7	1,521.6
43	Macomb Township	329,800	24.60	41.70	26.8	622	1,015	903.6	8,838,600	144.3	1,047.9
44	Madison Heights	106,600	4.75	6.50	19.4	629	755	292.1	2,068,000	33.7	325.8
45	Mayfield Twp	790	0.04	0.07	48.3	839	155	2.2	38,200	0.5	2.7
46	Melvindale	42,600	1.50	2.10	19.9	594	525	116.7	847,700	14.0	130.7
47	New Haven, Village of	25,500	0.79	1.10	29.8	613	80	69.9	759,900	12.3	82.2
48	N O C W A	897,900	45.10	49.10	27.7	895	5,173	2,460.0	24,871,800	406.3	2,866.3
49	Northville	31,000	1.55	2.02	31.1	836	211	84.9	964,100	15.6	100.5
50	Northville Township	140,800	10.00	13.80	30.5	855	521	385.8	4,294,400	70.1	455.9
51	Novi	292,400	17.00	19.00	31.4	936	1,836	801.1	9,181,400	150.1	951.2
52	Oak Park	97,000	3.90	3.90	19.7	669	285	265.8	1,910,900	31.2	297.0
53	Oakland Co. Drain Comm.	9,700	0.184	0.184	20.4	617	115	26.6	197,900	3.3	29.9
54	Plymouth	44,100	1.81	2.62	30.8	750	203	120.8	1,358,300	22.2	143.0
55	Plymouth Township	161,900	10.00	10.00	31.3	793	315	443.6	5,067,500	82.7	526.3
56	Redford Township	160,500	7.20	10.00	22.6	638	1,271	439.7	3,627,300	59.2	498.9
57	River Rouge	37,900	1.78	2.26	19.4	585	431	103.8	735,300	12.1	115.9
58	Riverview	48,500	1.68	2.67	25.3	594	130	132.9	1,227,100	20.0	152.9
59	Rockwood	9,900	0.56	0.72	32.7	592	88	27.1	323,700	5.2	32.3
60	Romeo	6,000	0.42	0.60	32.2	789	155	16.4	193,200	3.3	19.7
61	Romulus	218,500	8.92	11.00	27.3	651	919	598.6	5,965,100	97.6	696.2
62	Roseville	189,900	6.39	9.06	19.0	620	885	520.3	3,608,100	58.9	579.2
63	Royal Oak Township	11,000	0.473	0.649	19.2	665	146	30.1	211,200	3.6	33.7
64	S O C W A	1,254,800	60.50	60.50	22.2	732	4,998	3,437.8	27,856,600	455.1	3,892.9
65	Shelby Township	404,100	24.79	45.44	26.4	694	1,246	1,107.1	10,668,200	174.3	1,281.4
66	South Rockwood	4,700	0.176	0.297	33.4	586	88	12.9	157,000	2.4	15.3
67	Southgate	114,500	5.00	7.00	23.7	601	361	313.7	2,713,700	44.4	358.1
68	St. Clair County-Burtchville Twp	7,800	0.48	0.68	47.2	620	105	21.4	368,200	6.0	27.4
69	St. Clair County-Greenwood	20,600	1.75	1.75	45.4	774	413	56.4	935,200	15.4	71.8
70	St. Clair Shores	190,200	7.50	10.00	20.2	594	1,239	521.1	3,842,000	62.7	583.8
71	Sterling Heights	577,900	33.00	52.50	22.3	632	3,175	1,583.3	12,887,200	210.7	1,794.0

Table 1a  
Water Supply System  
FY 2022 Units of Service Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Units of Service Input Data										
	<u>Volume</u>	<u>Max Day</u>	<u>Peak Hour</u>	<u>Distance</u>	<u>Elevation</u>	<u>Eq Mtrs</u>	<u>Avg Day Use</u>	<u>Dist x Sales</u>	<u>Allo NRW</u>	<u>Avg Day Prod</u>	
	<i>mcf</i>	<i>mgd</i>	<i>mgd</i>	<i>miles</i>	<i>feet</i>	<i>5/8" proxies</i>	<i>mcf/day</i>	<i>mcf</i>	<i>mcf/day</i>	<i>mcf/day</i>	
							<i>(1) / 365</i>	<i>(1) * (4)</i>	<i>~ (8)</i>	<i>(7) + (9)</i>	
72	Sumpter Township	29,500	1.08	1.67	32.9	663	155	80.8	970,600	15.9	96.7
73	Sylvan Lake	6,400	0.35	0.55	29.1	938	80	17.5	186,200	3.0	20.5
74	Taylor	262,600	11.20	14.00	23.5	616	1,078	719.5	6,171,100	100.8	820.3
75	Trenton	87,100	3.30	4.92	25.8	596	1,185	238.6	2,247,200	36.7	275.3
76	Troy	473,500	27.00	40.00	24.2	756	2,548	1,297.3	11,458,700	187.1	1,484.4
77	Utica	24,700	1.20	1.75	24.4	660	155	67.7	602,700	9.8	77.5
78	Van Buren Township	132,400	6.90	8.17	32.5	676	1,090	362.7	4,303,000	70.5	433.2
79	Walled Lake	30,700	1.16	1.67	31.7	959	115	84.1	973,200	15.9	100.0
80	Warren	628,200	27.00	35.00	18.4	623	1,509	1,721.1	11,558,900	188.8	1,909.9
81	Washington Township	78,700	5.40	5.40	29.6	754	278	215.6	2,329,500	38.1	253.7
82	Wayne	104,100	8.28	8.28	25.9	646	600	285.2	2,696,200	44.1	329.3
83	West Bloomfield Township	266,800	15.50	26.00	28.7	912	1,960	731.0	7,657,200	125.2	856.2
84	Westland	328,100	12.50	17.50	26.0	653	1,925	898.9	8,530,600	139.5	1,038.4
85	Wixom	74,900	4.33	5.10	33.9	944	155	205.2	2,539,100	41.4	246.6
86	Woodhaven	57,700	3.24	5.12	28.5	596	195	158.1	1,644,500	26.8	184.9
87	Ypsilanti Comm Util Auth	485,300	21.00	21.00	35.8	726	1,880	1,329.6	17,373,700	283.8	1,613.4
88	Subtotal Wholesale	13,588,930	658.04	854.73			67,158	37,229.8	355,452,100	5,808.3	43,038.1
89	Detroit	<b>4,186,400</b>	<b>115.05</b>	<b>136.09</b>	16.8	629		11,469.6	70,331,500	1,148.7	12,618.3
90	Grand Total	17,775,330	773.09	990.83			67,158	48,699.4	425,783,600	6,957.0	55,656.4
91	Modified Demands	618,980	34.91	58.21	6		2,755	1,695.8	16,065,000	262.3	1,958.1
92	Non-Master Metered	4,888,400	143.61	174.46	3		0	13,392.9	84,145,700	1,374.5	14,767.4
93	No Mods	12,267,950	594.57	758.16	79		64,403	33,610.7	325,572,900	5,320.2	38,930.9
94	Total	17,775,330	773.09	990.83	88		67,158	48,699.4	425,783,600	6,957.0	55,656.4



Table 1b  
Water Supply System  
Detailed FY 2022 Units of Service

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Units of Service Detail								
	<u>Max Day</u>	<u>Peak Hour</u>	<u>PH Incr</u>	<u>PH Dist</u>	<u>Elev Factor</u>	<u>Comm DE</u>	<u>MD DE</u>	<u>PH DE</u>	<u>PHI DE</u>
	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>miles *</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>
	<i>(2)*133.68 + (9)</i>	<i>(3)*133.68 + (9)</i>	<i>(12) - (11)</i>	<i>(12) * (4)</i>	<i>[(5)-610] / 10.56</i>	<i>(10) * (15)</i>	<i>(11) * (15)</i>	<i>(12) * (15)</i>	<i>(13) * (15)</i>
1 Allen Park	806.4	1,100.5	294.1	23,110.0	21.0	8,370.6	16,934.0	23,110.0	6,176.0
2 Almont Village	59.3	64.6	5.3	2,449.1	56.1	1,784.0	3,325.2	3,625.2	300.0
3 Ash Township	213.3	313.6	100.3	9,375.5	32.3	4,425.1	6,889.6	10,128.0	3,238.4
4 Belleville	73.9	107.4	33.4	3,489.2	38.8	1,722.7	2,868.9	4,165.6	1,296.7
5 Berlin Township	175.4	269.0	93.6	9,307.2	34.6	3,041.3	6,069.4	9,307.2	3,237.7
6 Brownstown Township	973.1	1,534.6	561.5	43,735.7	28.5	12,562.8	27,734.1	43,735.7	16,001.6
7 Bruce Twp	71.4	118.1	46.7	3,872.7	47.7	338.7	3,406.5	5,632.0	2,225.4
8 Canton Township	3,191.7	3,325.4	133.7	107,077.6	44.7	51,020.6	142,669.5	148,645.1	5,975.5
9 Center Line	160.4	223.2	62.8	4,106.7	19.6	1,858.1	3,143.0	4,374.5	1,231.5
10 Chesterfield Township	1,249.1	1,683.6	434.5	47,644.9	29.0	15,961.6	36,224.0	48,823.4	12,599.4
11 Clinton Township	2,783.6	3,211.4	427.8	73,219.6	22.8	28,602.6	63,466.2	73,219.6	9,753.3
12 Commerce Township	926.6	1,065.6	139.0	33,459.8	65.2	21,633.4	60,412.4	69,477.0	9,064.6
13 Dearborn	3,568.4	4,868.2	1,299.8	97,850.4	20.1	36,775.0	71,724.2	97,850.4	26,126.2
14 Dearborn Heights	1,141.8	1,676.6	534.7	37,555.1	23.7	14,532.8	27,061.7	39,734.6	12,672.9
15 Eastpointe	525.3	765.9	240.6	13,863.6	18.3	5,775.5	9,613.3	14,016.8	4,403.4
16 Ecorse	554.6	634.8	80.2	12,759.4	20.1	8,745.5	11,147.2	12,759.4	1,612.2
17 Farmington	320.5	347.2	26.7	9,409.6	41.8	5,931.4	13,396.1	14,513.7	1,117.6
18 Farmington Hills	2,831.4	3,005.2	173.8	82,342.4	43.9	49,334.8	124,298.9	131,928.1	7,629.1
19 Ferndale	395.2	435.3	40.1	7,922.6	21.3	4,517.7	8,417.9	9,272.1	854.2
20 Flat Rock	379.8	540.2	160.4	16,259.9	30.1	5,565.5	11,431.4	16,259.9	4,828.5
21 Flint	2,345.3	2,345.3	0.0	121,953.9	76.2	130,942.1	178,709.4	178,709.4	0.0
22 Fraser	390.6	592.5	201.9	12,441.5	21.7	3,953.7	8,475.9	12,856.2	4,380.3
23 Garden City	474.3	729.7	255.3	18,241.9	27.7	7,058.0	13,139.4	20,212.0	7,072.6
24 Gibraltar	95.1	123.2	28.1	3,805.8	30.9	1,634.6	2,938.4	3,805.8	867.5
25 Grosse Ile Township	285.7	486.2	200.5	13,127.9	27.0	3,291.3	7,713.8	13,127.9	5,414.1
26 Grosse Pt. Park	497.7	827.9	330.2	14,902.9	18.0	3,038.4	8,959.5	14,902.9	5,943.4
27 Grosse Pt. Shores	197.5	363.2	165.8	6,865.0	18.9	1,164.2	3,732.1	6,865.0	3,132.9
28 Grosse Pt. Woods	471.4	595.7	124.3	11,258.5	18.9	4,158.0	8,908.8	11,258.5	2,349.7
29 Hamtramck	253.6	383.3	129.7	6,400.9	18.9	3,541.9	4,793.3	7,244.1	2,450.8
30 Harper Woods	293.7	414.0	120.3	7,617.7	18.4	2,662.5	5,403.9	7,617.7	2,213.7
31 Harrison Township	531.6	672.0	140.4	16,127.6	24.0	7,094.4	12,758.8	16,127.6	3,368.7
32 Hazel Park	242.3	341.2	98.9	6,175.4	20.8	3,190.7	5,038.9	7,096.6	2,057.6
33 Highland Park	475.7	486.0	10.2	8,407.0	20.0	6,390.0	9,514.7	9,719.1	204.3
34 Huron Township	444.0	552.3	108.3	16,513.5	32.3	6,292.0	14,341.5	17,839.0	3,497.5
35 Imlay City	331.1	348.4	17.4	15,993.8	74.1	11,819.0	24,532.3	25,820.1	1,287.7

Table 1b  
Water Supply System  
Detailed FY 2022 Units of Service

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
	Units of Service Detail									
	<u>Max Day</u>	<u>Peak Hour</u>	<u>PH Incr</u>	<u>PH Dist</u>	<u>Elev Factor</u>	<u>Comm DE</u>	<u>MD DE</u>	<u>PH DE</u>	<u>PHI DE</u>	
	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>miles *</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	
	<i>(2)*133.68 + (9)</i>	<i>(3)*133.68 + (9)</i>	<i>(12) - (11)</i>	<i>(12) * (4)</i>	<i>[(5)-610] / 10.56</i>	<i>(10) * (15)</i>	<i>(11) * (15)</i>	<i>(12) * (15)</i>	<i>(13) * (15)</i>	
36	Imlay Twp	1.6	3.2	1.6	137.0	63.1	25.2	101.2	202.4	101.2
37	Inkster	363.5	483.8	120.3	11,804.5	27.1	7,959.3	9,850.3	13,110.8	3,260.5
38	Keego Harbor	64.9	94.4	29.5	2,747.0	59.8	1,901.6	3,878.4	5,645.1	1,766.7
39	Lapeer	271.9	376.2	104.3	18,471.5	71.8	13,261.5	19,524.6	27,011.3	7,486.6
40	Lenox Township	75.6	101.5	25.9	3,096.1	31.4	1,513.5	2,373.1	3,187.4	814.3
41	Lincoln Park	788.6	989.2	200.5	20,178.9	20.4	10,042.9	16,088.3	20,178.9	4,090.6
42	Livonia	3,280.4	4,617.2	1,336.8	120,969.5	33.5	50,973.6	109,891.8	154,674.8	44,783.0
43	Macomb Township	3,432.8	5,718.8	2,285.9	153,263.3	27.9	29,236.4	95,776.3	159,553.9	63,777.7
44	Madison Heights	668.7	902.6	233.9	17,510.9	21.2	6,907.0	14,176.1	19,135.6	4,959.5
45	Mayfield Twp	5.8	9.9	4.0	476.1	70.0	189.0	409.3	690.0	280.7
46	Melvindale	214.5	294.7	80.2	5,865.1	19.9	2,600.9	4,269.0	5,865.1	1,596.1
47	New Haven, Village of	117.2	159.3	42.1	4,748.6	30.1	2,474.2	3,528.9	4,796.4	1,267.5
48	N O C W A	6,435.3	6,970.0	534.7	193,069.4	54.7	156,786.6	352,010.5	381,259.8	29,249.3
49	Northville	222.8	285.6	62.8	8,883.2	52.5	5,276.3	11,697.3	14,995.8	3,298.6
50	Northville Township	1,406.9	1,914.9	508.0	58,404.2	53.7	24,481.8	75,550.8	102,829.7	27,278.9
51	Novi	2,422.7	2,690.0	267.4	84,467.0	62.3	59,259.8	150,932.3	167,588.9	16,656.6
52	Oak Park	552.6	552.6	0.0	10,885.3	25.3	7,514.1	13,979.6	13,979.6	0.0
53	Oakland Co. Drain Comm.	27.9	27.9	0.0	569.1	21.1	630.9	588.6	588.6	0.0
54	Plymouth	264.2	372.4	108.3	11,471.2	44.1	6,306.3	11,649.5	16,424.7	4,775.2
55	Plymouth Township	1,419.5	1,419.5	0.0	44,430.5	48.6	25,578.2	68,988.0	68,988.0	0.0
56	Redford Township	1,021.7	1,396.0	374.3	31,549.7	25.3	12,622.2	25,849.0	35,318.9	9,469.9
57	River Rouge	250.1	314.2	64.2	6,095.8	19.4	2,248.5	4,851.0	6,095.8	1,244.8
58	Riverview	244.6	376.9	132.3	9,536.3	25.3	3,868.4	6,188.0	9,536.3	3,348.3
59	Rockwood	80.1	100.8	20.7	3,295.6	32.7	1,056.2	2,618.0	3,295.6	677.6
60	Romeo	59.4	83.5	24.1	2,689.0	49.2	969.2	2,924.7	4,108.6	1,183.9
61	Romulus	1,290.0	1,568.1	278.1	42,808.7	31.2	21,721.4	40,249.0	48,924.3	8,675.3
62	Roseville	913.1	1,270.0	356.9	24,130.9	19.9	11,526.1	18,171.1	25,273.9	7,102.8
63	Royal Oak Township	66.8	90.4	23.5	1,734.9	24.4	822.3	1,630.7	2,204.8	574.1
64	S O C W A	8,542.8	8,542.8	0.0	189,649.6	33.8	131,580.0	288,745.7	288,745.7	0.0
65	Shelby Township	3,488.2	6,248.7	2,760.5	164,966.8	34.4	44,080.2	119,995.5	214,956.8	94,961.3
66	South Rockwood	25.9	42.1	16.2	1,406.2	33.4	511.0	866.0	1,406.2	540.3
67	Southgate	712.8	980.2	267.4	23,229.9	23.7	8,487.0	16,893.4	23,229.9	6,336.5
68	St. Clair County-Burtchville Twp	69.9	96.9	27.0	4,573.8	48.1	1,317.9	3,362.2	4,661.0	1,298.9
69	St. Clair County-Greenwood	249.3	249.3	0.0	11,320.1	60.9	4,372.6	15,184.9	15,184.9	0.0
70	St. Clair Shores	1,065.3	1,399.5	334.2	28,270.0	20.2	11,792.8	21,519.1	28,270.0	6,750.9
71	Sterling Heights	4,622.2	7,228.9	2,606.8	161,205.1	24.4	43,773.6	112,780.7	176,385.9	63,605.2

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Table 1b  
Water Supply System  
Detailed FY 2022 Units of Service

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Units of Service Detail								
	<u>Max Day</u>	<u>Peak Hour</u>	<u>PH Incr</u>	<u>PH Dist</u>	<u>Elev Factor</u>	<u>Comm DE</u>	<u>MD DE</u>	<u>PH DE</u>	<u>PHI DE</u>
	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>miles *</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>	<i>mcf/day</i>
	<i>(2)*133.68 + (9)</i>	<i>(3)*133.68 + (9)</i>	<i>(12) - (11)</i>	<i>(12) * (4)</i>	<i>[(5)-610] / 10.56</i>	<i>(10) * (15)</i>	<i>(11) * (15)</i>	<i>(12) * (15)</i>	<i>(13) * (15)</i>
72 Sumpter Township	160.3	239.1	78.9	7,867.9	37.9	3,664.9	6,074.4	9,063.7	2,989.2
73 Sylvan Lake	50.1	76.5	26.5	2,226.9	60.2	1,234.1	3,013.3	4,606.8	1,593.4
74 Taylor	1,598.0	1,972.3	374.3	46,349.7	24.1	19,769.2	38,512.3	47,533.1	9,020.8
75 Trenton	477.8	694.4	216.6	17,915.7	25.8	7,102.7	12,328.4	17,915.7	5,587.3
76 Troy	3,796.5	5,534.3	1,737.8	133,930.6	38.0	56,407.2	144,266.0	210,304.2	66,038.2
77 Utica	170.2	243.7	73.5	5,947.3	29.1	2,255.3	4,953.3	7,092.9	2,139.6
78 Van Buren Township	992.9	1,162.7	169.8	37,786.8	38.8	16,808.2	38,524.4	45,111.6	6,587.2
79 Walled Lake	171.0	239.1	68.2	7,580.9	64.7	6,470.0	11,061.7	15,472.8	4,411.1
80 Warren	3,798.2	4,867.6	1,069.4	89,564.2	19.6	37,434.0	74,444.2	95,405.3	20,961.1
81 Washington Township	760.0	760.0	0.0	22,495.3	43.2	10,959.8	32,830.9	32,830.9	0.0
82 Wayne	1,151.0	1,151.0	0.0	29,810.3	29.3	9,648.5	33,723.6	33,723.6	0.0
83 West Bloomfield Township	2,197.2	3,600.9	1,403.6	103,345.7	57.3	49,060.3	125,902.3	206,331.2	80,428.9
84 Westland	1,810.5	2,478.9	668.4	64,451.6	30.1	31,255.8	54,496.3	74,615.2	20,118.9
85 Wixom	620.2	723.2	102.9	24,515.5	65.5	16,152.3	40,625.5	47,367.7	6,742.2
86 Woodhaven	459.9	711.2	251.3	20,270.5	28.5	5,269.7	13,107.9	20,270.5	7,162.6
87 Ypsilanti Comm Util Auth	3,091.1	3,091.1	0.0	110,661.1	46.8	75,507.1	144,663.1	144,663.1	0.0
88 Subtotal Wholesale	93,775.3	120,069.3	26,294.0	3,121,275.0		1,541,398.1	3,384,814.7	4,214,393.9	829,578.3
89 Detroit	16,528.3	19,341.8	2,813.5	324,941.6	18.6	234,700.4	307,425.9	359,756.8	52,330.9
90 Grand Total	110,303.6	139,411.1	29,107.5	3,446,216.6		1,776,098.5	3,692,240.6	4,574,150.7	881,909.2
91 Modified Demands	4,929.2	8,043.2	3,114.0	212,294.3		62,518.1	163,783.4	267,956.2	104,172.6
92 Non-Master Metered	20,572.4	24,695.9	4,123.5	431,199.0		277,865.4	388,664.8	467,326.3	78,661.4
93 No Mods	84,802.0	106,672.0	21,870.0	2,802,723.3		1,435,715.0	3,139,792.4	3,838,868.2	699,075.2
94 Total	110,303.6	139,411.1	29,107.5	3,446,216.6		1,776,098.5	3,692,240.6	4,574,150.7	881,909.2

Table 1c  
Water Supply System  
Consolidated FY 2022 Units of Service

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Sales Volume	Consolidated Units of Service									
	Common-to-All									Suburban Only
	Commod	Max Day	PH Incr	PH Dist	Comm DE	MD DE	PH DE	PHI DE	Mtrs	
<i>Mcf</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>eq 5/8" mtrs</i>	
1 Allen Park	129,300	398.6	806.4	294.1	23,110.0	8,370.6	16,934.0	23,110.0	6,176.0	928
2 Almont Village	9,500	31.8	59.3	5.3	2,449.1	1,784.0	3,325.2	3,625.2	300.0	115
3 Ash Township	42,400	137.0	213.3	100.3	9,375.5	4,425.1	6,889.6	10,128.0	3,238.4	160
4 Belleville	13,600	44.4	73.9	33.4	3,489.2	1,722.7	2,868.9	4,165.6	1,296.7	115
5 Berlin Township	26,600	87.9	175.4	93.6	9,307.2	3,041.3	6,069.4	9,307.2	3,237.7	211
6 Brownstown Township	137,500	440.8	973.1	561.5	43,735.7	12,562.8	27,734.1	43,735.7	16,001.6	523
7 Bruce Twp	2,180	7.1	71.4	46.7	3,872.7	338.7	3,406.5	5,632.0	2,225.4	115
8 Canton Township	349,500	1,141.4	3,191.7	133.7	107,077.6	51,020.6	142,669.5	148,645.1	5,975.5	1,770
9 Center Line	31,200	94.8	160.4	62.8	4,106.7	1,858.1	3,143.0	4,374.5	1,231.5	155
10 Chesterfield Township	171,900	550.4	1,249.1	434.5	47,644.9	15,961.6	36,224.0	48,823.4	12,599.4	725
11 Clinton Township	403,100	1,254.5	2,783.6	427.8	73,219.6	28,602.6	63,466.2	73,219.6	9,753.3	1,218
12 Commerce Township	102,000	331.8	926.6	139.0	33,459.8	21,633.4	60,412.4	69,477.0	9,064.6	520
13 Dearborn	596,300	1,829.6	3,568.4	1,299.8	97,850.4	36,775.0	71,724.2	97,850.4	26,126.2	0
14 Dearborn Heights	197,400	613.2	1,141.8	534.7	37,555.1	14,532.8	27,061.7	39,734.6	12,672.9	617
15 Eastpointe	104,000	315.6	525.3	240.6	13,863.6	5,775.5	9,613.3	14,016.8	4,403.4	1,013
16 Ecorse	141,800	435.1	554.6	80.2	12,759.4	8,745.5	11,147.2	12,759.4	1,612.2	285
17 Farmington	44,600	141.9	320.5	26.7	9,409.6	5,931.4	13,396.1	14,513.7	1,117.6	315
18 Farmington Hills	352,600	1,123.8	2,831.4	173.8	82,342.4	49,334.8	124,298.9	131,928.1	7,629.1	2,754
19 Ferndale	69,800	212.1	395.2	40.1	7,922.6	4,517.7	8,417.9	9,272.1	854.2	568
20 Flat Rock	57,200	184.9	379.8	160.4	16,259.9	5,565.5	11,431.4	16,259.9	4,828.5	235
21 Flint	478,700	1,718.4	2,345.3	0.0	121,953.9	130,942.1	178,709.4	178,709.4	0.0	3,600
22 Fraser	59,100	182.2	390.6	201.9	12,441.5	3,953.7	8,475.9	12,856.2	4,380.3	296
23 Garden City	80,900	254.8	474.3	255.3	18,241.9	7,058.0	13,139.4	20,212.0	7,072.6	491
24 Gibraltar	16,300	52.9	95.1	28.1	3,805.8	1,634.6	2,938.4	3,805.8	867.5	176
25 Grosse Ile Township	38,300	121.9	285.7	200.5	13,127.9	3,291.3	7,713.8	13,127.9	5,414.1	400
26 Grosse Pt. Park	55,600	168.8	497.7	330.2	14,902.9	3,038.4	8,959.5	14,902.9	5,943.4	291
27 Grosse Pt. Shores	20,200	61.6	197.5	165.8	6,865.0	1,164.2	3,732.1	6,865.0	3,132.9	283
28 Grosse Pt. Woods	72,200	220.0	471.4	124.3	11,258.5	4,158.0	8,908.8	11,258.5	2,349.7	461
29 Hamtramck	62,200	187.4	253.6	129.7	6,400.9	3,541.9	4,793.3	7,244.1	2,450.8	658
30 Harper Woods	47,600	144.7	293.7	120.3	7,617.7	2,662.5	5,403.9	7,617.7	2,213.7	357
31 Harrison Township	94,400	295.6	531.6	140.4	16,127.6	7,094.4	12,758.8	16,127.6	3,368.7	440
32 Hazel Park	50,500	153.4	242.3	98.9	6,175.4	3,190.7	5,038.9	7,096.6	2,057.6	538
33 Highland Park	105,700	319.5	475.7	10.2	8,407.0	6,390.0	9,514.7	9,719.1	204.3	0
34 Huron Township	60,300	194.8	444.0	108.3	16,513.5	6,292.0	14,341.5	17,839.0	3,497.5	278
35 Imlay City	45,700	159.5	331.1	17.4	15,993.8	11,819.0	24,532.3	25,820.1	1,287.7	155

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Table 1c  
Water Supply System  
Consolidated FY 2022 Units of Service

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
Sales Volume	Consolidated Units of Service										
	Common-to-All									Suburban Only	
	Commod	Max Day	PH Incr	PH Dist	Comm DE	MD DE	PH DE	PHI DE	Mtrs		
<i>Mcf</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>eq 5/8" mtrs</i>		
36	Imlay Twp	160	0.4	1.6	1.6	137.0	25.2	101.2	202.4	101.2	80
37	Inkster	93,600	293.7	363.5	120.3	11,804.5	7,959.3	9,850.3	13,110.8	3,260.5	443
38	Keego Harbor	9,900	31.8	64.9	29.5	2,747.0	1,901.6	3,878.4	5,645.1	1,766.7	123
39	Lapeer	52,100	184.7	271.9	104.3	18,471.5	13,261.5	19,524.6	27,011.3	7,486.6	400
40	Lenox Township	14,900	48.2	75.6	25.9	3,096.1	1,513.5	2,373.1	3,187.4	814.3	400
41	Lincoln Park	160,200	492.3	788.6	200.5	20,178.9	10,042.9	16,088.3	20,178.9	4,090.6	813
42	Livonia	480,300	1,521.6	3,280.4	1,336.8	120,969.5	50,973.6	109,891.8	154,674.8	44,783.0	2,386
43	Macomb Township	329,800	1,047.9	3,432.8	2,285.9	153,263.3	29,236.4	95,776.3	159,553.9	63,777.7	1,015
44	Madison Heights	106,600	325.8	668.7	233.9	17,510.9	6,907.0	14,176.1	19,135.6	4,959.5	755
45	Mayfield Twp	790	2.7	5.8	4.0	476.1	189.0	409.3	690.0	280.7	155
46	Melvindale	42,600	130.7	214.5	80.2	5,865.1	2,600.9	4,269.0	5,865.1	1,596.1	525
47	New Haven, Village of	25,500	82.2	117.2	42.1	4,748.6	2,474.2	3,528.9	4,796.4	1,267.5	80
48	N O C W A	897,900	2,866.3	6,435.3	534.7	193,069.4	156,786.6	352,010.5	381,259.8	29,249.3	5,173
49	Northville	31,000	100.5	222.8	62.8	8,883.2	5,276.3	11,697.3	14,995.8	3,298.6	211
50	Northville Township	140,800	455.9	1,406.9	508.0	58,404.2	24,481.8	75,550.8	102,829.7	27,278.9	521
51	Novi	292,400	951.2	2,422.7	267.4	84,467.0	59,259.8	150,932.3	167,588.9	16,656.6	1,836
52	Oak Park	97,000	297.0	552.6	0.0	10,885.3	7,514.1	13,979.6	13,979.6	0.0	285
53	Oakland Co. Drain Comm.	9,700	29.9	27.9	0.0	569.1	630.9	588.6	588.6	0.0	115
54	Plymouth	44,100	143.0	264.2	108.3	11,471.2	6,306.3	11,649.5	16,424.7	4,775.2	203
55	Plymouth Township	161,900	526.3	1,419.5	0.0	44,430.5	25,578.2	68,988.0	68,988.0	0.0	315
56	Redford Township	160,500	498.9	1,021.7	374.3	31,549.7	12,622.2	25,849.0	35,318.9	9,469.9	1,271
57	River Rouge	37,900	115.9	250.1	64.2	6,095.8	2,248.5	4,851.0	6,095.8	1,244.8	431
58	Riverview	48,500	152.9	244.6	132.3	9,536.3	3,868.4	6,188.0	9,536.3	3,348.3	130
59	Rockwood	9,900	32.3	80.1	20.7	3,295.6	1,056.2	2,618.0	3,295.6	677.6	88
60	Romeo	6,000	19.7	59.4	24.1	2,689.0	969.2	2,924.7	4,108.6	1,183.9	155
61	Romulus	218,500	696.2	1,290.0	278.1	42,808.7	21,721.4	40,249.0	48,924.3	8,675.3	919
62	Roseville	189,900	579.2	913.1	356.9	24,130.9	11,526.1	18,171.1	25,273.9	7,102.8	885
63	Royal Oak Township	11,000	33.7	66.8	23.5	1,734.9	822.3	1,630.7	2,204.8	574.1	146
64	S O C W A	1,254,800	3,892.9	8,542.8	0.0	189,649.6	131,580.0	288,745.7	288,745.7	0.0	4,998
65	Shelby Township	404,100	1,281.4	3,488.2	2,760.5	164,966.8	44,080.2	119,995.5	214,956.8	94,961.3	1,246
66	South Rockwood	4,700	15.3	25.9	16.2	1,406.2	511.0	866.0	1,406.2	540.3	88
67	Southgate	114,500	358.1	712.8	267.4	23,229.9	8,487.0	16,893.4	23,229.9	6,336.5	361
68	St. Clair County-Burtchville Twp	7,800	27.4	69.9	27.0	4,573.8	1,317.9	3,362.2	4,661.0	1,298.9	105
69	St. Clair County-Greenwood	20,600	71.8	249.3	0.0	11,320.1	4,372.6	15,184.9	15,184.9	0.0	413
70	St. Clair Shores	190,200	583.8	1,065.3	334.2	28,270.0	11,792.8	21,519.1	28,270.0	6,750.9	1,239
71	Sterling Heights	577,900	1,794.0	4,622.2	2,606.8	161,205.1	43,773.6	112,780.7	176,385.9	63,605.2	3,175

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THE FOSTER GROUP

Table 1c  
Water Supply System  
Consolidated FY 2022 Units of Service

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
Consolidated Units of Service											
Sales	Common-to-All									Suburban Only	
Volume	Commod	Max Day	PH Incr	PH Dist	Comm DE	MD DE	PH DE	PHI DE	Mtrs		
<i>Mcf</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>eq 5/8" mtrs</i>		
72	Sumpter Township	29,500	96.7	160.3	78.9	7,867.9	3,664.9	6,074.4	9,063.7	2,989.2	155
73	Sylvan Lake	6,400	20.5	50.1	26.5	2,226.9	1,234.1	3,013.3	4,606.8	1,593.4	80
74	Taylor	262,600	820.3	1,598.0	374.3	46,349.7	19,769.2	38,512.3	47,533.1	9,020.8	1,078
75	Trenton	87,100	275.3	477.8	216.6	17,915.7	7,102.7	12,328.4	17,915.7	5,587.3	1,185
76	Troy	473,500	1,484.4	3,796.5	1,737.8	133,930.6	56,407.2	144,266.0	210,304.2	66,038.2	2,548
77	Utica	24,700	77.5	170.2	73.5	5,947.3	2,255.3	4,953.3	7,092.9	2,139.6	155
78	Van Buren Township	132,400	433.2	992.9	169.8	37,786.8	16,808.2	38,524.4	45,111.6	6,587.2	1,090
79	Walled Lake	30,700	100.0	171.0	68.2	7,580.9	6,470.0	11,061.7	15,472.8	4,411.1	115
80	Warren	628,200	1,909.9	3,798.2	1,069.4	89,564.2	37,434.0	74,444.2	95,405.3	20,961.1	1,509
81	Washington Township	78,700	253.7	760.0	0.0	22,495.3	10,959.8	32,830.9	32,830.9	0.0	278
82	Wayne	104,100	329.3	1,151.0	0.0	29,810.3	9,648.5	33,723.6	33,723.6	0.0	600
83	West Bloomfield Township	266,800	856.2	2,197.2	1,403.6	103,345.7	49,060.3	125,902.3	206,331.2	80,428.9	1,960
84	Westland	328,100	1,038.4	1,810.5	668.4	64,451.6	31,255.8	54,496.3	74,615.2	20,118.9	1,925
85	Wixom	74,900	246.6	620.2	102.9	24,515.5	16,152.3	40,625.5	47,367.7	6,742.2	155
86	Woodhaven	57,700	184.9	459.9	251.3	20,270.5	5,269.7	13,107.9	20,270.5	7,162.6	195
87	Ypsilanti Comm Util Auth	485,300	1,613.4	3,091.1	0.0	110,661.1	75,507.1	144,663.1	144,663.1	0.0	1,880
88	Total Suburban	13,588,930	43,038.1	93,775.3	26,294.0	3,121,275.0	1,541,398.1	3,384,814.7	4,214,393.9	829,578.3	67,158
89	Detroit	4,186,400	12,618.3	16,528.3	2,813.5	324,941.6	234,700.4	307,425.9	359,756.8	52,330.9	0
90	Grand Total	17,775,330	55,656.4	110,303.6	29,107.5	3,446,216.6	1,776,098.5	3,692,240.6	4,574,150.7	881,909.2	67,158
91	Modified Demands	618,980	1,958.1	4,929.2	3,114.0	212,294.3	62,518.1	163,783.4	267,956.2	104,172.6	2,755
92	Non-Master Metered	4,888,400	14,767.4	20,572.4	4,123.5	431,199.0	277,865.4	388,664.8	467,326.3	78,661.4	0
93	No Mods	12,267,950	38,930.9	84,802.0	21,870.0	2,802,723.3	1,435,715.0	3,139,792.4	3,838,868.2	699,075.2	64,403
94	Total	17,775,330	55,656.4	110,303.6	29,107.5	3,446,216.6	1,776,098.5	3,692,240.6	4,574,150.7	881,909.2	67,158

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**Table 1d**  
**Water Supply System**  
**Consolidated FY 2022 Units of Service Summary for "Mod" and "No Mod" Member Partners**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
	Consolidated Units of Service										
Sales	Common-to-All									Suburban Only	
<u>Volume</u>	<u>Commod</u>	<u>Max Day</u>	<u>PH Incr</u>	<u>PH Dist</u>	<u>Comm DE</u>	<u>MD DE</u>	<u>PH DE</u>	<u>PHI DE</u>	<u>Mtrs</u>		
<i>Mcf</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>Mcf-miles/day</i>	<i>eq 5/8" mtrs</i>		
<u>"Mod" Member Partners</u>											
1	Bruce Twp	2,180	7.1	71.4	46.7	3,872.7	338.7	3,406.5	5,632.0	2,225.4	115
2	Dearborn	596,300	1,829.6	3,568.4	1,299.8	97,850.4	36,775.0	71,724.2	97,850.4	26,126.2	0
3	Grosse Pt. Woods	72,200	220.0	471.4	124.3	11,258.5	4,158.0	8,908.8	11,258.5	2,349.7	461
4	Harrison Township	94,400	295.6	531.6	140.4	16,127.6	7,094.4	12,758.8	16,127.6	3,368.7	440
5	Highland Park	105,700	319.5	475.7	10.2	8,407.0	6,390.0	9,514.7	9,719.1	204.3	0
6	New Haven, Village of	25,500	82.2	117.2	42.1	4,748.6	2,474.2	3,528.9	4,796.4	1,267.5	80
7	Shelby Township	404,100	1,281.4	3,488.2	2,760.5	164,966.8	44,080.2	119,995.5	214,956.8	94,961.3	1,246
8	St. Clair County-Greenwood	20,600	71.8	249.3	0.0	11,320.1	4,372.6	15,184.9	15,184.9	0.0	413
8	Subtotal Suburban "Mods"	1,320,980	4,107.2	8,973.3	4,424.0	318,551.8	105,683.1	245,022.3	375,525.7	130,503.1	2,755
79	"No Mod" Suburban	12,267,950	38,930.9	84,802.0	21,870.0	2,802,723.3	1,435,715.0	3,139,792.4	3,838,868.2	699,075.2	64,403
87	Total Suburban	13,588,930	43,038.1	93,775.3	26,294.0	3,121,275.0	1,541,398.1	3,384,814.7	4,214,393.9	829,578.3	67,158
1	Detroit	4,186,400	12,618.3	16,528.3	2,813.5	324,941.6	234,700.4	307,425.9	359,756.8	52,330.9	0
88	Grand Total	17,775,330	55,656.4	110,303.6	29,107.5	3,446,216.6	1,776,098.5	3,692,240.6	4,574,150.7	881,909.2	67,158



Table 2  
Water Supply System  
Determination of FY 2022 Proforma Revenue Under Existing Charges

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	FY 2022 Proforma Revenue								
	Sales	Existing Charges		Gross Revenue	CTA Revenue	Ownership Benefit	KWA Debt Service	Highland Park	
	Volume	Fixed Mo	Commodity	Exist Charges	Exist Charges	Adjustment	Credit	Bad Debt Expense	
	Mcf	\$/mo	\$/Mcf	\$	\$	\$	\$	\$	
				(1)*(3) + (2)*12	(4)-(6)-(7)-(8)	Allocated Prorata Based on Prior COS			
1	Allen Park	129,300	122,400	7.80	2,477,300	2,265,100	158,700	45,400	8,100
2	Almont Village	9,500	12,200	10.52	246,300	225,200	15,800	4,500	800
3	Ash Township	42,400	42,400	8.28	859,900	786,000	55,100	16,000	2,800
4	Belleville	13,600	16,000	9.77	324,900	297,100	20,800	5,900	1,100
5	Berlin Township	26,600	37,400	11.41	752,300	687,800	48,200	13,900	2,400
6	Brownstown Township	137,500	187,400	10.82	3,736,600	3,415,200	239,300	69,700	12,400
7	Bruce Twp	2,180	15,900	68.40	339,900	310,900	21,700	6,200	1,100
8	Canton Township	349,500	527,600	12.17	10,584,600	9,674,500	678,000	197,100	35,000
9	Center Line	31,200	23,900	6.23	481,200	440,000	30,800	8,800	1,600
10	Chesterfield Township	171,900	217,600	10.33	4,386,900	4,009,800	281,000	81,600	14,500
11	Clinton Township	403,100	390,100	7.79	7,821,300	7,148,700	501,000	145,700	25,900
12	Commerce Township	102,000	183,400	14.50	3,679,800	3,363,400	235,700	68,600	12,100
13	Dearborn	596,300	539,900	7.24	10,796,000	9,865,300	691,400	203,200	36,100
14	Dearborn Heights	197,400	189,200	7.70	3,790,400	3,464,500	242,800	70,600	12,500
15	Eastpointe	104,000	80,600	6.15	1,606,800	1,469,600	103,000	29,000	5,200
16	Ecorse	141,800	78,800	4.31	1,556,800	1,422,900	99,800	29,000	5,100
17	Farmington	44,600	52,300	9.24	1,039,700	950,400	66,700	19,200	3,400
18	Farmington Hills	352,600	460,900	10.20	9,127,300	8,344,100	584,800	168,500	29,900
19	Ferndale	69,800	52,300	6.19	1,059,700	969,200	67,900	19,200	3,400
20	Flat Rock	57,200	70,500	9.18	1,371,100	1,253,300	87,800	25,500	4,500
21	Flint	478,700	572,300	8.76	11,061,000	10,302,000	722,300	(6,652,800)	37,000
22	Fraser	59,100	63,200	8.51	1,261,300	1,152,900	80,800	23,400	4,200
23	Garden City	80,900	87,900	8.30	1,726,300	1,578,200	110,600	31,900	5,600
24	Gibraltar	16,300	17,300	8.33	343,400	314,100	22,000	6,200	1,100
25	Grosse Ile Township	38,300	57,300	11.65	1,133,800	1,036,600	72,600	20,900	3,700
26	Grosse Pt. Park	55,600	76,700	11.04	1,534,200	1,402,300	98,300	28,500	5,100
27	Grosse Pt. Shores	20,200	33,900	13.60	681,500	623,000	43,700	12,500	2,300
28	Grosse Pt. Woods	72,200	73,700	9.13	1,543,600	1,411,100	98,900	28,500	5,100
29	Hamtramck	62,200	40,900	5.39	826,100	755,700	53,000	14,800	2,600
30	Harper Woods	47,600	42,500	6.76	831,800	760,600	53,300	15,200	2,700
31	Harrison Township	94,400	79,100	6.82	1,593,000	1,456,200	102,100	29,400	5,300
32	Hazel Park	50,500	38,200	5.98	760,400	695,500	48,800	13,700	2,400
33	Highland Park	105,700	60,300	4.61	1,210,900	1,110,800	77,800	22,300	0
34	Huron Township	60,300	76,000	10.09	1,520,400	1,389,800	97,400	28,200	5,000
35	Imlay City	45,700	74,600	13.52	1,513,100	1,382,900	96,900	28,200	5,100

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Table 2  
Water Supply System  
Determination of FY 2022 Proforma Revenue Under Existing Charges

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	FY 2022 Proforma Revenue								
	Sales	Existing Charges		Gross Revenue	CTA Revenue	Ownership Benefit	KWA Debt Service	Highland Park	
	Volume	Fixed Mo	Commodity	Exist Charges	Exist Charges	Adjustment	Credit	Bad Debt Expense	
	Mcf	\$/mo	\$/Mcf	\$	\$	\$	\$	\$	
				(1)*(3) + (2)*12	(4)-(6)-(7)-(8)	Allocated Prorata Based on Prior COS			
36	Imlay Twp	160	800	39.44	15,900	14,700	1,000	200	0
37	Inkster	93,600	63,800	5.45	1,275,700	1,166,400	81,700	23,400	4,200
38	Keego Harbor	9,900	15,500	12.35	308,300	281,800	19,800	5,700	1,000
39	Lapeer	52,100	80,300	11.84	1,580,500	1,444,700	101,300	29,300	5,200
40	Lenox Township	14,900	15,300	8.21	305,900	280,200	19,600	5,200	900
41	Lincoln Park	160,200	115,900	6.12	2,371,200	2,167,900	152,000	43,600	7,700
42	Livonia	480,300	594,800	9.92	11,902,200	10,879,400	762,400	221,100	39,300
43	Macomb Township	329,800	653,000	16.03	13,122,700	11,992,900	840,500	245,700	43,600
44	Madison Heights	106,600	99,400	6.82	1,919,800	1,755,400	123,000	35,200	6,200
45	Mayfield Twp	790	2,500	23.10	48,200	44,300	3,100	700	100
46	Melvindale	42,600	33,600	6.23	668,600	611,600	42,900	12,000	2,100
47	New Haven, Village of	25,500	20,500	6.74	417,900	382,000	26,700	7,800	1,400
48	N O C W A	897,900	1,143,600	10.22	22,899,700	20,932,600	1,467,000	424,700	75,400
49	Northville	31,000	46,100	11.72	916,500	837,800	58,700	17,000	3,000
50	Northville Township	140,800	290,100	16.95	5,867,800	5,362,700	375,800	109,800	19,500
51	Novi	292,400	468,800	12.69	9,336,200	8,533,800	598,100	173,500	30,800
52	Oak Park	97,000	71,700	6.03	1,445,300	1,321,000	92,600	26,900	4,800
53	Oakland Co. Drain Comm.	9,700	4,300	3.29	83,500	76,500	5,400	1,400	200
54	Plymouth	44,100	55,500	10.24	1,117,600	1,021,600	71,600	20,800	3,600
55	Plymouth Township	161,900	229,900	11.31	4,589,900	4,194,700	293,900	86,000	15,300
56	Redford Township	160,500	165,300	8.04	3,274,000	2,993,400	209,800	60,100	10,700
57	River Rouge	37,900	34,800	7.54	703,400	643,300	45,100	12,800	2,200
58	Riverview	48,500	45,000	7.82	919,300	840,200	58,900	17,200	3,000
59	Rockwood	9,900	14,400	11.56	287,200	262,600	18,400	5,300	900
60	Romeo	6,000	13,000	18.18	265,100	242,600	16,900	4,800	800
61	Romulus	218,500	216,400	8.23	4,395,100	4,017,500	281,600	81,500	14,500
62	Roseville	189,900	138,700	5.91	2,786,700	2,547,700	178,600	51,300	9,100
63	Royal Oak Township	11,000	10,500	7.15	204,700	187,200	13,100	3,700	700
64	S O C W A	1,254,800	1,192,900	7.58	23,826,200	21,779,000	1,526,300	442,400	78,500
65	Shelby Township	404,100	724,600	15.15	14,817,300	13,541,700	949,000	277,300	49,300
66	South Rockwood	4,700	6,000	9.92	118,600	108,400	7,600	2,200	400
67	Southgate	114,500	114,600	7.90	2,279,800	2,083,900	146,000	42,400	7,500
68	St. Clair County-Burtchville Twp	7,800	16,800	18.67	347,200	317,400	22,200	6,400	1,200
69	St. Clair County-Greenwood	20,600	36,000	12.83	696,300	637,200	44,600	12,300	2,200
70	St. Clair Shores	190,200	158,300	6.68	3,170,100	2,898,600	203,100	58,100	10,300
71	Sterling Heights	577,900	785,000	10.99	15,771,100	14,415,800	1,010,300	293,000	52,000

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**Table 2**  
**Water Supply System**  
**Determination of FY 2022 Proforma Revenue Under Existing Charges**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	FY 2022 Proforma Revenue								
	Sales	Existing Charges		Gross Revenue	CTA Revenue	Ownership Benefit	KWA Debt Service	Highland Park	
	Volume	Fixed Mo	Commodity	Exist Charges	Exist Charges	Adjustment	Credit	Bad Debt Expense	
	Mcf	\$/mo	\$/Mcf	\$	\$	\$	\$	\$	
				(1)*(3) + (2)*12	(4)-(6)-(7)-(8)	Allocated Prorata Based on Prior COS			
72	Sumpter Township	29,500	34,500	9.64	698,400	638,300	44,800	13,000	2,300
73	Sylvan Lake	6,400	12,100	15.11	241,900	221,100	15,500	4,500	800
74	Taylor	262,600	241,400	7.24	4,798,000	4,385,800	307,400	89,000	15,800
75	Trenton	87,100	86,700	8.10	1,745,900	1,597,000	111,900	31,400	5,600
76	Troy	473,500	700,800	12.14	14,157,900	12,941,000	906,900	263,300	46,700
77	Utica	24,700	29,800	9.34	588,300	537,800	37,700	10,900	1,900
78	Van Buren Township	132,400	177,200	11.14	3,601,300	3,292,400	230,700	66,400	11,800
79	Walled Lake	30,700	41,700	10.64	827,000	755,800	52,900	15,500	2,800
80	Warren	628,200	530,000	6.89	10,688,300	9,769,000	684,600	199,300	35,400
81	Washington Township	78,700	116,900	12.49	2,385,800	2,180,600	152,800	44,500	7,900
82	Wayne	104,100	159,500	13.38	3,306,900	3,022,700	211,800	61,400	11,000
83	West Bloomfield Township	266,800	538,000	16.29	10,802,200	9,873,700	691,900	200,900	35,700
84	Westland	328,100	321,700	7.80	6,419,600	5,869,000	411,200	118,400	21,000
85	Wixom	74,900	127,600	13.73	2,559,600	2,339,200	163,900	48,000	8,500
86	Woodhaven	57,700	86,700	11.91	1,727,600	1,579,000	110,600	32,300	5,700
87	Ypsilanti Comm Util Auth	485,300	540,900	8.76	10,742,000	9,818,600	688,000	199,900	35,500
88	Total Suburban	13,588,930	183,200	9.53	322,925,800	295,374,200	20,700,000	(862,000)	1,061,100
89	Detroit	4,186,400	1,879,600		43,255,400	42,245,500	(20,700,000)	861,700	149,400
90	GRAND TOTAL	17,775,330			366,181,200	337,619,700	0	(300)	1,210,500
91	less: Bad Debt Expense								
92	<b>Net Wholesale Revenue</b>								
	<i>(a) Flint / Detroit Adjustment Impacts</i>								
93	Flint Gross	478,700	572,300	8.76	11,061,000	10,302,000	722,300	(6,652,800)	36,700
94	less: KWA Debt Svc Credit		(554,400)		(6,652,800)	0	0	0	0
95	Flint Net		17,900		4,408,200	10,302,000	722,300	(6,652,800)	36,700
96	Detroit Gross				43,255,400	42,245,500	(20,700,000)	861,700	148,200
97	less: Ownership Adj Credit				(20,700,000)	0	0	0	0
98	Detroit Net				22,555,400	42,245,500	(20,700,000)	861,700	148,200
99	Modified Demands - Mods	618,980	949,800		19,408,000	17,739,100	1,243,000	361,500	64,400
100	Non-Master Metered - Mods	4,888,400	2,479,800		55,262,300	53,221,600	(19,930,800)	1,087,200	185,500
101	No Mods	12,267,950	14,567,900		291,510,900	266,659,000	18,687,800	(1,449,000)	960,600
102	Total	17,775,330	17,997,500		366,181,200	337,619,700	0	(300)	1,210,500
103	Total Mods (99) + (100)	5,507,380	3,429,600		74,670,300	70,960,700	(18,687,800)	1,448,700	249,900

Table 3  
Executive Summary of FY 2022 BUDGET Request Comparison (\$ millions)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Water System				Sewer System				Total GLWA			
<u>Annual BUDGET</u>	<u>FY 2021(a)</u>	<u>FY 2022</u>	<u>Change</u>	<u>% Change</u>	<u>FY 2021(a)</u>	<u>FY 2022</u>	<u>Change</u>	<u>% Change</u>	<u>FY 2021(a)</u>	<u>FY 2022</u>	<u>Change</u>	<u>% Change</u>
1 Operation and Maintenance Expense	137.1	145.5	8.4	6.1%	184.9	183.1	(1.8)	-1.0%	322.1	328.6	6.5	2.0%
2 Master Bond Ordinance Commitments	179.7	172.0	(7.7)	-4.3%	262.1	259.5	(2.6)	-1.0%	441.8	431.5	(10.3)	-2.3%
3 Deposit to I&E (and other reserve) Funds	24.8	28.1	3.3	13.1%	39.7	34.6	(5.1)	-12.8%	64.5	62.7	(1.8)	-2.8%
4 <b>TOTAL BUDGET</b>	<b>341.6</b>	<b>345.6</b>	<b>3.9</b>	<b>1.2%</b>	<b>486.8</b>	<b>477.2</b>	<b>(9.5)</b>	<b>-2.0%</b>	<b>828.4</b>	<b>822.8</b>	<b>(5.6)</b>	<b>-0.7%</b>
<u>less: "Non Customer" Revenue</u>												
5 Investment Earnings & Miscellaneous	(4.8)	(1.2)	3.6	-74.7%	(5.6)	(1.4)	4.2	-74.8%	(10.4)	(2.6)	7.8	-74.8%
6 Subtotal Revenue Requirement "Offsets"	(4.8)	(1.2)	3.6	-74.7%	(5.6)	(1.4)	4.2	-74.8%	(10.4)	(2.6)	7.8	-74.8%
7 Preliminary Revenue Req't from Charges	336.8	344.4	7.6	2.2%	481.2	475.8	(5.4)	-1.1%	818.0	820.2	2.2	0.3%
8 plus: Expected "System" Bad Debt	1.2	1.2	0.1	4.8%	1.3	0.0	(1.3)	-100.0%	2.5	1.2	(1.2)	-50.0%
9 Revenue Required from Charges	338.0	345.6	7.6	2.3%	482.5	475.8	(6.7)	-1.4%	820.4	821.4	1.0	0.1%
10 Proforma Billed Revenue - Existing Charges	338.0	338.9	0.9	0.3%	482.5	476.9	(5.5)	-1.1%	820.4	815.8	(4.7)	-0.6%
11 Charge Revenue Adjustment Needed		6.8				(1.1)				5.6		
12 % Charge Revenue Adjustment Needed		<b>2.0%</b>				<b>-0.2%</b>				<b>0.7%</b>		
<b><u>Charge Adjustment Illustration</u></b>												
<u>Proforma Revenue - Existing Charges</u>												
13 Revenue from Charges	338.0	338.9	0.9	-0.3%	482.5	476.9	(5.5)	1.2%	820.4	815.8	(4.7)	0.6%
14 Investment Earnings & Miscellaneous	4.8	1.2	(3.6)	1.1%	5.6	1.4	(4.2)	0.9%	10.4	2.6	(7.8)	1.0%
15 Expected Bad Debt Expense	(1.2)	(1.2)	(0.1)	0.0%	(1.3)	0.0	1.3	-0.3%	(2.5)	(1.2)	1.2	-0.2%
16 Net Proforma Revenue Comparison	341.6	338.8	(2.8)		486.8	478.3	(8.4)		828.4	817.2	(11.2)	
17 Adjustment to Address Revenue Variance (Lns 13,14)				0.8%				1.8%				1.4%
18 Adjustment to Address BUDGET Variance (Line 4)				1.2%				-2.0%				-0.7%
19 <b>System Charge Adjustment</b>				<b>2.0%</b>				<b>-0.2%</b>				<b>0.7%</b>

(a) As originally approved in March 2020. The originally adopted FY 2021 Budget did not reflect anticipated debt service savings projected by the bond refinancing, nor the increase in the deposit to the I&E Fund. However that expectation was understood as part of the budget approval process, and was accomplished via the First Quarter FY 2021 Budget Amendment once the 2020 transactions closed in May and June.

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THE FOSTER GROUP

Table 4  
Water Supply System  
Allocation of FY 2022 GLWA Wholesale Service Revenue Requirements to Cost Pools

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Amount to Allocate	Cost Pools									Sub Only
	Common-to-All									
\$	<u>Commod</u>	<u>Max Day</u>	<u>PH Incr</u>	<u>PH Dist</u>	<u>Comm DE</u>	<u>MD DE</u>	<u>PH DE</u>	<u>PHI DE</u>	<u>Mtrs</u>	\$
<b>Revenue Requirement Elements</b>										
1 Regional System O&M Expense	145,497,300	8,316,300	71,115,400	1,820,300	19,188,300	16,393,900	10,803,900	8,196,900	8,196,900	1,465,400
2 Pension Obligation - Operating Portion	6,048,000	0	3,454,000	98,100	1,033,700	407,000	569,300	203,500	203,500	78,900
3 Debt Service	135,481,000	0	56,389,500	3,773,600	48,515,600	0	0	24,867,100	0	1,935,300
4 Non-Operating Portion of Pension Obligation	6,268,300	0	3,579,900	101,600	1,071,300	421,800	590,000	210,900	210,900	81,800
5 Transfer to WRAP Fund	1,702,000	44,000	774,400	34,800	423,000	91,200	63,400	204,600	45,600	21,000
6 Lease Payment to Detroit Local System	22,500,000	582,200	10,237,500	460,400	5,591,500	1,205,700	837,500	2,704,800	602,900	277,400
7 Transfer to GLWA Regional I&E Account	28,093,900	0	11,693,200	782,500	10,060,400	0	0	5,156,500	0	401,300
8 Total Gross Revenue Requirements	345,590,500	8,942,500	157,243,900	7,071,300	85,883,800	18,519,600	12,864,100	41,544,300	9,259,800	4,261,100
9 less: Investment Earnings & Miscellaneous Revenue	(1,221,000)	(31,600)	(555,600)	(25,000)	(303,400)	(65,400)	(45,400)	(146,800)	(32,700)	(15,100)
10 Revenue Requirements from Charges	344,369,500	8,910,900	156,688,300	7,046,300	85,580,400	18,454,200	12,818,700	41,397,500	9,227,100	4,246,000
<b>Summary - Revenues Required from Charges</b>										
11 Net Operating Expenses	151,545,300	8,316,300	74,569,400	1,918,400	20,222,000	16,800,900	11,373,200	8,400,400	8,400,400	1,544,300
12 Net Capital Requirements	192,824,200	594,600	82,118,900	5,127,900	65,358,400	1,653,300	1,445,500	32,997,100	826,700	2,701,700
13 Total	344,369,500	8,910,900	156,688,300	7,046,300	85,580,400	18,454,200	12,818,700	41,397,500	9,227,100	4,246,000
14 Relative Cost Pool Distribution		2.6%	45.5%	2.0%	24.9%	5.4%	3.7%	12.0%	2.7%	1.2%

**Table 5**  
**Water Supply System**  
**Calculation and Application of FY 2022 Wholesale Service SHARES - Common To All (CTA) Cost Pools**

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
		Summary by Major Category					Specific Cost Pools								
<b>CTA SHARES</b>		<b>Total</b>	<b>Commodity</b>	<b>Max Day</b>	<b>Peak Hour</b>	<b>Demand</b>	<b>Commodity</b>	<b>Maximum Day Usage</b>	<b>Peak Hour Increment</b>	<b>Peak Hour Distance</b>	<b>Commodity Distance-Elevation</b>	<b>Max Day Distance-Elevation</b>	<b>Peak Hour Distance-Elevation</b>	<b>Peak Hr Incr Distance-Elevation</b>	
1	Bruce Twp	0.088%	0.017%	0.067%	0.127%	0.094%	0.013%	0.065%	0.160%	0.112%	0.019%	0.092%	0.123%	0.252%	
2	Dearborn	2.910%	2.467%	3.137%	2.725%	2.948%	3.287%	3.235%	4.466%	2.839%	2.071%	1.943%	2.139%	2.962%	
3	Grosse Pt. Woods	0.357%	0.286%	0.413%	0.304%	0.363%	0.395%	0.427%	0.427%	0.327%	0.234%	0.241%	0.246%	0.266%	
4	Harrison Township	0.452%	0.442%	0.472%	0.430%	0.452%	0.531%	0.482%	0.482%	0.468%	0.399%	0.346%	0.353%	0.382%	
5	Highland Park	0.332%	0.430%	0.418%	0.210%	0.323%	0.574%	0.431%	0.035%	0.244%	0.360%	0.258%	0.212%	0.023%	
6	New Haven, Village of	0.118%	0.142%	0.105%	0.129%	0.116%	0.148%	0.106%	0.145%	0.138%	0.139%	0.096%	0.105%	0.144%	
7	Shelby Township	4.039%	2.424%	3.169%	5.378%	4.181%	2.302%	3.162%	9.484%	4.787%	2.482%	3.250%	4.699%	10.768%	
8	St. Clair County-Greenwood	0.259%	0.208%	0.240%	0.292%	0.264%	0.129%	0.226%	0.000%	0.328%	0.246%	0.411%	0.332%	0.000%	
8	Subtotal Suburban "Mods"	8.555%	6.415%	8.022%	9.596%	8.743%	7.380%	8.135%	15.199%	9.244%	5.950%	6.636%	8.210%	14.798%	
79	"No Mod" Suburban	79.226%	77.290%	77.497%	81.641%	79.395%	69.949%	76.881%	75.135%	81.328%	80.835%	85.038%	83.925%	79.268%	
87	Total Suburban	87.781%	83.706%	85.519%	91.237%	88.138%	77.328%	85.016%	90.334%	90.571%	86.786%	91.674%	92.135%	94.066%	
1	Detroit	12.219%	16.294%	14.481%	8.763%	11.862%	22.672%	14.984%	9.666%	9.429%	13.214%	8.326%	7.865%	5.934%	
88	Grand Total	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	
<b>BUDGET TO ALLOCATE</b>		<b>340,123,400</b>	<b>27,365,100</b>	<b>169,507,000</b>	<b>143,251,300</b>	<b>312,758,300</b>	<b>8,910,900</b>	<b>156,688,300</b>	<b>7,046,300</b>	<b>85,580,400</b>	<b>18,454,200</b>	<b>12,818,700</b>	<b>41,397,500</b>	<b>9,227,100</b>	
<b>ALLOCATED CTA BUDGET</b>															
1	Bruce Twp	299,600	4,600	113,200	181,800	295,000	1,100	101,400	11,300	96,200	3,500	11,800	51,000	23,300	
2	Dearborn	9,896,400	675,000	5,317,900	3,903,500	9,221,400	292,900	5,068,900	314,700	2,429,900	382,100	249,000	885,600	273,300	
3	Grosse Pt. Woods	1,215,100	78,400	700,500	436,200	1,136,700	35,200	669,600	30,100	279,600	43,200	30,900	101,900	24,600	
4	Harrison Township	1,536,200	121,000	799,500	615,700	1,415,200	47,300	755,200	34,000	400,500	73,700	44,300	146,000	35,200	
5	Highland Park	1,127,800	117,600	708,800	301,400	1,010,200	51,200	675,800	2,500	208,800	66,400	33,000	88,000	2,100	
6	New Haven, Village of	402,500	38,900	178,800	184,800	363,600	13,200	166,500	10,200	117,900	25,700	12,300	43,400	13,300	
7	Shelby Township	13,738,700	663,200	5,371,700	7,703,800	13,075,500	205,200	4,955,100	668,300	4,096,600	458,000	416,600	1,945,400	993,500	
8	St. Clair County-Greenwood	882,300	56,900	406,900	418,500	825,400	11,500	354,200	0	281,100	45,400	52,700	137,400	0	
8	Subtotal Suburban "Mods"	29,098,800	1,755,700	13,597,500	13,745,600	27,343,100	657,600	12,746,800	1,071,000	7,910,600	1,098,100	850,700	3,398,600	1,365,400	
79	"No Mod" Suburban	269,466,000	21,150,600	131,363,500	116,951,900	248,315,400	6,233,100	120,462,800	5,294,300	69,600,400	14,917,500	10,900,700	34,743,000	7,314,200	
87	Total Suburban	298,564,700	22,906,200	144,961,000	130,697,500	275,658,500	6,890,600	133,209,600	6,365,200	77,511,100	16,015,600	11,751,400	38,141,600	8,679,600	
1	Detroit	41,558,700	4,458,900	24,546,000	12,553,800	37,099,800	2,020,300	23,478,700	681,100	8,069,300	2,438,600	1,067,300	3,255,900	547,500	
88	Grand Total	340,123,400	27,365,100	169,507,000	143,251,300	312,758,300	8,910,900	156,688,300	7,046,300	85,580,400	18,454,200	12,818,700	41,397,500	9,227,100	

**Table 6**  
**Water Supply System**  
**Calculation and Application of FY 2022 Suburban Only SHARES**  
**and Determination of CTA Revenue Requirement Adjustments**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Suburban Only Master Meter Allocation		Allocated CTA	Allocated Comprehensive CTA	Proforma CTA	Adjustment	% Adjustment
	<u>SHARE</u>	<u>Rev Req't</u>	<u>Rev Req't</u>	<u>Rev Req't</u>	<u>Revenue</u>	<u>Required</u>	<u>Required</u>
		4,246,000	Table 5 + (2)	(2) + (3)	Table 2	(4) - (5)	(6) / (5)
1 Bruce Twp	0.171%	7,300	299,600	306,900	310,900	(4,000)	-1.29%
2 Dearborn	0.000%	0	9,896,400	9,896,400	9,865,300	31,100	0.32%
3 Grosse Pt. Woods	0.686%	29,100	1,215,100	1,244,200	1,411,100	(166,900)	-11.83%
4 Harrison Township	0.655%	27,800	1,536,200	1,564,000	1,456,200	107,800	7.40%
5 Highland Park	0.000%	0	1,127,800	1,127,800	1,110,800	17,000	1.53%
6 New Haven, Village of	0.119%	5,100	402,500	407,600	382,000	25,600	6.70%
7 Shelby Township	1.855%	78,800	13,738,700	13,817,500	13,541,700	275,800	2.04%
8 St. Clair County-Greenwo	0.615%	26,100	882,300	908,400	637,200	271,200	42.56%
8 Subtotal Suburban "Mods"	4.103%	174,200	29,098,600	29,272,800	28,715,200	557,600	1.94%
79 "No Mod" Suburban	95.897%	4,071,800	269,466,000	273,537,800	266,659,000	6,878,800	<b>2.58%</b>
87 Total Suburban	100.000%	4,246,000	298,564,600	302,810,600	295,374,200	7,436,400	2.52%
1 Detroit	NA	NA	41,558,700	41,558,700	42,245,500	(686,800)	-1.63%
88 Grand Total	100.000%	4,246,000	340,123,300	344,369,300	337,619,700	6,749,600	2.00%
9 Total Mods	4.103%	174,200	70,657,300	70,831,500	70,960,700	(129,200)	-0.18%

Table 7  
Water Supply System  
Allocation of FY 2022 Revenue Requirements and Adjustments to Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Proforma CTA Revenue	Indexed Adjustment	CTA Rev Req't Adjustment	Allocated CTA Rev Req't	Detroit Ownership Apply Adjustment	Adjustment Adjusted Rev Req't	Flint KWA Debt Svc Adj Apply Adjustment	Adjusted Rev Req't	HP Bad Debt Adjusted Rev Req't	Adjustment Charge Rev Req't
	\$	%	\$	\$	\$	\$	\$	\$	\$	\$
	Table 2	Table 6	(1) * (2)	(1) + (3)	20,700,000	(4) + (5)	6,652,800	(6) + (7)	1,227,400	(8) + (9)
1 Allen Park	2,265,100	2.58%	58,400	2,323,500	158,800	2,482,300	46,300	2,528,600	8,300	2,536,900
2 Almont Village	225,200	2.58%	5,800	231,000	15,800	246,800	4,600	251,400	800	252,200
3 Ash Township	786,000	2.58%	20,300	806,300	55,100	861,400	16,100	877,500	2,900	880,400
4 Belleville	297,100	2.58%	7,700	304,800	20,800	325,600	6,100	331,700	1,100	332,800
5 Berlin Township	687,800	2.58%	17,700	705,500	48,200	753,700	14,100	767,800	2,500	770,300
6 Brownstown Township	3,415,200	2.58%	88,100	3,503,300	239,500	3,742,800	69,800	3,812,600	12,500	3,825,100
7 Bruce Twp	310,900	-1.29%	(4,000)	306,900	21,000	327,900	6,100	334,000	1,100	335,100
8 Canton Township	9,674,500	2.58%	249,600	9,924,100	678,400	10,602,500	197,800	10,800,300	35,500	10,835,800
9 Center Line	440,000	2.58%	11,400	451,400	30,900	482,300	9,000	491,300	1,600	492,900
10 Chesterfield Township	4,009,800	2.58%	103,400	4,113,200	281,200	4,394,400	82,000	4,476,400	14,700	4,491,100
11 Clinton Township	7,148,700	2.58%	184,400	7,333,100	501,300	7,834,400	146,200	7,980,600	26,200	8,006,800
12 Commerce Township	3,363,400	2.58%	86,800	3,450,200	235,900	3,686,100	68,800	3,754,900	12,300	3,767,200
13 Dearborn	9,865,300	0.32%	31,100	9,896,400	676,500	10,572,900	197,200	10,770,100	35,400	10,805,500
14 Dearborn Heights	3,464,500	2.58%	89,400	3,553,900	242,900	3,796,800	70,800	3,867,600	12,700	3,880,300
15 Eastpointe	1,469,600	2.58%	37,900	1,507,500	103,100	1,610,600	30,000	1,640,600	5,400	1,646,000
16 Ecorse	1,422,900	2.58%	36,700	1,459,600	99,800	1,559,400	29,100	1,588,500	5,200	1,593,700
17 Farmington	950,400	2.58%	24,500	974,900	66,600	1,041,500	19,400	1,060,900	3,500	1,064,400
18 Farmington Hills	8,344,100	2.58%	215,200	8,559,300	585,100	9,144,400	170,600	9,315,000	30,600	9,345,600
19 Ferndale	969,200	2.58%	25,000	994,200	68,000	1,062,200	19,800	1,082,000	3,600	1,085,600
20 Flat Rock	1,253,300	2.58%	32,300	1,285,600	87,900	1,373,500	25,600	1,399,100	4,600	1,403,700
21 Flint	10,302,000	2.58%	265,800	10,567,800	722,400	11,290,200	(6,652,800)	4,637,400	37,800	4,675,200
22 Fraser	1,152,900	2.58%	29,700	1,182,600	80,800	1,263,400	23,600	1,287,000	4,200	1,291,200
23 Garden City	1,578,200	2.58%	40,700	1,618,900	110,700	1,729,600	32,300	1,761,900	5,800	1,767,700
24 Gibraltar	314,100	2.58%	8,100	322,200	22,000	344,200	6,400	350,600	1,200	351,800
25 Grosse Ile Township	1,036,600	2.58%	26,700	1,063,300	72,700	1,136,000	21,200	1,157,200	3,800	1,161,000
26 Grosse Pt. Park	1,402,300	2.58%	36,200	1,438,500	98,300	1,536,800	28,700	1,565,500	5,100	1,570,600
27 Grosse Pt. Shores	623,000	2.58%	16,100	639,100	43,700	682,800	12,700	695,500	2,300	697,800
28 Grosse Pt. Woods	1,411,100	-11.83%	(166,900)	1,244,200	85,100	1,329,300	24,800	1,354,100	4,400	1,358,500
29 Hamtramck	755,700	2.58%	19,500	775,200	53,000	828,200	15,500	843,700	2,800	846,500
30 Harper Woods	760,600	2.58%	19,600	780,200	53,300	833,500	15,500	849,000	2,800	851,800
31 Harrison Township	1,456,200	7.40%	107,800	1,564,000	106,900	1,670,900	31,200	1,702,100	5,600	1,707,700
32 Hazel Park	695,500	2.58%	17,900	713,400	48,800	762,200	14,200	776,400	2,600	779,000
33 Highland Park	1,110,800	1.53%	17,000	1,127,800	77,100	1,204,900	22,500	1,227,400	0	1,227,400
34 Huron Township	1,389,800	2.58%	35,900	1,425,700	97,500	1,523,200	28,400	1,551,600	5,100	1,556,700
35 Inlay City	1,382,900	2.58%	35,700	1,418,600	97,000	1,515,600	28,300	1,543,900	5,100	1,549,000

Table 7  
Water Supply System  
Allocation of FY 2022 Revenue Requirements and Adjustments to Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Proforma CTA Revenue	Indexed Adjustment	CTA Rev Req't Adjustment	Allocated CTA Rev Req't	Detroit Ownership Adjustment		Flint KWA Debt Svc Adj		HP Bad Debt Adjustment		
	\$	%	\$	\$	Apply Adjustment	Adjusted Rev Req't	Apply Adjustment	Adjusted Rev Req't	Apply Adjustment	Charge Rev Req't	
	Table 2	Table 6	(1) * (2)	(1) + (3)	\$	\$	\$	\$	\$	\$	
					20,700,000	(4) + (5)	6,652,800	(6) + (7)	1,227,400	(8) + (9)	
36	Imlay Twp	14,700	2.58%	400	15,100	1,000	16,100	300	16,400	100	16,500
37	Inkster	1,166,400	2.58%	30,100	1,196,500	81,800	1,278,300	23,800	1,302,100	4,300	1,306,400
38	Keego Harbor	281,800	2.58%	7,300	289,100	19,800	308,900	5,800	314,700	1,000	315,700
39	Lapeer	1,444,700	2.58%	37,300	1,482,000	101,300	1,583,300	29,500	1,612,800	5,300	1,618,100
40	Lenox Township	280,200	2.58%	7,200	287,400	19,600	307,000	5,700	312,700	1,000	313,700
41	Lincoln Park	2,167,900	2.58%	55,900	2,223,800	152,000	2,375,800	44,300	2,420,100	8,000	2,428,100
42	Livonia	10,879,400	2.58%	280,600	11,160,000	762,900	11,922,900	222,400	12,145,300	39,900	12,185,200
43	Macomb Township	11,992,900	2.58%	309,400	12,302,300	841,000	13,143,300	245,200	13,388,500	44,000	13,432,500
44	Madison Heights	1,755,400	2.58%	45,300	1,800,700	123,100	1,923,800	35,900	1,959,700	6,400	1,966,100
45	Mayfield Twp	44,300	2.58%	1,100	45,400	3,100	48,500	900	49,400	200	49,600
46	Melvindale	611,600	2.58%	15,800	627,400	42,900	670,300	12,500	682,800	2,200	685,000
47	New Haven, Village of	382,000	6.70%	25,600	407,600	27,900	435,500	8,100	443,600	1,500	445,100
48	N O C W A	20,932,600	2.58%	540,000	21,472,600	1,467,900	22,940,500	428,000	23,368,500	76,800	23,445,300
49	Northville	837,800	2.58%	21,600	859,400	58,700	918,100	17,100	935,200	3,100	938,300
50	Northville Township	5,362,700	2.58%	138,300	5,501,000	376,000	5,877,000	109,600	5,986,600	19,700	6,006,300
51	Novi	8,533,800	2.58%	220,100	8,753,900	598,400	9,352,300	174,500	9,526,800	31,300	9,558,100
52	Oak Park	1,321,000	2.58%	34,100	1,355,100	92,600	1,447,700	27,000	1,474,700	4,800	1,479,500
53	Oakland Co. Drain Comm.	76,500	2.58%	2,000	78,500	5,400	83,900	1,600	85,500	300	85,800
54	Plymouth	1,021,600	2.58%	26,400	1,048,000	71,600	1,119,600	20,900	1,140,500	3,700	1,144,200
55	Plymouth Township	4,194,700	2.58%	108,200	4,302,900	294,100	4,597,000	85,800	4,682,800	15,400	4,698,200
56	Redford Township	2,993,400	2.58%	77,200	3,070,600	209,900	3,280,500	61,200	3,341,700	11,000	3,352,700
57	River Rouge	643,300	2.58%	16,600	659,900	45,100	705,000	13,200	718,200	2,400	720,600
58	Riverview	840,200	2.58%	21,700	861,900	58,900	920,800	17,200	938,000	3,100	941,100
59	Rockwood	262,600	2.58%	6,800	269,400	18,400	287,800	5,400	293,200	1,000	294,200
60	Romeo	242,600	2.58%	6,300	248,900	17,000	265,900	5,000	270,900	900	271,800
61	Romulus	4,017,500	2.58%	103,600	4,121,100	281,700	4,402,800	82,100	4,484,900	14,700	4,499,600
62	Roseville	2,547,700	2.58%	65,700	2,613,400	178,700	2,792,100	52,100	2,844,200	9,300	2,853,500
63	Royal Oak Township	187,200	2.58%	4,800	192,000	13,100	205,100	3,800	208,900	700	209,600
64	S O C W A	21,779,000	2.58%	561,800	22,340,800	1,527,200	23,868,000	445,300	24,313,300	79,900	24,393,200
65	Shelby Township	13,541,700	2.04%	275,800	13,817,500	944,600	14,762,100	275,400	15,037,500	49,400	15,086,900
66	South Rockwood	108,400	2.58%	2,800	111,200	7,600	118,800	2,200	121,000	400	121,400
67	Southgate	2,083,900	2.58%	53,800	2,137,700	146,100	2,283,800	42,600	2,326,400	7,600	2,334,000
68	St. Clair County-Burchville Twp	317,400	2.58%	8,200	325,600	22,300	347,900	6,500	354,400	1,200	355,600
69	St. Clair County-Greenwood	637,200	42.56%	271,200	908,400	62,100	970,500	18,100	988,600	3,200	991,800
70	St. Clair Shores	2,898,600	2.58%	74,800	2,973,400	203,300	3,176,700	59,300	3,236,000	10,600	3,246,600
71	Sterling Heights	14,415,800	2.58%	371,900	14,787,700	1,010,900	15,798,600	294,700	16,093,300	52,900	16,146,200

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Table 7  
Water Supply System  
Allocation of FY 2022 Revenue Requirements and Adjustments to Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Proforma CTA Revenue	Indexed Adjustment	CTA Rev Req't Adjustment	Allocated CTA Rev Req't	Detroit Ownership Adjustment		Flint KWA Debt Svc Adj		HP Bad Debt Adjustment		
	\$	%	\$	\$	Apply Adjustment	Adjusted Rev Req't	Apply Adjustment	Adjusted Rev Req't	Apply Adjustment	Charge Rev Req't	
	Table 2	Table 6	(1) * (2)	(1) + (3)	\$	\$	\$	\$	\$	\$	
					20,700,000	(4) + (5)	6,652,800	(6) + (7)	1,227,400	(8) + (9)	
72	Sumpter Township	638,300	2.58%	16,500	654,800	44,800	699,600	13,100	712,700	2,300	715,000
73	Sylvan Lake	221,100	2.58%	5,700	226,800	15,500	242,300	4,500	246,800	800	247,600
74	Taylor	4,385,800	2.58%	113,100	4,498,900	307,500	4,806,400	89,700	4,896,100	16,100	4,912,200
75	Trenton	1,597,000	2.58%	41,200	1,638,200	112,000	1,750,200	32,600	1,782,800	5,900	1,788,700
76	Troy	12,941,000	2.58%	333,800	13,274,800	907,500	14,182,300	264,600	14,446,900	47,500	14,494,400
77	Utica	537,800	2.58%	13,900	551,700	37,700	589,400	11,000	600,400	2,000	602,400
78	Van Buren Township	3,292,400	2.58%	84,900	3,377,300	230,900	3,608,200	67,300	3,675,500	12,100	3,687,600
79	Walled Lake	755,800	2.58%	19,500	775,300	53,000	828,300	15,500	843,800	2,800	846,600
80	Warren	9,769,000	2.58%	252,000	10,021,000	685,000	10,706,000	199,700	10,905,700	35,800	10,941,500
81	Washington Township	2,180,600	2.58%	56,300	2,236,900	152,900	2,389,800	44,600	2,434,400	8,000	2,442,400
82	Wayne	3,022,700	2.58%	78,000	3,100,700	212,000	3,312,700	61,800	3,374,500	11,100	3,385,600
83	West Bloomfield Township	9,873,700	2.58%	254,700	10,128,400	692,400	10,820,800	201,900	11,022,700	36,200	11,058,900
84	Westland	5,869,000	2.58%	151,400	6,020,400	411,600	6,432,000	120,000	6,552,000	21,500	6,573,500
85	Wixom	2,339,200	2.58%	60,300	2,399,500	164,000	2,563,500	47,800	2,611,300	8,600	2,619,900
86	Woodhaven	1,579,000	2.58%	40,700	1,619,700	110,700	1,730,400	32,300	1,762,700	5,800	1,768,500
87	Ypsilanti Comm Util Auth	9,818,600	2.58%	253,300	10,071,900	688,500	10,760,400	200,700	10,961,100	36,000	10,997,100
88	Total Suburban	295,374,200	2.52%	7,436,500	302,810,700	20,700,100	323,510,800	(828,000)	322,682,800	1,078,900	323,761,700
89	Detroit	42,245,500	-1.63%	(686,800)	41,558,700	(20,700,000)	20,858,700	828,000	21,686,700	148,500	21,835,200
90	GRAND TOTAL	337,619,700	2.00%	6,749,700	344,369,400	100	344,369,500	0	344,369,500	1,227,400	345,596,900
91	less: Bad Debt Expense										(1,227,400)
92	<b>Net Wholesale Revenue</b>			<b>344,369,400</b>		<b>100</b>	<b>344,369,500</b>	<b>0</b>	<b>344,369,500</b>	<b>1,227,400</b>	<b>344,369,500</b>
93	Modified Demands	17,739,100	2.87%	509,500	18,248,600	1,247,600	19,496,200	363,700	19,859,900	65,200	19,925,100
94	Non-Master Metered	53,221,600	-1.20%	(638,700)	52,582,900	(19,946,400)	32,636,500	1,047,700	33,684,200	183,900	33,868,100
95	No Mods	266,659,000	2.58%	6,878,900	273,537,900	18,698,900	292,236,800	(1,411,400)	290,825,400	978,300	291,803,700
96	Total	337,619,700	2.00%	6,749,700	344,369,400	100	344,369,500	0	344,369,500	1,227,400	345,596,900
97	Total Mods (93) + (94)	70,960,700	-0.18%	(129,200)	70,831,500	(18,698,800)	52,132,700	1,411,400	53,544,100	249,100	53,793,200

Table 8  
Water Supply System  
Calculation of FY 2022 Wholesale Water Service Charge Schedule

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
	Sales Volume	Existing Charges		Proforma Revenue	Allocated Revenue Req't	Charge Adjustment	% Charge Adjustment	60% Recover Via:		Proposed Charges		Projected Revenue	Revenue Recovery	
	Mcf	Fixed Mo \$/mo	Commodity \$/Mcf	Exist Charges \$	\$	\$		Fixed Mo \$	Commodity \$	Fixed Mo \$/mo	Commodity \$/Mcf	\$		
				Table 2	Table 7	(5) - (4)	(6) / (4)	60% of (5)	(5) - (8)*12	(8) / 12 mos	(9) / (1)	'12*(10)+(1)*(11)	(12) / (5)	
1	Allen Park	129,300	122,400	7.80	2,477,300	2,536,900	59,600	2.41%	1,522,100	1,015,300	126,800	7.85	2,536,600	100.0%
2	Almont Village	9,500	12,200	10.52	246,300	252,200	5,900	2.40%	151,300	101,000	12,600	10.63	252,200	100.0%
3	Ash Township	42,400	42,400	8.28	859,900	880,400	20,500	2.38%	528,200	352,400	44,000	8.31	880,300	100.0%
4	Belleville	13,600	16,000	9.77	324,900	332,800	7,900	2.43%	199,700	133,600	16,600	9.82	332,800	100.0%
5	Berlin Township	26,600	37,400	11.41	752,300	770,300	18,000	2.39%	462,200	308,300	38,500	11.59	770,300	100.0%
6	Brownstown Township	137,500	187,400	10.82	3,736,600	3,825,100	88,500	2.37%	2,295,100	1,529,500	191,300	11.12	3,824,600	100.0%
7	Bruce Twp	2,180	15,900	68.40	339,900	335,100	(4,800)	-1.41%	201,100	133,500	16,800	61.24	335,100	100.0%
8	Canton Township	349,500	527,600	12.17	10,584,600	10,835,800	251,200	2.37%	6,501,500	4,334,200	541,800	12.40	10,835,400	100.0%
9	Center Line	31,200	23,900	6.23	481,200	492,900	11,700	2.43%	295,700	197,700	24,600	6.34	493,000	100.0%
10	Chesterfield Township	171,900	217,600	10.33	4,386,900	4,491,100	104,200	2.38%	2,694,700	1,795,900	224,600	10.45	4,491,600	100.0%
11	Clinton Township	403,100	390,100	7.79	7,821,300	8,006,800	185,500	2.37%	4,804,100	3,203,200	400,300	7.95	8,008,200	100.0%
12	Commerce Township	102,000	183,400	14.50	3,679,800	3,767,200	87,400	2.38%	2,260,300	1,506,400	188,400	14.77	3,767,300	100.0%
13	Dearborn	596,300	539,900	7.24	10,796,000	10,805,500	9,500	0.09%	6,483,300	4,321,900	540,300	7.25	10,806,800	100.0%
14	Dearborn Heights	197,400	189,200	7.70	3,790,400	3,880,300	89,900	2.37%	2,328,200	1,552,300	194,000	7.86	3,879,600	100.0%
15	Eastpointe	104,000	80,600	6.15	1,606,800	1,646,000	39,200	2.44%	987,600	658,400	82,300	6.33	1,645,900	100.0%
16	Ecorse	141,800	78,800	4.31	1,556,800	1,593,700	36,900	2.37%	956,200	637,300	79,700	4.49	1,593,100	100.0%
17	Farmington	44,600	52,300	9.24	1,039,700	1,064,400	24,700	2.38%	638,600	426,000	53,200	9.55	1,064,300	100.0%
18	Farmington Hills	352,600	460,900	10.20	9,127,300	9,345,600	218,300	2.39%	5,607,400	3,738,000	467,300	10.60	9,345,200	100.0%
19	Ferndale	69,800	52,300	6.19	1,059,700	1,085,600	25,900	2.44%	651,400	434,000	54,300	6.22	1,085,800	100.0%
20	Flat Rock	57,200	70,500	9.18	1,371,100	1,403,700	32,600	2.38%	842,200	561,300	70,200	9.81	1,403,500	100.0%
21	Flint (a)	478,700	17,900	8.76	4,408,500	4,675,200	266,700	6.05%	144,000	4,531,200	12,000	9.47	4,677,300	100.0%
22	Fraser	59,100	63,200	8.51	1,261,300	1,291,200	29,900	2.37%	774,700	516,000	64,600	8.73	1,291,100	100.0%
23	Garden City	80,900	87,900	8.30	1,726,300	1,767,700	41,400	2.40%	1,060,600	706,900	88,400	8.74	1,767,900	100.0%
24	Gibraltar	16,300	17,300	8.33	343,400	351,800	8,400	2.45%	211,100	140,600	17,600	8.63	351,900	100.0%
25	Grosse Ile Township	38,300	57,300	11.65	1,133,800	1,161,000	27,200	2.40%	696,600	463,800	58,100	12.11	1,161,000	100.0%
26	Grosse Pt. Park	55,600	76,700	11.04	1,534,200	1,570,600	36,400	2.37%	942,400	628,600	78,500	11.31	1,570,800	100.0%
27	Grosse Pt. Shores	20,200	33,900	13.60	681,500	697,800	16,300	2.39%	418,700	279,000	34,900	13.81	697,800	100.0%
28	Grosse Pt. Woods	72,200	73,700	9.13	1,543,600	1,358,500	(185,100)	-11.99%	815,100	543,700	67,900	7.53	1,358,500	100.0%
29	Hamtramck	62,200	40,900	5.39	826,100	846,500	20,400	2.47%	507,900	338,900	42,300	5.45	846,600	100.0%
30	Harper Woods	47,600	42,500	6.76	831,800	851,800	20,000	2.40%	511,100	340,600	42,600	7.16	852,000	100.0%
31	Harrison Township	94,400	79,100	6.82	1,593,000	1,707,700	114,700	7.20%	1,024,600	682,900	85,400	7.23	1,707,300	100.0%
32	Hazel Park	50,500	38,200	5.98	760,400	779,000	18,600	2.45%	467,400	311,000	39,000	6.16	779,100	100.0%
33	Highland Park	105,700	60,300	4.61	1,210,900	1,227,400	16,500	1.36%	736,400	490,600	61,400	4.64	1,227,200	100.0%
34	Huron Township	60,300	76,000	10.09	1,520,400	1,556,700	36,300	2.39%	934,000	623,100	77,800	10.33	1,556,500	100.0%
35	Imlay City	45,700	74,600	13.52	1,513,100	1,549,000	35,900	2.37%	929,400	619,000	77,500	13.54	1,548,800	100.0%

Table 8  
Water Supply System  
Calculation of FY 2022 Wholesale Water Service Charge Schedule

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
	Sales Volume	Existing Charges		Profoma Revenue	Allocated Revenue Req't	Charge Adjustment	% Charge Adjustment	60%	Recover Via:	Proposed Charges		Projected Revenue	Revenue Recovery	
	Mcf	Fixed Mo \$/mo	Commodity \$/Mcf	Exist Charges \$	\$	\$		\$	\$	\$/mo	\$/Mcf	\$		
				Table 2	Table 7	(5) - (4)	(6) / (4)	60% of (5)	(5) - (8)*12	(8) / 12 mos	(9) / (1)	'12*(10)+(1)*(11)	(12) / (5)	
36	Imlay Twp	160	800	39.44	15,900	16,500	600	3.77%	9,900	6,900	800	43.13	16,500	100.0%
37	Inkster	93,600	63,800	5.45	1,275,700	1,306,400	30,700	2.41%	783,800	522,800	65,300	5.59	1,306,800	100.0%
38	Keego Harbor	9,900	15,500	12.35	308,300	315,700	7,400	2.40%	189,400	126,100	15,800	12.74	315,700	100.0%
39	Lapeer	52,100	80,300	11.84	1,580,500	1,618,100	37,600	2.38%	970,900	647,300	80,900	12.42	1,617,900	100.0%
40	Lenox Township	14,900	15,300	8.21	305,900	313,700	7,800	2.55%	188,200	125,300	15,700	8.41	313,700	100.0%
41	Lincoln Park	160,200	115,900	6.12	2,371,200	2,428,100	56,900	2.40%	1,456,900	971,300	121,400	6.06	2,427,600	100.0%
42	Livonia	480,300	594,800	9.92	11,902,200	12,185,200	283,000	2.38%	7,311,100	4,873,600	609,300	10.15	12,186,600	100.0%
43	Macomb Township	329,800	653,000	16.03	13,122,700	13,432,500	309,800	2.36%	8,059,500	5,373,300	671,600	16.29	13,431,600	100.0%
44	Madison Heights	106,600	99,400	6.82	1,919,800	1,966,100	46,300	2.41%	1,179,700	786,500	98,300	7.38	1,966,300	100.0%
45	Mayfield Twp	790	2,500	23.10	48,200	49,600	1,400	2.90%	29,800	19,600	2,500	24.81	49,600	100.0%
46	Melvindale	42,600	33,600	6.23	668,600	685,000	16,400	2.45%	411,000	273,400	34,300	6.42	685,100	100.0%
47	New Haven, Village of	25,500	20,500	6.74	417,900	445,100	27,200	6.51%	267,100	177,500	22,300	6.96	445,100	100.0%
48	N O C W A	897,900	1,143,600	10.22	22,899,700	23,445,300	545,600	2.38%	14,067,200	9,377,700	1,172,300	10.44	23,441,700	100.0%
49	Northville	31,000	46,100	11.72	916,500	938,300	21,800	2.38%	563,000	375,500	46,900	12.11	938,200	100.0%
50	Northville Township	140,800	290,100	16.95	5,867,800	6,006,300	138,500	2.36%	3,603,800	2,402,700	300,300	17.06	6,005,600	100.0%
51	Novi	292,400	468,800	12.69	9,336,200	9,558,100	221,900	2.38%	5,734,900	3,823,300	477,900	13.08	9,559,400	100.0%
52	Oak Park	97,000	71,700	6.03	1,445,300	1,479,500	34,200	2.37%	887,700	591,500	74,000	6.10	1,479,700	100.0%
53	Oakland Co. Drain Comm.	9,700	4,300	3.29	83,500	85,800	2,300	2.75%	51,500	34,200	4,300	3.53	85,800	100.0%
54	Plymouth	44,100	55,500	10.24	1,117,600	1,144,200	26,600	2.38%	686,500	457,800	57,200	10.38	1,144,200	100.0%
55	Plymouth Township	161,900	229,900	11.31	4,589,900	4,698,200	108,300	2.36%	2,818,900	1,879,400	234,900	11.61	4,698,500	100.0%
56	Redford Township	160,500	165,300	8.04	3,274,000	3,352,700	78,700	2.40%	2,011,600	1,341,500	167,600	8.36	3,353,000	100.0%
57	River Rouge	37,900	34,800	7.54	703,400	720,600	17,200	2.45%	432,400	288,600	36,000	7.61	720,400	100.0%
58	Riverview	48,500	45,000	7.82	919,300	941,100	21,800	2.37%	564,700	375,900	47,100	7.75	941,100	100.0%
59	Rockwood	9,900	14,400	11.56	287,200	294,200	7,000	2.44%	176,500	117,800	14,700	11.90	294,200	100.0%
60	Romeo	6,000	13,000	18.18	265,100	271,800	6,700	2.53%	163,100	108,600	13,600	18.10	271,800	100.0%
61	Romulus	218,500	216,400	8.23	4,395,100	4,499,600	104,500	2.38%	2,699,800	1,799,600	225,000	8.24	4,500,400	100.0%
62	Roseville	189,900	138,700	5.91	2,786,700	2,853,500	66,800	2.40%	1,712,100	1,141,100	142,700	6.01	2,853,700	100.0%
63	Royal Oak Township	11,000	10,500	7.15	204,700	209,600	4,900	2.39%	125,800	83,600	10,500	7.60	209,600	100.0%
64	S O C W A	1,254,800	1,192,900	7.58	23,826,200	24,393,200	567,000	2.38%	14,635,900	9,756,800	1,219,700	7.78	24,398,700	100.0%
65	Shelby Township	404,100	724,600	15.15	14,817,300	15,086,900	269,600	1.82%	9,052,100	6,035,300	754,300	14.94	15,088,900	100.0%
66	South Rockwood	4,700	6,000	9.92	118,600	121,400	2,800	2.36%	72,800	48,200	6,100	10.26	121,400	100.0%
67	Southgate	114,500	114,600	7.90	2,279,800	2,334,000	54,200	2.38%	1,400,400	933,600	116,700	8.15	2,333,600	100.0%
68	St. Clair County-Burtchville Twp	7,800	16,800	18.67	347,200	355,600	8,400	2.42%	213,400	142,000	17,800	18.21	355,600	100.0%
69	St. Clair County-Greenwood	20,600	36,000	12.83	696,300	991,800	295,500	42.44%	595,100	396,600	49,600	19.25	991,800	100.0%
70	St. Clair Shores	190,200	158,300	6.68	3,170,100	3,246,600	76,500	2.41%	1,948,000	1,299,000	162,300	6.83	3,246,700	100.0%
71	Sterling Heights	577,900	785,000	10.99	15,771,100	16,146,200	375,100	2.38%	9,687,700	6,458,600	807,300	11.18	16,148,500	100.0%

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Table 8  
Water Supply System  
Calculation of FY 2022 Wholesale Water Service Charge Schedule

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
	Sales Volume	Existing Charges		Profoma Revenue	Allocated Revenue Req't	Charge Adjustment	% Charge Adjustment	60% Recover Via:		Proposed Charges		Projected Revenue	Revenue Recovery	
	Mcf	Fixed Mo \$/mo	Commodity \$/Mcf	\$	\$	\$		Fixed Mo \$	Commodity \$	Fixed Mo \$/mo	Commodity \$/Mcf	\$		
				Table 2	Table 7	(5) - (4)	(6) / (4)	60% of (5)	(5) - (8)*12	(8) / 12 mos	(9) / (1)	'12*(10)+(1)*(11)	(12) / (5)	
72	Sumpter Township	29,500	34,500	9.64	698,400	715,000	16,600	2.38%	429,000	285,400	35,800	9.67	714,900	100.0%
73	Sylvan Lake	6,400	12,100	15.11	241,900	247,600	5,700	2.36%	148,600	98,800	12,400	15.44	247,600	100.0%
74	Taylor	262,600	241,400	7.24	4,798,000	4,912,200	114,200	2.38%	2,947,300	1,965,000	245,600	7.48	4,911,400	100.0%
75	Trenton	87,100	86,700	8.10	1,745,900	1,788,700	42,800	2.45%	1,073,200	715,900	89,400	8.22	1,788,800	100.0%
76	Troy	473,500	700,800	12.14	14,157,900	14,494,400	336,500	2.38%	8,696,600	5,798,000	724,700	12.24	14,492,000	100.0%
77	Utica	24,700	29,800	9.34	588,300	602,400	14,100	2.40%	361,400	241,200	30,100	9.77	602,500	100.0%
78	Van Buren Township	132,400	177,200	11.14	3,601,300	3,687,600	86,300	2.40%	2,212,600	1,474,800	184,400	11.14	3,687,700	100.0%
79	Walled Lake	30,700	41,700	10.64	827,000	846,600	19,600	2.37%	508,000	339,000	42,300	11.04	846,500	100.0%
80	Warren	628,200	530,000	6.89	10,688,300	10,941,500	253,200	2.37%	6,564,900	4,376,300	547,100	6.97	10,943,800	100.0%
81	Washington Township	78,700	116,900	12.49	2,385,800	2,442,400	56,600	2.37%	1,465,400	977,200	122,100	12.42	2,442,700	100.0%
82	Wayne	104,100	159,500	13.38	3,306,900	3,385,600	78,700	2.38%	2,031,400	1,354,000	169,300	13.01	3,385,900	100.0%
83	West Bloomfield Township	266,800	538,000	16.29	10,802,200	11,058,900	256,700	2.38%	6,635,300	4,424,100	552,900	16.58	11,058,300	100.0%
84	Westland	328,100	321,700	7.80	6,419,600	6,573,500	153,900	2.40%	3,944,100	2,629,100	328,700	8.01	6,572,500	100.0%
85	Wixom	74,900	127,600	13.73	2,559,600	2,619,900	60,300	2.36%	1,571,900	1,047,900	131,000	13.99	2,619,900	100.0%
86	Woodhaven	57,700	86,700	11.91	1,727,600	1,768,500	40,900	2.37%	1,061,100	707,700	88,400	12.27	1,768,800	100.0%
87	Ypsilanti Comm Util Auth	485,300	540,900	8.76	10,742,000	10,997,100	255,100	2.37%	6,598,300	4,398,300	549,900	9.06	10,995,600	100.0%
88	Total Suburban	13,588,930	15,563,500	9.53	316,273,300	323,761,700	7,488,400	2.37%	191,596,200	132,161,300	15,966,700	9.73	323,769,300	100.0%
89	Detroit (a)	4,186,400	1,879,600		22,555,400	21,835,200	(720,200)	-3.19%	21,835,200		1,819,600		21,835,200	100.0%
90	GRAND TOTAL	17,775,330			338,828,700	345,596,900	6,768,200	2.00%	213,431,400	132,161,300			345,604,500	100.0%
91	less: Bad Debt Expense				(1,210,900)	(1,227,400)	(16,500)						(1,227,200)	
92	Net Wholesale Revenue				337,617,800	344,369,500	6,751,700	2.00%					344,377,300	100.0%
<b>(a) Flint / Detroit Adjustment Impacts</b>														
93	Flint Gross	478,700	572,300	8.76	11,061,000	11,328,000	267,000	2.41%	6,796,800	4,531,200	566,400	9.47	11,330,100	100.0%
94	less: KWA Debt Svc Credit		(554,400)		(6,652,800)	(6,652,800)	0	0.00%	(6,652,800)	0	(554,400)		(6,652,800)	100.0%
95	Flint Net for Line 21		17,900	8.76	4,408,200	4,675,200	267,000	6.06%	144,000	4,531,200	12,000	9.47	4,677,300	100.0%
96	Detroit Gross		3,604,600		43,255,400	42,535,200	(720,200)	-1.66%	(43,255,400)	(86,510,800)	3,544,600		42,535,200	100.0%
97	less: Ownership Adj Credit		(1,725,000)		(20,700,000)	(20,700,000)	0	0.00%	20,700,000	41,400,000	(1,725,000)		(20,700,000)	100.0%
98	Detroit Net for Line 89		1,879,600		22,555,400	21,835,200	(720,200)	-3.19%	(22,555,400)	(45,110,800)	1,819,600		21,835,200	100.0%
99	Modified Demands	618,980			19,408,000	19,925,100	517,100	2.66%					19,926,700	100.0%
100	Non-Master Metered	4,888,400			34,562,300	33,868,100	(694,200)	-2.01%					33,869,200	100.0%
101	No Mods	12,267,950			284,858,400	291,803,700	6,945,300	2.44%					291,808,600	100.0%
102	Total	17,775,330			338,828,700	345,596,900	6,768,200	2.00%					345,604,500	100.0%
103	Total Mods (99) + (100)	5,507,380			53,970,300	53,793,200	(177,100)	-0.3%					53,795,900	100.0%

Table 9  
Water Supply System  
Calculation of FY 2022 Wholesale Water Service Charge Schedule - Adjustment for "Mod" Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	Sales	Calculated Charges		Revenue Under	Recommended Charges =		Revenue Under	Revenue	
	<u>Volume</u>	<u>Fixed Mo</u>	<u>Commodity</u>	<u>Calculated</u>	<u>Originally Proposed Charges</u>		<u>Recommended</u>	<u>Variance (b)</u>	
	<i>Mcf</i>	<i>\$/mo</i>	<i>\$/Mcf</i>	<i>\$</i>	<i>\$/mo</i>	<i>\$/Mcf</i>	<i>\$</i>	<i>\$</i>	
		<i>Table 8</i>	<i>Table 8</i>	<i>12*(2)+(1)*(3)</i>	<i>from 12/30 preliminary report</i>		<i>12*(5)+(1)*(6)</i>	<i>(7) - (4)</i>	
1	Bruce Twp	2,180	16,800	61.24	335,100	16,700	61.65	334,800	(300)
2	Dearborn	596,300	540,300	7.25	10,806,800	540,000	7.24	10,797,200	(9,600)
3	Grosse Pt. Woods	72,200	67,900	7.53	1,358,500	67,900	7.52	1,357,700	(800)
4	Harrison Township	94,400	85,400	7.23	1,707,300	85,300	7.24	1,707,100	(200)
5	Highland Park	105,700	61,400	4.64	1,227,200	61,300	4.65	1,227,100	(100)
6	New Haven, Village of	25,500	22,300	6.96	445,100	22,200	6.99	444,600	(500)
7	Shelby Township	404,100	754,300	14.94	15,088,900	753,700	14.92	15,073,600	(15,300)
8	St. Clair County-Greenwood	20,600	49,600	19.25	991,800	49,600	19.23	991,300	(500)
9	Total Suburban	1,320,980	1,598,000		31,960,700	1,596,700		31,933,400	(27,300)
10	Detroit	4,186,400	1,819,600		21,835,200	1,817,900		21,814,600	(20,600)
11	GRAND TOTAL	5,507,380	3,417,600		53,795,900	3,414,600		53,748,000	(47,900)

(b) The FY 2022 BUDGET must be adjusted to reflect the minor variance created by the decision to set Mod Member Partner charges equivalent to the original proposa

Table 1  
Sewage Disposal System  
FY 2022 SHARES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
	Existing SHARES							
	CTA Treat / Collection Cost Pool	CSO Facility Cost Pool	Suburban Only Cost Pool	"All in" SHARE	Proposed "All in" SHARE	Change in SHARE		
	(a)			(b)	(c)	Variance	% Variance	
1	OMID	16.436%	2.651%	22.182%	14.660%	14.589%	-0.071%	-0.5%
2	Rouge Valley	12.893%	2.956%	20.347%	11.682%	11.804%	0.122%	1.0%
3	Oakland GWK	10.735%	2.256%	18.625%	9.735%	9.788%	0.053%	0.5%
4	Evergreen Farmington	8.378%	1.485%	12.719%	7.521%	7.639%	0.118%	1.6%
5	SE Macomb San Dist	5.910%	1.174%	10.020%	5.345%	5.291%	-0.054%	-1.0%
6	Dearborn	4.518%	1.631%	8.048%	4.194%	4.284%	0.090%	2.1%
7	Grosse Pointe Farms	0.596%	0.504%	1.075%	0.593%	0.580%	-0.013%	-2.2%
8	Grosse Pointe Park	0.435%	0.062%	0.746%	0.390%	0.402%	0.012%	3.1%
9	Melvindale	0.367%	0.074%	0.568%	0.331%	0.332%	0.001%	0.3%
10	Farmington	0.275%	0.052%	0.445%	0.248%	0.253%	0.005%	2.0%
11	Center Line	0.247%	0.055%	0.368%	0.223%	0.220%	-0.003%	-1.3%
12	Allen Park	0.206%	0.031%	0.316%	0.184%	0.179%	-0.005%	-2.7%
13	Highland Park	1.065%	2.065%	2.165%	1.222%	1.144%	-0.078%	-6.4%
14	Hamtramck	0.717%	1.595%	1.764%	0.857%	0.853%	-0.004%	-0.5%
15	Grosse Pointe	0.180%	0.228%	0.417%	0.1920%	0.190%	-0.002%	-1.0%
16	Harper Woods	0.051%	0.013%	0.112%	0.047%	0.046%	-0.001%	-2.1%
17	Redford Township	0.045%	0.133%	0.073%	0.057%	0.057%	0.000%	0.0%
18	Wayne County #3	0.007%	0.035%	0.011%	0.011%	0.011%	0.000%	0.0%
19	Subtotal Suburban Wholesale	63.058%	17.000%	100.000%	57.492%	57.662%	0.170%	0.3%
20	Detroit Customers	36.942%	83.000%	0.000%	42.508%	42.338%	-0.170%	-0.4%
21	Total	100.000%	100.000%	100.000%	100.000%	100.000%	0.000%	0.0%

(a) The existing published **SHAREs** reflected proportional allocation factors for revenue requirements excluding CSO and Suburban only costs.

(b) The effect of the prior methodology established "All in" **SHAREs** after recognizing the CSO and Suburban only cost pools.

(c) The proposed methodology establishes effective "All in" **SHAREs**, inclusive of all cost pools.

Table 2  
Sewage Disposal System  
Determination of FY 2022 Proforma Revenue Under Existing Charges

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Existing Fixed Monthly Charges				Proforma Revenue - Existing Charges						
	FY 2021 <u>Rev Req'ts</u>	Bad Debt <u>Projected</u>	Bad Debt <u>True-Up</u>	<u>Total</u>	FY 2021 <u>Rev Req'ts</u>	CTA FY 2021 <u>Rev Req'ts</u>	Specifics/ <u>Adjustments</u>	Bad Debt <u>Projected</u>	Bad Debt <u>True-Up</u>	<u>Total</u>	
	<i>(1) * 12</i>				<i>FY 2022 SHARES</i>		<i>(5) - (6)</i>	<i>(2) * (12)</i>	<i>(3) * (12)</i>		
<u>Suburban Wholesale</u>											
1	OMID Common *	5,726,500	27,700	(27,700)	5,726,500	68,718,000	67,494,300	1,223,700	332,900	(332,900)	68,718,000
2	Rouge Valley	4,575,900	22,200	(22,200)	4,575,900	54,910,800	53,788,500	1,122,300	266,200	(266,200)	54,910,800
3	Oakland GWK	3,821,000	18,500	(18,500)	3,821,000	45,852,000	44,824,600	1,027,400	222,300	(222,300)	45,852,000
4	Evergreen Farmington	2,944,100	14,300	(14,300)	2,944,100	35,329,200	34,627,700	701,500	171,300	(171,300)	35,329,200
5	SE Macomb San Dist	2,097,000	10,200	(10,200)	2,097,000	25,164,000	24,611,300	552,700	122,000	(122,000)	25,164,000
6	Dearborn	1,646,200	8,000	(8,000)	1,646,200	19,754,400	19,310,400	444,000	95,800	(95,800)	19,754,400
7	Grosse Pointe Farms	232,300	1,100	(1,100)	232,300	2,787,600	2,728,300	59,300	13,500	(13,500)	2,787,600
8	Grosse Pointe Park	153,000	700	(700)	153,000	1,836,000	1,794,900	41,100	8,900	(8,900)	1,836,000
9	Melvindale	129,600	600	(600)	129,600	1,555,200	1,523,900	31,300	7,500	(7,500)	1,555,200
10	Farmington	97,200	500	(500)	97,200	1,166,400	1,141,900	24,500	5,700	(5,700)	1,166,400
11	Center Line	87,300	400	(400)	87,300	1,047,600	1,027,300	20,300	5,100	(5,100)	1,047,600
12	Allen Park	72,200	400	(400)	72,200	866,400	849,000	17,400	4,200	(4,200)	866,400
13	Highland Park	478,900	2,300	(2,300)	478,900	5,746,800	5,627,400	119,400	27,900	(27,900)	5,746,800
14	Hamtramck	337,000	1,600	(1,600)	337,000	4,044,000	3,946,700	97,300	19,600	(19,600)	4,044,000
15	Grosse Pointe	75,400	400	(400)	75,400	904,800	881,800	23,000	4,400	(4,400)	904,800
16	Harper Woods	18,500	100	(100)	18,500	222,000	215,800	6,200	1,100	(1,100)	222,000
17	Redford Township	22,300	100	(100)	22,300	267,600	263,600	4,000	1,300	(1,300)	267,600
18	Wayne County #3	4,300	0	0	4,300	51,600	51,000	600	300	(300)	51,600
19	Subtotal Suburban Wholesale	22,518,700	109,100	(109,100)	22,518,700	270,224,400	264,708,400	5,516,000	1,310,000	(1,310,000)	270,224,400
20	Detroit Customers	15,842,700			15,842,700	190,112,100	195,628,100	(5,516,000)			190,112,100
21	SUBTOTAL	38,361,400	109,100	(109,100)	38,361,400	460,336,500	460,336,500	0	1,310,000	(1,310,000)	460,336,500
22	OMID Direct *	176,800			176,800	2,121,900		2,121,900		0	2,121,900
23	Total Wholesale	38,538,200	109,100	(109,100)	38,538,200	462,458,400	460,336,500	2,121,900	1,310,000	(1,310,000)	462,458,400
24	OMID Total *	5,903,300	27,700	(27,700)	5,903,300	70,839,900	67,494,300	3,345,600	332,900	(332,900)	70,839,900
<u>Industrial Specific Charges</u>											
25	Industrial Waste Control	732,200			732,200	8,786,100		8,786,100			8,786,100
26	Industrial Surcharges	474,300			474,300	5,691,500		5,691,500			5,691,500
27	Subtotal	1,206,500	0	0	1,206,500	14,477,600	0	14,477,600	0	0	14,477,600
28	Total	39,744,700	109,100	(109,100)	39,744,700	476,936,000	460,336,500	16,599,500	1,310,000	(1,310,000)	476,936,000

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Table 3  
Executive Summary of FY 2022 BUDGET Request Comparison (\$ millions)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Water System				Sewer System				Total GLWA			
<u>Annual BUDGET</u>	<u>FY 2021(a)</u>	<u>FY 2022</u>	<u>Change</u>	<u>% Change</u>	<u>FY 2021(a)</u>	<u>FY 2022</u>	<u>Change</u>	<u>% Change</u>	<u>FY 2021(a)</u>	<u>FY 2022</u>	<u>Change</u>	<u>% Change</u>
1 Operation and Maintenance Expense	137.1	145.5	8.4	6.1%	184.9	183.1	(1.8)	-1.0%	322.1	328.6	6.5	2.0%
2 Master Bond Ordinance Commitments	179.7	172.0	(7.7)	-4.3%	262.1	259.5	(2.6)	-1.0%	441.8	431.5	(10.3)	-2.3%
3 Deposit to I&E (and other reserve) Funds	24.8	28.1	3.3	13.1%	39.7	34.6	(5.1)	-12.8%	64.5	62.7	(1.8)	-2.8%
4 <b>TOTAL BUDGET</b>	<b>341.6</b>	<b>345.6</b>	<b>3.9</b>	<b>1.2%</b>	<b>486.8</b>	<b>477.2</b>	<b>(9.5)</b>	<b>-2.0%</b>	<b>828.4</b>	<b>822.8</b>	<b>(5.6)</b>	<b>-0.7%</b>
<u>less: "Non Customer" Revenue</u>												
5 Investment Earnings & Miscellaneous	(4.8)	(1.2)	3.6	-74.7%	(5.6)	(1.4)	4.2	-74.8%	(10.4)	(2.6)	7.8	-74.8%
6 Subtotal Revenue Requirement "Offsets"	(4.8)	(1.2)	3.6	-74.7%	(5.6)	(1.4)	4.2	-74.8%	(10.4)	(2.6)	7.8	-74.8%
7 Preliminary Revenue Req't from Charges	336.8	344.4	7.6	2.2%	481.2	475.8	(5.4)	-1.1%	818.0	820.2	2.2	0.3%
8 plus: Expected "System" Bad Debt	1.2	1.2	0.1	4.8%	1.3	0.0	(1.3)	-100.0%	2.5	1.2	(1.2)	-50.0%
9 Revenue Required from Charges	338.0	345.6	7.6	2.3%	482.5	475.8	(6.7)	-1.4%	820.4	821.4	1.0	0.1%
10 Proforma Billed Revenue - Existing Charges	338.0	338.9	0.9	0.3%	482.5	476.9	(5.5)	-1.1%	820.4	815.8	(4.7)	-0.6%
11 Charge Revenue Adjustment Needed		6.8				(1.1)				5.6		
12 % Charge Revenue Adjustment Needed		<b>2.0%</b>				<b>-0.2%</b>				<b>0.7%</b>		
<b>Charge Adjustment Illustration</b>												
<u>Proforma Revenue - Existing Charges</u>												
13 Revenue from Charges	338.0	338.9	0.9	-0.3%	482.5	476.9	(5.5)	1.2%	820.4	815.8	(4.7)	0.6%
14 Investment Earnings & Miscellaneous	4.8	1.2	(3.6)	1.1%	5.6	1.4	(4.2)	0.9%	10.4	2.6	(7.8)	1.0%
15 Expected Bad Debt Expense	(1.2)	(1.2)	(0.1)	0.0%	(1.3)	0.0	1.3	-0.3%	(2.5)	(1.2)	1.2	-0.2%
16 Net Proforma Revenue Comparison	341.6	338.8	(2.8)		486.8	478.3	(8.4)		828.4	817.2	(11.2)	
17 Adjustment to Address Revenue Variance (Lns 13,14)				0.8%				1.8%				1.4%
18 Adjustment to Address BUDGET Variance (Line 4)				1.2%				-2.0%				-0.7%
19 <b>System Charge Adjustment</b>				<b>2.0%</b>				<b>-0.2%</b>				<b>0.7%</b>

(a) As originally approved in March 2020. The originally adopted FY 2021 Budget did not reflect anticipated debt service savings projected by the bond refinancing, nor the increase in the deposit to the I&E Fund. However that expectation was understood as part of the budget approval process, and was accomplished via the First Quarter FY 2021 Budget Amendment once the 2020 transactions closed in May and June.

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Table 4  
Sewage Disposal System  
Allocation of FY 2022 GLWA Wholesale Service Revenue Requirements to Cost Pools

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)										
														<b>Cost Pool Allocation</b>									
														Allocated FY 2022	less: OMID Contractual	Remaining Balance	Industrial Waste Control	WRRF Treatment					"Common" prior to Surcharge
<i>Separated for Purposes of Surcharge Calculations</i>					WRRF Treatment	Conveyance	CSO Facilities	"Common" TOTAL															
				Flow					BOD	TSS	PHOS	FOG											
<u>Revenue Requirement Elements</u>																							
1 Regional System O&M Expense	183,096,700	1,568,500	181,528,200	7,243,500	12,827,800	30,793,600	68,401,600	16,453,500	1,317,500	129,794,000	27,556,500	16,934,200	174,284,700										
2 Pension Obligation - Operating Portion	10,824,000	189,400	10,634,600	499,200	389,300	1,593,600	4,073,300	889,000	85,200	7,030,400	1,938,100	1,167,000	10,135,500										
3 Debt Service	207,209,500	0	207,209,500	237,900	66,858,600	20,723,700	30,181,400	5,986,700	1,121,600	124,872,000	47,245,700	34,853,700	206,971,400										
4 Non-Operating Portion of Pension Obligation	11,620,700	203,400	11,417,300	535,900	417,900	1,710,900	4,373,100	954,400	91,500	7,547,800	2,080,700	1,252,900	10,881,400										
5 Transfer to WRAP Fund	2,345,600	10,700	2,334,900	44,900	480,500	305,500	587,500	132,500	14,700	1,520,700	454,600	314,700	2,290,000										
6 Lease Payment to Detroit Local I&E	27,500,000	181,500	27,318,500	524,800	5,622,100	3,574,800	6,873,800	1,550,800	171,900	17,793,400	5,318,500	3,681,900	26,793,800										
7 Transfer to GLWA Regional I&E Account	34,616,900	0	34,616,900	39,800	11,169,600	3,462,200	5,042,200	1,000,200	187,400	20,861,600	7,893,000	5,822,700	34,577,300										
8 Total Gross Revenue Requirements	477,213,400	2,153,500	475,059,900	9,126,000	97,765,800	62,164,300	119,532,900	26,967,100	2,989,800	309,419,900	92,487,100	64,027,100	465,934,100										
9 less: Investment Earnings & Misc. Revenue	(1,410,800)	0	(1,410,800)	(27,100)	(290,300)	(184,600)	(355,000)	(80,100)	(8,900)	(918,900)	(274,700)	(190,100)	(1,383,700)										
10 Revenue Requirements from Charges	475,802,600	2,153,500	473,649,100	9,098,900	97,475,500	61,979,700	119,177,900	26,887,000	2,980,900	308,501,000	92,212,400	63,837,000	464,550,400										
<u>Summary - Revenues Required from Charges</u>																							
11 Net Operating Expenses	193,920,700	1,757,900	192,162,800	7,742,700	13,217,100	32,387,200	72,474,900	17,342,500	1,402,700	136,824,400	29,494,600	18,101,200	184,420,200										
12 Net Capital Requirements	281,881,900	395,600	281,486,300	1,356,200	84,258,400	29,592,500	46,703,000	9,544,500	1,578,200	171,676,600	62,717,800	45,735,800	280,130,200										
13 Total	475,802,600	2,153,500	473,649,100	9,098,900	97,475,500	61,979,700	119,177,900	26,887,000	2,980,900	308,501,000	92,212,400	63,837,000	464,550,400										
14 Cost Pool Allocation Factor - All Costs				1.9%	20.6%	13.1%	25.2%	5.7%	0.6%		19.5%	13.5%											
15 Cost Pool Allocation Factor - "Common" Costs										66.4%	19.8%	13.7%											

Table 5  
Sewage Disposal System  
Calculation of FY 2022 GLWA Pollutant Surcharge Rates

	(1)	(2)	(3)	(4)	(5)
	WRRF Treatment Pollutant Cost Pools <i>(from Table 4)</i>				
	<u>BOD</u>	<u>TSS</u>	<u>PHOS</u>	<u>FOG</u>	<u>Total</u>
1 Net Operating Expenses	32,387,200	72,474,900	17,342,500	1,402,700	123,607,300
2 Net Capital Requirements	29,592,500	46,703,000	9,544,500	1,578,200	87,418,200
3 Total	61,979,700	119,177,900	26,887,000	2,980,900	211,025,500
<u>Loadings Analysis</u>					
4 Flow Reported @ WRRF - Mcf					28,495,300
5 Average Influent Strength Reported @ WRRF - mg/l	100.0	140.0	2.36	15.0	
6 Total Pollutant Loadings - lbs $(4) * (5) * 0.0624$	177,810,700	248,934,900	4,196,300	26,671,600	457,613,500
7 Unit Cost - \$/lb. $(3) / (6)$	0.349	0.479	6.407	0.112	
8 Existing Surcharge Rate - \$/lb	0.491	0.499	7.354	0.473	
9 Unit Rate Change - % $[(7) - (8)] / (8)$	-28.9%	-4.0%	-12.9%	-76.3%	
10 Surchargeable Loadings - lbs	8,198,800	2,004,600	50,300	625,200	10,878,900
11 Total Surcharge Revenue - Existing $(10) * (8)$	4,025,600	1,000,300	369,900	295,700	5,691,500
12 Total Surcharge Revenue - Proposed $(10) * (7)$	<b>2,861,400</b>	<b>960,200</b>	<b>322,300</b>	<b>70,000</b>	<b>4,213,900</b>
13 Relative Surcharge / Total $(10) / (6)$	4.6%	0.8%	1.2%	2.3%	2.4%

Table 6  
Sewage Disposal System  
Summarized FY 2022 Wholesale Service Revenue Requirement Allocation to Cost Pools and Customer Classes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total <u>Rev Req't</u>	OMID <u>Specific</u>	Industrial <u>Waste Control</u>	Industrial <u>Surcharges</u>	"Common" Allocable on SHAREs				TOTAL
	\$	\$	\$	\$	WRRF <u>Treatment</u>	<u>Conveyance</u>	CSO <u>Facilities</u>	"Common" <u>TOTAL</u>	\$
	<i>Table 4</i>	<i>Table 4</i>	<i>Table 4</i>	<i>Table 5</i>	<i>Table 4 - (4)</i>	<i>Table 4</i>	<i>Table 4</i>	<i>(5) + (6) + (7)</i>	
<u>BUDGET Elements</u>									
1 Net Operating Expenses	193,920,700	1,757,900	7,742,700	2,319,900	134,504,500	29,494,600	18,101,200	182,100,300	193,920,800
2 Net Capital Requirements	281,881,900	395,600	1,356,200	1,894,000	169,782,600	62,717,800	45,735,800	278,236,200	281,882,000
3 Net to Recover from Charges	475,802,600	2,153,500	9,098,900	4,213,900	304,287,100	92,212,400	63,837,000	460,336,500	475,802,800

Table 7  
Sewage Disposal System  
Allocation of FY 2022 Revenue Requirements and Adjustments to Member Partners

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
	FY 2022 <u>SHARE</u>	Allocated <u>CTA Rev Req't</u>	Detroit Capital Ownership <u>Adjustment</u>	Adjusted Allocated <u>BUDGET</u>	OMID <u>Specific</u>	Total Wholesale <u>Rev Req'ts</u>	<u>Additional Allocated Elements</u>		Total Amount for <u>"Net" Charges</u>	
		460,336,500	5,516,000				0	0		
	Table 1	Table 6		(2) + (3)	Table 4	(4) + (5)			(6) + (7) + (8)	
<u>Suburban Wholesale</u>										
1	OMID	14.589%	67,158,500	1,193,800	68,352,300	2,153,500	70,505,800	0	0	70,505,800
2	Rouge Valley	11.804%	54,338,100	1,130,100	55,468,200		55,468,200	0	0	55,468,200
3	Oakland GWK	9.788%	45,057,700	1,049,300	46,107,000		46,107,000	0	0	46,107,000
4	Evergreen Farmington	7.639%	35,165,100	701,100	35,866,200		35,866,200	0	0	35,866,200
5	SE Macomb San Dist	5.291%	24,356,400	561,100	24,917,500		24,917,500	0	0	24,917,500
6	Dearborn	4.284%	19,720,800	463,300	20,184,100		20,184,100	0	0	20,184,100
7	Grosse Pointe Farms	0.580%	2,670,000	60,500	2,730,500		2,730,500	0	0	2,730,500
8	Grosse Pointe Park	0.402%	1,850,600	44,300	1,894,900		1,894,900	0	0	1,894,900
9	Melvindale	0.332%	1,528,300	31,400	1,559,700		1,559,700	0	0	1,559,700
10	Farmington	0.253%	1,164,700	25,200	1,189,900		1,189,900	0	0	1,189,900
11	Center Line	0.220%	1,012,700	20,300	1,033,000		1,033,000	0	0	1,033,000
12	Allen Park	0.179%	824,000	17,200	841,200		841,200	0	0	841,200
13	Highland Park	1.144%	5,266,200	107,900	5,374,100		5,374,100	0	0	5,374,100
14	Hamtramck	0.853%	3,926,700	79,500	4,006,200		4,006,200	0	0	4,006,200
15	Grosse Pointe	0.190%	874,600	19,800	894,400		894,400	0	0	894,400
16	Harper Woods	0.046%	211,800	5,500	217,300		217,300	0	0	217,300
17	Redford Township	0.057%	262,400	4,900	267,300		267,300	0	0	267,300
18	Wayne County #3	0.011%	50,600	800	51,400		51,400	0	0	51,400
19	Subtotal Suburban Wholesale	57.662%	265,439,200	5,516,000	270,955,200	2,153,500	273,108,700	0	0	273,108,700
20	Detroit Customers	42.338%	194,897,300	(5,516,000)	189,381,300		189,381,300			189,381,300
21	<b>Total</b>	100.00%	460,336,500	0	460,336,500	2,153,500	462,490,000	0	0	462,490,000

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Table 8  
Sewage Disposal System  
Calculation of FY 2022 Wholesale Sewer Service Charge Schedule - Fixed Monthly Charges

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	Allocated CTA Rev Req't	Detroit Capital Ownership Adjustment	Adjusted Allocated BUDGET	OMID Specific	Total Wholesale Rev Req'ts	Additional Bad Debt Projected	Allocated Elements Bad Debt True-Up	Total Amount for "Net" Charges	
	\$	\$	\$	\$	\$	\$	\$	\$	
<u>Metered Customers</u>									
1	OMID	5,596,500	99,500	5,696,000	179,500	5,875,500	0	0	5,875,500
2	Rouge Valley	4,528,200	94,200	4,622,400	0	4,622,400	0	0	4,622,400
3	Oakland GWK	3,754,800	87,500	3,842,300	0	3,842,300	0	0	3,842,300
4	Evergreen Farmington	2,930,400	58,500	2,988,900	0	2,988,900	0	0	2,988,900
5	SE Macomb San Dist	2,029,700	46,800	2,076,500	0	2,076,500	0	0	2,076,500
6	Dearborn	1,643,400	38,600	1,682,000	0	1,682,000	0	0	1,682,000
7	Grosse Pointe Farms	222,500	5,000	227,500	0	227,500	0	0	227,500
8	Grosse Pointe Park	154,200	3,700	157,900	0	157,900	0	0	157,900
9	Melvindale	127,400	2,600	130,000	0	130,000	0	0	130,000
10	Farmington	97,100	2,100	99,200	0	99,200	0	0	99,200
11	Center Line	84,400	1,700	86,100	0	86,100	0	0	86,100
12	Allen Park	68,700	1,400	70,100	0	70,100	0	0	70,100
13	Highland Park	438,900	8,900	447,800	0	447,800	0	0	447,800
14	Hamtramck	327,200	6,700	333,900	0	333,900	0	0	333,900
15	Grosse Pointe	72,900	1,600	74,500	0	74,500	0	0	74,500
16	Harper Woods	17,700	400	18,100	0	18,100	0	0	18,100
17	Redford Township	21,900	400	22,300	0	22,300	0	0	22,300
18	Wayne County #3	4,200	100	4,300	0	4,300	0	0	4,300
19	Subtotal Suburban Wholesale	22,120,100	459,700	22,579,800	179,500	22,759,300	0	0	22,759,300
20	Detroit Customers	16,241,400	(459,700)	15,781,800	0	15,781,800	0	0	15,781,800
21	<b>Total</b>	38,361,500	0	38,361,600	179,500	38,541,100	0	0	38,541,100

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Table 9  
Sewage Disposal System  
Comparison of Existing and Proposed Wholesale Service Charges

	(1)	(2)	(3)	(4)	
	<u>Existing</u>	<u>Proposed</u>	<u>Charge</u>	<u>% Charge</u>	
	<u>Charges</u>	<u>Charges</u>	<u>Adjustment</u>	<u>Adjustment</u>	
	<i>\$/mo</i>	<i>\$/mo</i>	<i>\$/mo</i>		
<u>Suburban Wholesale</u>					
1	OMID Common *	5,726,500	5,696,000	(30,500)	-0.5%
2	Rouge Valley	4,575,900	4,622,400	46,500	1.0%
3	Oakland GWK	3,821,000	3,842,300	21,300	0.6%
4	Evergreen Farmington	2,944,100	2,988,900	44,800	1.5%
5	SE Macomb San Dist	2,097,000	2,076,500	(20,500)	-1.0%
6	Dearborn	1,646,200	1,682,000	35,800	2.2%
7	Grosse Pointe Farms	232,300	227,500	(4,800)	-2.1%
8	Grosse Pointe Park	153,000	157,900	4,900	3.2%
9	Melvindale	129,600	130,000	400	0.3%
10	Farmington	97,200	99,200	2,000	2.1%
11	Center Line	87,300	86,100	(1,200)	-1.4%
12	Allen Park	72,200	70,100	(2,100)	-2.9%
13	Highland Park	478,900	447,800	(31,100)	-6.5%
14	Hamtramck	337,000	333,900	(3,100)	-0.9%
15	Grosse Pointe	75,400	74,500	(900)	-1.2%
16	Harper Woods	18,500	18,100	(400)	-2.2%
17	Redford Township	22,300	22,300	0	0.0%
18	Wayne County #3	4,300	4,300	0	0.0%
19	Subtotal Suburban Wholesale	22,518,700	22,579,800	61,100	0.3%
20	Detroit Customers	15,842,700	15,781,800	(60,900)	-0.4%
21	<b>SUBTOTAL</b>	<b>38,361,400</b>	<b>38,361,600</b>	<b>200</b>	<b>0.0%</b>
22	OMID Direct *	176,800	179,500	2,700	1.5%
23	<b>Total Wholesale</b>	<b>38,538,200</b>	<b>38,541,100</b>	<b>2,900</b>	<b>0.0%</b>
24	<i>OMID Total *</i>	<i>5,903,300</i>	<i>5,875,500</i>	<i>(27,800)</i>	<i>-0.5%</i>

Table 10  
Sewage Disposal System  
Proposed FY 2022 Industrial Specific Charges

Industrial Waste Control Charges	
Revenue Req't - \$ <i>from Table 5</i>	9,098,900
Eq Mtrs	212,224
Unit Cost - \$/eq mtr	3.57

Industrial Surcharges <i>from Table 6</i>		
Revenue	Estimated	Unit
<u>Req't</u>	<u>Loadings</u>	<u>Rate</u>
\$	lbs	\$/lb

<u>Meter Size</u>	<u>Equivalency Ratio</u>	<u>Unit Rate</u>
5/8	1.0	3.57
3/4	1.5	5.36
1	2.5	8.93
1-1/2	5.5	19.64
2	8.0	28.56
3	14.5	51.77
4	20.0	71.40
6	30.0	107.10
8	50.0	178.50
10	70.0	249.90
12	80.0	285.60
14	100.0	357.00
16	120.0	428.40
18	140.0	499.80
20	160.0	571.20
24	180.0	642.60
30	200.0	714.00
36	220.0	785.40
48	240.0	856.80

BOD	61,979,700	177,810,700	0.349
SS	119,177,900	248,934,900	0.479
PHOS	26,887,000	4,196,300	6.407
FOG	2,980,900	26,671,600	0.112

## Appendices

- A. December 30, 2020 memorandum: “FY 2022 Cost of Service and Charges Study - Detailed Cost Allocation Schedules”
- B. December 17, 2020 memorandum: “GLWA Financial Forecast Update”
- C. November 13 and 16, 2020 memorandum: “FY 2022 SHARE Calculations”
- D. January 11, 2021 memorandum: “Highland Park Bad Debt Expense Review”

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



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MEMORANDUM

FY 2022 Cost of Service and Charges Study  
Detailed Cost Allocation Schedules

December 30, 2020

To: Nicolette Bateson

From: Bart Foster

The attached exhibits are intended to delineate the process we've taken to allocate the FY 2022 BUDGET to cost pools as part of the FY 2022 Cost of Service and Charges Study. This material illustrates the detailed, step by step approach we applied to get to the final cost pool allocation, which is summarized as "Table 4" in our cost of service 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. We believe that the annotation provides a "road map" for interested parties to follow the allocation logic, and we'll not elaborate in this introduction.

For the FY 2022 Cost of Service Study, significant review efforts have been applied towards continuing to refine and understand the manner by which budgeted operating expenses of the Centralized Services group have been assigned to Water and Sewer, 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 Asset Management cost center includes specific contracts to address the Linear System Integrity Program, which is largely focused on Water transmission mains. The costs of those specific contracts are directly assigned to the appropriate fund and Cost Pool in these calculations.

The FY 2022 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 we have assigned discrete activities directly to Water and Sewer budget responsibilities based on our review. These results are summarized at the bottom of page A-11 of the exhibits. All other "general" Centralized Services budgeted costs have been assigned 50% to Water and 50% to Sewer<sup>1</sup>.

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<sup>1</sup> 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 A-11. 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 subtle adjustment in the Logistics and Materials cost center, reflecting a new “Sewer only” facility within that budget.

As noted in the exhibits, we have allocated specific operating costs to cost pools in part based on judgment and experience applied to the historical cost information in prior reports. In general, we embraced the concepts established with the Sewer Rate Simplification Initiative and sought to maintain the general allocation assumptions that could be supported by existing data.

Subsequent phases of the Cost Allocation Project, and the accompanying review of the overall Cost Allocation Methodology Projects, are intended to refine allocation of specific functional costs to “Cost Pools” that align the GLWA revenue requirements with measures of services to Member Partners.

We have also incorporated updated information from the GLWA capital asset inventory and valuation project, in order to establish the “fixed asset profile” by various functions. This updated information has been utilized to allocate capital revenue requirements to Cost Pools, as illustrated herein.

The approach summarized above results in an allocation of the FY 2022 BUDGET<sup>2</sup> to individual Cost Pools, as shown on exhibit pages A-28 and A-29. These figures are incorporated into the formal Cost of Service Study. The changes noted above have impacts on the relative cost pool allocations, and on subsequent Member Partner cost of service allocations and charges. These impacts are discussed in the Cost of Service Study report.

We are prepared to discuss this matter at your convenience.

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<sup>2</sup> BUDGET refers to overall revenue requirement.

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

Water Operations Group Functional Allocation Matrix - FY 2022 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 2022 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
<b>Part 1 - Water Treatment Plants</b>									
<b>Personnel Costs</b>									
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%
<b>Contractual Services</b>									
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%
<b>Electricity</b>									
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%
<b>Chemicals</b>									
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%
<b>Other Utilities</b>									
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 2022 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 2022 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
<b>Other</b>									
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%
<b>TOTAL WTP Budget</b>									
9.3.1 Water Works Park	4.4%	10.3%	63.7%	21.6%					0.0%
9.3.2 Lake Huron Water Plant	3.6%	13.8%	49.6%	32.9%					0.0%
9.3.3 Springwells Water Plant	4.4%	10.1%	64.4%	21.1%					0.0%
9.3.4 Northeast Water Plant	4.2%	10.6%	62.5%	22.6%					0.0%
9.3.5 Southwest Water Plant	5.1%	9.8%	66.3%	18.8%					0.0%
Total WTPs	4.3%	11.0%	60.9%	23.7%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Part 2 - Booster Stations</b>									
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%
<b>Part 3 - Support Services</b>									
9.1 Chief Operating Officer Water Operations & P	5.4%	8.2%	65.8%	12.5%	0.8%	6.5%	0.8%	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	5.4%	8.2%	65.8%	12.5%	0.8%	6.5%	0.8%	0.0%	0.0%
Total Support Costs	5.1%	7.7%	67.6%	9.4%	2.7%	4.9%	2.7%	0.0%	0.0%
<b>TOTAL GROUP</b>	3.8%	9.1%	52.9%	18.7%	0.3%	15.0%	0.3%	0.0%	0.0%
Indirect Allocation Factors (Non Commodity)	5.4%	8.2%	65.8%	12.5%	0.8%	6.5%	0.8%	0.0%	0.0%

Aligns with FY 2022 Budget Request as of 12/18/2020. Subsequent modifications may occur.

Water Operations Group Functional Allocation Matrix - FY 2022 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 2022 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	
<b>Part 1 - Water Treatment Plants</b>										
<b>Personnel Costs</b>										
9.3.1 Water Works Park	3,245,500	194,700	292,100	2,271,900	486,800	0	0	0	0	0
9.3.2 Lake Huron Water Plant	2,625,600	157,500	236,300	1,838,000	393,800	0	0	0	0	0
9.3.3 Springwells Water Plant	3,150,600	189,000	283,600	2,205,400	472,600	0	0	0	0	0
9.3.4 Northeast Water Plant	2,740,600	164,400	246,700	1,918,400	411,100	0	0	0	0	0
9.3.5 Southwest Water Plant	2,846,700	170,800	256,200	1,992,700	427,000	0	0	0	0	0
Total WTPs	14,609,000	876,400	1,314,900	10,226,400	2,191,300	0	0	0	0	0
<b>Contractual Services</b>										
9.3.1 Water Works Park	1,671,900	100,300	150,500	1,170,300	250,800	0	0	0	0	0
9.3.2 Lake Huron Water Plant	1,339,900	80,400	120,600	937,900	201,000	0	0	0	0	0
9.3.3 Springwells Water Plant	4,726,200	283,600	425,400	3,308,300	708,900	0	0	0	0	0
9.3.4 Northeast Water Plant	3,078,100	184,700	277,000	2,154,700	461,700	0	0	0	0	0
9.3.5 Southwest Water Plant	3,782,700	227,000	340,400	2,647,900	567,400	0	0	0	0	0
Total WTPs	14,598,800	876,000	1,313,900	10,219,100	2,189,800	0	0	0	0	0
<b>Electricity</b>										
9.3.1 Water Works Park	2,050,000	51,200	410,000	512,500	1,076,300	0	0	0	0	0
9.3.2 Lake Huron Water Plant	6,500,000	162,500	1,300,000	1,625,000	3,412,500	0	0	0	0	0
9.3.3 Springwells Water Plant	3,000,000	75,000	600,000	750,000	1,575,000	0	0	0	0	0
9.3.4 Northeast Water Plant	2,800,000	70,000	560,000	700,000	1,470,000	0	0	0	0	0
9.3.5 Southwest Water Plant	1,270,000	31,800	254,000	317,400	666,800	0	0	0	0	0
Total WTPs	15,620,000	390,500	3,124,000	3,904,900	8,200,600	0	0	0	0	0
<b>Chemicals</b>										
9.3.1 Water Works Park	1,165,700	0	0	1,165,700	0	0	0	0	0	0
9.3.2 Lake Huron Water Plant	1,200,300	0	0	1,200,300	0	0	0	0	0	0
9.3.3 Springwells Water Plant	1,981,000	0	0	1,981,000	0	0	0	0	0	0
9.3.4 Northeast Water Plant	1,518,500	0	0	1,518,500	0	0	0	0	0	0
9.3.5 Southwest Water Plant	693,600	0	0	693,600	0	0	0	0	0	0
Total WTPs	6,559,100	0	0	6,559,100	0	0	0	0	0	0
<b>Other Utilities</b>										
9.3.1 Water Works Park	265,000	15,900	23,800	185,600	39,700	0	0	0	0	0
9.3.2 Lake Huron Water Plant	251,000	15,100	22,600	175,600	37,700	0	0	0	0	0
9.3.3 Springwells Water Plant	280,300	16,800	25,200	196,300	42,000	0	0	0	0	0
9.3.4 Northeast Water Plant	285,100	17,100	25,700	199,500	42,800	0	0	0	0	0
9.3.5 Southwest Water Plant	490,500	29,400	44,100	343,400	73,600	0	0	0	0	0
Total WTPs	1,571,900	94,300	141,400	1,100,400	235,800	0	0	0	0	0

Water Operations Group Functional Allocation Matrix - FY 2022 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 2022 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
<b>Other</b>										
9.3.1 Water Works Park	655,000	39,300	59,000	458,400	98,300	0	0	0	0	0
9.3.2 Lake Huron Water Plant	677,200	40,600	60,900	474,100	101,600	0	0	0	0	0
9.3.3 Springwells Water Plant	478,400	28,700	43,100	334,800	71,800	0	0	0	0	0
9.3.4 Northeast Water Plant	364,100	21,800	32,800	254,900	54,600	0	0	0	0	0
9.3.5 Southwest Water Plant	724,400	43,500	65,200	507,000	108,700	0	0	0	0	0
Total WTPs	2,899,100	173,900	261,000	2,029,200	435,000	0	0	0	0	0
<b>TOTAL WTP Budget</b>										
9.3.1 Water Works Park	9,053,100	401,400	935,400	5,764,400	1,951,900	0	0	0	0	0
9.3.2 Lake Huron Water Plant	12,594,000	456,100	1,740,400	6,250,900	4,146,600	0	0	0	0	0
9.3.3 Springwells Water Plant	13,616,500	593,100	1,377,300	8,775,800	2,870,300	0	0	0	0	0
9.3.4 Northeast Water Plant	10,786,400	458,000	1,142,200	6,746,000	2,440,200	0	0	0	0	0
9.3.5 Southwest Water Plant	9,807,900	502,500	959,900	6,502,000	1,843,500	0	0	0	0	0
Total WTPs	55,857,900	2,411,100	6,155,200	34,039,100	13,252,500	0	0	0	0	0
<b>Part 2 - Booster Stations</b>										
Personnel Costs	0	0	0	0	0	0	0	0	0	0
Contractual Services	10,000	0	0	0	0	10,000	0	0	0	0
Electricity	9,401,000	0	0	0	0	9,401,000	0	0	0	0
Chemicals	0	0	0	0	0	0	0	0	0	0
Other Utilities	76,900	0	0	0	0	76,900	0	0	0	0
Other	1,348,200	0	0	0	0	1,348,200	0	0	0	0
Total Booster Station Costs	10,836,100	0	0	0	0	10,836,100	0	0	0	0
<b>Part 3 - Support Services</b>										
9.1 Chief Operating Officer Water	486,100	26,300	39,700	319,700	61,000	4,000	31,400	4,000	0	0
9.2.1 Water Director	1,800,700	180,100	180,100	1,260,400	180,100	0	0	0	0	0
9.2.2 Water Quality	1,964,500	0	0	1,964,500	0	0	0	0	0	0
9.5.1 Water / Field Engineering	1,308,200	65,400	196,200	261,800	196,200	196,200	196,200	196,200	0	0
9.7.1 Water Operations Unallocat	2,723,000	147,500	222,100	1,791,400	341,700	22,300	175,700	22,300	0	0
Total Support Costs	8,282,500	419,300	638,100	5,597,800	779,000	222,500	403,300	222,500	0	0
<b>TOTAL GROUP</b>	<b>74,976,500</b>	<b>2,830,400</b>	<b>6,793,300</b>	<b>39,636,900</b>	<b>14,031,500</b>	<b>222,500</b>	<b>11,239,400</b>	<b>222,500</b>	<b>0</b>	<b>0</b>
Indirect Allocation Factors	23,929,700	1,295,800	1,952,200	15,742,300	3,002,600	196,200	1,544,400	196,200	0	0

Wastewater Operations Group Functional Allocation Matrix - FY 2022 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 2022 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 and FY 2021 Cost of Service Studies.

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

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
<b>Part 1 - Water Reuse &amp; Reclamation Facility</b>												
<b>Personnel Costs</b>												
8.2.1 Wastewater Operations	7.5%	4.0%	8.0%	16.0%	12.0%	10.0%	37.50%				5.0%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	25.0%				2.5%	
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	3.4%	3.9%	17.4%	12.7%	12.0%	21.5%	28.4%	0.0%	0.0%	0.0%	0.6%	0.0%
<b>Contractual Services</b>												
8.2.1 Wastewater Operations	7.5%	4.0%	8.0%	16.0%	12.0%	10.0%	37.50%				5.0%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	25.0%				2.5%	
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	22.6%	9.0%	4.5%	18.1%	10.8%	22.6%	12.3%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Electricity</b>												
8.2.1 Wastewater Operations	25.0%	10.0%	5.0%	20.0%	12.0%	25.0%	3.00%				0.0%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	25.0%				2.5%	
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	22.6%	9.0%	4.5%	18.1%	10.8%	22.6%	12.3%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Chemicals</b>												
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	2.6%	4.0%	19.8%	30.0%	30.1%	12.9%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%

Wastewater Operations Group Functional Allocation Matrix - FY 2022 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 2022 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 and FY 2021 Cost of Service Studies.

	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
<b>1 - ALLOCATION FACTORS</b>												
<b>Other Utilities</b>												
8.2.1 Wastewater Operations	5.0%	5.0%	5.0%	20.0%	5.0%	5.0%	55.00%				0.0%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	25.00%				2.5%	
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	3.4%	3.4%	3.4%	13.8%	3.4%	3.4%	69.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Other</b>												
8.2.1 Wastewater Operations	7.5%	4.0%	8.0%	16.0%	12.0%	10.0%	37.50%				5.0%	
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	25.00%				2.5%	
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	4.7%	3.6%	12.2%	13.2%	11.3%	20.6%	32.3%	0.0%	0.0%	0.0%	2.1%	0.0%
<b>TOTAL WRRF Budget</b>												
8.2.1 Wastewater Operations	15.2%	7.1%	5.8%	18.9%	10.2%	15.9%	25.5%	0.0%	0.0%	0.0%	1.4%	0.0%
8.2.2 Wastewater Process Control	7.5%	4.0%	8.0%	16.0%	12.0%	25.0%	25.0%	0.0%	0.0%	0.0%	2.5%	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	5.8%	3.8%	10.0%	12.9%	10.2%	14.2%	42.6%	0.0%	0.0%	0.0%	0.5%	0.0%
<b>Part 2 - Lift Stations</b>												
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 2022 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 2022 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 and FY 2021 Cost of Service Studies.

**1 - ALLOCATION FACTORS**

**Part 3 - CSO Facilities**

Personnel Costs  
 Contractual Services  
 Electricity  
 Chemicals  
 Other Utilities  
 Other  
 Total CSO Costs

**Part 4 - Industrial Waste Control**

Personnel Costs  
 Contractual Services  
 Electricity  
 Chemicals  
 Other Utilities  
 Other  
 Total IWC Costs

**Part 5 - Support Services**

8.1 Chief Operating Officer Wastewater  
 8.2.8 Wastewater Fire Damage  
 8.5 Wastewater Engineering  
 8.61 Analytical Laboratory  
 8.7 O&M Unallocated Reserve  
 Total Support Costs  
**TOTAL GROUP**  
 Indirect Allocation Factors (*Personnel*)

	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
									100.0%			
									100.0%			
									100.0%			
									100.0%			
									100.0%			
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
											100.0%	
											100.0%	
											100.0%	
											100.0%	
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
	2.7%	3.1%	13.8%	10.0%	9.5%	17.0%	22.5%	0.0%	12.6%	0.0%	8.8%	0.0%
						100.0%						
	5.0%		10.0%	15.0%	10.0%	15.0%	20.0%	15.0%	5.0%		5.0%	
			15.0%	15.0%	15.0%		15.0%				40.0%	
	2.7%	3.1%	13.8%	10.0%	9.5%	17.0%	22.5%	0.0%	12.6%	0.0%	8.8%	0.0%
	3.2%	1.0%	12.3%	13.4%	10.9%	12.6%	19.8%	7.0%	6.5%	0.0%	13.4%	0.0%
	4.5%	2.8%	8.9%	11.2%	8.9%	11.9%	32.6%	3.6%	10.7%	0.0%	4.8%	0.0%
	2.7%	3.1%	13.8%	10.0%	9.5%	17.0%	22.5%	0.0%	12.6%	0.0%	8.8%	0.0%

Aligns with FY 2022 Budget Request as of 12/18/2020. Subsequent modifications may occur.

Wastewater Operations Group Functional Allocation Matrix - FY 2022 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 2022 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 and FY 2021 Cost of Service Studies.

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	
<b>Personnel Costs</b>													
8.2.1 Wastewater Operations	1,158,900	86,900	46,400	92,700	185,400	139,100	115,900	434,600	0	0	0	57,900	0
8.2.2 Wastewater Process Control	2,242,200	168,200	89,700	179,100	358,800	269,100	560,600	560,600	0	0	0	56,100	0
8.2.4 Wastewater Primary Process	4,316,500	431,700	647,500	3,237,300	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	4,027,700	0	0	(100)	2,013,900	2,013,900	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	3,651,400	0	0	0	0	0	3,651,400	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	3,955,300	0	0	0	0	0	0	3,955,300	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	770,300	0	0	0	0	0	0	770,300	0	0	0	0	0
Total WRRF	20,122,300	686,800	783,600	3,509,000	2,558,100	2,422,100	4,327,900	5,720,800	0	0	0	114,000	0
<b>Contractual Services</b>													
8.2.1 Wastewater Operations	550,000	41,200	22,000	44,100	88,000	66,000	55,000	206,200	0	0	0	27,500	0
8.2.2 Wastewater Process Control	1,068,300	80,100	42,700	85,500	170,900	128,200	267,100	267,100	0	0	0	26,700	0
8.2.4 Wastewater Primary Process	431,000	43,100	64,700	323,200	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	194,000	0	0	0	97,000	97,000	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	92,000	0	0	0	0	0	92,000	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	327,368	0	0	0	0	0	0	327,400	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	15,837,000	0	0	0	0	0	0	15,837,000	0	0	0	0	0
Total WRRF	18,499,668	164,400	129,400	452,800	355,900	291,200	414,100	16,637,700	0	0	0	54,200	0
<b>Electricity</b>													
8.2.1 Wastewater Operations	10,543,000	2,635,800	1,054,300	527,000	2,108,600	1,265,200	2,635,800	316,300	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	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	1,120,000	0	0	0	0	0	0	1,120,000	0	0	0	0	0
Total WRRF	11,663,000	2,635,800	1,054,300	527,000	2,108,600	1,265,200	2,635,800	1,436,300	0	0	0	0	0
<b>Chemicals</b>													
8.2.1 Wastewater Operations	5,000	0	0	2,000	500	2,000	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	2,107,200	210,700	316,100	1,580,400	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	4,801,700	0	0	(100)	2,400,900	2,400,900	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	1,033,600	0	0	0	0	0	1,033,600	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	45,000	0	0	0	0	0	0	45,000	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	7,992,500	210,700	316,100	1,582,300	2,401,400	2,402,900	1,033,600	45,500	0	0	0	0	0

Wastewater Operations Group Functional Allocation Matrix - FY 2022 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 2022 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 and FY 2021 Cost of Service Studies.

		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	
<b>2 - FUNCTIONAL O&amp;M ALLOCATION</b>														
<b>Other Utilities</b>														
8.2.1 Wastewater Operations	5,588,593	279,400	279,400	279,600	1,117,700	279,400	279,400	3,073,700	0	0	0	0	0	0
8.2.2 Wastewater Process Control	0	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	0
8.2.4 Wastewater Secondary Process	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	0	0	0	0
8.2.6 Wastewater Incineration Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	2,530,400	0	0	0	0	0	0	2,530,400	0	0	0	0	0	0
Total WRRF	8,118,993	279,400	279,400	279,600	1,117,700	279,400	279,400	5,604,100	0	0	0	0	0	0
<b>Other</b>														
8.2.1 Wastewater Operations	4,281,107	321,100	171,200	342,500	685,000	513,700	428,100	1,605,400	0	0	0	214,100	0	0
8.2.2 Wastewater Process Control	1,230,200	92,300	49,200	98,300	196,800	147,600	307,600	307,600	0	0	0	30,800	0	0
8.2.4 Wastewater Primary Process	1,300,000	130,000	195,000	975,000	0	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	1,315,000	0	0	0	657,500	657,500	0	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	1,660,000	0	0	0	0	0	1,660,000	0	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	1,846,132	0	0	0	0	0	0	1,846,100	0	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	0
Total WRRF	11,632,439	543,400	415,400	1,415,800	1,539,300	1,318,800	2,395,700	3,759,100	0	0	0	244,900	0	0
<b>TOTAL WRRF Budget</b>														
8.2.1 Wastewater Operations	22,126,600	3,364,400	1,573,300	1,287,900	4,185,200	2,265,400	3,514,200	5,636,700	0	0	0	299,500	0	0
8.2.2 Wastewater Process Control	4,540,700	340,600	181,600	362,900	726,500	544,900	1,135,300	1,135,300	0	0	0	113,600	0	0
8.2.4 Wastewater Primary Process	8,154,700	815,500	1,223,300	6,115,900	0	0	0	0	0	0	0	0	0	0
8.2.4 Wastewater Secondary Process	10,338,400	0	0	(200)	5,169,300	5,169,300	0	0	0	0	0	0	0	0
8.2.5 Wastewater Dewatering Process	6,437,000	0	0	0	0	0	6,437,000	0	0	0	0	0	0	0
8.2.6 Wastewater Incineration Process	6,173,800	0	0	0	0	0	0	6,173,800	0	0	0	0	0	0
8.2.7 Biosolids Dryer Facility and Hauling Co	20,257,700	0	0	0	0	0	0	20,257,700	0	0	0	0	0	0
Total WRRF	78,028,900	4,520,500	2,978,200	7,766,500	10,081,000	7,979,600	11,086,500	33,203,500	0	0	0	413,100	0	0
<b>Part 2 - Lift Stations</b>														
Personnel Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contractual Services	28,200	0	0	0	0	0	0	0	28,200	0	0	0	0	0
Electricity	2,137,000	0	0	0	0	0	0	0	2,137,000	0	0	0	0	0
Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Utilities	100,500	0	0	0	0	0	0	0	100,500	0	0	0	0	0
Other	501,700	0	0	0	0	0	0	0	501,700	0	0	0	0	0
Total Lift Stations Costs	2,767,400	0	0	0	0	0	0	0	2,767,400	0	0	0	0	0

## Wastewater Operations Group Functional Allocation Matrix - FY 2022 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 2022 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 and FY 2021 Cost of Service Studies.

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	
<b>Part 3 - CSO Facilities</b>													
Personnel Costs	3,199,500	0	0	0	0	0	0	0	3,199,500	0	0	0	
Contractual Services	1,821,520	0	0	0	0	0	0	0	1,821,500	0	0	0	
Electricity	955,400	0	0	0	0	0	0	0	955,400	0	0	0	
Chemicals	1,258,000	0	0	0	0	0	0	0	1,258,000	0	0	0	
Other Utilities	1,170,900	0	0	0	0	0	0	0	1,170,900	0	0	0	
Other	2,517,380	0	0	0	0	0	0	0	2,517,400	0	0	0	
Total CSO Costs	10,922,700	0	0	0	0	0	0	0	10,922,700	0	0	0	
<b>Part 4 - Industrial Waste Control</b>													
Personnel Costs	2,133,000	0	0	0	0	0	0	0	0	0	2,133,000	0	
Contractual Services	117,000	0	0	0	0	0	0	0	0	0	117,000	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	148,300	0	0	0	0	0	0	0	0	0	148,300	0	
Total IWC Costs	2,398,300	0	0	0	0	0	0	0	0	0	2,398,300	0	
<b>Part 5 - Support Services</b>													
8.1 Chief Operating Officer Wastewater	2,833,200	76,400	87,200	390,600	284,700	269,600	481,700	636,700	0	356,100	0	250,100	0
8.2.8 Wastewater Fire Damage	0	0	0	0	0	0	0	0	0	0	0	0	0
8.5 Wastewater Engineering	9,032,500	451,600	0	903,300	1,354,900	903,300	1,354,900	1,806,500	1,354,900	451,600	0	451,600	0
8.61 Analytical Laboratory	3,971,200	0	0	595,700	595,700	595,700	0	595,700	0	0	0	1,588,500	0
8.7 O&M Unallocated Reserve	3,654,800	98,600	112,500	503,800	367,300	347,800	621,400	821,400	0	459,400	0	322,600	0
Total Support Costs	19,491,700	626,600	199,700	2,393,400	2,602,600	2,116,400	2,458,000	3,860,300	1,354,900	1,267,100	0	2,612,800	0
<b>TOTAL GROUP</b>	<b>113,609,000</b>	<b>5,147,100</b>	<b>3,177,900</b>	<b>10,159,900</b>	<b>12,683,600</b>	<b>10,096,000</b>	<b>13,544,500</b>	<b>37,063,800</b>	<b>4,122,300</b>	<b>12,189,800</b>	<b>0</b>	<b>5,424,200</b>	<b>0</b>
Indirect Allocation Factors ( <i>Personnel</i> )	25,454,800	686,800	783,600	3,509,000	2,558,100	2,422,100	4,327,900	5,720,800	0	3,199,500	0	2,247,000	0

Centralized Services Group Functional Allocation Matrix - FY 2022 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 2022 Budget. The FY 2022 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 and FY 2021 Cost of Service Studies.

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
<b>Centralized Services</b>													
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
<b>Centralized Services</b>														
4.1 Chief Planning Officer	292,000													
4.2 System Planning	4,828,500													
4.3 System Analytics	5,859,600					1,150,000				1,515,000				
4.4 Asset Management & Capital Planning	5,329,100				3,428,400					100,000				
4.5 Energy Management	3,197,100													
5.3 Field Service Operations	17,726,100				4,366,700					4,918,400				
5.4 Facility Operations	7,188,200													
5.5 Fleet Operations	2,687,900													
7.1 Systems Control	12,302,900			1,050,000				1,050,000		273,000				
6. Information Technology	38,343,600													
10.1 Security	4,321,400													
11.1 HAZMAT	1,665,800													
12.1 Centralized Services Unallocated Reserve	1,463,000													
<b>Total Centralized Services Specific</b>	<b>105,205,200</b>	<b>0</b>	<b>0</b>	<b>1,050,000</b>	<b>7,795,100</b>	<b>0</b>	<b>1,150,000</b>	<b>0</b>	<b>1,050,000</b>	<b>0</b>	<b>6,806,400</b>	<b>0</b>	<b>0</b>	<b>0</b>
<i>Relative Cost Pool Allocation</i>		<i>0.0%</i>	<i>0.0%</i>	<i>5.9%</i>	<i>43.7%</i>	<i>0.0%</i>	<i>6.4%</i>	<i>0.0%</i>	<i>5.9%</i>	<i>0.0%</i>	<i>38.1%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>

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

Centralized Services Group Functional Allocation Matrix - FY 2022 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 2022 Budget.

The FY 2022 allocation factors are based on historical data and judgement. They are unchanged from the FY 2020 and FY 2021 Cost of Service Studies.

		Cost Pool Allocation Factors													
<b>Part 3 - Allocation of Non-Specific Budget</b>		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	
<b>Centralized Services</b>															
4.1 Chief Planning Officer	292,000	0	0	0	0	0	146,000	0	0	0	0	0	0	146,000	
4.2 System Planning	4,828,500	1,448,600	0	482,900	482,900	0	0	1,690,000	241,400	241,400	241,400	0	0	0	
4.3 System Analytics	3,194,600	958,400	0	319,500	319,500	0	0	1,118,100	159,700	159,700	159,700	0	0	0	
4.4 Asset Management & Capital Planning	1,800,700	540,200	0	180,100	180,100	0	0	630,200	90,000	90,000	90,000	0	0	0	
4.5 Energy Management	3,197,100	959,100	0	639,400	0	0	0	1,438,700	159,900	0	0	0	0	0	
5.3 Field Service Operations	8,441,000	0	422,100	844,100	2,532,300	422,100	0	0	1,266,200	0	2,954,400	0	0	0	
5.4 Facility Operations	7,188,200	2,875,300	0	718,800	0	0	0	3,594,100	0	0	0	0	0	0	
5.5 Fleet Operations	2,687,900	0	0	0	0	0	1,344,000	0	0	0	0	0	0	1,344,000	
7.1 Systems Control	9,929,900	496,500	496,500	3,475,500	496,500	496,500	0	0	3,475,500	0	993,000	0	0	0	
6. Information Technology	38,343,600	0	0	0	0	0	19,171,800	0	0	0	0	0	0	19,171,800	
10.1 Security	4,321,400	0	0	0	0	0	2,160,700	2,160,700	0	0	0	0	0	0	
11.1 HAZMAT	1,665,800	0	0	0	0	0	0	1,665,800	0	0	0	0	0	0	
12.1 Centralized Services Unallocated Reserve	1,463,000	0	0	0	0	0	731,500	0	0	0	0	0	0	731,500	
<b>Total Centralized Services Non-Specific</b>	<b>87,353,700</b>	<b>7,278,100</b>	<b>918,600</b>	<b>6,660,300</b>	<b>4,011,300</b>	<b>918,600</b>	<b>23,554,000</b>	<b>12,297,600</b>	<b>5,392,700</b>	<b>491,100</b>	<b>4,438,500</b>	<b>0</b>	<b>0</b>	<b>21,393,300</b>	
<i>Relative Cost Pool Allocation</i>		<i>8.3%</i>	<i>1.1%</i>	<i>7.6%</i>	<i>4.6%</i>	<i>1.1%</i>	<i>27.0%</i>	<i>14.1%</i>	<i>6.2%</i>	<i>0.6%</i>	<i>5.1%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>24.5%</i>	
<b>Part 4 - Consolidated Centralized Services Budget</b>		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	
<b>Centralized Services</b>															
4.1 Chief Planning Officer	292,000	0	0	0	0	0	146,000	0	0	0	0	0	0	146,000	
4.2 System Planning	4,828,500	1,448,600	0	482,900	482,900	0	0	1,690,000	241,400	241,400	241,400	0	0	0	
4.3 System Analytics	5,859,600	958,400	0	319,500	319,500	0	1,150,000	1,118,100	159,700	159,700	1,674,700	0	0	0	
4.4 Asset Management & Capital Planning	5,329,100	540,200	0	180,100	3,608,500	0	0	630,200	90,000	90,000	190,000	0	0	0	
4.5 Energy Management	3,197,100	959,100	0	639,400	0	0	0	1,438,700	159,900	0	0	0	0	0	
5.3 Field Service Operations	17,726,100	0	422,100	844,100	6,899,000	422,100	0	0	1,266,200	0	7,872,800	0	0	0	
5.4 Facility Operations	7,188,200	2,875,300	0	718,800	0	0	0	3,594,100	0	0	0	0	0	0	
5.5 Fleet Operations	2,687,900	0	0	0	0	0	1,344,000	0	0	0	0	0	0	1,344,000	
7.1 Systems Control	12,302,900	496,500	496,500	4,525,500	496,500	496,500	0	0	4,525,500	0	1,266,000	0	0	0	
6. Information Technology	38,343,600	0	0	0	0	0	19,171,800	0	0	0	0	0	0	19,171,800	
10.1 Security	4,321,400	0	0	0	0	0	2,160,700	2,160,700	0	0	0	0	0	0	
11.1 HAZMAT	1,665,800	0	0	0	0	0	0	1,665,800	0	0	0	0	0	0	
12.1 Centralized Services Unallocated Reserve	1,463,000	0	0	0	0	0	731,500	0	0	0	0	0	0	731,500	
<b>Total Centralized Services Consolidated</b>	<b>105,205,200</b>	<b>7,278,100</b>	<b>918,600</b>	<b>7,710,300</b>	<b>11,806,400</b>	<b>918,600</b>	<b>24,704,000</b>	<b>12,297,600</b>	<b>6,442,700</b>	<b>491,100</b>	<b>11,244,900</b>	<b>0</b>	<b>0</b>	<b>21,393,300</b>	
<i>Relative Cost Pool Allocation</i>		<i>6.9%</i>	<i>0.9%</i>	<i>7.3%</i>	<i>11.2%</i>	<i>0.9%</i>	<i>23.5%</i>	<i>11.7%</i>	<i>6.1%</i>	<i>0.5%</i>	<i>10.7%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>20.3%</i>	
Indirect Allocation Factors		<i>13.6%</i>	<i>1.7%</i>	<i>14.5%</i>	<i>22.1%</i>	<i>1.7%</i>		<i>23.7%</i>	<i>12.4%</i>	<i>0.9%</i>	<i>21.7%</i>	<i>0.0%</i>	<i>0.0%</i>		
Allocated Indirect	0	14,813,300	425,500	3,571,200	5,468,500	425,500	(24,704,000)	13,895,500	2,657,300	202,600	4,637,900	0	0	(21,393,300)	
Reallocated Total	105,205,600	22,091,400	1,344,100	11,281,500	17,274,900	1,344,100	0	26,193,100	9,100,000	693,700	15,882,800	0	0	0	
		<i>21.0%</i>	<i>1.3%</i>	<i>10.7%</i>	<i>16.4%</i>	<i>1.3%</i>	<i>0.0%</i>	<i>24.9%</i>	<i>8.6%</i>	<i>0.7%</i>	<i>15.1%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	

TFG

THE FOSTER GROUP

Aligns with FY 2022 Budget Request as of 12/18/2020. Subsequent modifications may occur.

Aligns with FY 2022 Budget Request as of 12/18/2020. Subsequent modifications may occur.

### Administrative Services Group Functional Allocation Matrix - FY 2022 Budget

Goal is to allocate specific budget items within the Group that align with Cost Pools used to allocate costs to Member P. For purposes of the FY 2022 Budget, these costs are equally allocated between Water and Sewer, and subsequently allocated as overhead amounts to other Cost Pools.

		<b>Part 1 - Water / Sewer Allocation</b>			
		Allocation Factor		Allocated Budget	
		<u>Water</u>	<u>Sewer</u>	<u>Water</u>	<u>Sewer</u>
<b>Part 1 - Water / Sewer Allocation</b>					
<b><u>Administrative and Other Services</u></b>					
1.1 Board of Directors	169,900	50.0%	50.0%	85,000	84,900
1.2 Chief Executive Officer	657,200	50.0%	50.0%	328,600	328,600
1.3 Public Affairs	1,525,700	50.0%	50.0%	762,900	762,800
2.1 Chief Administrative Officer	1,160,800	50.0%	50.0%	580,400	580,400
2.2 General Counsel	3,308,000	50.0%	50.0%	1,654,000	1,654,000
2.3 Organizational Development	4,724,200	50.0%	50.0%	2,362,100	2,362,100
2.4 Risk Management and Safety	1,857,500	50.0%	50.0%	928,800	928,700
2.5 Risk Management Insurance Fund	3,600,000	50.0%	50.0%	1,800,000	1,800,000
3.1 Chief Financial Officer	1,131,200	50.0%	50.0%	565,600	565,600
3.2 Finance	4,855,700	50.0%	50.0%	2,427,900	2,427,800
3.3 Treasury	1,368,000	50.0%	50.0%	684,000	684,000
3.4 Public Finance	1,066,400	50.0%	50.0%	533,200	533,200
3.5 Procurement	3,426,900	50.0%	50.0%	1,713,500	1,713,400
3.6 Internal Audit & Lease Administration	755,000	50.0%	50.0%	377,500	377,500
3.7 Transformation	1,713,400	50.0%	50.0%	856,700	856,700
3.8 Logistics and Materials	2,569,800	41.6%	58.4%	1,068,900	1,500,900
13.1 Administrative Services O&M Unallocate	913,600	50.0%	50.0%	456,800	456,800
<b>Total Administrative Services</b>	<b>34,803,300</b>	<b>49.4%</b>	<b>50.6%</b>	<b>17,185,900</b>	<b>17,617,400</b>

Consolidated Allocation of Water Operating Costs to Cost Pools - FY 2022 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 2022 Allocation Factors are based on historical data and judgement. The upcoming Water Cost Allocation Methodology Project will review these factors.

Step 1 - Summarize Group Expenses

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**Water Operations Group**

Total  
 Power  
 Chemicals  
 Other Utilities  
 Subtotal w/o Commodities  
 WTP Allocation Factors

**Centralized Services**

Original Allocation  
 Allocation of Water Plant General  
 Allocated Subtotal  
 Treat Water General Centralized as A&G  
 "Direct" Centralized Services  
 Subtotal "Direct" Total  
 Subtotal "Direct" w/o Commodities  
 Indirect Overhead Allocation Factors

**Administrative Services**

Group Budget  
 Centralized A&G  
 Total A&G to Allocate  
 Allocation of A&G  
 Allocated Total

**ALLOCATED GRAND TOTAL**

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			
2,830,400	6,793,300	39,636,900	14,031,500	0	222,500	11,239,400	222,500	0	0		74,976,500	
390,500	3,124,000	3,904,900	8,200,600	0	0	9,401,000	0	0	0		25,021,000	
0	0	6,559,100	0	0	0	0	0	0	0		6,559,100	
94,300	141,400	1,100,400	235,800	0	0	76,900	0	0	0		1,648,800	
2,345,600	3,527,900	28,072,500	5,595,100	0	222,500	1,761,500	222,500	0	0		41,747,600	
5.9%	8.9%	71.0%	14.2%									
<b>Centralized Services</b>												
431,700	649,400	5,167,100	1,029,900	7,278,100	918,600	7,710,300	11,806,400	918,600	24,704,000		53,336,000	
431,700	649,400	5,167,100	1,029,900	(7,278,100)	918,600	7,710,300	11,806,400	918,600	24,704,000		0	
431,700	649,400	5,167,100	1,029,900	0	918,600	7,710,300	11,806,400	918,600	(24,704,000)	24,704,000	53,336,000	
431,700	649,400	5,167,100	1,029,900	0	918,600	7,710,300	11,806,400	918,600	0		28,632,000	
3,262,100	7,442,700	44,804,000	15,061,400	0	1,141,100	18,949,700	12,028,900	918,600	0		103,608,500	
2,777,300	4,177,300	33,239,600	6,625,000	0	1,141,100	9,471,800	12,028,900	918,600	0		70,379,600	
3.9%	5.9%	47.2%	9.4%	0.0%	1.6%	13.5%	17.1%	1.3%	0.0%			
<b>Administrative Services</b>												
										17,185,900		
										24,704,000		
										41,889,900	41,889,900	
1,653,000	2,486,300	19,784,200	3,943,200	0	679,200	5,637,600	7,159,600	546,800	0	(41,889,900)	0	
1,653,000	2,486,300	19,784,200	3,943,200	0	679,200	5,637,600	7,159,600	546,800	0	0	41,889,900	
<b>4,915,100</b>	<b>9,929,000</b>	<b>64,588,200</b>	<b>19,004,600</b>	<b>0</b>	<b>1,820,300</b>	<b>24,587,300</b>	<b>19,188,500</b>	<b>1,465,400</b>	<b>0</b>	<b>0</b>	<b>145,498,400</b>	

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Step 2 - Develop Allocation Factors  
 Based on Prior Simplified Assumptions

Source of Supply	Cost Pool Allocation									
	Common-to-All								Sub Only	Det Only
	Commod	Max Day	PH Incr	PH Dist	Comm DE	MD DE	PH DE	PHI DE	Mtrs	Direct
Source of Supply Power	50.00%	50.00%								
Source of Supply Other		100.00%								
Low Lift Pumps Power	50.00%	50.00%								
Low Lift Pumps Other		100.00%								
Purification Chemicals	100.00%									
Purification Other		100.00%								
High Lift Pumps Power					50.00%		25.00%	25.00%		
High Lift Pumps Other						100.00%				
Reservoirs			100.00%							
Booster Stations					50.00%		25.00%	25.00%		
Transmission Mains				100.00%						
Suburban Meters									100.00%	

Traditional allocation factors developed to support Model Water Contract cost allocation methodology



## Consolidated Allocation of Water Operating Costs to Cost Pools - FY 2022 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 2022 Allocation Factors are based on historical data and judgement. The upcoming Water Cost Allocation Methodology Project will review these factors.

**Step 3 - Apply Allocation Factors**

	Cost Pool Allocation										Grand Total	
	Common-to-All									Sub Only		Det Only
	Commod	Max Day	PH Incr	PH Dist	Comm DE	MD DE	PH DE	PHI DE	Mtrs	Direct		
<b>All Operating Costs</b>												
Source of Supply Power	390,500	195,300	195,300	0	0	0	0	0	0	0	0	390,600
Source of Supply Other	4,524,600	0	4,524,600	0	0	0	0	0	0	0	0	4,524,600
Low Lift Pumps Power	3,124,000	1,562,000	1,562,000	0	0	0	0	0	0	0	0	3,124,000
Low Lift Pumps Other	6,805,000	0	6,805,000	0	0	0	0	0	0	0	0	6,805,000
Purification Chemicals	6,559,100	6,559,100	0	0	0	0	0	0	0	0	0	6,559,100
Purification Other	58,029,100	0	58,029,100	0	0	0	0	0	0	0	0	58,029,100
High Lift Pumps Power	8,200,600	0	0	0	4,100,300	0	2,050,200	2,050,200	0	0	0	8,200,700
High Lift Pumps Other	10,804,000	0	0	0	0	10,804,000	0	0	0	0	0	10,804,000
Reservoirs	1,820,300	0	0	1,820,300	0	0	0	0	0	0	0	1,820,300
Booster Stations	24,587,300	0	0	0	12,293,700	0	6,146,800	6,146,800	0	0	0	24,587,300
Transmission Mains	19,188,500	0	0	0	19,188,500	0	0	0	0	0	0	19,188,500
Suburban Meters	1,465,400	0	0	0	0	0	0	0	1,465,400	0	0	1,465,400
<b>Total</b>	<b>145,498,400</b>	<b>8,316,400</b>	<b>71,116,000</b>	<b>1,820,300</b>	<b>19,188,500</b>	<b>16,394,000</b>	<b>10,804,000</b>	<b>8,197,000</b>	<b>8,197,000</b>	<b>1,465,400</b>	<b>0</b>	<b>145,498,600</b>
<i>Cost Pool Allocation Factor - All Costs</i>		<b>5.7%</b>	<b>48.9%</b>	<b>1.3%</b>	<b>13.2%</b>	<b>11.3%</b>	<b>7.4%</b>	<b>5.6%</b>	<b>5.6%</b>	<b>1.0%</b>	<b>0.0%</b>	
<b>Non-Commodity Costs</b>												
Source of Supply Power		0	0	0	0	0	0	0	0	0	0	0
Source of Supply Other	2,777,300	0	2,777,300	0	0	0	0	0	0	0	0	2,777,300
Low Lift Pumps Power		0	0	0	0	0	0	0	0	0	0	0
Low Lift Pumps Other	4,177,300	0	4,177,300	0	0	0	0	0	0	0	0	4,177,300
Purification Chemicals		0	0	0	0	0	0	0	0	0	0	0
Purification Other	33,239,600	0	33,239,600	0	0	0	0	0	0	0	0	33,239,600
High Lift Pumps Power		0	0	0	0	0	0	0	0	0	0	0
High Lift Pumps Other	6,625,000	0	0	0	0	6,625,000	0	0	0	0	0	6,625,000
Reservoirs	1,141,100	0	0	1,141,100	0	0	0	0	0	0	0	1,141,100
Booster Stations	9,471,800	0	0	0	4,735,900	0	2,368,000	2,368,000	0	0	0	9,471,900
Transmission Mains	12,028,900	0	0	0	12,028,900	0	0	0	0	0	0	12,028,900
Suburban Meters	918,600	0	0	0	0	0	0	0	918,600	0	0	918,600
<b>Total</b>	<b>70,379,600</b>	<b>0</b>	<b>40,194,200</b>	<b>1,141,100</b>	<b>12,028,900</b>	<b>4,735,900</b>	<b>6,625,000</b>	<b>2,368,000</b>	<b>2,368,000</b>	<b>918,600</b>	<b>0</b>	<b>70,379,700</b>
<i>Cost Pool Allocation Factor - Non Commodity Costs</i>		<b>0.0%</b>	<b>57.1%</b>	<b>1.6%</b>	<b>17.1%</b>	<b>6.7%</b>	<b>9.4%</b>	<b>3.4%</b>	<b>3.4%</b>	<b>1.3%</b>	<b>0.0%</b>	

Consolidated Allocation of Wastewater Operating Costs to Cost Pools - FY 2022 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 2022 WRRF allocation factors are only necessary to establish pollutant surcharges, as the FY 2022 SHARES methodology simplifies the allocation process for Member Partner SHARES.

Step 1 - Summarize Group Expenses

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	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			
<b>Wastewater Operations Group</b>																	
Total	5,147,100	3,177,900	10,159,900	12,683,600	10,096,000	13,544,500	37,063,800		4,122,300	12,189,800	0	5,424,200	0	0			113,609,100
Power	2,635,800	1,054,300	527,000	2,108,600	1,265,200	2,635,800	1,436,300		0	0	0	0	0	0			11,663,000
Chemicals	210,700	316,100	1,582,300	2,401,400	2,402,900	1,033,600	45,500		0	0	0	0	0	0			7,992,500
Other Utilities	279,400	279,400	279,600	1,117,700	279,400	279,400	5,604,100		0	0	0	0	0	0			8,119,000
Subtotal w/o Commodities	2,021,200	1,528,100	7,771,000	7,055,900	6,148,500	9,595,700	29,977,900		4,122,300	12,189,800	0	5,424,200	0	0			85,834,600
WW Operations Allocation Factors	3.2%	2.4%	12.1%	11.0%	9.6%	15.0%	46.8%										100.0%
<b>Centralized Services</b>																	
Original Allocation																	
Allocation of WRRF General	387,800	293,200	1,490,900	1,353,700	1,179,600	1,841,000	5,751,400	(12,297,600)	6,442,700	491,100	11,244,900	0	0	21,393,300			51,869,600
Allocated Subtotal	387,800	293,200	1,490,900	1,353,700	1,179,600	1,841,000	5,751,400	0	6,442,700	491,100	11,244,900	0	0	21,393,300			51,869,600
Treat Sewer General Centralized as A&G														(21,393,300)			
"Direct" Centralized Services	387,800	293,200	1,490,900	1,353,700	1,179,600	1,841,000	5,751,400	0	6,442,700	491,100	11,244,900	0	0		21,393,300		30,476,300
Subtotal "Direct" Total	5,534,900	3,471,100	11,650,800	14,037,300	11,275,600	15,385,500	42,815,200	0	10,565,000	12,680,900	11,244,900	5,424,200	0	0			144,085,400
Subtotal "Direct" w/o Commodities	2,409,000	1,821,300	9,261,900	8,409,600	7,328,100	11,436,700	35,729,300	0	10,565,000	12,680,900	11,244,900	5,424,200	0	0			116,310,900
Indirect Overhead Allocation Factors	2.1%	1.6%	8.0%	7.2%	6.3%	9.8%	30.7%	0.0%	9.1%	10.9%	9.7%	4.7%	0.0%	0.0%			100.0%
<b>Administrative Services</b>																	
Group Budget																	
Centralized A&G																	
Total A&G to Allocate																	
Allocation of A&G	808,000	610,900	3,106,400	2,820,600	2,457,800	3,835,900	11,983,600	0	3,543,500	4,253,200	3,771,500	1,819,300	0	0		17,617,400	0
Allocated Total	808,000	610,900	3,106,400	2,820,600	2,457,800	3,835,900	11,983,600	0	3,543,500	4,253,200	3,771,500	1,819,300	0	0		21,393,300	39,010,700
<b>ALLOCATED GRAND TOTAL</b>	<b>6,342,900</b>	<b>4,082,000</b>	<b>14,757,200</b>	<b>16,857,900</b>	<b>13,733,400</b>	<b>19,221,400</b>	<b>54,798,800</b>	<b>0</b>	<b>14,108,500</b>	<b>16,934,100</b>	<b>15,016,400</b>	<b>7,243,500</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>183,096,100</b>

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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 2022 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 2022 WRRF allocation factors are only necessary to establish pollutant surcharges, as the FY 2022 SHARES methodology simplifies the allocation process for 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					
<b>All Operating Costs</b>													
Primary Pumping	6,342,900		6,342,900	0	6,342,900	0	0	0	0	6,342,900	0	0	6,342,900
Rack & Grit	4,082,000		4,082,000	0	4,082,000	0	0	0	0	4,082,000	0	0	4,082,000
Primary Chemical Addition	1,582,300		1,582,300	0	0	0	1,582,300	0	0	1,582,300	0	0	1,582,300
Primary Sedimentation	13,174,900		13,174,900	0	0	0	9,222,400	2,635,000	1,317,500	13,174,900	0	0	13,174,900
Aeration	16,857,900		16,857,900	0	0	16,857,900	0	0	0	16,857,900	0	0	16,857,900
Secondary Clarification	11,330,500		11,330,500	0	0	2,832,600	7,364,800	1,133,100	0	11,330,500	0	0	11,330,500
Chlorination	2,402,900		2,402,900	0	2,402,900	0	0	0	0	2,402,900	0	0	2,402,900
Dewatering	19,221,400		19,221,400	0	0	2,883,200	13,455,000	2,883,200	0	19,221,400	0	0	19,221,400
Sludge Treatment	54,798,800		54,798,800	0	0	8,219,800	38,359,200	8,219,800	0	54,798,800	0	0	54,798,800
Process Water & Outfall	0		0	0	0	0	0	0	0	0	0	0	0
Lift Stations	14,108,500	1,568,500	12,540,000	0	0	0	0	0	0	0	12,540,000	0	12,540,000
CSO Facilities	16,934,100		16,934,100	0	0	0	0	0	0	0	16,934,100	0	16,934,100
Interceptors	15,016,400		15,016,400	0	0	0	0	0	0	0	15,016,400	0	15,016,400
Industrial Waste Control	7,243,500		7,243,500	7,243,500	0	0	0	0	0	0	0	0	0
Suburban Meters	0		0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>183,096,100</b>	<b>1,568,500</b>	<b>181,527,600</b>	<b>7,243,500</b>	<b>12,827,800</b>	<b>30,793,500</b>	<b>68,401,400</b>	<b>16,453,400</b>	<b>1,317,500</b>	<b>129,793,600</b>	<b>27,556,400</b>	<b>16,934,100</b>	<b>174,284,100</b>
<i>Cost Pool Allocation Factor - All Costs</i>				<b>4.0%</b>	<b>7.1%</b>	<b>17.0%</b>	<b>37.7%</b>	<b>9.1%</b>	<b>0.7%</b>	<b>71.5%</b>	<b>15.2%</b>	<b>9.3%</b>	
<i>Cost Pool Allocation Factor - "Common" Costs</i>										<b>74.5%</b>	<b>15.8%</b>	<b>9.7%</b>	
<b>Non-Commodity Costs</b>													
Primary Pumping	2,409,000		2,409,000	0	2,409,000	0	0	0	0	2,409,000	0	0	2,409,000
Rack & Grit	1,821,300		1,821,300	0	1,821,300	0	0	0	0	1,821,300	0	0	1,821,300
Primary Chemical Addition	0		0	0	0	0	0	0	0	0	0	0	0
Primary Sedimentation	9,261,900		9,261,900	0	0	0	6,483,300	1,852,400	926,200	9,261,900	0	0	9,261,900
Aeration	8,409,600		8,409,600	0	0	8,409,600	0	0	0	8,409,600	0	0	8,409,600
Secondary Clarification	7,328,100		7,328,100	0	0	1,832,000	4,763,300	732,800	0	7,328,100	0	0	7,328,100
Chlorination	0		0	0	0	0	0	0	0	0	0	0	0
Dewatering	11,436,700		11,436,700	0	0	1,715,500	8,005,700	1,715,500	0	11,436,700	0	0	11,436,700
Sludge Treatment	35,729,300		35,729,300	0	0	5,359,400	25,010,500	5,359,400	0	35,729,300	0	0	35,729,300
Process Water & Outfall	0		0	0	0	0	0	0	0	0	0	0	0
Lift Stations	10,565,000	750,000	9,815,000	0	0	0	0	0	0	0	9,815,000	0	9,815,000
CSO Facilities	12,680,900		12,680,900	0	0	0	0	0	0	0	12,680,900	0	12,680,900
Interceptors	11,244,900		11,244,900	0	0	0	0	0	0	0	11,244,900	0	11,244,900
Industrial Waste Control	5,424,200		5,424,200	5,424,200	0	0	0	0	0	0	0	0	0
Suburban Meters	0		0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>116,310,900</b>	<b>750,000</b>	<b>115,560,900</b>	<b>5,424,200</b>	<b>4,230,300</b>	<b>17,316,500</b>	<b>44,262,800</b>	<b>9,660,100</b>	<b>926,200</b>	<b>76,395,900</b>	<b>21,059,900</b>	<b>12,680,900</b>	<b>110,136,700</b>
<i>Cost Pool Allocation Factor - Non Commodity Costs</i>				<b>4.7%</b>	<b>3.7%</b>	<b>15.0%</b>	<b>38.3%</b>	<b>8.4%</b>	<b>0.8%</b>	<b>66.1%</b>	<b>18.2%</b>	<b>11.0%</b>	



Allocation of Water Capital Revenue Requirements to Cost Pools - FY 2022 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.

Direct from GLWA  
Capital Asset Records

Step 1 - Interpret Fixed Asset Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Reported Asset Value by Function - 6/30/20 (Includes CWIP)				Reallocate General Items				Reallocated Total - 6/30/20			
	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	61,438,500	13,044,800	48,393,700	2,309,000	27,928,300	6,680,800	21,247,500	958,200	89,366,800	19,725,600	69,641,200	3,267,200
2 Low Lift Pumping	70,392,600	33,414,100	36,978,500	4,594,200	31,998,600	17,112,900	14,885,700	1,906,700	102,391,200	50,527,000	51,864,200	6,500,900
3 Purification	549,311,700	131,160,900	418,150,800	29,739,500	249,702,100	67,173,600	182,528,500	12,342,300	799,013,800	198,334,500	600,679,300	42,081,800
4 High Lift Pumping	97,044,200	40,830,500	56,213,700	5,428,400	44,113,700	20,911,200	23,202,500	2,252,800	141,157,900	61,741,700	79,416,200	7,681,200
5 Reservoirs	74,254,500	14,411,900	59,842,600	2,620,200	1,143,200	179,400	963,800	24,100	75,397,700	14,591,300	60,806,400	2,644,300
6 Water Booster Stations	294,140,000	107,318,800	186,821,200	18,260,900	4,528,500	1,335,800	3,192,700	167,700	298,668,500	108,654,600	190,013,900	18,428,600
7 Transmission Mains	873,838,100	164,715,000	709,123,100	37,701,900	13,453,300	2,050,200	11,403,100	346,300	887,291,400	166,765,200	720,526,200	38,048,200
8 Wholesale Master Meters	39,999,200	4,414,800	35,584,400	1,018,600	615,800	55,000	560,800	9,400	40,615,000	4,469,800	36,145,200	1,028,000
9 Subtotal	2,060,418,800	509,310,800	1,551,108,000	101,672,700	373,483,500	115,498,900	257,984,600	18,007,500	2,433,902,300	624,809,700	1,809,092,600	119,680,200
10 Water Treatment General	336,580,100	107,817,400	228,762,700	16,918,100	(336,580,100)	(107,817,400)	(228,762,700)	(16,918,100)	0	0	0	0
11 Water General	36,903,300	7,681,500	29,221,800	1,089,400	(36,903,300)	(7,681,500)	(29,221,800)	(1,089,400)	0	0	0	0
12 Total	2,433,902,200	624,809,700	1,809,092,500	119,680,200	100	0	100	0	2,433,902,300	624,809,700	1,809,092,600	119,680,200

Step 2 - Identify Capital Rev Req't

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	6/30/30 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)	
					68%	4.52%	
1 Source of Supply	89,366,800	19,725,600	69,641,200	3,267,200	2,232,700	3,148,400	5,381,100
2 Low Lift Pumping	102,391,200	50,527,000	51,864,200	6,500,900	4,442,600	2,344,700	6,787,300
3 Purification	799,013,800	198,334,500	600,679,300	42,081,800	28,758,000	27,156,200	55,914,200
4 High Lift Pumping	141,157,900	61,741,700	79,416,200	7,681,200	5,249,200	3,590,300	8,839,500
5 Reservoirs	75,397,700	14,591,300	60,806,400	2,644,300	1,807,100	2,749,000	4,556,100
6 Water Booster Stations	298,668,500	108,654,600	190,013,900	18,428,600	12,593,800	8,590,400	21,184,200
7 Transmission Mains	887,291,400	166,765,200	720,526,200	38,048,200	26,001,500	32,574,400	58,575,900
8 Wholesale Master Meters	40,615,000	4,469,800	36,145,200	1,028,000	702,500	1,634,100	2,336,600
9 Total	2,433,902,300	624,809,700	1,809,092,600	119,680,200	81,787,400	81,787,500	163,574,900
10 Debt Service	135,481,000						
11 Xfer to GLWA Regional I&E Account	28,093,900						
12 Total Capital Rev Req't	163,574,900				81,787,400	81,787,500	163,574,900
13 Relative "Utility Basis" Components					50.0%	50.0%	

Adjustment to approximate "pre valuation" 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 of Water Capital Revenue Requirements to Cost Pools - FY 2022 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 3 - Allocate to Cost Pools	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Total Capital Rev Req't	Cost Pool Allocation	Cost Pools					
			Common-to-All			Sub Only		
			Commod	Max Day	PH Incr	PH Dist	PH DE	Mtrs
1 Source of Supply	5,381,100	Max Day		5,381,100				
2 Low Lift Pumping	6,787,300	Max Day		6,787,300				
3 Purification	55,914,200	Max Day		55,914,200				
4 High Lift Pumping	8,839,500	Peak Hour Distance/Elevation					8,839,500	
5 Reservoirs	4,556,100	Peak Hour Increment			4,556,100			
6 Water Booster Stations	21,184,200	Peak Hour Distance/Elevation					21,184,200	
7 Transmission Mains	58,575,900	Peak Hour Distance				58,575,900		
8 Wholesale Master Meters	2,336,600	Suburban Meters						2,336,600
9 Total	163,574,900		0	68,082,600	4,556,100	58,575,900	30,023,700	2,336,600
10 Capital Revenue Req't Allocation Factor			0.0%	41.6%	2.8%	35.8%	18.4%	1.4%

Traditional allocation approach developed to support model water contract cost allocation methodology

Direct from GLWA  
Capital Asset Records

Allocation of Wastewater Capital Revenue Requirements to Cost Pools - FY 2022 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 - 6/30/20 (Includes CWIP)				Allocate WRRF General				Reallocated Subtotal			
	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 Primary Pumping	134,461,000	36,091,400	98,378,000	7,864,100	21,336,500	5,378,300	15,803,200	1,410,800	155,797,500	41,469,700	114,181,200	9,274,900
2 Rack & Grit	84,496,400	15,210,000	69,286,500	2,111,600	13,408,000	2,266,600	11,130,000	378,800	97,904,400	17,476,600	80,416,500	2,490,400
3 Primary Chemical Addition	0	0	0	0	0	0	0	0	0	0	0	0
4 Primary Sedimentation	247,714,800	50,841,000	196,873,800	14,092,100	39,307,800	7,576,200	31,625,300	2,528,100	287,022,600	58,417,200	228,499,100	16,620,200
5 Aeration	129,276,800	24,760,800	104,516,000	6,062,100	20,513,900	3,689,800	16,789,200	1,087,500	149,790,700	28,450,600	121,305,200	7,149,600
6 Secondary Clarification	175,549,200	46,989,900	129,923,900	12,630,800	27,856,500	7,002,300	20,870,600	2,265,900	203,405,700	53,992,200	150,794,500	14,896,700
7 Chlorination	0	0	0	0	0	0	0	0	0	0	0	0
8 Dewatering	124,572,300	38,682,500	85,907,300	8,504,200	19,767,400	5,764,400	13,799,900	1,525,600	144,339,700	44,446,900	99,707,200	10,029,800
9 Sludge Treatment	368,671,400	92,285,200	276,392,300	15,969,600	58,501,400	13,752,100	44,398,900	2,864,900	427,172,800	106,037,300	320,791,200	18,834,500
10 Process Water & Outfall	227,151,700	34,580,300	192,572,000	8,323,900	36,044,800	5,153,000	30,934,100	1,493,300	263,196,500	39,733,300	223,506,100	9,817,200
11 Lift Stations	329,232,500	49,055,900	280,174,500	11,414,700					329,232,500	49,055,900	280,174,500	11,414,700
12 CSO Facilities	571,982,000	65,202,200	505,332,000	18,209,100					571,982,000	65,202,200	505,332,000	18,209,100
13 Interceptors	420,936,400	26,617,100	393,774,300	7,720,800					420,936,400	26,617,100	393,774,300	7,720,800
14 Industrial Waste Control	2,783,400	34,000	2,749,400	159,800					2,783,400	34,000	2,749,400	159,800
15 Suburban Meters	61,472,400	12,093,600	49,378,800	3,606,200					61,472,400	12,093,600	49,378,800	3,606,200
16 Subtotal	2,878,300,300	492,443,900	2,385,258,800	116,669,000	236,736,300	50,582,700	185,351,200	13,554,900	3,115,036,600	543,026,600	2,570,610,000	130,223,900
17 WRRF General	236,736,300	50,582,700	185,351,200	13,554,900	(236,736,300)	(50,582,700)	(185,351,200)	(13,554,900)	0	0	0	0
18 Wastewater General	138,555,500	75,248,500	63,187,000	5,778,500					138,555,500	75,248,500	63,187,000	5,778,500
19 Total	3,253,592,100	618,275,100	2,633,797,000	136,002,400	0	0	0	0	3,253,592,100	618,275,100	2,633,797,000	136,002,400

## Allocation of Wastewater Capital Revenue Requirements to Cost Pools - FY 2019 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 - 6/30/18			
	Acquisition Cost	Accumulated Depreciation	Net Book Value	Annual Depr Expense	Acquisition Cost	Accumulated Depreciation	Net Book Value	Annual Depr Expense
1 Primary Pumping	6,929,800	5,746,600	2,806,600	411,600	162,727,300	47,216,300	116,987,800	9,686,500
2 Rack & Grit	4,354,700	2,421,800	1,976,700	110,500	102,259,100	19,898,400	82,393,200	2,600,900
3 Primary Chemical Addition	0	0	0	0	0	0	0	0
4 Primary Sedimentation	12,766,600	8,095,000	5,616,600	737,500	299,789,200	66,512,200	234,115,700	17,357,700
5 Aeration	6,662,600	3,942,500	2,981,700	317,300	156,453,300	32,393,100	124,286,900	7,466,900
6 Secondary Clarification	9,047,400	7,481,800	3,706,600	661,000	212,453,100	61,474,000	154,501,100	15,557,700
7 Chlorination	0	0	0	0	0	0	0	0
8 Dewatering	6,420,200	6,159,100	2,450,900	445,100	150,759,900	50,606,000	102,158,100	10,474,900
9 Sludge Treatment	19,000,500	14,693,800	7,885,200	835,800	446,173,300	120,731,100	328,676,400	19,670,300
10 Process Water & Outfall	11,706,900	5,505,900	5,493,900	435,600	274,903,400	45,239,200	229,000,000	10,252,800
11 Lift Stations	14,644,100	6,797,800	6,886,800	506,500	343,876,600	55,853,700	287,061,300	11,921,200
12 CSO Facilities	25,441,500	9,035,200	12,421,300	808,000	597,423,500	74,237,400	517,753,300	19,017,100
13 Interceptors	18,723,100	3,688,400	9,679,200	342,600	439,659,500	30,305,500	403,453,500	8,063,400
14 Industrial Waste Control	123,800	4,700	67,600	7,100	2,907,200	38,700	2,817,000	166,900
15 Suburban Meters	2,734,300	1,675,800	1,213,800	160,000	64,206,700	13,769,400	50,592,600	3,766,200
16 Subtotal	138,555,500	75,248,400	63,186,900	5,778,600	3,253,592,100	618,275,000	2,633,796,900	136,002,500
17 WWRF General					0	0	0	0
18 Wastewater General	(138,555,500)	(75,248,500)	(63,187,000)	(5,778,500)	0	0	0	0
19 Total	0	(100)	(100)	100	3,253,592,100	618,275,000	2,633,796,900	136,002,500

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### Allocation of Wastewater Capital Revenue Requirements to Cost Pools - FY 2022 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.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Acquisition Cost	Accumulated Depreciation	Net Book Value	Annual Depr Expense	Annual Depr Expense	Return on Rate Base	Total Capital Rev Req't
					~ (4) / (5) <b>89%</b>	~ rel (3) / (6) <b>4.59%</b>	
1 Primary Pumping	162,727,300	47,216,300	116,987,800	9,686,500	8,611,800	5,370,700	13,982,500
2 Rack & Grit	102,259,100	19,898,400	82,393,200	2,600,900	2,312,300	3,782,500	6,094,800
3 Primary Chemical Addition	0	0	0	0	0	0	0
4 Primary Sedimentation	299,789,200	66,512,200	234,115,700	17,357,700	15,431,900	10,747,900	26,179,800
5 Aeration	156,453,300	32,393,100	124,286,900	7,466,900	6,638,500	5,705,800	12,344,300
6 Secondary Clarification	212,453,100	61,474,000	154,501,100	15,557,700	13,831,600	7,092,900	20,924,500
7 Chlorination	0	0	0	0	0	0	0
8 Dewatering	150,759,900	50,606,000	102,158,100	10,474,900	9,312,700	4,689,900	14,002,600
9 Sludge Treatment	446,173,300	120,731,100	328,676,400	19,670,300	17,487,900	15,089,000	32,576,900
10 Process Water & Outfall	274,903,400	45,239,200	229,000,000	10,252,800	9,115,300	10,513,000	19,628,300
11 Lift Stations	343,876,600	55,853,700	287,061,300	11,921,200	10,598,600	13,178,500	23,777,100
12 CSO Facilities	597,423,500	74,237,400	517,753,300	19,017,100	16,907,200	23,769,200	40,676,400
13 Interceptors	439,659,500	30,305,500	403,453,500	8,063,400	7,168,800	18,521,900	25,690,700
14 Industrial Waste Control	2,907,200	38,700	2,817,000	166,900	148,400	129,300	277,700
15 Suburban Meters	64,206,700	13,769,400	50,592,600	3,766,200	3,348,300	2,322,600	5,670,900
16 Total	3,253,592,100	618,275,000	2,633,796,900	136,002,500	120,913,300	120,913,200	241,826,500
<i>Capital Revenue Requirement</i>							
17 Debt Service	207,209,500						
18 Xfer to GLWA Regional I&E Account	34,616,900						
19 Total Capital Rev Req't	241,826,400			Allocate based on Utility Basis Concept -->	120,913,300	120,913,100	241,826,400
20 Relative "Utility Basis" Components					50.0%	50.0%	

Adjustment to approximate "pre valuation" 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 of Wastewater Capital Revenue Requirements to Cost Pools - FY 2022 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)
<b>Step 3 - Allocate to Cost Pools</b>		Capital Revenue Requirement Allocation Factors					Cost Pool Allocation										
Total Capital Rev Req't		WRRF Treatment					Industrial Waste Control	WRRF Treatment Separated for Purposes of Surcharge Calculations					"Common" prior to Surcharge				
		Flow	BOD	TSS	PHOS	FOG		Flow	BOD	TSS	PHOS	FOG	WRRF Treatment	Conveyance	CSO Facilities	"Common" TOTAL	
1	Primary Pumping	13,982,500	100%					13,982,500	0	0	0	0	13,982,500				13,982,500
2	Rack & Grit	6,094,800	100%					6,094,800	0	0	0	0	6,094,800				6,094,800
3	Primary Chemical Addition	0			100%			0	0	0	0	0	0				0
4	Primary Sedimentation	26,179,800	85%		10%	5%		22,252,800	0	2,618,000	0	1,309,000	26,179,800				26,179,800
5	Aeration	12,344,300	20%	80%				2,468,900	9,875,400	0	0	0	12,344,300				12,344,300
6	Secondary Clarification	20,924,500	65%	35%				13,600,900	7,323,600	0	0	0	20,924,500				20,924,500
7	Chlorination	0	100%					0	0	0	0	0	0				0
8	Dewatering	14,002,600		15%	70%	15%		0	2,100,400	9,801,800	2,100,400	0	14,002,600				14,002,600
9	Sludge Treatment	32,576,900		15%	70%	15%		0	4,886,500	22,803,800	4,886,500	0	32,576,800				32,576,800
10	Process Water & Outfall	19,628,300	100%					19,628,300	0	0	0	0	19,628,300				19,628,300
11	Lift Stations	23,777,100												23,777,100			23,777,100
12	CSO Facilities	40,676,400													40,676,400		40,676,400
13	Interceptors	25,690,700												25,690,700			25,690,700
14	Industrial Waste Control	277,700					277,700										0
15	Suburban Meters	5,670,900												5,670,900			5,670,900
16	OMID Facilities	0												0			0
17	<b>Total</b>	<b>241,826,500</b>						<b>277,700</b>	<b>78,028,200</b>	<b>24,185,900</b>	<b>35,223,600</b>	<b>6,986,900</b>	<b>1,309,000</b>	<b>145,733,600</b>	<b>55,138,700</b>	<b>40,676,400</b>	<b>241,548,700</b>
18	<i>Cost Pool Allocation Factor - All Costs</i>							<b>0.1%</b>	<b>32.3%</b>	<b>10.0%</b>	<b>14.6%</b>	<b>2.9%</b>	<b>0.5%</b>	<b>60.3%</b>	<b>22.8%</b>	<b>16.8%</b>	
19	<i>Cost Pool Allocation Factor - "Common" Costs</i>													<b>60.3%</b>	<b>22.8%</b>	<b>16.8%</b>	



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

O&M factors from page A-15

Consolidated Water Revenue Requirement Allocated to Cost Pools

Goal is to use allocation factors resulting from detailed review to allocate the final 2022 BUDGET figures for the FY 2022 Charges

Allocation Factors from Detailed Review

Capital factors from page A-19

		Cost Pool Allocation									
		Common-to-All								Sub Only	Det Only
		Commod	Max Day	PH Incr	PH Dist	Comm DE	MD DE	PH DE	PHI DE	Mtrs	Direct
O&M Expense - Total	1	5.7%	48.9%	1.3%	13.2%	11.3%	7.4%	5.6%	5.6%	1.0%	0.0%
O&M Expense - Non-Commodity	2	0.0%	57.1%	1.6%	17.1%	6.7%	9.4%	3.4%	3.4%	1.3%	0.0%
Capital Revenue Requirements	3	0.0%	41.6%	2.8%	35.8%	0.0%	0.0%	18.4%	0.0%	1.4%	0.0%

Apply Allocation Factors to BUDGET

		Cost Pool Allocation										Allocated TOTAL	
		Common-to-All								Sub Only	Det Only		
BUDGET Elements	Budget to Allocate	Allocation Basis	Commod	Max Day	PH Incr	PH Dist	Comm DE	MD DE	PH DE	PHI DE	Mtrs	Direct	
1 Regional System O&M Expense	145,497,300	1	8,316,300	71,115,400	1,820,300	19,188,300	16,393,900	10,803,900	8,196,900	8,196,900	1,465,400	0	145,497,300
2 Pension Obligation - Operating Portion	6,048,000	2	0	3,454,000	98,100	1,033,700	407,000	569,300	203,500	203,500	78,900	0	6,048,000
3 Debt Service	135,481,000	3	0	56,389,500	3,773,600	48,515,600	0	0	24,867,100	0	1,935,300	0	135,481,100
4 Non-Operating Portion of Pension Oblg	6,268,300	2	0	3,579,900	101,600	1,071,300	421,800	590,000	210,900	210,900	81,800	0	6,268,200
5 Transfer to WRAP Fund	1,702,000	4	44,000	774,400	34,800	423,000	91,200	63,400	204,600	45,600	21,000	0	1,702,000
Transfer to Extra. Repair and Repl. Fund	0	3	0	0	0	0	0	0	0	0	0	0	0
6 Lease Payment - Transfer to Detroit Local I&E	22,500,000	4	582,200	10,237,500	460,400	5,591,500	1,205,700	837,500	2,704,800	602,900	277,400	0	22,499,900
7 Transfer to GLWA Regional I&E Account	28,093,900	3	0	11,693,200	782,500	10,060,400	0	0	5,156,500	0	401,300	0	28,093,900
Operating Reserves	0	1	0	0	0	0	0	0	0	0	0	0	0
8 Total Gross BUDGET	345,590,500		8,942,500	157,243,900	7,071,300	85,883,800	18,519,600	12,864,100	41,544,300	9,259,800	4,261,100	0	345,590,400
9 less: Revenue from Non-Contract Cust	0	4	0	0	0	0	0	0	0	0	0	0	0
10 less: Non-Operating Revenue	(1,221,000)	4	(31,600)	(555,600)	(25,000)	(303,400)	(65,400)	(45,400)	(146,800)	(32,700)	(15,100)	0	(1,221,000)
11 Net BUDGET Req'd from Charges	344,369,500		8,910,900	156,688,300	7,046,300	85,580,400	18,454,200	12,818,700	41,397,500	9,227,100	4,246,000	0	344,369,400
12 Subtotal Direct Elements			8,316,300	146,232,000	6,576,100	79,869,300	17,222,700	11,963,200	38,634,900	8,611,300	3,962,700	0	321,388,500
13 Allocation Factors for Indirect Elements		4	2.6%	45.5%	2.0%	24.9%	5.4%	3.7%	12.0%	2.7%	1.2%	0.0%	

THIS IS WATER TABLE 4 IN THE FY 2022 COST OF SERVICE STUDY MEMORANDUM

O&M factors from page A-17

Consolidated Sewer Revenue Requirement Allocated to Cost Pools

Goal is to use allocation factors resulting from detailed review to allocate the final 2022 BUDGET figures for the FY 2022 Charges

Allocation Factors from Detailed Review

Capital factors from page A-23

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

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					
	4.0%	7.1%	17.0%	37.7%	9.1%	0.7%	71.5%	15.2%	9.3%	96.0%
	4.7%	3.7%	15.0%	38.3%	8.4%	0.8%	66.1%	18.2%	11.0%	95.3%
	0.1%	32.3%	10.0%	14.6%	2.9%	0.5%	60.3%	22.8%	16.8%	99.9%

Apply Allocation Factors to BUDGET

BUDGET Elements	Budget to Allocate	OMID Contractual	Remaining Balance	Allocation Basis	WRRF Treatment						"Common" prior to Surcharge			
					Separated for Purposes of Surcharge Calculations						WRRF Treatment	Conveyance	CSO Facilities	"Common" TOTAL
					Industrial Waste Control	Flow	BOD	TSS	PHOS	FOG				
1 Regional System O&M Expense	183,096,700	1,568,500	181,528,200	1	7,243,500	12,827,800	30,793,600	68,401,600	16,453,500	1,317,500	129,794,000	27,556,500	16,934,200	174,284,700
2 Pension Obligation - Operating Portion	10,824,000	189,400	10,634,600	2	499,200	389,300	1,593,600	4,073,300	889,000	85,200	7,030,400	1,938,100	1,167,000	10,135,500
3 Debt Service	207,209,500	0	207,209,500	3	237,900	66,858,600	20,723,700	30,181,400	5,986,700	1,121,600	124,872,000	47,245,700	34,853,700	206,971,400
4 Non-Operating Portion of Pension Oblig	11,620,700	203,400	11,417,300	2	535,900	417,900	1,710,900	4,373,100	954,400	91,500	7,547,800	2,080,700	1,252,900	10,881,400
5 Transfer to WRAP Fund	2,345,600	10,700	2,334,900	4	44,900	480,500	305,500	587,500	132,500	14,700	1,520,800	454,600	314,700	2,290,100
6 Lease Payment - Transfer to Detroit Local I&E	27,500,000	181,500	27,318,500	4	524,800	5,622,100	3,574,800	6,873,800	1,550,800	171,900	17,793,300	5,318,500	3,681,900	26,793,700
7 Transfer to GLWA Regional I&E Account	34,616,900	0	34,616,900	3	39,800	11,169,600	3,462,200	5,042,200	1,000,200	187,400	20,861,600	7,893,000	5,822,700	34,577,300
8 Total Gross BUDGET	477,213,400	2,153,500	475,059,900		9,126,000	97,765,800	62,164,300	119,532,900	26,967,100	2,989,800	309,419,900	92,487,100	64,027,100	465,934,100
9 less: Non-Operating Revenue	(1,410,800)	0	(1,410,800)	4	(27,100)	(290,300)	(184,600)	(355,000)	(80,100)	(8,900)	(918,900)	(274,700)	(190,100)	(1,383,700)
10 Net BUDGET Req'd from Charges	475,802,600	2,153,500	473,649,100		9,098,900	97,475,500	61,979,700	119,177,900	26,887,000	2,980,900	308,501,000	92,212,400	63,837,000	464,550,400
11 Subtotal Direct Elements					8,556,300	91,663,200	58,284,000	112,071,600	25,283,800	2,803,200	290,105,800	86,714,000	60,030,500	436,850,300
12 Allocation Factors for Indirect Elements				4	1.921%	20.580%	13.086%	25.162%	5.677%	0.629%	65.133%	19.469%	13.478%	

THIS IS SEWER TABLE 4 IN THE FY 2022 COST OF SERVICE STUDY MEMORANDUM

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MEMORANDUM

GLWA Financial Forecast Update

December 17, 2020

To: Nicolette Bateson

From: Bart Foster

This memorandum is intended to introduce updated long-term financial plan forecasts for the GLWA Regional System Water and Sewer funds, prepared in coordination with development of the Fiscal Year 2022 budget and charges. These PRELIMINARY updated projections reflect forecasted financial results for a ten-year<sup>1</sup> projection period (*Fiscal Year 2021 through Fiscal Year 2031*) for GLWA's capital and operating requirements. Separate exhibits are designed to summarize forecasts for both the Water Fund and the Sewer Fund. These forecast summaries are presented in similar format to prior published work products we have prepared in various forums, which largely focused on revenue requirements (reflected as either "budget" or "cash" basis) in a manner that aligns with requirements of the GLWA Master Bond Ordinances (MBO's). We are in the process of updating the forecast exhibits that illustrate projected "GAAP basis" results. Those exhibits will be presented in subsequent documents.

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

Executive Summary Takeaways

- This forecast introduces recommended overall ***System Charge Adjustments*** of a 2.0% increase for Water and a 0.2% decrease for Sewer.
  - *The Water adjustment is proposed to increase the average charge to Member Partners by 2.0% is the product of:*
    - 1.2% to address a \$3.95 million revenue requirement increase;
    - 1.0% to address a \$3.61 million decrease in budgeted non-operating revenue;

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<sup>1</sup> Actually 11 years, including estimated results for the current year.

- -0.2% (reduction) to reflect a \$0.8 million increase in budgeted water sales under existing charges
  - *The 0.2% Sewer decrease has been established to result in no increase in charges paid via the recently proposed SHAREs and is the product of:*
    - 0.9% to address a \$4.18 million decrease in budgeted non-operating revenue
    - 0.9% to address a negative budgeted revenue variance totaling \$4.23 million, which is made up of:
      - the \$5.96 million decrease in charge revenue associated with of the revenue related to the OMID contribution, offset by:
      - a moderate \$0.44 million increase in baseline billings to industrial specific customers, and:
      - the decision to not include any bad debt expense related to Highland Park in the FY 2022 charges to suburban wholesale Member Partners
    - -2.0% (reduction) to decrease the overall revenue requirement by \$9.54 million in order to balance the revenue requirement and meet the objective of no System Charge adjustment for SHAREs Member Partners
  - *These proposed adjustments will be more fully documented in the coming weeks, as the FY 2022 Charges are formally presented.*
- Despite the lower FY 2022 charge adjustments (compared to the 2<sup>nd</sup> year of the existing biennial budget) the budgeted FY 2022 amounts available for the I&E Funds are approximately \$30 million for each System.
- The Water CIP creates relatively more financing pressure on the forecast than does the Sewer CIP. As a result the Water System forecast contains continuation of significant debt financing, while mostly “pay go” capital financing is forecasted for the Sewer System towards the end of the ten year period.
  - *This fundamental difference in the Water and Sewer Forecasts is highlighted throughout this memorandum and in the accompanying exhibits.*

*[Remainder of page intentionally left blank]*

### Forecast Introduction and Exhibits

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

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

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

1. FY 2021 estimated activity is consistent with the formally amended budget, with additional minor estimates to reflect ongoing review.
2. FY 2022 through FY 2026 O&M is consistent with the preliminary budget prepared by GLWA.
  - *FY 2022 increase of 2.0% in total (combined Water and Sewer) compared to originally approved FY 2021 budget*
  - *Water increase is 6.1%, Sewer is a decrease of 1.0% - this reflects diligent review of the FY 2022 budget preparation and individual budget programs*
3. Future O&M growth = 2%
4. CIP’s reflects current versions presented to Member Partners on November 10.
5. CIP Expenditure Level reflects a 75% Spend Rate Assumption for entire forecast period.
6. Investment earnings rate = 0.33% for FY 2022, gradually increasing to 1.00% by FY 2026 and 1.50% thereafter (*consistent with estimates provided by PFM*)
7. Capital financing forecast policy:
  - *Fund all Major CIP expenditures via Construction Fund, which is sourced by:*
    - SRF loans
    - Transfers from I&E
    - Bond Proceeds
    - Investment Earnings on Bond Proceeds
  - *CIP funding source priority:*
    - Apply “confirmed” SRF resources to specific projects;

- Identify short lived CIP projects that should be financed by I&E (*currently estimated at 10% of total CIP*)
  - Spend existing I&E Funds until they reach policy minimum (*\$90 million*);
  - Do not rely on annual deposits to I&E to finance CIP until subsequent year(s);
  - Issue debt to finance remainder of annual capital requirements;
  - Plan biennial bond sales in amounts that result in zero “carryover” at end of 2<sup>nd</sup> year<sup>2</sup>
8. FY 2022 System Charge adjustments = **2.0% increase** for Water and a **0.2% decrease** for Sewer.
- *Consistent with our understanding of pending charge proposals scheduled to be presented next month*
  - *After recognition of baseline revenue variances, results in overall total FY 2022 revenue requirement adjustments of:*
    - 1.2% **increase** for Water
    - 2.0% **decrease** for Sewer
9. “Top Line” increase in annual revenue requirements = 3% starting in FY 2023.
10. Total GLWA / DWSD “Legacy Pension Obligation” annual payments reduce from \$45.4 million to \$9.0 million starting in FY 2024, and all amounts are treated as a non-operating expense after FY 2023.

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

1. Forecasted CIP Financing Plan
  - Illustrates forecasted plan resulting from application of CIP financing policy noted above. Note that the forecast anticipates the next “new money Regional System” bond transactions to occur in FY 2023 for both the Water and Sewer Systems. These are subject to change, and could be impacted by availability of additional SRF loans, DWSD Local System needs, and/or refinancing opportunities. Also note the relatively larger need for forecasted additional Water bond sales compared to Sewer due to the relatively larger Water CIP requirements. The Sewer forecast anticipates being able to “pay go” all CIP Financing starting in FY 2028.
2. Forecasted CIP Financing Plan Table
  - Same as 1, in tabular form consistent with published Feasibility Reports.
3. Forecasted Application of CIP Funding Sources
  - Illustrates growing utilization of I&E monies to finance annual capital improvements, particularly for Sewer. The Water picture is “muddied” because of the early year spend down of existing balances while the Sewer picture is

<sup>2</sup> In prior forecasts a \$50 million annual carryover minimum in Bond Funds was projected. This has been removed to facilitate compliance reporting and to recognize the \$90 million I&E balances.

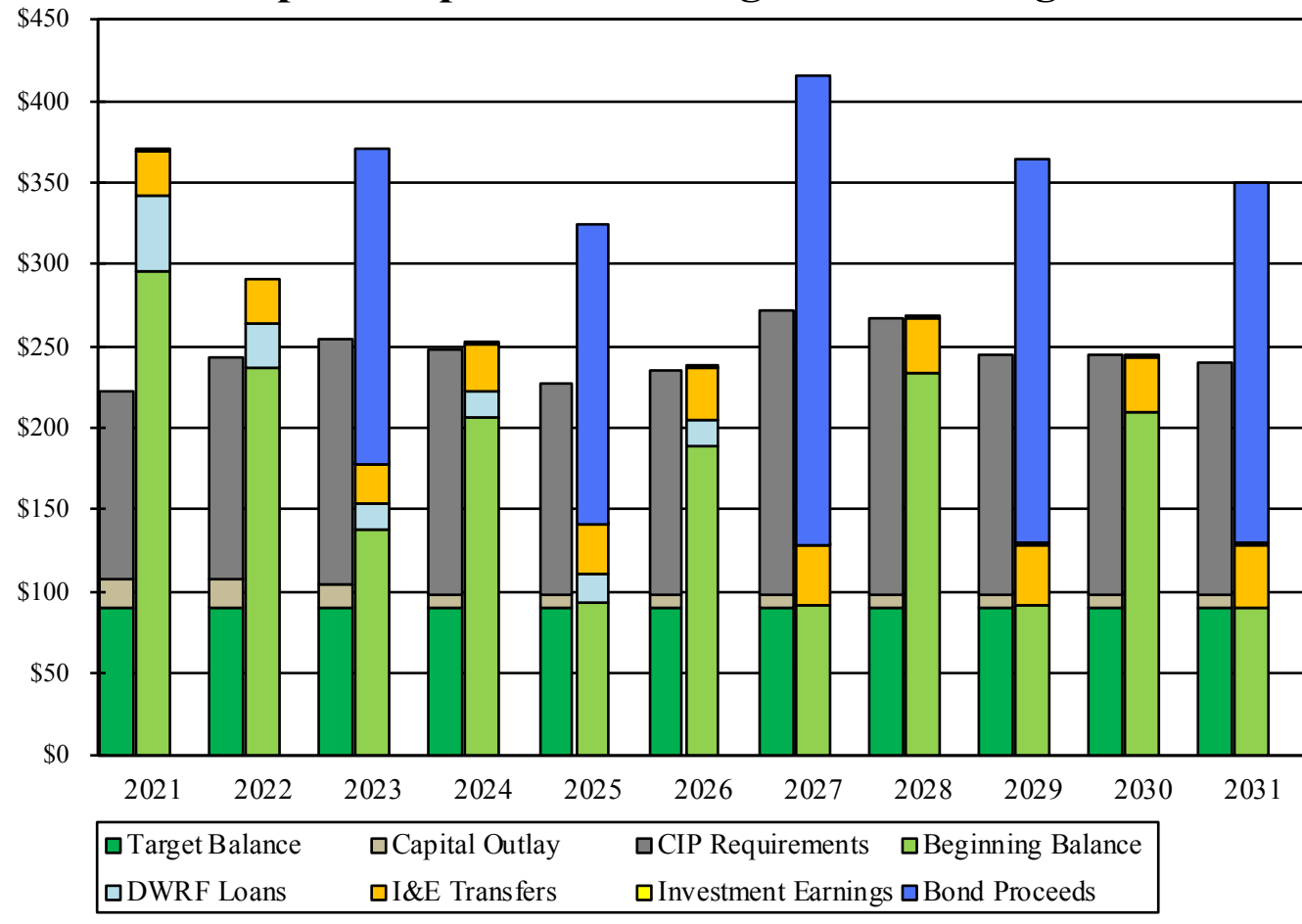
more evident of steady growth – sufficient to fully fund the CIP and exceed the \$90 million policy minimum by the end of the forecast period.

4. Revenue Requirement Financing Plan
  - Graphical depiction of the “business plan” for the FY 2022 Budget / Charge adjustments of 2% for Water and the moderate reduction for Sewer, then following the 3% top line / 2% O&M growth rate assumption for the balance of the forecast period. Note the relatively stable transfers to Water I&E compared to the rapid growth in the Sewer amounts.
5. Wholesale System Revenue Requirement Financing Plan Table
  - Same as 4, in tabular form consistent with published Feasibility Reports.
6. Forecasted Fund Balance Summary
  - Illustrates “non-restricted” liquidity balances and debt service coverage (as computed for the Regional System portion)
  - Shows forecasted reduction of existing I&E balances to policy minimums for both systems, with Sewer increasing towards the end of the forecast period.
    - \* *Note that if full “pay go” status of the Sewer CIP is achieved it would be appropriate to reduce the top line revenue growth assumption in the forecast.*
  - Debt service coverage provided by Regional System net revenues is relatively stable for Water and materially increasing for Sewer.
7. Projected Cash and Investment Balances – Wholesale System Table
  - Same as 6, in tabular form consistent with published Feasibility Reports.
  - Documents forecasted “Days Cash on Hand” metric
8. Relative Revenue Requirement Distribution
  - Illustrates “where each \$ of revenue goes” with respect to revenue requirements. Again, note the reduction in debt service, and corresponding increase in I&E bottom line transfers for Sewer, while the Water bottom line contribution is fairly constant as the relative debt service portion increases.
9. I&E Flow of Funds Forecast
  - Illustrates draw down of existing balances to fund CIP requirements, maintenance of the \$90 million policy minimums, and the growth in annual transfers from revenues, particularly for Sewer.
10. Schedule 1 – Revenue Requirements Budget Summary
  - Budget summary schedule version of Revenue Requirement Financing Plan. Illustrates the “anatomy of a charge increase” calculation introduced in the Executive Summary to this memorandum.
11. Schedule 5 – Capital Financing Budget Summary
  - Budget summary schedule version of Capital Financing Plan. Illustrates the flow of funds concept for the Construction Fund.

We are hopeful that this executive summary presentation provides a platform for discussion of financial planning policies and assumptions as the development of the FY 2022 Budget and related forecast proceeds. We are prepared to present this material at the Audit Committee meeting scheduled for December 18 and to discuss this matter further at your convenience.

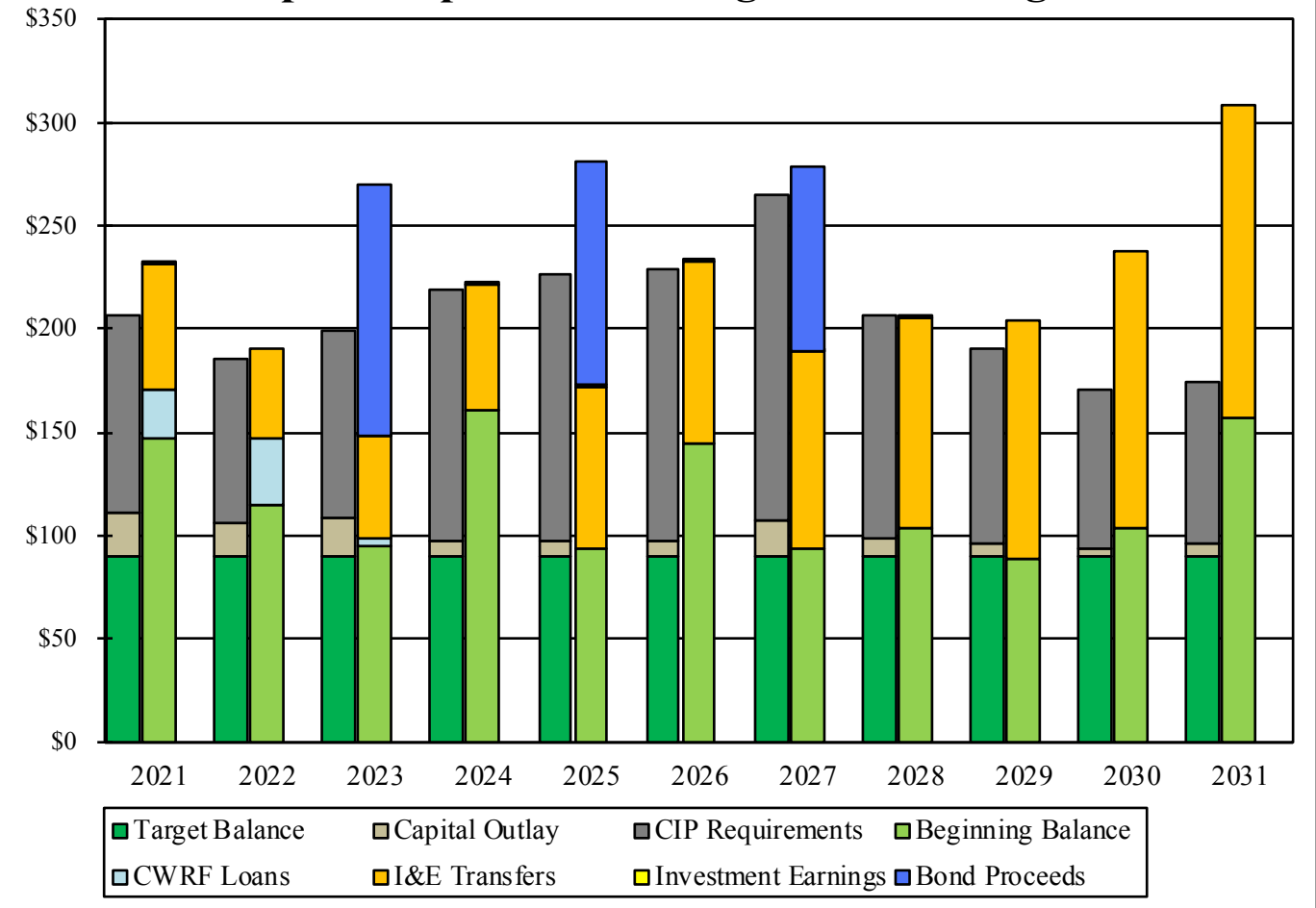


### Capital Improvement Program Financing Plan



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Requirements</b>											
Target Balance	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Capital Outlay	17.9	17.0	14.1	8.8	8.6	8.5	7.9	7.5	7.9	7.4	7.6
CIP Requirement	114.6	136.6	150.6	149.4	128.2	136.8	174.6	170.2	147.1	147.7	142.8
<b>Total</b>	<b>222.5</b>	<b>243.6</b>	<b>254.6</b>	<b>248.1</b>	<b>226.8</b>	<b>235.3</b>	<b>272.5</b>	<b>267.6</b>	<b>245.0</b>	<b>245.0</b>	<b>240.4</b>
<b>Sources</b>											
Beginning Balance	296.0	237.5	138.1	206.2	93.7	188.5	92.3	233.3	91.2	209.3	90.3
DWRf Loans	45.4	26.1	16.6	16.6	16.6	15.8	0.0	0.0	0.0	0.0	0.0
I&E Transfers	28.5	28.1	23.3	28.4	31.3	32.4	35.7	33.4	37.2	34.2	38.9
Investment Earnings	0.1	0.0	0.2	0.7	0.4	1.0	1.1	2.1	0.9	1.8	0.8
Bond Proceeds	0.0	0.0	192.7	0.0	183.3	0.0	286.7	0.0	235.0	0.0	220.9
<b>Total Sources</b>	<b>369.9</b>	<b>291.7</b>	<b>370.9</b>	<b>251.9</b>	<b>325.3</b>	<b>237.6</b>	<b>415.8</b>	<b>268.8</b>	<b>364.3</b>	<b>245.3</b>	<b>350.9</b>
End Balance	237.5	138.1	206.2	93.7	188.5	92.3	233.3	91.2	209.3	90.3	200.4

### Capital Improvement Program Financing Plan



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Requirements</b>											
Target Balance	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Capital Outlay	20.5	16.0	18.2	8.0	7.1	7.6	16.7	9.2	5.7	4.2	5.9
CIP Requirement	95.8	79.3	91.5	121.0	129.7	131.9	158.0	107.4	95.1	76.2	78.0
<b>Total</b>	<b>206.3</b>	<b>185.3</b>	<b>199.7</b>	<b>219.0</b>	<b>226.8</b>	<b>229.5</b>	<b>264.7</b>	<b>206.6</b>	<b>190.7</b>	<b>170.4</b>	<b>173.9</b>
<b>Sources</b>											
Beginning Balance	147.1	114.7	94.7	160.4	93.3	144.0	93.7	104.0	89.2	103.3	156.7
CWRf Loans	23.6	32.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I&E Transfers	60.2	43.3	48.9	61.4	79.2	88.7	95.4	101.5	114.8	133.9	150.9
Investment Earnings	0.1	0.0	0.1	0.4	0.2	0.5	0.4	0.2	0.0	0.0	0.0
Bond Proceeds	0.0	0.0	122.2	0.0	108.1	0.0	89.3	0.0	0.0	0.0	0.0
<b>Total Sources</b>	<b>231.0</b>	<b>190.0</b>	<b>270.1</b>	<b>222.2</b>	<b>280.8</b>	<b>233.1</b>	<b>278.7</b>	<b>205.8</b>	<b>204.0</b>	<b>237.2</b>	<b>307.7</b>
End Balance	114.7	94.7	160.4	93.3	144.0	93.7	104.0	89.2	103.3	156.7	223.8

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

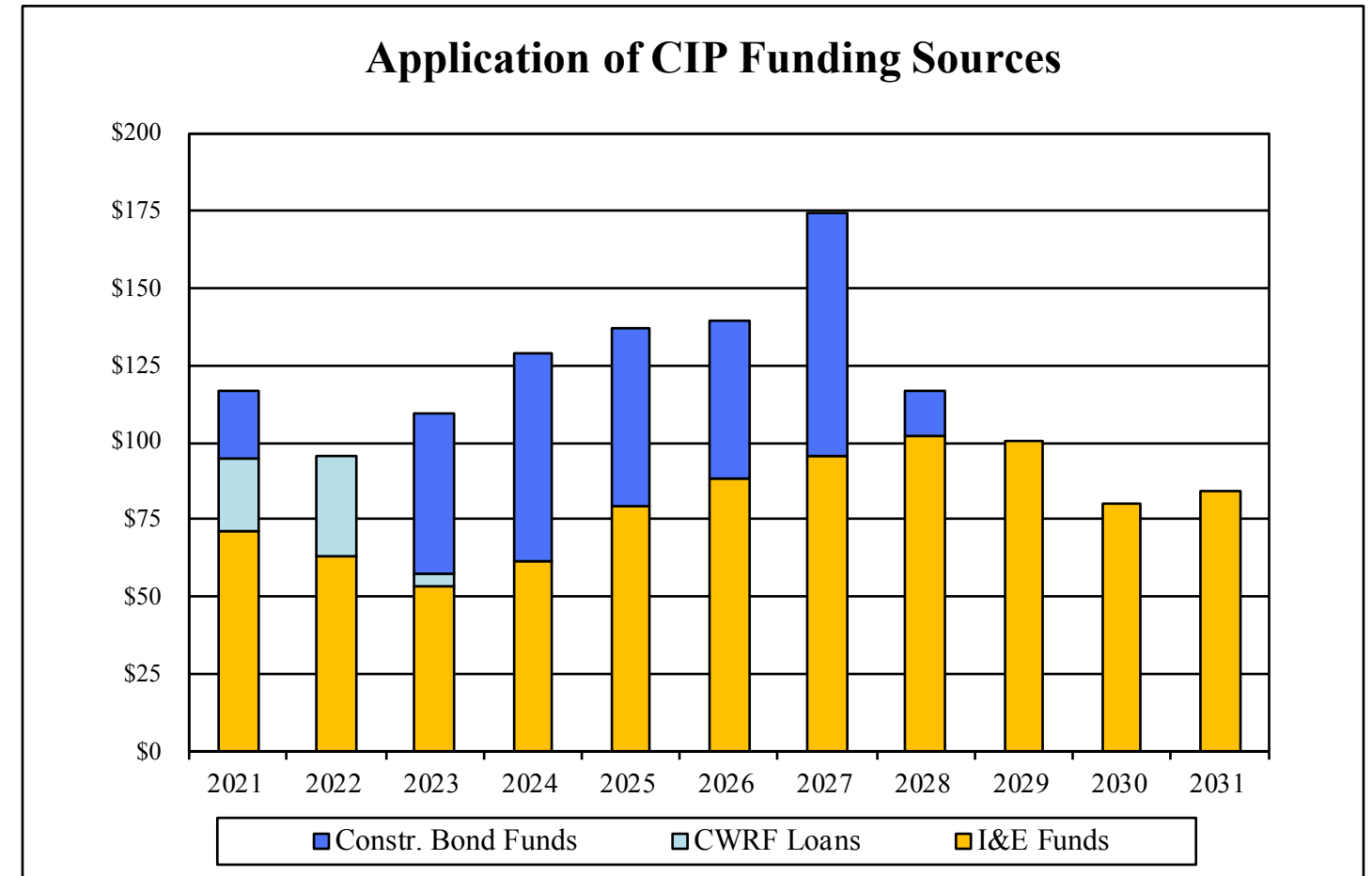
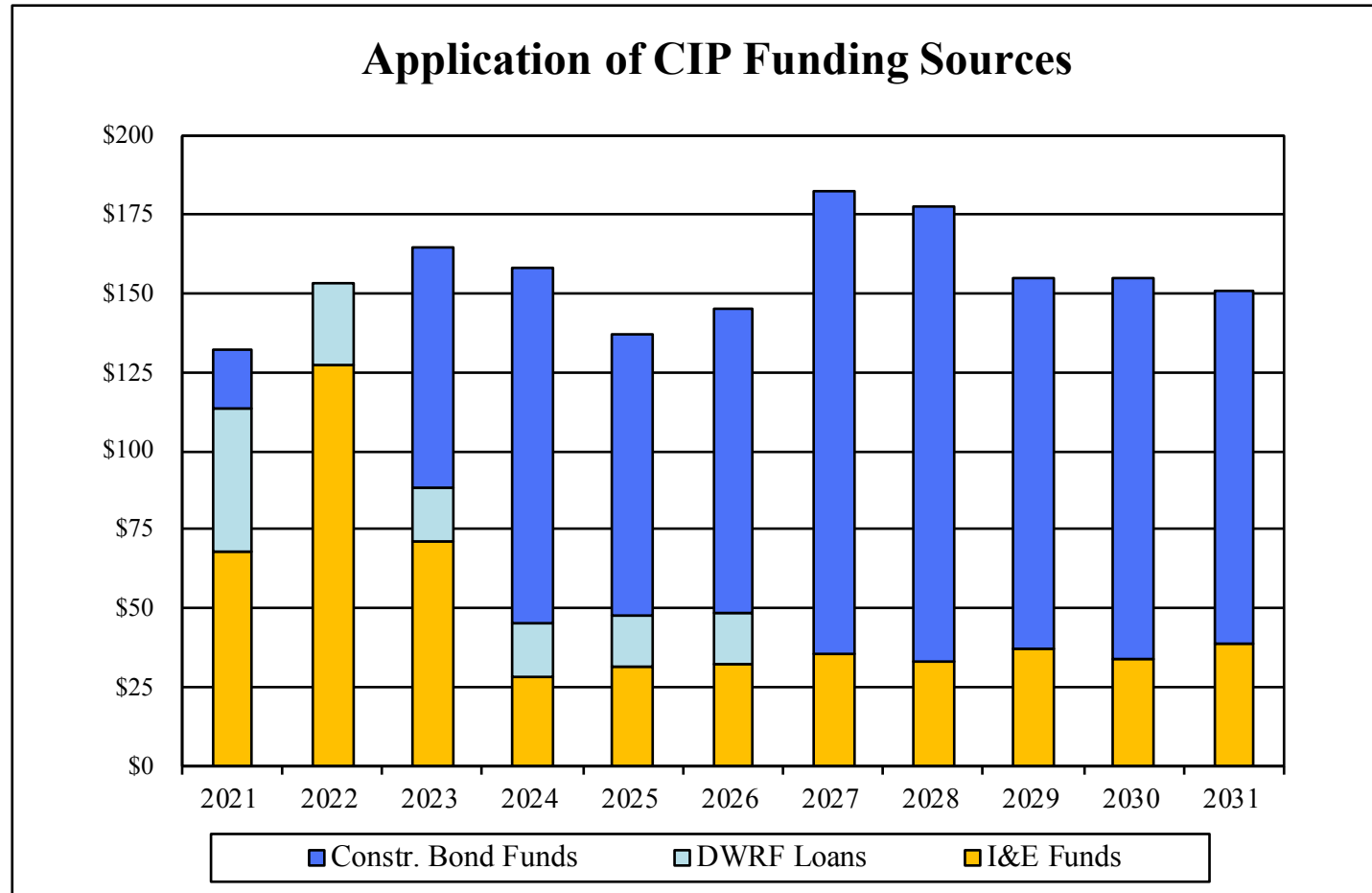
Line No.	Fiscal Year Ended June 30,												Total
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031		
<b>Financing Requirements</b>													
1	17.9	17.0	14.1	8.8	8.6	8.5	7.9	7.5	7.9	7.4	7.6	113.0	
2	<u>114.6</u>	<u>136.6</u>	<u>150.6</u>	<u>149.4</u>	<u>128.2</u>	<u>136.8</u>	<u>174.6</u>	<u>170.2</u>	<u>147.1</u>	<u>147.7</u>	<u>142.8</u>	<u>1,598.5</u>	
3	132.5	153.6	164.6	158.1	136.8	145.3	182.5	177.6	155.0	155.0	150.4	1,711.6	
<b>Financing Sources</b>													
<u>Construction Fund</u>													
4	-	-	-	-	-	-	-	-	-	-	-	- (g)	
5	74.4	45.8	16.6	16.6	16.6	15.8	-	-	-	-	-	185.8	
6	<u>(29.0)</u>	<u>(19.7)</u>	-	-	-	-	-	-	-	-	-	<u>(48.7)</u>	
7	45.4	26.1	16.6	16.6	16.6	15.8	-	-	-	-	-	137.1	
8	19.0	0.0	76.7	113.2	88.9	97.2	146.8	144.3	117.8	120.8	111.5	1,036.2	
9	<u>50.1</u>	<u>110.5</u>	<u>57.3</u>	<u>19.6</u>	<u>22.7</u>	<u>23.8</u>	<u>27.8</u>	<u>25.9</u>	<u>29.3</u>	<u>26.8</u>	<u>31.3</u>	<u>425.2</u>	
10	114.6	136.6	150.6	149.4	128.2	136.8	174.6	170.2	147.1	147.7	142.8	1,598.5	
11	<u>114.6</u>	<u>136.6</u>	<u>150.6</u>	<u>149.4</u>	<u>128.2</u>	<u>136.8</u>	<u>174.6</u>	<u>170.2</u>	<u>147.1</u>	<u>147.7</u>	<u>142.8</u>	<u>1,598.5</u>	
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 (h)	
<b>Subsidiary Capital Financing Funds</b>													
<u>Construction Bond Fund</u>													
13	19.0	-	-	116.2	3.7	98.5	2.3	143.3	1.2	119.3	0.3	19.0 (g)	
14	-	-	205.0	-	195.0	-	305.0	-	250.0	-	235.0	1,190.0	
15	-	-	-	-	-	-	-	-	-	-	-	0.0	
16	-	-	<u>(12.3)</u>	-	<u>(11.7)</u>	-	<u>(18.3)</u>	-	<u>(15.0)</u>	-	<u>(14.1)</u>	<u>(71.4)</u>	
17	-	-	192.7	-	183.3	-	286.7	-	235.0	-	220.9	1,118.6	
18	<u>0.1</u>	<u>0.0</u>	<u>0.2</u>	<u>0.7</u>	<u>0.4</u>	<u>1.0</u>	<u>1.1</u>	<u>2.1</u>	<u>0.9</u>	<u>1.8</u>	<u>0.8</u>	<u>9.1</u>	
19	19.0	0.0	192.9	116.9	187.4	99.4	290.1	145.5	237.1	121.1	222.0	1,146.6	
20	<u>(19.0)</u>	<u>0.0</u>	<u>(76.7)</u>	<u>(113.2)</u>	<u>(88.9)</u>	<u>(97.2)</u>	<u>(146.8)</u>	<u>(144.3)</u>	<u>(117.8)</u>	<u>(120.8)</u>	<u>(111.5)</u>	<u>(1,036.2)</u>	
21	0.0	0.0	116.2	3.7	98.5	2.3	143.3	1.2	119.3	0.3	110.4	110.4 (h)	
<u>GLWA Regional System Improvement and Extension Account</u>													
22	277.0	237.5	138.1	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	277.0 (g)	
23	<u>28.5</u>	<u>28.1</u>	<u>23.3</u>	<u>28.4</u>	<u>31.3</u>	<u>32.4</u>	<u>35.7</u>	<u>33.4</u>	<u>37.2</u>	<u>34.2</u>	<u>38.9</u>	<u>351.3</u>	
24	305.5	265.6	161.4	118.4	121.3	122.4	125.7	123.4	127.2	124.2	128.9	628.3	
25	(17.9)	(17.0)	(14.1)	(8.8)	(8.6)	(8.5)	(7.9)	(7.5)	(7.9)	(7.4)	(7.6)	(113.0)	
26	<u>(50.1)</u>	<u>(110.5)</u>	<u>(57.3)</u>	<u>(19.6)</u>	<u>(22.7)</u>	<u>(23.8)</u>	<u>(27.8)</u>	<u>(25.9)</u>	<u>(29.3)</u>	<u>(26.8)</u>	<u>(31.3)</u>	<u>(425.2)</u>	
27	237.5	138.1	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0 (h)	

- (a) From Table 1.
- (b) Estimated balance available June 30, 2020 (applies only to Fiscal Year 2021).
- (c) Par value for future bonds.
- (d) Reserved
- (e) Includes amounts to provide funding to the DWSD CIP.
- (f) Assumes amounts will be required from bond proceeds to fund debt service reserve fund.
- (g) Total column reflects estimated balance available June 30, 2020.
- (h) Total column reflects estimated balance available June 30, 2031.

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

Line No.	Fiscal Year Ended June 30,												Total
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031		
<b>Financing Requirements</b>													
1	20.5	16.0	18.2	8.0	7.1	7.6	16.7	9.2	5.7	4.2	5.9	119.1	
2	<u>95.8</u>	<u>79.3</u>	<u>91.5</u>	<u>121.0</u>	<u>129.7</u>	<u>131.9</u>	<u>158.0</u>	<u>107.4</u>	<u>95.1</u>	<u>76.2</u>	<u>78.0</u>	<u>1,163.8</u>	
3	116.3	95.3	109.7	129.0	136.8	139.5	174.7	116.6	100.7	80.4	83.9	1,282.9	
<b>Financing Sources</b>													
<u>Construction Fund</u>													
4	-	-	-	-	-	-	-	-	-	-	-	- (g)	
5	32.6	40.5	4.1	-	-	-	-	-	-	-	-	77.2	
6	<u>(9.0)</u>	<u>(8.5)</u>	-	-	-	-	-	-	-	-	-	<u>(17.5)</u>	
7	23.6	32.0	4.1	-	-	-	-	-	-	-	-	59.7	
8	21.2	-	51.9	67.5	57.7	50.8	79.3	14.2	-	-	-	342.7	
9	<u>51.0</u>	<u>47.3</u>	<u>35.4</u>	<u>53.4</u>	<u>72.1</u>	<u>81.0</u>	<u>78.6</u>	<u>93.2</u>	<u>95.1</u>	<u>76.2</u>	<u>78.0</u>	<u>761.4</u>	
10	95.8	79.3	91.5	121.0	129.7	131.9	158.0	107.4	95.1	76.2	78.0	1,163.8	
11	<u>95.8</u>	<u>79.3</u>	<u>91.5</u>	<u>121.0</u>	<u>129.7</u>	<u>131.9</u>	<u>158.0</u>	<u>107.4</u>	<u>95.1</u>	<u>76.2</u>	<u>78.0</u>	<u>1,163.8</u>	
12	-	-	-	-	-	-	-	-	-	-	-	- (h)	
<b>Subsidiary Capital Financing Funds</b>													
<u>Construction Bond Funds</u>													
13	21.1	-	-	70.4	3.3	54.0	3.7	14.0	-	-	-	166.5 (g)	
14	-	-	130.0	-	115.0	-	95.0	-	-	-	-	340.0	
15	-	-	-	-	-	-	-	-	-	-	-	-	
16	-	-	<u>(7.8)</u>	-	<u>(6.9)</u>	-	<u>(5.7)</u>	-	-	-	-	<u>(20.4)</u>	
17	-	-	122.2	-	108.1	-	89.3	-	-	-	-	319.6	
18	<u>0.1</u>	-	<u>0.1</u>	<u>0.4</u>	<u>0.2</u>	<u>0.5</u>	<u>0.4</u>	<u>0.2</u>	-	-	-	<u>2.0</u>	
19	21.2	-	122.3	70.8	111.6	54.5	93.4	14.2	-	-	-	488.1	
20	<u>(21.2)</u>	-	<u>(51.9)</u>	<u>(67.5)</u>	<u>(57.7)</u>	<u>(50.8)</u>	<u>(79.3)</u>	<u>(14.2)</u>	-	-	-	<u>(342.7)</u>	
21	-	-	70.4	3.3	54.0	3.7	14.0	-	-	-	-	145.4 (h)	
<u>GLWA Regional System Improvement and Extension Account</u>													
22	126.0	114.7	94.7	90.0	90.0	90.0	90.0	90.0	89.2	103.3	156.7	1,134.6 (g)	
23	40.9	34.6	48.9	61.4	79.2	88.7	95.4	101.5	114.8	133.9	150.9	950.3	
24	<u>19.3</u>	<u>8.7</u>	-	-	-	-	-	-	-	-	-	<u>28.0</u>	
25	186.2	158.0	143.6	151.4	169.2	178.7	185.4	191.5	204.0	237.2	307.7	2,112.8	
26	(20.5)	(16.0)	(18.2)	(8.0)	(7.1)	(7.6)	(16.7)	(9.2)	(5.7)	(4.2)	(5.9)	(119.1)	
27	<u>(51.0)</u>	<u>(47.3)</u>	<u>(35.4)</u>	<u>(53.4)</u>	<u>(72.1)</u>	<u>(81.0)</u>	<u>(78.6)</u>	<u>(93.2)</u>	<u>(95.1)</u>	<u>(76.2)</u>	<u>(78.0)</u>	<u>(761.4)</u>	
28	114.7	94.7	90.0	90.0	90.0	90.0	90.0	89.2	103.3	156.7	223.8	1,232.4	

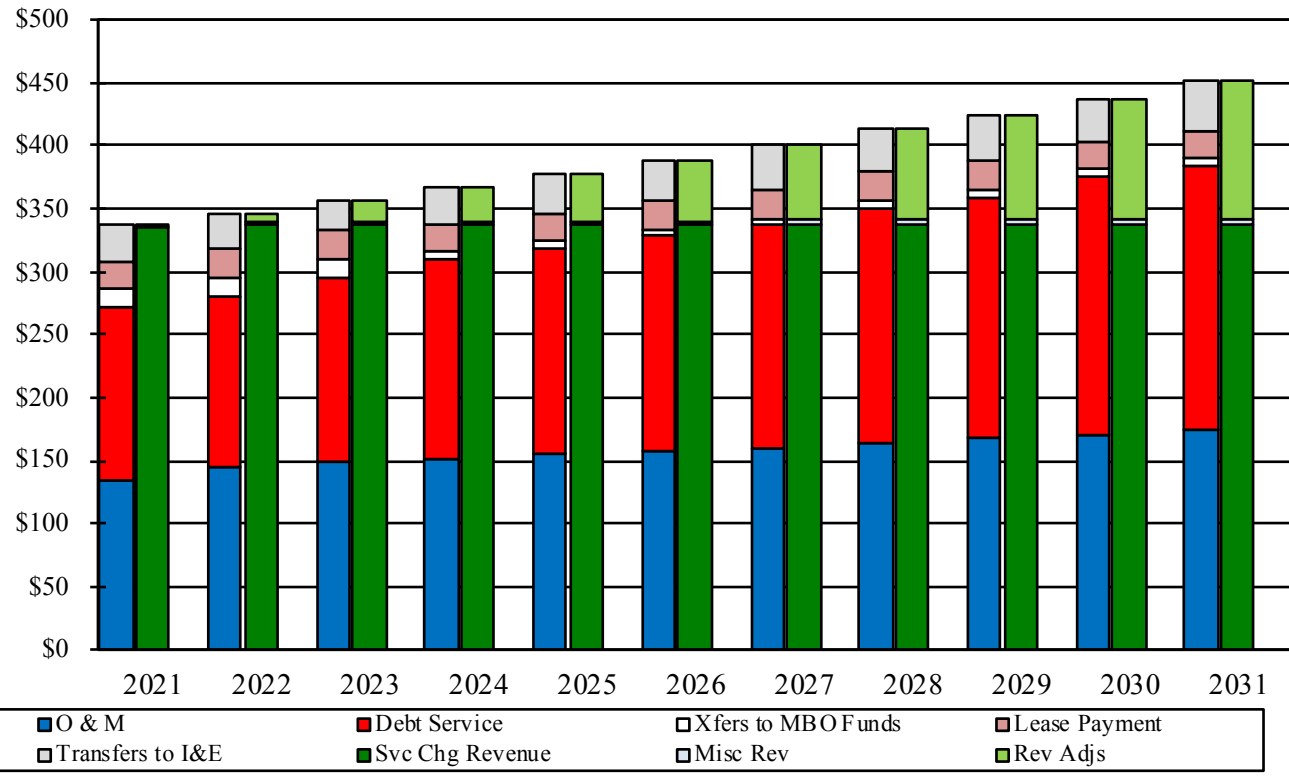
- (a) From Table 1.
- (b) Estimated balance available June 30, 2020 (applies only to Fiscal Year 2021).
- (c) Par value for future bonds.
- (d) Reserved
- (e) Includes amounts to provide funding to the DWSD CIP.
- (f) Assumes amounts will be required from bond proceeds to fund debt service reserve fund.
- (g) Total column reflects estimated balance available June 30, 2020.
- (h) Total column reflects estimated balance available June 30, 2031.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
I&E Funds	68.0	127.5	71.4	28.4	31.3	32.4	35.7	33.4	37.2	34.2	38.9
DWRP Loans	45.4	26.1	16.6	16.6	16.6	15.8	0.0	0.0	0.0	0.0	0.0
Constr. Bond Funds	19.0	0.0	76.7	113.2	88.9	97.2	146.8	144.3	117.8	120.8	111.5
<i>I&amp;E % of Total</i>	51%	83%	43%	18%	23%	22%	20%	19%	24%	22%	26%

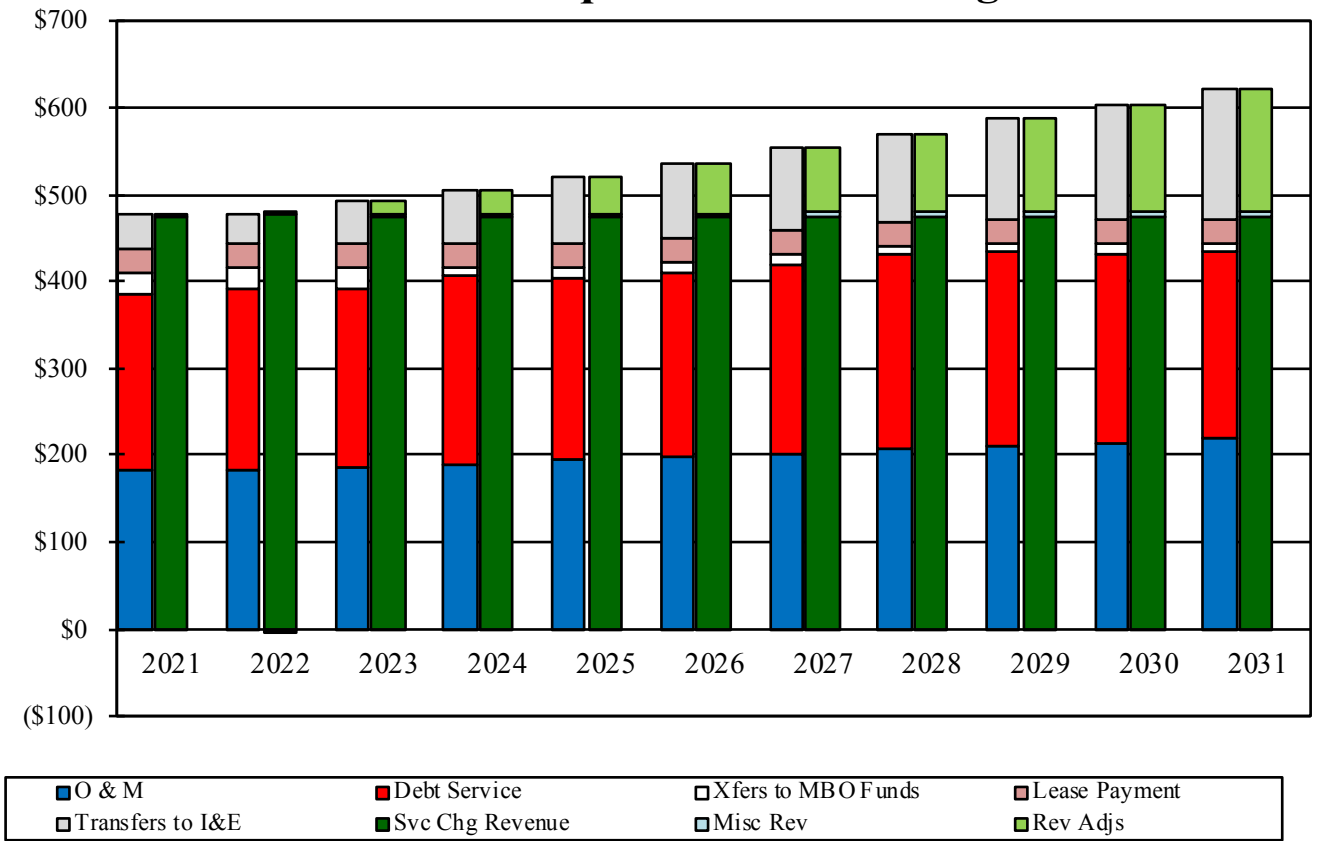
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
I&E Funds	71.5	63.3	53.6	61.4	79.2	88.7	95.4	102.3	100.7	80.4	83.9
CWRP Loans	23.6	32.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Constr. Bond Funds	21.2	0.0	51.9	67.5	57.7	50.8	79.3	14.2	0.0	0.0	0.0
<i>I&amp;E % of Total</i>	61%	66%	49%	48%	58%	64%	55%	88%	100%	100%	100%

### Revenue Requirement Financing Plan



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>REVENUE</b>											
Svc. Chg. Revenue	335.1	337.6	337.6	337.6	337.6	337.6	337.6	337.6	337.6	337.6	337.6
<b>Charge Adjustments</b>		<b>2.0%</b>	<b>3.0%</b>	<b>2.9%</b>	<b>2.9%</b>	<b>2.8%</b>	<b>2.7%</b>	<b>3.0%</b>	<b>3.0%</b>	<b>3.0%</b>	<b>3.0%</b>
Revenue from Adjs		6.8	17.1	27.5	38.2	48.9	59.4	71.3	83.7	96.4	109.5
Other	1.5	1.2	1.2	1.5	1.8	2.5	3.6	3.7	3.7	3.8	3.8
<b>Total Revenue</b>	<b>336.5</b>	<b>345.6</b>	<b>356.0</b>	<b>366.6</b>	<b>377.6</b>	<b>389.0</b>	<b>400.6</b>	<b>412.7</b>	<b>425.0</b>	<b>437.8</b>	<b>450.9</b>
<b>BUDGET</b>											
O&M Expense	134.1	145.5	149.5	151.6	154.8	157.5	160.7	163.9	167.1	170.5	173.9
Debt Service	137.4	135.5	146.5	158.9	163.0	170.5	175.8	187.0	192.3	204.6	209.6
Xfers to MBO Funds	14.0	14.0	14.1	5.2	6.1	6.1	6.0	5.9	5.9	6.0	6.0
Lease Payment	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Transfers to I&E	28.5	28.1	23.3	28.4	31.3	32.4	35.7	33.4	37.2	34.2	38.9
<b>Total BUDGET</b>	<b>336.5</b>	<b>345.6</b>	<b>356.0</b>	<b>366.6</b>	<b>377.6</b>	<b>389.0</b>	<b>400.6</b>	<b>412.7</b>	<b>425.0</b>	<b>437.8</b>	<b>450.9</b>
Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(0.0)

### Revenue Requirement Financing Plan



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>REVENUE</b>											
Svc. Chg. Revenue	475.9	476.9	475.6	475.6	475.6	475.6	475.6	475.6	475.6	475.6	475.6
<b>Charge Adjustments</b>		<b>-0.2%</b>	<b>3.2%</b>	<b>2.9%</b>	<b>3.0%</b>	<b>2.9%</b>	<b>2.8%</b>	<b>3.0%</b>	<b>3.0%</b>	<b>3.0%</b>	<b>2.9%</b>
Revenue from Adjs		(1.1)	14.3	28.6	43.5	58.4	73.2	89.8	106.9	124.2	141.6
Other	1.4	1.4	1.6	2.0	2.3	3.1	4.4	4.4	4.4	4.7	5.4
<b>Total Revenue</b>	<b>477.4</b>	<b>477.2</b>	<b>491.5</b>	<b>506.3</b>	<b>521.5</b>	<b>537.1</b>	<b>553.2</b>	<b>569.8</b>	<b>586.9</b>	<b>604.5</b>	<b>622.6</b>
<b>BUDGET</b>											
O&M Expense	182.3	183.1	185.6	190.3	194.1	198.3	202.3	206.3	210.4	214.6	218.9
Debt Service	201.8	207.2	204.6	218.0	209.9	211.8	217.6	224.2	223.8	218.1	214.9
Xfers to MBO Funds	24.9	24.8	24.9	9.0	10.8	10.8	10.5	10.3	10.3	10.3	10.4
Lease Payment	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Transfers to I&E	40.9	34.6	48.9	61.4	79.2	88.7	95.4	101.5	114.8	133.9	150.9
<b>Total BUDGET</b>	<b>477.4</b>	<b>477.2</b>	<b>491.5</b>	<b>506.3</b>	<b>521.5</b>	<b>537.1</b>	<b>553.2</b>	<b>569.8</b>	<b>586.9</b>	<b>604.5</b>	<b>622.7</b>
Balance	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

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

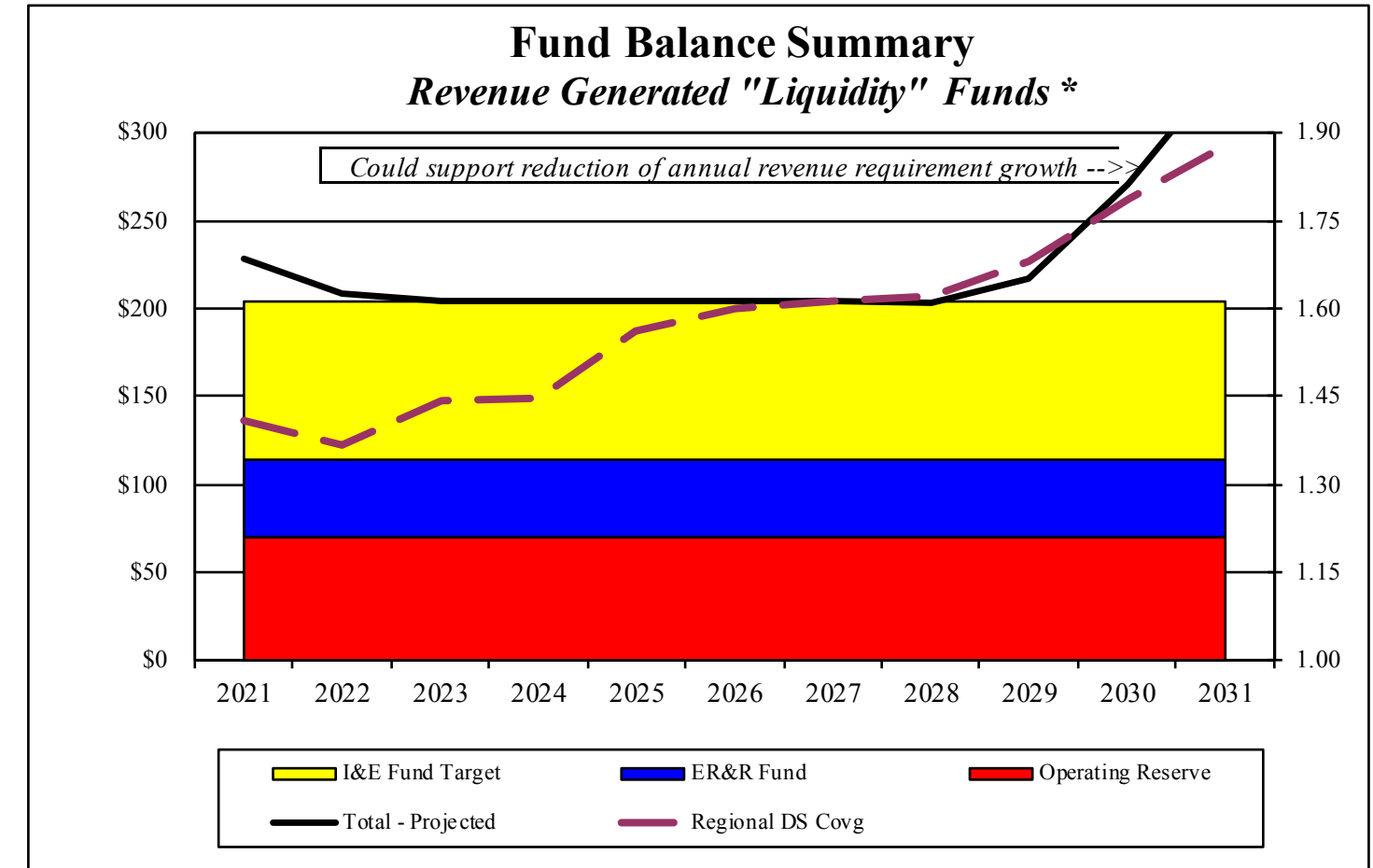
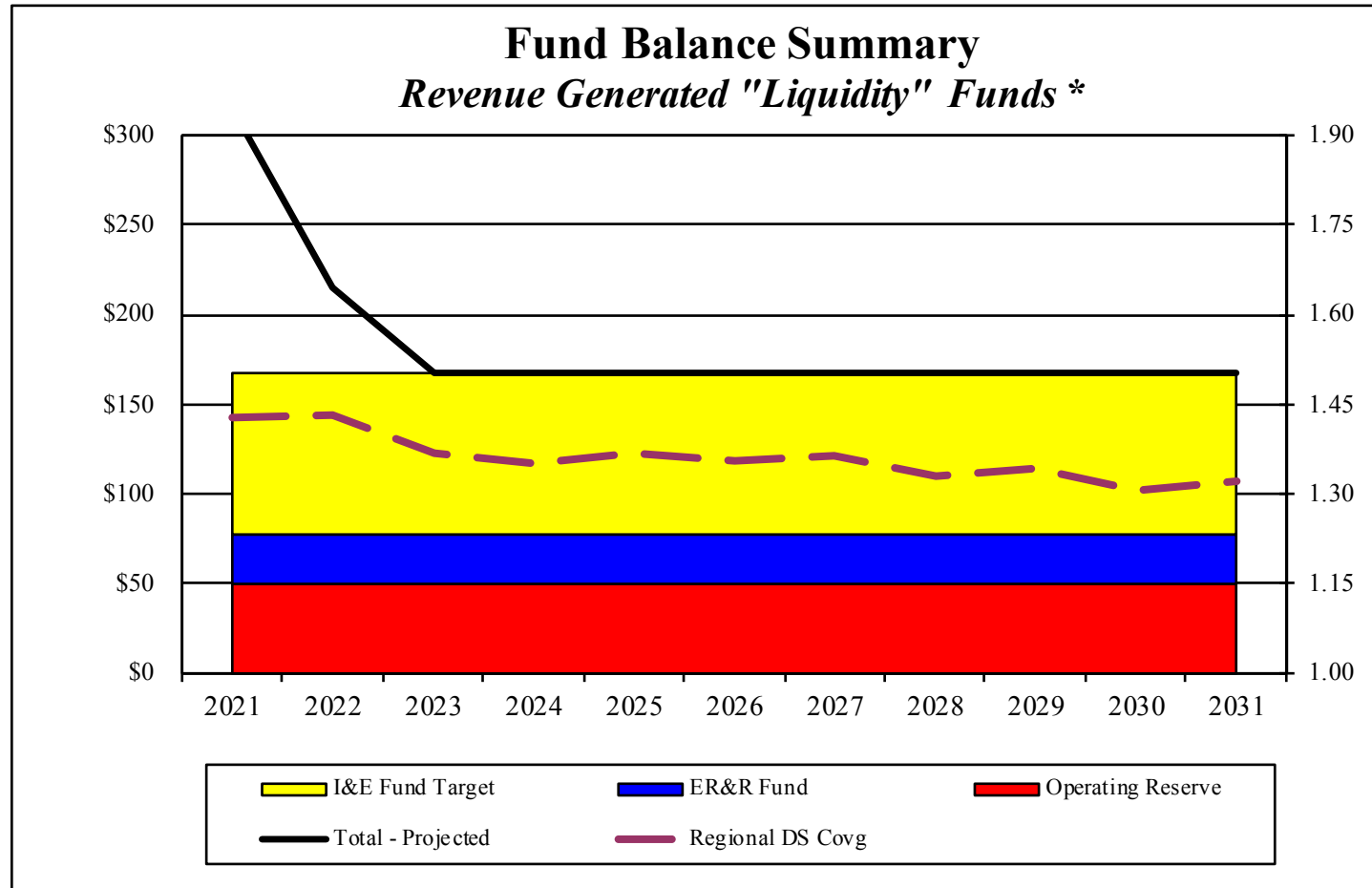
Line No.	Item	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Revenue (a)</b>												
1	Operating Revenue Under Existing Charges	335.1	337.6	337.6	337.6	337.6	337.6	337.6	337.6	337.6	337.6	337.6
<u>Projected Revenue from Adjustments</u>												
2	FY 2022: 2.0%		6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
3	FY 2023: 3.0%			10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
4	FY 2024: 2.9%				10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
5	FY 2025: 2.9%					10.7	10.7	10.7	10.7	10.7	10.7	10.7
6	FY 2026: 2.8%						10.7	10.7	10.7	10.7	10.7	10.7
7	FY 2027: 2.7%							10.5	10.5	10.5	10.5	10.5
8	FY 2028: 3.0%								11.9	11.9	11.9	11.9
9	FY 2029: 3.0%									12.4	12.4	12.4
10	FY 2030: 3.0%										12.7	12.7
11	FY 2031: 3.0%											13.1
12	<b>Total Projected Revenue from Water Charges</b>	<u>335.1</u>	<u>344.4</u>	<u>354.7</u>	<u>365.1</u>	<u>375.8</u>	<u>386.5</u>	<u>397.0</u>	<u>409.0</u>	<u>421.3</u>	<u>434.0</u>	<u>447.1</u>
13	Other Revenue	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
14	Non-Operating Revenue	<u>1.3</u>	<u>1.0</u>	<u>1.0</u>	<u>1.3</u>	<u>1.6</u>	<u>2.3</u>	<u>3.4</u>	<u>3.5</u>	<u>3.5</u>	<u>3.6</u>	<u>3.6</u>
15	<b>Total Revenue Available</b>	<u>336.5</u>	<u>345.6</u>	<u>356.0</u>	<u>366.6</u>	<u>377.6</u>	<u>389.0</u>	<u>400.6</u>	<u>412.7</u>	<u>425.0</u>	<u>437.8</u>	<u>450.9</u>
<b>Revenue Requirements</b>												
16	Transfer to GLWA Regional O&M Account	134.1	145.5	149.5	151.6	154.8	157.5	160.7	163.9	167.1	170.5	173.9
18	Total O&M Expense	140.2	151.5	155.6	151.6	154.8	157.5	160.7	163.9	167.1	170.5	173.9
19	Debt Service Allocation - Regional System	137.4	135.5	146.5	158.9	163.0	170.5	175.8	187.0	192.3	204.6	209.6
20	Non-Operating Portion of Pension Obligation	5.4	5.4	5.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
21	B & C Note Non-Operating Payments	<u>0.9</u>	<u>0.9</u>	<u>0.9</u>	<u>0.9</u>	<u>1.7</u>	<u>1.6</u>	<u>1.4</u>	<u>1.3</u>	<u>1.3</u>	<u>1.2</u>	<u>1.2</u>
22	Transfer to Pension Obligation Payment Fund	6.3	6.3	6.3	3.4	4.2	4.1	4.0	3.8	3.8	3.8	3.7
23	Transfer to WRAP Fund	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.1	2.1	2.2	2.3
24	Lease Payment to DWSD Local System	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
25	Transfer to GLWA Regional I&E Account	28.5	28.1	23.3	28.4	31.3	32.4	35.7	33.4	37.2	34.2	38.9
26	<b>Total Revenue Requirements</b>	<u>336.5</u>	<u>345.6</u>	<u>356.0</u>	<u>366.6</u>	<u>377.6</u>	<u>389.0</u>	<u>400.6</u>	<u>412.7</u>	<u>425.0</u>	<u>437.8</u>	<u>450.9</u>
27	Indicated Balance (Deficiency)	-	-	-	-	-	-	-	-	-	-	-
28	Projected Debt Service Coverage Ratio (Regional)	1.43	1.43	1.37	1.35	1.37	1.36	1.37	1.33	1.34	1.31	1.32
29	Net Revenues (15) - (18)	196.3	194.0	200.4	215.0	222.9	231.5	240.0	248.8	257.9	267.3	277.0
30	Revenues Remaining after Debt Service (29)-(19)	58.9	58.6	53.8	56.1	59.8	60.9	64.2	61.7	65.6	62.7	67.4
31	Applied to MBO Reserve Funds (22,23)	(7.9)	(8.0)	(8.0)	(5.2)	(6.1)	(6.1)	(6.0)	(5.9)	(5.9)	(6.0)	(6.0)
32	Applied as Lease Payment to DWSD (24)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)	(22.5)
33	Available for I&E Fund (29) - (30,31,32)	28.5	28.1	23.3	28.4	31.3	32.4	35.7	33.4	37.2	34.2	38.9

(a) From Table 3. Based on application of FY 2021 charges for 2021 through 2031.

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

Line No.	Item	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Revenue (a)</b>												
1	Operating Revenue Under Existing Charges	475.9	476.9	475.6	475.6	475.6	475.6	475.6	475.6	475.6	475.6	475.6
<u>Projected Revenue from Adjustments</u>												
2	FY 2022: -0.2%		(1.1)	(1.1)	(1.1)	(1.1)	(1.1)	(1.1)	(1.1)	(1.1)	(1.1)	(1.1)
3	FY 2023: 3.2%			15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4
4	FY 2024: 2.9%				14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3
5	FY 2025: 3.0%					14.9	14.9	14.9	14.9	14.9	14.9	14.9
6	FY 2026: 2.9%						14.9	14.9	14.9	14.9	14.9	14.9
7	FY 2027: 2.8%							14.8	14.8	14.8	14.8	14.8
8	FY 2028: 3.0%								16.6	16.6	16.6	16.6
9	FY 2029: 3.0%									17.1	17.1	17.1
10	FY 2030: 3.0%										17.3	17.3
11	FY 2031: 2.9%											17.4
12	<b>Total Operating Revenue</b>	<u>475.9</u>	<u>475.8</u>	<u>489.9</u>	<u>504.2</u>	<u>519.1</u>	<u>534.0</u>	<u>548.8</u>	<u>565.5</u>	<u>582.5</u>	<u>599.8</u>	<u>617.2</u>
13	Other Revenue	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
14	Non-Operating Revenue	<u>1.0</u>	<u>1.0</u>	<u>1.2</u>	<u>1.6</u>	<u>1.9</u>	<u>2.7</u>	<u>4.0</u>	<u>4.0</u>	<u>4.0</u>	<u>4.3</u>	<u>5.0</u>
15	<b>Total Revenue Available</b>	<u>477.4</u>	<u>477.2</u>	<u>491.5</u>	<u>506.3</u>	<u>521.5</u>	<u>537.1</u>	<u>553.2</u>	<u>569.8</u>	<u>586.9</u>	<u>604.5</u>	<u>622.6</u>
<b>Revenue Requirements</b>												
16	Transfer to GLWA Regional O&M Account	182.3	183.1	185.6	190.3	194.1	198.3	202.3	206.3	210.4	214.6	218.9
17	Transfer to GLWA Pension O&M Account	10.8	10.8	10.8	-	-	-	-	-	-	-	-
18	Total O&M Expense	<u>193.1</u>	<u>193.9</u>	<u>196.4</u>	<u>190.3</u>	<u>194.1</u>	<u>198.3</u>	<u>202.3</u>	<u>206.3</u>	<u>210.4</u>	<u>214.6</u>	<u>218.9</u>
19	Debt Service Allocation - Regional System	201.8	207.2	204.6	218.0	209.9	211.8	217.6	224.2	223.8	218.1	214.9
20	Non-Operating Portion of Pension Obligation	9.7	9.7	9.7	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
21	B & C Note Non-Operating Payments	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>	<u>3.7</u>	<u>3.6</u>	<u>3.3</u>	<u>2.9</u>	<u>2.9</u>	<u>2.8</u>	<u>2.7</u>
22	Transfer to Pension Obligation Payment Fund	11.6	11.6	11.6	6.5	8.2	8.2	7.8	7.4	7.4	7.3	7.2
23	Transfer to WRAP Fund	2.4	2.3	2.5	2.5	2.6	2.7	2.8	2.8	2.9	3.0	3.1
24	Lease Payment to DWSD Local System	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
25	Transfer to GLWA Regional I&E Account	40.9	34.6	48.9	61.4	79.2	88.7	95.4	101.5	114.8	133.9	150.9
26	<b>Total Revenue Requirements</b>	<u>477.4</u>	<u>477.2</u>	<u>491.5</u>	<u>506.3</u>	<u>521.5</u>	<u>537.1</u>	<u>553.2</u>	<u>569.8</u>	<u>586.9</u>	<u>604.5</u>	<u>622.7</u>
27	Indicated Balance (Deficiency)	-	-	-	-	-	-	-	-	-	-	-
28	Projected Debt Service Coverage Ratio (Regional)	1.41	1.37	1.44	1.45	1.56	1.60	1.61	1.62	1.68	1.79	1.88
29	Net Revenues (15) - (18)	284.2	283.3	295.1	315.9	327.4	338.8	351.0	363.5	376.5	389.9	403.7
30	Revenues Remaining after Debt Service (29)-(19)	82.4	76.1	90.5	97.9	117.5	127.0	133.4	139.3	152.6	171.7	188.8
31	Applied to MBO Reserve Funds (22,23)	(14.0)	(14.0)	(14.1)	(9.0)	(10.8)	(10.8)	(10.5)	(10.3)	(10.3)	(10.3)	(10.4)
32	Applied as Lease Payment to DWSD (24)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)
33	Available for I&E Fund (29) - (30,31,32)	40.9	34.6	48.9	61.4	79.2	88.7	95.4	101.5	114.8	133.9	150.9

(a) From Table 3. Based on application of FY 2021 charges for 2021 through 2031.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<u>Fund Balance Minimums</u>											
Operating Reserve	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
ER&R Fund	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
I&E Fund Target	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Total - Minimums	167.5	167.5	167.5	167.5	167.5	167.5	167.5	167.5	167.5	167.5	167.5
<u>Projections</u>											
Operating Reserve	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
ER&R Fund	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
I&E Fund	237.5	138.1	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Total - Projected	315.0	215.6	167.5	167.5	167.5	167.5	167.5	167.5	167.5	167.5	167.5
Projected > Minimum	147.5	48.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regional DS Covg	1.43	1.43	1.37	1.35	1.37	1.36	1.37	1.33	1.34	1.31	1.32

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

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<u>Fund Balance Minimums</u>											
Operating Reserve	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
ER&R Fund	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
I&E Fund Target	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Total - Minimums	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
<u>Projections</u>											
Operating Reserve	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
ER&R Fund	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
I&E Fund	114.7	94.7	90.0	90.0	90.0	90.0	90.0	89.2	103.3	156.7	223.8
Total - Projected	228.7	208.7	204.0	204.0	204.0	204.0	204.0	203.2	217.3	270.7	337.8
Projected > Minimum	24.7	4.7	0.0	0.0	0.0	0.0	0.0	(0.8)	13.3	66.7	133.8
Regional DS Covg	1.41	1.37	1.44	1.45	1.56	1.60	1.61	1.62	1.68	1.79	1.88

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

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

Line No.	Fiscal Year Ended June 30,										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Operating Fund</b>											
1	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
2	-	-	-	-	-	-	-	-	-	-	-
3	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
<b>Budget Stabilization Fund (a)</b>											
4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
5	-	-	-	-	-	-	-	-	-	-	-
6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>ER&amp;R Fund (a)</b>											
7	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
8	-	-	-	-	-	-	-	-	-	-	-
9	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
<b>I&amp;E Fund (b)</b>											
10	277.0	237.5	138.1	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
11	(17.9)	(17.0)	(14.1)	(8.8)	(8.6)	(8.5)	(7.9)	(7.5)	(7.9)	(7.4)	(7.6)
12	(50.1)	(110.5)	(57.3)	(19.6)	(22.7)	(23.8)	(27.8)	(25.9)	(29.3)	(26.8)	(31.3)
13	209.0	110.0	66.7	61.6	58.7	57.6	54.3	56.6	52.8	55.8	51.1
14	28.5	28.1	23.3	28.4	31.3	32.4	35.7	33.4	37.2	34.2	38.9
15	237.5	138.1	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
<b>Total Revenue Generated Funds (c)</b>											
16	356.5	317.0	217.6	169.5	169.5	169.5	169.5	169.5	169.5	169.5	169.5
17	(39.6)	(99.4)	(48.1)	-	-	-	-	-	-	-	-
18	317.0	217.6	169.5	169.5	169.5	169.5	169.5	169.5	169.5	169.5	169.5
19	<b>857</b>	<b>541</b>	<b>409</b>	<b>403</b>	<b>395</b>	<b>388</b>	<b>381</b>	<b>373</b>	<b>366</b>	<b>359</b>	<b>352</b>
<b>Other Funds</b>											
20	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
21	-	-	116.2	3.7	98.5	2.3	143.3	1.2	119.3	0.3	110.4
22	-	-	-	-	-	-	-	-	-	-	-
23	321.5	222.1	290.2	177.7	272.5	176.3	317.3	175.2	293.3	174.3	284.4
24	321.5	222.1	174.0	174.0	174.0	174.0	174.0	174.0	174.0	174.0	174.0

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

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

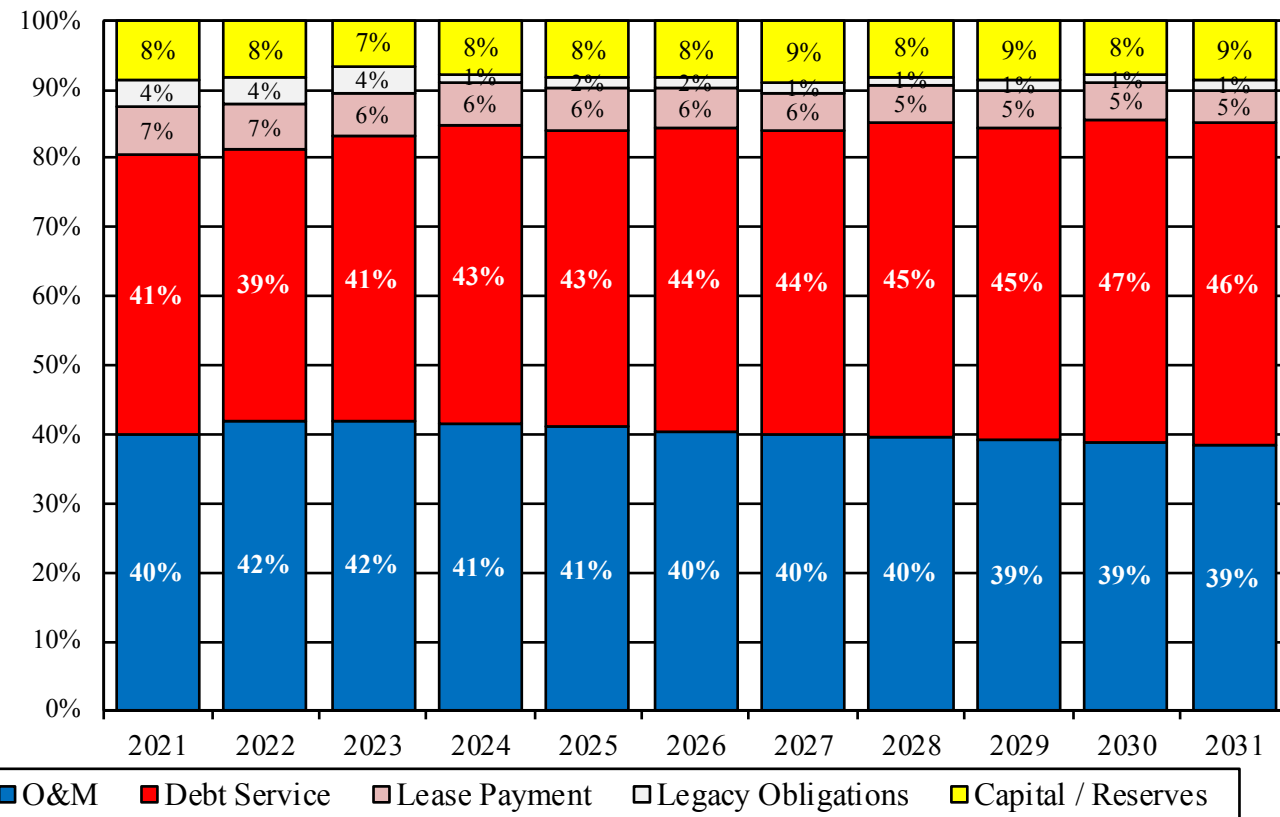
Line No.	Fiscal Year Ended June 30,										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Operating Fund</b>											
1	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
2	-	-	-	-	-	-	-	-	-	-	-
3	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
<b>Budget Stabilization Fund (a)</b>											
4	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	-	-	-	-	-	-	-	-	-	-	-
6	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
<b>ER&amp;R Fund (a)</b>											
7	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
8	-	-	-	-	-	-	-	-	-	-	-
9	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
<b>I&amp;E Fund (b)</b>											
10	126.0	114.7	94.7	90.0	90.0	90.0	90.0	90.0	89.2	103.3	156.7
11	(20.5)	(16.0)	(18.2)	(8.0)	(7.1)	(7.6)	(16.7)	(9.2)	(5.7)	(4.2)	(5.9)
12	(51.0)	(47.3)	(35.4)	(53.4)	(72.1)	(81.0)	(78.6)	(93.2)	(95.1)	(76.2)	(78.0)
13	54.5	51.4	41.1	28.6	10.8	1.3	(5.4)	(12.3)	(11.5)	22.8	72.9
14	40.9	34.6	48.9	61.4	79.2	88.7	95.4	101.5	114.8	133.9	150.9
15	19.3	8.7	-	-	-	-	-	-	-	-	-
16	114.7	94.7	90.0	90.0	90.0	90.0	90.0	89.2	103.3	156.7	223.8
<b>Total Revenue Generated Funds (c)</b>											
17	245.0	233.7	213.7	209.0	209.0	209.0	209.0	209.0	208.2	222.3	275.7
18	(30.6)	(28.7)	(4.7)	-	-	-	-	(0.8)	14.1	53.5	67.1
19	214.4	205.0	209.0	209.0	209.0	209.0	209.0	208.2	222.3	275.7	342.8
20	<b>419</b>	<b>399</b>	<b>401</b>	<b>391</b>	<b>384</b>	<b>376</b>	<b>368</b>	<b>359</b>	<b>377</b>	<b>460</b>	<b>563</b>
<b>Other Funds</b>											
21	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
22	-	-	70.4	3.3	54.0	3.7	14.0	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-
24	653.8	623.9	700.8	623.7	666.9	608.4	611.4	587.9	619.4	756.4	926.3
25	653.8	623.9	630.4	620.5	612.9	604.8	597.4	587.9	619.4	756.4	926.3

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

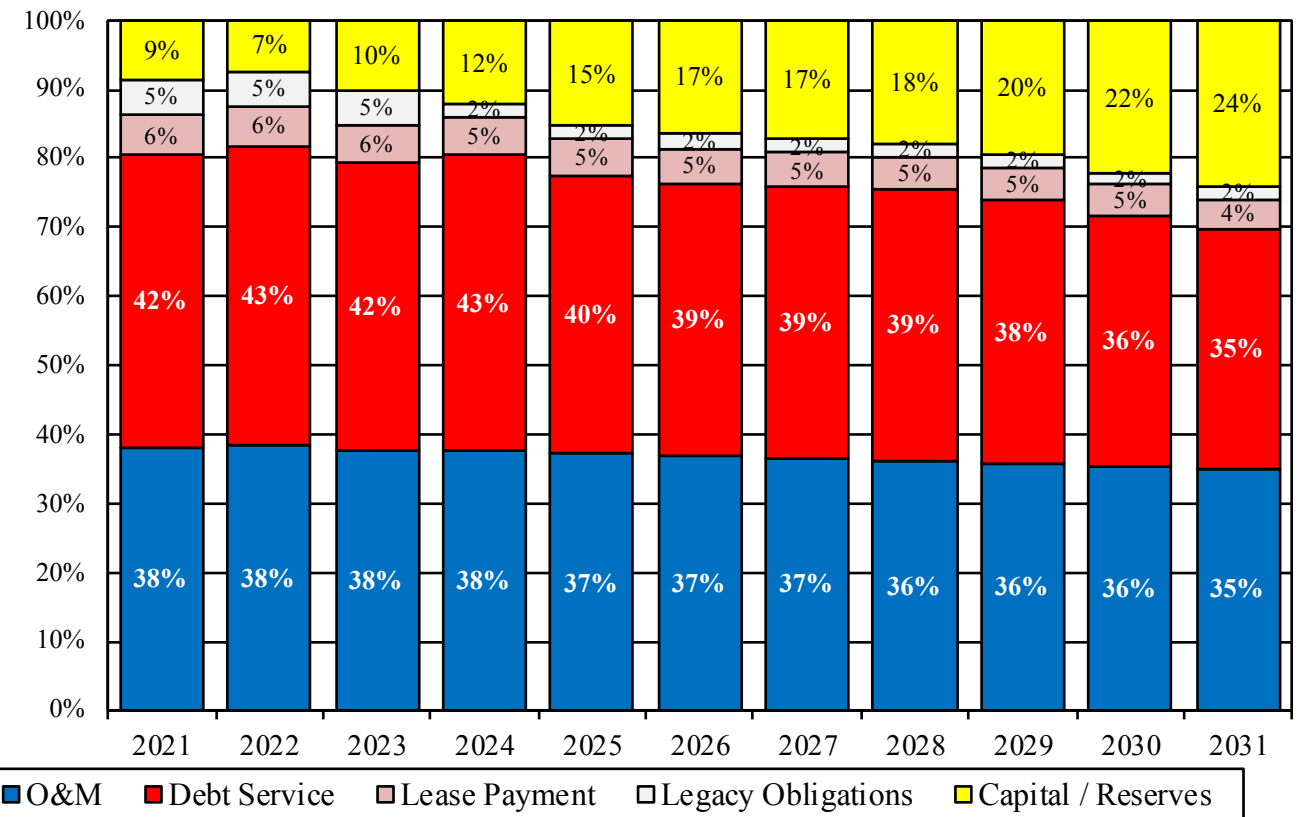
GLWA Water Supply System Financial Plan Summary (\$ millions)

GLWA Sewage Disposal System Financial Plan Summary (\$ millions)

### Relative Revenue Requirement Distribution



### Relative Revenue Requirement Distribution



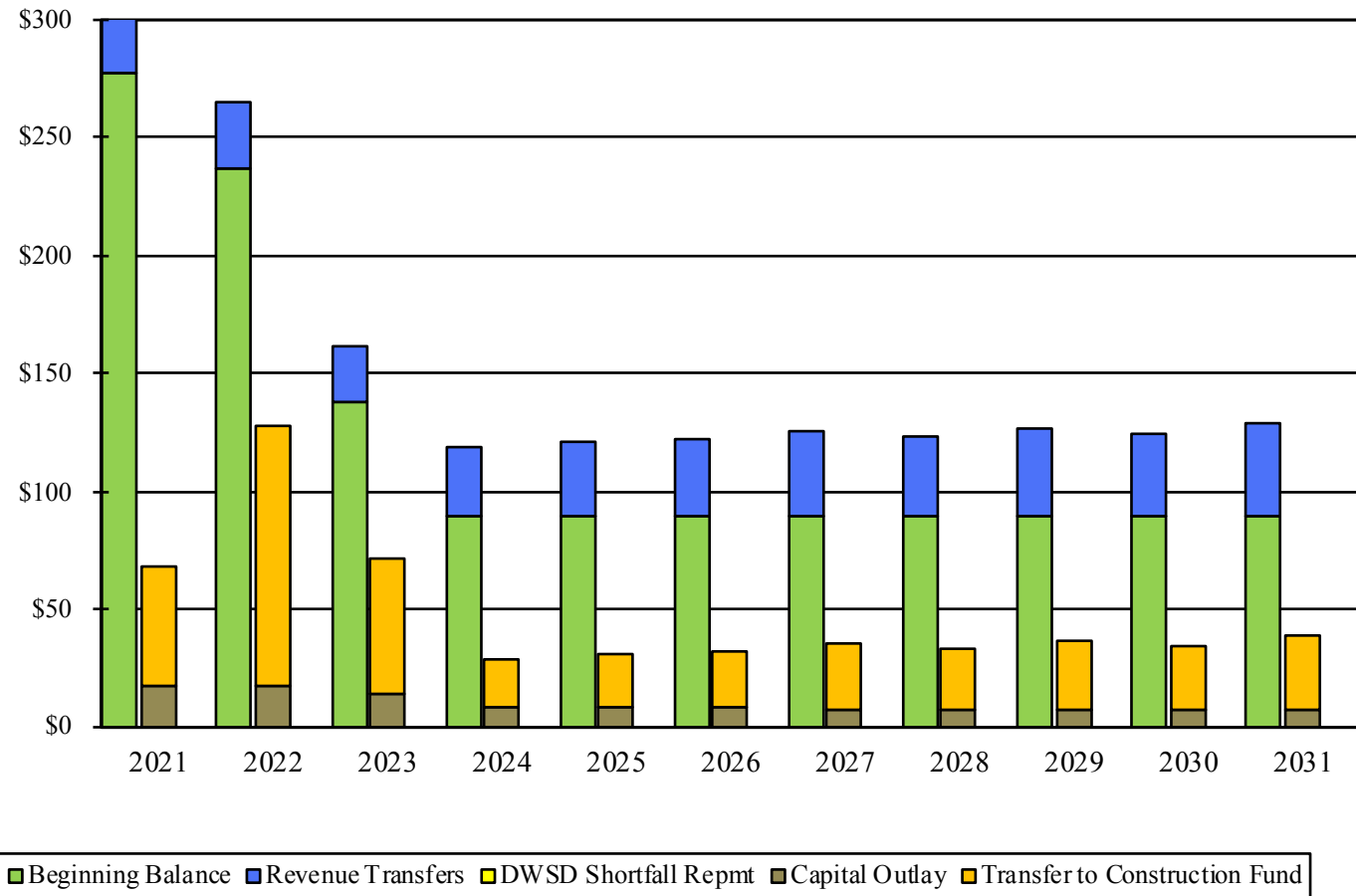
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
O&M	134.1	145.5	149.5	151.6	154.8	157.5	160.7	163.9	167.1	170.5	173.9
Debt Service	137.4	135.5	146.5	158.9	163.0	170.5	175.8	187.0	192.3	204.6	209.6
Lease Payment	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Legacy Obligations	14.0	14.0	14.1	5.2	6.1	6.1	6.0	5.9	5.9	6.0	6.0
Capital / Reserves	28.5	28.1	23.3	28.4	31.3	32.4	35.7	33.4	37.2	34.2	38.9
<b>Total</b>	<b>336.5</b>	<b>345.6</b>	<b>356.0</b>	<b>366.6</b>	<b>377.6</b>	<b>389.0</b>	<b>400.6</b>	<b>412.7</b>	<b>425.0</b>	<b>437.8</b>	<b>450.9</b>

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
O&M	182.3	183.1	185.6	190.3	194.1	198.3	202.3	206.3	210.4	214.6	218.9
Debt Service	201.8	207.2	204.6	218.0	209.9	211.8	217.6	224.2	223.8	218.1	214.9
Lease Payment	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Legacy Obligations	24.9	24.8	24.9	9.0	10.8	10.8	10.5	10.3	10.3	10.3	10.4
Capital / Reserves	40.9	34.6	48.9	61.4	79.2	88.7	95.4	101.5	114.8	133.9	150.9
<b>Total</b>	<b>477.4</b>	<b>477.2</b>	<b>491.5</b>	<b>506.3</b>	<b>521.5</b>	<b>537.1</b>	<b>553.2</b>	<b>569.8</b>	<b>586.9</b>	<b>604.5</b>	<b>622.7</b>

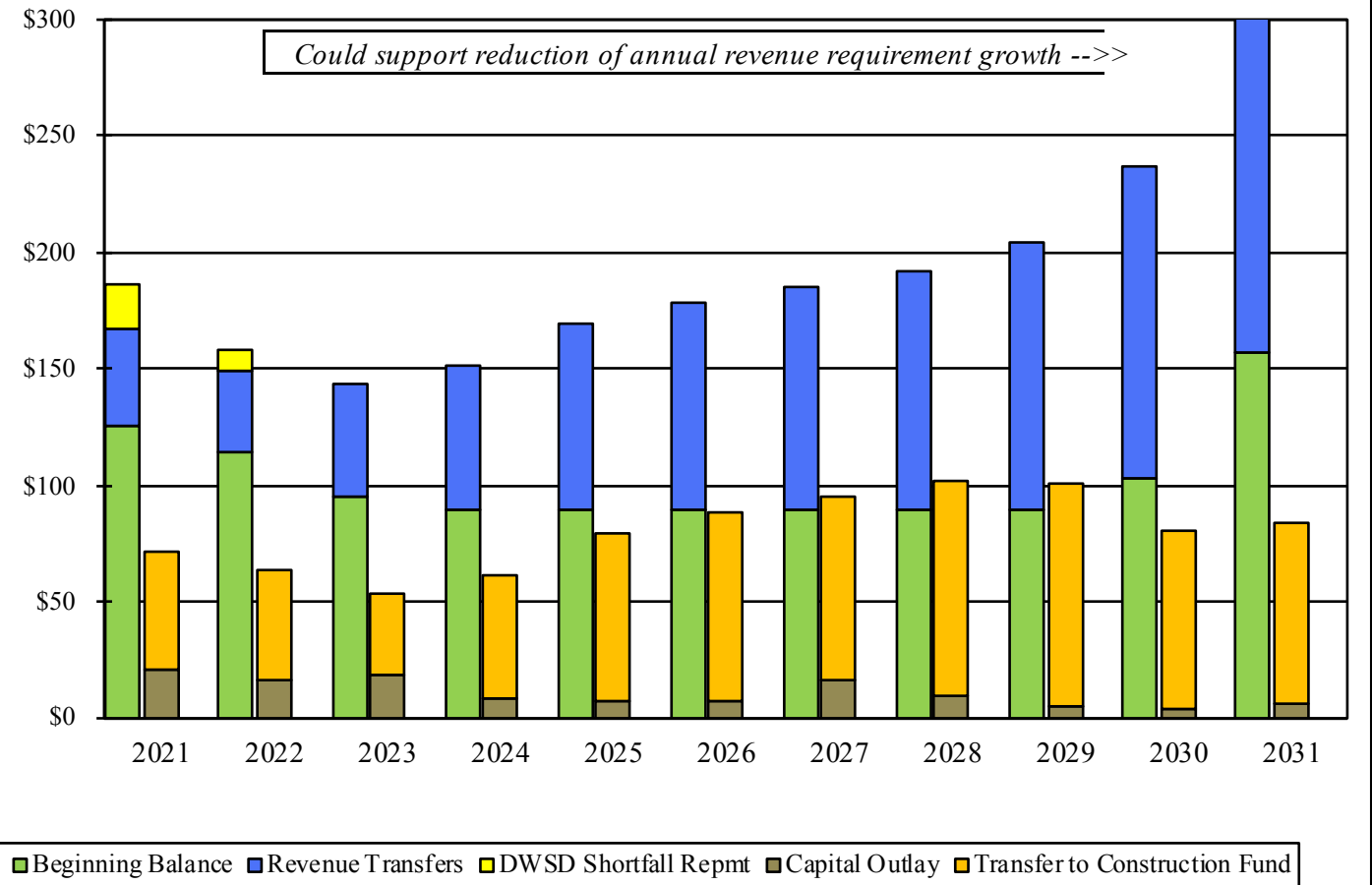




### I&E Flow of Funds Forecast



### I&E Flow of Funds Forecast



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Beginning Balance	277.0	237.5	138.1	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Capital Outlay	(17.9)	(17.0)	(14.1)	(8.8)	(8.6)	(8.5)	(7.9)	(7.5)	(7.9)	(7.4)	(7.6)
Transfer to Constr	(50.1)	(110.5)	(57.3)	(19.6)	(22.7)	(23.8)	(27.8)	(25.9)	(29.3)	(26.8)	(31.3)
Initial Balance	209.0	110.0	66.7	61.6	58.7	57.6	54.3	56.6	52.8	55.8	51.1
Revenue Transfers	28.5	28.1	23.3	28.4	31.3	32.4	35.7	33.4	37.2	34.2	38.9
DWSD Shortfall Repmt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Beginning Balance	126.0	114.7	94.7	90.0	90.0	90.0	90.0	90.0	89.2	103.3	156.7
Capital Outlay	(20.5)	(16.0)	(18.2)	(8.0)	(7.1)	(7.6)	(16.7)	(9.2)	(5.7)	(4.2)	(5.9)
Transfer to Constr	(51.0)	(47.3)	(35.4)	(53.4)	(72.1)	(81.0)	(78.6)	(93.2)	(95.1)	(76.2)	(78.0)
Initial Balance	54.5	51.4	41.1	28.6	10.8	1.3	(5.4)	(12.3)	(11.5)	22.8	72.9
Revenue Transfers	40.9	34.6	48.9	61.4	79.2	88.7	95.4	101.5	114.8	133.9	150.9
DWSD Shortfall Repmt	19.3	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Schedule 1A - Water System Revenue Requirements Budget**

	Current Year (a)		Biennial Budget						Forecast		
	FY 2021 Adopted	FY 2021 Estimated	FY 2022 Requested	FY 2022 \$ Change	FY 2022 % Change	FY 2023 Requested	FY 2023 \$ Change	FY 2023 % Change	FY 2024 Forecast	FY 2025 Forecast	FY 2026 Forecast
<b>Water System Revenue Requirements</b>											
<b>Revenues</b>											
1 Revenues from Charges	\$ 336,807,600	\$ 335,060,200	\$ 344,369,900	\$ 7,562,300	2.2%	\$354,735,100	\$ 10,365,200	3.0%	\$365,140,600	\$375,821,200	\$386,492,500
2 Other Operating Revenue	-	175,000	175,000	175,000	NA	175,000	-	0.0%	175,000	175,000	175,000
3 Non-Operating Revenue	4,834,400	1,276,400	1,046,000	(3,788,400)	-78.4%	1,048,500	2,500	0.2%	1,322,000	1,640,500	2,298,100
<b>4 Total Revenues</b>	<b>341,642,000</b>	<b>336,511,600</b>	<b>345,590,900</b>	<b>3,948,900</b>	<b>1.2%</b>	<b>355,958,600</b>	<b>10,367,700</b>	<b>3.0%</b>	<b>366,637,600</b>	<b>377,636,700</b>	<b>388,965,600</b>
<b>Revenue Requirements</b>											
5 Operations & Maintenance (O&M) Expense	\$137,127,300	\$134,127,300	\$145,497,300	\$8,370,000	6.1%	\$149,545,300	\$4,048,000	2.8%	\$151,643,700	\$154,753,000	\$157,501,200
6 O&M Legacy Pension Allocation	6,048,000	6,048,000	6,048,000	-	0.0%	6,048,000	-	0.0%	-	-	-
7 Debt Service Allocation	143,189,900	137,436,100	135,481,000	(7,708,900)	-5.4%	146,520,400	11,039,400	8.1%	158,907,300	163,033,800	170,520,200
8 Accelerated Legacy Pension Allocation	6,268,300	6,268,300	6,268,300	-	0.0%	6,268,300	-	0.0%	3,395,500	4,173,300	4,142,200
9 Water Residential Assistance Program	1,669,400	1,669,400	1,702,000	32,600	2.0%	1,779,800	77,800	4.6%	1,833,200	1,888,200	1,944,800
10 Lease Payment to Local System I&E Account (b)	22,500,000	22,500,000	22,500,000	-	0.0%	22,500,000	-	0.0%	22,500,000	22,500,000	22,500,000
11 Improvement & Extension Fund Allocation	23,962,500	28,462,600	28,093,900	4,131,400	17.2%	23,296,400	(4,797,500)	-17.1%	28,357,400	31,287,900	32,356,700
12 Operating Reserve Deposit	876,600	-	-	(876,600)	-100.0%	-	-	NA	-	-	-
13 Extraordinary Repair & Replacement Deposit	-	-	-	-	NA	-	-	NA	-	-	-
<b>14 Annual Revenue Requirements</b>	<b>\$ 341,642,000</b>	<b>\$ 336,511,700</b>	<b>\$ 345,590,500</b>	<b>\$ 3,948,500</b>	<b>1.2%</b>	<b>\$355,958,200</b>	<b>\$ 10,367,700</b>	<b>3.0%</b>	<b>\$366,637,100</b>	<b>\$377,636,200</b>	<b>\$388,965,100</b>
15 <i>Change in Annual Revenue Requirement</i>				3,948,500	1.2%		10,367,700	3.0%	3.0%	3.0%	3.0%
16 <i>Change Attributable to Non-Charge Revenue (FY 2022 reduction in investment earnings see lines 2&amp;3)</i>				3,613,400	1.1%		(2,500)	0.0%	-0.1%	-0.1%	-0.2%
17 <i>Change Attributable to Sales Revenue (FY 2022 attributable to increased projected Water Sales)</i>				(809,700)	-0.2%		-	0.0%	0.0%	0.0%	0.0%
18 <b>Charge Adjustment (Based on System Charge Adjustment of 2.0%)</b>				6,752,200	2.0%		10,365,200	3.0%	2.9%	2.9%	2.8%

(a) The originally adopted FY 2021 Budget did not reflect anticipated debt service savings projected by the bond refinancing, nor the increase in the deposit to the I&E Fund. However that expectation was understood as part of the budget approval process, and was accomplished via the First Quarter FY 2021 Budget Amendment once the May 2020 transaction closed.

**Schedule 1B - Sewer System Revenue Requirements Budget**

Sewer System Revenue Requirements	Current Year (a)		Biennial Budget						Forecast		
	FY 2021 Adopted	FY 2021 Estimated	FY 2022 Requested	FY 2022 \$ Change	FY 2022 % Change	FY 2023 Requested	FY 2023 \$ Change	FY 2023 % Change	FY 2024 Forecast	FY 2025 Forecast	FY 2026 Forecast
<b>Revenues</b>											
1 Revenues from Charges	\$ 481,162,100	\$ 475,904,100	\$ 475,802,800	\$ (5,359,300)	-1.1%	\$ 489,928,100	\$ 14,125,300	3.0%	\$ 504,239,700	\$ 519,116,500	\$ 534,044,000
2 Other Operating Revenue	-	400,000	400,000	400,000	NA	400,000	-	0.0%	400,000	400,000	400,000
3 Non-Operating Revenue	5,589,200	1,045,900	1,010,800	(4,578,400)	-81.9%	1,201,900	191,100	18.9%	1,636,200	1,947,800	2,664,200
<b>4 Total Revenues</b>	<b>486,751,300</b>	<b>477,350,000</b>	<b>477,213,600</b>	<b>(9,537,700)</b>	<b>-2.0%</b>	<b>491,530,000</b>	<b>14,316,400</b>	<b>3.0%</b>	<b>506,275,900</b>	<b>521,464,300</b>	<b>537,108,200</b>
<b>Revenue Requirements</b>											
5 Operations & Maintenance (O&M) Expense	\$ 184,946,100	\$ 182,296,000	\$ 183,096,700	\$ (1,849,400)	-1.0%	\$ 185,619,000	\$ 2,522,300	1.4%	\$ 190,339,700	\$ 194,068,500	\$ 198,295,100
6 O&M Legacy Pension Allocation	10,824,000	10,824,000	10,824,000	-	0.0%	10,824,000	-	0.0%	-	-	-
7 Debt Service Allocation	209,739,900	201,780,500	207,209,500	(2,530,400)	-1.2%	204,566,500	(2,643,000)	-1.3%	218,008,000	209,894,000	211,809,200
8 Accelerated Legacy Pension Allocation	11,620,700	11,620,700	11,620,700	-	0.0%	11,620,700	-	0.0%	6,479,300	8,228,800	8,158,800
9 Water Residential Assistance Program	2,415,100	2,415,100	2,345,600	(69,500)	-2.9%	2,457,600	112,000	4.8%	2,531,400	2,607,300	2,685,500
10 Lease Payment to Local System I&E Account (b)	27,500,000	27,500,000	27,500,000	-	0.0%	27,500,000	-	0.0%	27,500,000	27,500,000	27,500,000
11 Improvement & Extension Fund Allocation	39,705,500	40,913,900	34,616,900	(5,088,600)	-12.8%	48,942,000	14,325,100	41.4%	61,417,300	79,165,400	88,659,300
12 Operating Reserve Deposit	-	-	-	-	NA	-	-	NA	-	-	-
13 Extraordinary Repair & Replacement Deposit	-	-	-	-	NA	-	-	NA	-	-	-
<b>15 Annual Budgeted Revenue Requirements</b>	<b>\$ 486,751,300</b>	<b>\$ 477,350,200</b>	<b>\$ 477,213,400</b>	<b>\$ (9,537,900)</b>	<b>-2.0%</b>	<b>\$ 491,529,800</b>	<b>\$ 14,316,400</b>	<b>3.0%</b>	<b>\$ 506,275,700</b>	<b>\$ 521,464,000</b>	<b>\$ 537,107,900</b>
16 Change in Annual Revenue Requirement				(9,537,900)	-2.0%		14,316,400	3.0%	3.0%	3.0%	3.0%
17 Change Attributable to Non-Charge Revenue (FY 2022 reduction in investment earnings see lines 2&3)				4,178,400	0.9%		(191,100)	0.0%	-0.1%	-0.1%	-0.1%
18 Change Attributable to Sales Revenue (FY 2022 attributable to elimination of one time OMID Charge)				4,226,100	0.9%		-	0.0%	0.0%	0.0%	0.0%
19 Charge Adjustment (Based on no change in overall charges to "SHAREs" Member Partners)				(1,133,400)	-0.2%		14,125,300	3.0%	2.9%	2.9%	2.9%

(a) The originally adopted FY 2021 Budget did not reflect anticipated debt service savings projected by the bond refinancing, nor the increase in the deposit to the I&E Fund. However that expectation was understood as part of the budget approval process, and was accomplished via the First Quarter FY 2021 Budget Amendment once the June 2020 transaction closed.



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## MEMORANDUM

FY 2022 SHARE Calculations

November 16, 2020

To: Sue McCormick

From: Bart Foster

This memorandum is intended to introduce the specific calculations of the proposed Sewer SHARES for the upcoming proposed FY 2022 Wholesale Sewer Charges. The proposed SHARES have been prepared by the “Think Tank” that collaborated as part of the Outreach process. The Think Tank’s recommended methodology was set forth in a collaboratively authored memorandum dated October 20, 2020, which contained calculation results of implementing the methodology. The intent of this memorandum is to provide a more detailed understanding of the specific calculations.

The Think Tank’s memorandum was carefully prepared to set forth the process followed and the specific methodology recommendations, and we’ll note attempt to further elaborate on that discussion<sup>1</sup>. Rather, we aim to set forth the detailed calculations with the assistance of the attached tables, which we briefly introduce herein.

1. Presents historical results of the annual flow balances for the Master Metered Member Partners for FYs 2013 through 2019, which represents the seven-year data period the Think Tank recommends for purposes of the FY 2022 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 facility<sup>2</sup>. Table 1 presents total contributed volume as well as Sanitary and Non-Sanitary contributions.
2. Presents similar historical data for the Member Partners in the D+ Customer Class, 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+ communities, nor was any analysis available

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<sup>1</sup> The Think Tank memorandum addresses key assumptions regarding “Regional” and “Local” contributions of non-sanitary flow volumes within the D+ area. Regional volumes are effectively ignored for SHARE calculations.

<sup>2</sup> Other minor modifications were made to historical data for Dearborn and Rouge Valley.

to identify which D+ communities should receive reductions related to the Regional flow assumptions. A few notes:

- Grosse Pointe is being considered a member of the D+ Customer Class for purposes of the FY 2022 SHARES. The flow balance data contains only one year (FY 2019) of metered data for Grosse Pointe and it was deemed appropriate to keep that Member Partner in the class for which the most data existed.
  - Highland Park's sanitary flow estimate for purposes of SHARE calculations was based solely on the three most recent years (instead of seven) 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
3. Provides a summary of total contributed volume by flow type, deducts volumes contributed from Master Metered Member Partners, and displays the balance as being assignable to either D+ or Regional.
  4. Separates the "non-master metered" flow volumes into D+ (Local) and Regional components for purposes of SHARE calculations. As noted in the Think Tank memorandum, the proposed 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+ Customer Class. The table also assigns Dearborn's portion of the D+ flow (from the unmetered northeast district) to the majority of Dearborn (which is metered) in order to facilitate SHARE calculations.
  5. Serves as a summary of units of service for Master Metered Member Partners and the D+ Customer Class at large, in a format that aligns with the Core Methodology established by the Think Tank recommendations. Flow volumes are summarized from Tables 1 and 4 and converted to thousands of cubic feet (Mcf). 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.
  6. Illustrates application of the Core Methodology regarding cost pools and units of service "allocators". The FY 2021 Cost of Service Study results are used to populate the Core Methodology assumptions, and to assign the total revenue requirement to cost pools and units of service allocators. For purposes of SHARE calculations the allocation factors are simplified by rounding the nearest 0.5% and Line 9 presents the total revenue requirement to assign via each of the three allocators.
  7. Allocates revenue requirement responsibility to individual Member Partners and computes the "All in" SHARE for FY 2022. Applies the units of service *Shares* from the bottom of Table 5 to the revenue requirements from Table 6.

8. Compares the existing and proposed SHARES and the allocation of FY 2021 revenue requirements under both sets of SHARES in order to illustrate potential impact of the proposed SHARES. The bottom portion of this table is what populated the Impact Summary contained in the Think Tank memorandum. The SHARES shown in Column 2 reflect the proposed SHARES to be implemented with the FY 2022 Wholesale Sewer Charges and remain in place for two additional years.

We trust that this information provides additional detail that may be helpful in Member Partner review in advance of the Charges Rollout Meeting scheduled for this Thursday, November 19 and we encourage distribution of this material in advance. We are prepared to incorporate this material into the formal presentation at that meeting.

A few closing comments on this topic:

- We'd like to accentuate the message following the Impact Summary in the Think Tank memorandum. The most important metric impacting the (relatively minor) shifts in proposed SHARES are relative changes in flow volumes for individual Member Partners. The new proposed SHARES add flow volume data for three years (FYs 2017 through 2019) to the units of service. Those Member Partners that experienced relatively higher flow contributions in those years (compared to the average of all Member Partners) would naturally experience a SHARE increase under ANY methodology that relies on flow volume. We are prepared to illustrate this notion at Thursday's meeting.
- As noted in the Think Tank memorandum, the originally proposed SHARES treated the D+ Member Partners as a class at large, and did not individually assign SHARES to those communities. We have provided recommendations regarding individual D+ SHARES under separate cover, and we are prepared to present that information on Thursday as well.

We are prepared to discuss this matter at your convenience.

Table 1  
Flow Volume Data from Annual Flow Balances: FY 2013 - 2019 (mgd)  
**Master Metered Member Partners**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	<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>Average</u>	
<b><u>Total Contributed Volume</u></b>									
1	OMID	60.519	60.829	60.781	60.899	63.053	64.909	63.483	<b>62.068</b>
2	Rouge Valley	53.198	61.323	57.774	54.795	62.032	56.939	65.223	<b>58.755</b>
3	Oakland GWK	49.439	52.317	54.128	50.963	58.605	54.885	61.558	<b>54.556</b>
4	Evergreen Farmington	33.619	35.325	37.054	34.791	37.673	37.230	39.474	<b>36.452</b>
5	SE Macomb San Dist	26.231	28.909	27.672	28.877	30.144	29.642	32.750	<b>29.175</b>
6	Dearborn	19.532	22.349	20.883	20.456	26.248	23.789	24.396	<b>22.522</b>
7	Grosse Pointe Farms	3.012	3.048	2.891	2.983	3.296	3.320	3.452	<b>3.143</b>
8	Grosse Pointe Park	1.848	2.010	2.185	2.237	2.395	2.625	2.822	<b>2.303</b>
9	Melvindale	1.474	1.717	1.553	1.521	1.622	1.682	1.869	<b>1.634</b>
10	Farmington	1.122	1.233	1.343	1.195	1.304	1.407	1.548	<b>1.308</b>
11	Center Line	1.042	1.057	0.976	0.983	1.141	1.047	1.128	<b>1.053</b>
12	Allen Park	0.727	0.895	0.939	0.932	0.888	1.000	0.895	<b>0.897</b>
13	Total	251.764	271.013	268.179	260.631	288.402	278.477	298.598	<b>273.866</b>
<b><u>Sanitary Volume</u></b>									
1	OMID	44.885	45.985	44.591	43.363	42.658	42.959	42.627	<b>43.867</b>
2	Rouge Valley	29.265	31.883	29.317	28.341	28.199	29.043	28.535	<b>29.226</b>
3	Oakland GWK	20.833	21.523	21.173	19.373	20.093	20.525	20.317	<b>20.548</b>
4	Evergreen Farmington	20.530	21.224	20.891	19.127	19.851	20.296	20.103	<b>20.289</b>
5	SE Macomb San Dist	11.348	12.228	12.183	11.096	10.519	11.149	10.956	<b>11.354</b>
6	Dearborn	7.904	8.001	8.312	8.124	7.795	7.937	7.362	<b>7.919</b>
7	Grosse Pointe Farms	1.163	1.366	0.950	0.871	0.783	0.839	0.893	<b>0.981</b>
8	Grosse Pointe Park	0.805	0.911	0.906	0.785	0.863	0.868	0.651	<b>0.827</b>
9	Melvindale	0.861	0.840	0.940	0.790	0.857	0.828	0.779	<b>0.842</b>
10	Farmington	0.636	0.646	0.577	0.616	0.587	0.587	0.572	<b>0.603</b>
11	Center Line	0.582	0.627	0.576	0.557	0.539	0.556	0.553	<b>0.570</b>
12	Allen Park	0.459	0.518	0.497	0.443	0.388	0.406	0.436	<b>0.449</b>
13	Total	139.273	145.753	140.912	133.488	133.132	135.992	133.784	<b>137.476</b>
<b><u>Non-Sanitary Volume</u></b>									
1	OMID	15.634	14.845	16.190	17.536	20.395	21.951	20.856	<b>18.201</b>
2	Rouge Valley	23.933	29.440	28.457	26.454	33.833	27.896	36.688	<b>29.529</b>
3	Oakland GWK	28.606	30.794	32.955	31.590	38.512	34.360	41.241	<b>34.008</b>
4	Evergreen Farmington	13.088	14.102	16.163	15.664	17.822	16.934	19.372	<b>16.164</b>
5	SE Macomb San Dist	14.883	16.681	15.489	17.780	19.625	18.493	21.794	<b>17.821</b>
6	Dearborn	11.628	14.348	12.571	12.332	18.452	15.852	17.034	<b>14.602</b>
7	Grosse Pointe Farms	1.849	1.682	1.941	2.112	2.513	2.481	2.559	<b>2.163</b>
8	Grosse Pointe Park	1.043	1.099	1.279	1.452	1.531	1.758	2.171	<b>1.476</b>
9	Melvindale	0.613	0.877	0.614	0.731	0.765	0.854	1.090	<b>0.792</b>
10	Farmington	0.486	0.587	0.766	0.579	0.717	0.820	0.976	<b>0.705</b>
11	Center Line	0.460	0.430	0.400	0.425	0.603	0.492	0.575	<b>0.483</b>
12	Allen Park	0.268	0.377	0.442	0.490	0.501	0.594	0.459	<b>0.447</b>
13	Total	112.491	125.260	127.267	127.144	155.270	142.484	164.814	<b>136.390</b>



Table 2  
Flow Volume Data from Annual Flow Balances: FY 2013 - 2019 (mgd)  
***Sanitary Volume from D+ Member Partners***

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<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>Average</u>
<b><u>Sanitary Volume</u></b>								
1 Dearborn N.E.	0.474	0.469	0.471	0.454	0.361	0.362	0.349	<b>0.420</b>
2 Grosse Pointe *	0.256	0.459	0.411	0.564	0.421	0.420	0.430	<b>0.423</b>
3 Hamtramck	1.050	1.170	1.113	1.056	1.037	1.120	1.135	<b>1.097</b>
4 Harper Woods	0.104	0.116	0.111	0.104	0.105	0.105	0.084	<b>0.104</b>
5 Highland Park (a)	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	0.622	0.571	0.591	<b>0.594</b>
6 Redford Township	0.031	0.031	0.091	0.091	0.091	0.091	0.091	<b>0.074</b>
7 Wayne County #3	0.006	0.006	0.006	0.006	0.006	0.006	0.006	<b>0.006</b>
8 Detroit	56.373	55.148	52.554	49.666	48.543	55.806	54.829	<b>53.274</b>
9 Total	<u>58.294</u>	<u>57.398</u>	<u>54.757</u>	<u>51.941</u>	<u>51.185</u>	<u>58.482</u>	<u>57.515</u>	<b>55.993</b>
10 Water Trtmt Plant Backwash (b)	8.014	8.846	8.155	7.473	7.580	8.089	8.708	<b>8.124</b>
11 Total	<u>66.308</u>	<u>66.245</u>	<u>62.912</u>	<u>59.414</u>	<u>58.765</u>	<u>66.571</u>	<u>66.223</u>	<b>64.116</b>
12 Adjustment (c)	<u>0.783</u>	<u>0.701</u>	<u>0.625</u>	<u>0.633</u>	<u>0.000</u>	<u>0.000</u>	<u>0.000</u>	<b>0.052</b>
13 Total	<u>67.091</u>	<u>66.945</u>	<u>63.538</u>	<u>60.047</u>	<u>58.765</u>	<u>66.571</u>	<u>66.223</u>	<b>64.169</b>

\* Grosse Pointe is considered part of the D+ class for FY 20220 SHARES. Only one year of metered data exists.

(a) Highland Park's sanitary contributions based on a three-year average.

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

(c) Necessary to reflect prior Highland Park sanitary estimates and other minor adjustments from FY 2018 SHARE analysis.

Table 3  
Flow Volume Data from Annual Flow Balances: FY 2013 - 2019 (mgd)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		<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>Average</u>
<b><u>Total Contributed Volume</u></b>									
1	Total Reported @ WRRF	603.353	639.334	611.987	580.371	658.043	620.835	670.076	<b>626.286</b>
2	Total Reported Overflow	21.149	36.292	37.377	17.617	27.668	35.777	26.577	<b>28.922</b>
3	Total Contributed Volume	624.502	675.626	649.364	597.988	685.711	656.612	696.654	<b>655.208</b>
4	Sanitary Volume	206.364	212.699	204.449	193.535	191.897	202.564	200.007	<b>201.645</b>
5	Non-Sanitary Volume (3) - (4)	418.138	462.927	444.915	404.453	493.814	454.049	496.647	<b>453.563</b>
<b><u>Master Metered Member Partners</u></b>									
6	Sanitary Volume (Table 1)	139.273	145.753	140.912	133.488	133.132	135.992	133.784	<b>137.476</b>
7	Non-Sanitary Volume (Table 1)	112.491	125.260	127.267	127.144	155.270	142.484	164.814	<b>136.390</b>
8	Total Contributed Volume	251.764	271.013	268.179	260.631	288.402	278.477	298.598	<b>273.866</b>
<b><u>Balance from D+ and Regional</u></b>									
9	Sanitary Volume (4) - (6)	67.091	66.945	63.538	60.047	58.765	66.571	66.223	<b>64.169</b>
10	Non-Sanitary Volume (5) - (7)	305.647	337.667	317.648	277.309	338.545	311.564	331.833	<b>317.173</b>
11	Total Contributed Volume	372.738	404.613	381.186	337.356	397.309	378.136	398.056	<b>381.342</b>

Table 4  
 Determination and Allocation of D+ Flow Volumes (mgd)  
**Total System**

	(1)	(2)	(3)	(4)	(5)	(6)
	<u>7-Year</u> <u>Average</u>	<u>Regional Flow</u> <u>Assumption</u>	<u>Amount</u>	<u>Flow for</u> <u>D+ Class</u> <i>(1) - (3)</i>	<u>Dearborn</u> <u>Volume</u> <i>(b)</i>	<u>Remaining</u> <u>D+ Class</u> <i>(1) - (3)</i>
<b><u>Total D+ and Regional Flow</u></b>						
1 Sanitary Volume	64.169	<i>(a)</i>	8.176	55.993	0.420	55.573
2 Non-Sanitary Volume	317.173	<b>50%</b>	158.587	158.587	1.145	157.442
3 Total Contributed Volume	381.342		166.762	214.580	1.565	213.014

(a) Water Treatment Plant Backwash.

(b) Flows for the portion of Dearborn in D+ are assigned to the main Dearborn master metered account.

Table 5  
Consolidated Units of Service Summary  
***Based on 7-Year Average Flow Contributions from FY 2013 through FY 2019***

	(1)	(2)	(3)	(4)	(5)	
	Contributed Volume - mgd		Contributed Volume - Mcf			
	Total	Sanitary	Total	Sanitary	CSO	
					(a)	
<b><u>Member Partner Units</u></b>						
1	OMID	62.068	43.867	3,028,500	2,140,400	2.651%
2	Rouge Valley	58.755	29.226	2,866,900	1,426,000	2.956%
3	Oakland GWK	54.556	20.548	2,662,000	1,002,600	2.256%
4	Evergreen Farmington	36.452	20.289	1,778,600	990,000	1.485%
5	SE Macomb San Dist	29.175	11.354	1,423,500	554,000	1.174%
6	Dearborn * (w/ D+ allo)	24.087	8.339	1,175,300	406,900	1.631%
7	Grosse Pointe Farms	3.143	0.981	153,400	47,800	0.504%
8	Grosse Pointe Park	2.303	0.827	112,400	40,400	0.062%
9	Melvindale	1.634	0.842	79,700	41,100	0.074%
10	Farmington	1.308	0.603	63,800	29,400	0.052%
11	Center Line	1.053	0.570	51,400	27,800	0.056%
12	Allen Park	0.897	0.449	43,700	21,900	0.031%
13	M Customer Subtotal	275.431	137.896	13,439,200	6,728,300	12.931%
14	D+ Customers * (w/o Dbn allo)	213.014	55.573	10,393,700	2,711,500	87.069%
15	Total	488.446	193.469	23,832,900	9,439,800	100.000%
<b><u>Member Partner Shares</u></b>						
1	OMID			12.707%	22.674%	2.651%
2	Rouge Valley			12.029%	15.106%	2.956%
3	Oakland GWK			11.169%	10.621%	2.256%
4	Evergreen Farmington			7.463%	10.488%	1.485%
5	SE Macomb San Dist			5.973%	5.869%	1.174%
6	Dearborn * (w/ D+ allo)			4.931%	4.310%	1.631%
7	Grosse Pointe Farms			0.644%	0.506%	0.504%
8	Grosse Pointe Park			0.472%	0.428%	0.062%
9	Melvindale			0.334%	0.435%	0.074%
10	Farmington			0.268%	0.311%	0.052%
11	Center Line			0.216%	0.294%	0.056%
12	Allen Park			0.183%	0.232%	0.031%
13	M Customer Subtotal			56.389%	71.276%	12.931%
14	D+ Customers * (w/o Dbn allo)			43.611%	28.724%	87.069%
15	Total			100.000%	100.000%	100.000%

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

Table 6  
Revenue Requirement Allocation to Cost Pools  
*Application of Core Methodology Assumptions*

<u>Cost Pool</u>	(1)	(2)	(3)	(4)
	Allocators			
	Total Contr <u>Volume</u>	Sanitary <u>Volume</u>	CSO	
1 WRRF Cost Pool	<b>50%</b>	<b>50%</b>		
2 Conveyance Cost Pool	<b>100%</b>			
3 CSO Cost Pool			<b>100%</b>	
	FY 2021 Revenue <u>Requirement</u>	Allocator Calculation		
		Total Contr <u>Volume</u>	Sanitary <u>Volume</u>	<u>CSO</u>
4 WRRF Cost Pool	302,705,900	151,353,000	151,353,000	0
5 Conveyance Cost Pool	95,992,900	95,992,900	0	0
6 CSO Cost Pool	61,507,400	0	0	61,507,400
7 Total	460,206,200	247,345,900	151,353,000	61,507,400
8 Simplified Allocation Factors (a)		<b>54.0%</b>	<b>32.5%</b>	<b>13.5%</b>
9 Revenue Requirement Allocation		<b>248,511,300</b>	<b>149,567,100</b>	<b>62,127,800</b>

(a) Rounded to nearest 0.5%

Table 7  
 Allocated Revenue Requirements / Determination of SHARES  
**Three Year SHARE Period Beginning with FY 2022**

	(1)	(2)	(3)	(4)	(5)
	<u>Contributed Avg Volume</u>	<u>Sanitary Volume</u>	<u>CSO</u>	<u>Total</u>	<b>FY 2022 SHARE</b>
FY 2021 Cost Pool Allocation (a)	248,511,300	149,567,100	62,127,800	460,206,200	~ (4)
Relative Cost Pool %	54.0%	32.5%	13.5%	100.0%	
<b><u>Allocated Revenue Requirements (b)</u></b>					
1 OMID	31,578,900	33,913,200	1,647,100	67,139,200	<b>14.589%</b>
2 Rouge Valley	29,893,800	22,594,000	1,836,300	54,324,100	<b>11.804%</b>
3 Oakland GWK	27,757,300	15,885,500	1,401,600	45,044,400	<b>9.788%</b>
4 Evergreen Farmington	18,545,900	15,685,900	922,600	35,154,400	<b>7.639%</b>
5 SE Macomb San Dist	14,843,200	8,777,700	729,400	24,350,300	<b>5.291%</b>
6 Dearborn * (w/ D+ allo)	12,255,100	6,447,000	1,013,300	19,715,400	<b>4.284%</b>
7 Grosse Pointe Farms	1,599,500	757,400	313,100	2,670,000	<b>0.580%</b>
8 Grosse Pointe Park	1,172,000	640,100	38,400	1,850,500	<b>0.402%</b>
9 Melvindale	831,100	651,200	45,900	1,528,200	<b>0.332%</b>
10 Farmington	665,300	465,800	32,600	1,163,700	<b>0.253%</b>
11 Center Line	536,000	440,500	34,500	1,011,000	<b>0.220%</b>
12 Allen Park	455,700	347,000	19,200	821,900	<b>0.179%</b>
13 M Customer Subtotal	140,133,800	106,605,300	8,034,000	254,773,100	<b>55.361%</b>
14 D+ Customers * (w/o Dbn allo)	108,377,500	42,961,800	54,093,800	205,433,100	<b>44.639%</b>
15 Total	248,511,300	149,567,100	62,127,800	460,206,200	<b>100.000%</b>

(a) From Table 6.

(b) Application of specific Cost Pool Shares from Table 5.

Table 8  
Existing and Proposed SHARE Comparison  
*SHAREs reflect "All in" SHAREs*

	(1)	(2)	(3)	(4)	
	Existing CTA <u>SHARE (a)</u> <i>(a)</i>	Proposed <u>SHARE</u> <i>from Table 7</i>	<u>Variance</u>	<u>% Variance</u>	
<b><u>Member Partner Units</u></b>					
1	OMID	67,465,400	67,139,200	(326,200)	-0.5%
2	Rouge Valley	53,762,400	54,324,100	561,700	1.0%
3	Oakland GWK	44,800,700	45,044,400	243,700	0.5%
4	Evergreen Farmington	34,611,300	35,154,400	543,100	1.6%
5	SE Macomb San Dist	24,599,100	24,350,300	(248,800)	-1.0%
6	Dearborn * (w/ D+ allo)	19,300,500	19,715,400	414,900	2.1%
7	Grosse Pointe Farms	2,727,100	2,670,000	(57,100)	-2.1%
8	Grosse Pointe Park	1,793,600	1,850,500	56,900	3.2%
9	Melvindale	1,522,600	1,528,200	5,600	0.4%
10	Farmington	1,141,800	1,163,700	21,900	1.9%
11	Center Line	1,027,100	1,011,000	(16,100)	-1.6%
12	Allen Park	848,500	821,900	(26,600)	-3.1%
13	M Customer Subtotal	253,600,100	254,773,100	1,173,000	0.5%
14	D+ Customers * (w/o Dbn allo)	206,606,100	205,433,100	(1,173,000)	-0.6%
15	Total	460,206,200	460,206,200	0	0.0%
<b><u>Member Partner Shares</u></b>					
1	OMID	14.660%	14.589%	-0.071%	-0.5%
2	Rouge Valley	11.682%	11.804%	0.122%	1.0%
3	Oakland GWK	9.735%	9.788%	0.053%	0.5%
4	Evergreen Farmington	7.521%	7.639%	0.118%	1.6%
5	SE Macomb San Dist	5.345%	5.291%	-0.054%	-1.0%
6	Dearborn * (w/ D+ allo)	4.194%	4.284%	0.090%	2.1%
7	Grosse Pointe Farms	0.593%	0.580%	-0.013%	-2.2%
8	Grosse Pointe Park	0.390%	0.402%	0.012%	3.1%
9	Melvindale	0.331%	0.332%	0.001%	0.3%
10	Farmington	0.248%	0.253%	0.005%	2.0%
11	Center Line	0.223%	0.220%	-0.003%	-1.3%
12	Allen Park	0.184%	0.179%	-0.005%	-2.7%
13	M Customer Subtotal	55.106%	55.361%	0.255%	0.5%
14	D+ Customers * (w/o Dbn allo)	44.894%	44.639%	-0.255%	-0.6%
15	Total	100.000%	100.000%	0.000%	0.0%

(a) Based on review of FY 2021 Charges, which were based on FY 2020 Cost of Service Study.  
Existing SHAREs reflect "All in" SHAREs after recognizing CSO & Suburban only Cost Pools.

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MEMORANDUM

D+ SHARE Calculations

November 13, 2020

To: Sue McCormick

From: Bart Foster

The intent of this memorandum is to document the process we have used to compute the individual FY 2022 Sewer SHARE allocations for the Member Partners in the D+ Customer Class. Through the deliberative process undertaken via the Outreach process, the “Think Tank” collaboratively established a recommended new SHAREs methodology proposed to be implemented with the FY 2022 wholesale sewer charges. That process largely focused on establishing a methodology to determine SHAREs for the metered wholesale communities and the D+ customer class at large. The Think Tank’s recommended methodology was set forth in a collaboratively authored memorandum dated October 20, 2020. As noted in that memorandum, the Think Tank did not focus on ways to allocate responsibility to individual D+ communities – leaving that for GLWA to address.

Background

The original SHAREs established via the Rate Simplification Initiative resulted in the FY 2015 wholesale sewer charges. These SHAREs were determined based on flow volume data from FY 2008 through 2012. Calculations of SHAREs for the master metered communities were based on the master meter data. Calculation of SHAREs for the “D+” customer class at large was based on total flow reported for the System, less the master metered data, less an assumed amount of “common<sup>1</sup>” non-sanitary flow volume. The flow balance protocol utilized for the original SHARE calculations did not contain sufficient verifiable data to isolate non-sanitary flow volumes for individual D+ communities, nor was any analysis available to identify which D+ communities should receive reductions related to the “common” flow assumptions. Therefore each D+ community was assigned relative responsibility for the D+ customer class SHARE based on the relative revenue common to all revenue requirements they were then paying under the FY 2014 wholesales sewer charges.

This process was extended to the second SHARE period, which was originally implemented with the FY 2018 wholesale sewer charges. Those SHAREs (which are still in effect) were determined based on flow volume data from FY 2013 through 2016. The same basic process

<sup>1</sup> The concepts of “Common” or “Regional” flow have been used interchangeably in recent discussions regarding SHAREs. The terms refer to the portion of flow volume generated within the D+ area that should be recognized as a System responsibility and not included in SHARE and charge determination for any specific Member Partner.



was executed, and the same challenges existed with respect to isolating individual D+ community non-sanitary flows and the “source” of the common non-sanitary flows. Again, each D+ community was assigned relative responsibility for the D+ customer class SHARE based on the original FY 2014 allocation.

#### Recommended FY 2022 SHARES

As noted earlier, the Think Tank has established a recommended methodology for determining future SHARES via a simplified process. The new methodology still focusses heavily on flow volumes, and the recommended FY 2022 SHARES are based on flow volume data for a seven year period from FY 2013 through 2019. The flow balance protocol remains the same, and the same challenges exist with respect to isolating individual D+ community non-sanitary flows and the “source” of the common non-sanitary flows. The recommendation from the Think Tank is to assign 50% of all non-sanitary flow from the D+ area as “Common” for purposes of calculating SHARES.

The results summary on page 6 of the Think Tank memorandum indicates a reduction in the proposed “All In” SHARE for the D+ customer class at large from 44.894% to 44.639%, which equates to a decrease of approximately 0.6% of allocated revenue requirements. Our assignment is to allocate the 44.639% D+ share to individual D+ Member Partners based on the best available, verifiable information we have.

One significant data change within the D+ communities is the estimate of sanitary flow volumes from Highland Park. We’ll not elaborate on the specifics<sup>2</sup>, but as part of the flow balance analysis for FYs 2017 through 2019, the estimated annual sanitary volumes for Highland Park were reduced by approximately 60,000 Mcf. This, in part, was a contributing factor to the small decrease in the SHARE for the D+ customer class at large. Highland Park’s sanitary flow estimate for purposes of SHARE calculations was based solely on the three most recent years (instead of seven) in order to honor the new **verified** data. We believe it is appropriate to reflect this fact in the allocation of D+ SHARES, while still acknowledging that we still do not possess any new, more accurate, verifiable data with which to assign individual D+ community non-sanitary flows and the “source” of the common non-sanitary flows.

Our recommended approach to establishing individual SHARES for the D+ customer class consists of three simple steps:

**Step 1:** Recompute the original FY 2014 D+ allocation to reflect a shift in 60,000 Mcf of Highland Park dry weather flow contribution from sanitary to Dry Weather Infiltration. This is illustrated in the table below. Under the methodology then in place Highland Park’s hypothetically calculated share of treatment and conveyance costs within the D+ customer class would have been reduced from 2.928% to 2.633%. The calculated share of treatment and conveyance costs for all other D+ communities would increase slightly. Share of the “Wholesale Only and CSO cost pools would not be impacted.

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<sup>2</sup> This overall topic was reviewed at length with the Wastewater Analytics Task Force (WATF).

## D+ SHARE Calculations

November 13, 2020

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	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Original FY 2014 D+ SHARES				Adjusted* FY 2014 D+ SHARES			
	Treatment/ Conveyance	CSO	Wholesale Only	Total <i>wtd avg (1)-(3)</i>	Treatment/ Conveyance <i>Reallocate (1)</i>	CSO <i>from (2)</i>	Wholesale Only <i>from (3)</i>	Total
1 Grosse Pointe	0.475%	0.262%	7.502%	0.444%	0.477%	0.262%	7.502%	0.445%
2 Hamtramck	1.956%	1.831%	36.460%	1.987%	1.961%	1.831%	36.460%	1.992%
3 Harper Woods	0.123%	0.015%	2.193%	0.105%	0.123%	0.015%	2.193%	0.105%
4 Highland Park	2.928%	2.371%	51.440%	2.895%	2.633%	2.371%	51.440%	2.660%
5 Redford Township	0.112%	0.153%	2.062%	0.123%	0.112%	0.153%	2.062%	0.124%
6 Wayne County #3	0.016%	0.040%	0.342%	0.021%	0.016%	0.040%	0.342%	0.021%
7 Detroit	94.391%	95.327%	0.000%	94.424%	94.678%	95.327%	0.000%	94.653%
8 Total D+	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

\* Moving 60,000 Mcf of Highland Park units from Sanitary to DWII

**Step 2:** Use the recalculated treatment / conveyance D+ allocation factors from Step 1 as the basis for allocating the same cost pools in the updated, simplified methodology<sup>3</sup>. Maintain the relative CSO allocation factors dictated by existing legal agreements. The resulting D+ allocation factors are shown in the first three columns of the table below.

	(1)	(2)	(3)	(4)	(5)	(6)
	Calculation of FY 2022 D+ SHARE Allocation			Calculation of FY 2022 D+ SHARES		
	Treatment/ Conveyance	CSO	Total <i>wtd avg (1)-(2)</i>	Treatment/ Conveyance <i>~ (1)</i>	CSO <i>~ (2)</i>	Total <i>wtd avg (4)-(5)</i>
				<b>38.017%</b>	<b>87.069%</b>	<b>44.639%</b>
1 Grosse Pointe	0.477%	0.262%	0.425%	0.181%	0.228%	<b>0.190%</b>
2 Hamtramck	1.961%	1.831%	1.911%	0.746%	1.595%	<b>0.853%</b>
3 Harper Woods	0.123%	0.015%	0.103%	0.047%	0.013%	<b>0.046%</b>
4 Highland Park	2.633%	2.371%	2.564%	1.001%	2.065%	<b>1.144%</b>
5 Redford Township	0.112%	0.153%	0.128%	0.043%	0.133%	<b>0.057%</b>
6 Wayne County #3	0.016%	0.040%	0.025%	0.006%	0.035%	<b>0.011%</b>
7 Detroit	94.678%	95.327%	94.844%	35.994%	83.000%	<b>42.338%</b>
8 Total D+	100.000%	100.000%	100.000%	38.017%	87.069%	<b>44.639%</b>

**Step 3:** Use the new D+ allocation factors to assign responsibility for the **total** D+ SHARES for each cost pool established by the Think Tank memorandum. These calculations are shown in the last three columns of the table above.

The results of this analysis are then used to consolidate the D+ communities into the overall impact summary table that was originally contained in the Think Tank memorandum. We can then append the original impact summary to match that shown below. The D+ Member Partners are highlighted in the table.

<sup>3</sup> Note that the “Wholesale Only” Cost Pool is not maintained in the new methodology.

## D+ SHARE Calculations

November 13, 2020

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## GLWA Wastewater Charge Methodology / SHARES Development - Impact Summary

	Existing SHARES				Proposed "All in" SHARE (c)	Change in SHARE				
	CTA Treat / Collection Cost Pool (a)	CSO Facility Cost Pool	Suburban Only Cost Pool	"All in" SHARE (b)		Variance	% Variance			
	1	OMID	16.436%	2.651%		22.182%	14.660%	14.589%	-0.071%	-0.5%
	2	Rouge Valley	12.893%	2.956%		20.347%	11.682%	11.804%	0.122%	1.0%
3	Oakland GWK	10.735%	2.256%	18.625%	9.735%	9.788%	0.053%	0.5%		
4	Evergreen Farmington	8.378%	1.485%	12.719%	7.521%	7.639%	0.118%	1.6%		
5	SE Macomb San Dist	5.910%	1.174%	10.020%	5.345%	5.291%	-0.054%	-1.0%		
6	Dearborn	4.518%	1.631%	8.048%	4.194%	4.284%	0.090%	2.1%		
7	Grosse Pointe Farms	0.596%	0.504%	1.075%	0.593%	0.580%	-0.013%	-2.2%		
8	Grosse Pointe Park	0.435%	0.062%	0.746%	0.390%	0.402%	0.012%	3.1%		
9	Melvindale	0.367%	0.074%	0.568%	0.331%	0.332%	0.001%	0.3%		
10	Farmington	0.275%	0.052%	0.445%	0.248%	0.253%	0.005%	2.0%		
11	Center Line	0.247%	0.055%	0.368%	0.223%	0.220%	-0.003%	-1.3%		
12	Allen Park	0.206%	0.031%	0.316%	0.184%	0.179%	-0.005%	-2.7%		
13	Highland Park	1.065%	2.065%	2.165%	1.222%	1.144%	-0.078%	-6.4%		
14	Hamtramck	0.717%	1.595%	1.764%	0.857%	0.853%	-0.004%	-0.5%		
15	Grosse Pointe	0.180%	0.228%	0.417%	0.1920%	0.190%	-0.002%	-1.0%		
16	Harper Woods	0.051%	0.013%	0.112%	0.047%	0.046%	-0.001%	-2.1%		
17	Redford Township	0.045%	0.133%	0.073%	0.057%	0.057%	0.000%	0.0%		
18	Wayne County #3	0.007%	0.035%	0.011%	0.011%	0.011%	0.000%	0.0%		
19	Subtotal Suburban Wholesale	63.058%	17.000%	100.000%	57.492%	57.662%	0.170%	0.3%		
20	Detroit Customers	36.942%	83.000%	0.000%	42.508%	42.338%	-0.170%	-0.4%		
21	Total	100.000%	100.000%	100.000%	100.000%	100.000%	0.000%	0.0%		

(a) The existing published **SHARES** reflected proportional allocation factors for revenue requirements excluding CSO and Suburban only costs.

(b) The effect of the prior methodology established "All in" **SHARES** after recognizing the CSO and Suburban only cost pools.

(c) The proposed methodology establishes effective "All in" **SHARES**, inclusive of all cost pools.

Our recommended approach results in a reduction in Highland Park's share of approximately 6.4% compared to the overall D+ reduction of 0.6%. This reflects the new data regarding Highland Park's sanitary flow volume contribution. The individual impacts on all other D+ communities are closer to the class average reduction of 0.6%. Differences are largely associated with relative CSO cost pool responsibility compared to the average, and to the fact that the new methodology eliminates the "Wholesale Only" cost pool, which results in a slightly larger reduction for the suburban D+ customers than the Detroit customers.

We firmly believe that this approach is the most reasonable method to address the verified reduction in Highland Park sanitary volumes while acknowledging the lack of information with which to allocate responsibility for D+ non-sanitary volumes, including those volumes treated as "common" and those remaining volumes assigned to the class.

We are prepared to discuss this matter at your convenience.

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## MEMORANDUM

Highland Park Bad Debt Expense Review  
Executive Summary

January 11, 2021

To: Nicolette Bateson

From: Bart Foster

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

- The year-end working papers supporting the FY 2020 audit reveal an “allowance for doubtful accounts” for Highland Park totaling approximately \$44.9 million, and a resulting FY 2020 bad debt expense of approximately \$3.85 million, as summarized below. We note that the Sewer amount is approximately double the amount we anticipated when we commented on the plan for the FY 2021 Sewer charges.

Highland Park Bad Debt Amounts

	Allowance for Doubtful Accts		Change (a)
	<u>6/30/19</u>	<u>6/30/20</u>	
Sewer	31,940,744	34,584,627	2,643,883
Sewer Industrial Waste Control (b)	1,679,364	1,710,779	31,415
Water	<u>7,455,747</u>	<u>8,634,075</u>	<u>1,178,328</u>
Total (b)	41,075,855	44,929,481	3,853,626

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

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

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

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### Water

- Starting with the FY 2017 Water service charges, we began effectively increasing charges to ALL Member Partners (including Detroit) by amounts equivalent to Highland Park’s allocated revenue requirement.
- The FY 2020 Water bad debt expense for Highland Park was \$1.18 million, which was consistent with the amount we included in the FY 2020 charges.
- The proposed FY 2022 Water Charges include the entire revenue requirement allocated to Highland Park as a “bad debt revenue requirement” allocable to all Member Partners.

### Sewer

- As shown in the table below, payment performance improved in FYs 2018 and 2019, but fell off during FY 2020. After averaging 33% from FY 2013 through FY 2017, the average collection rate in starting in FY 2018 has been 73%.

<u>Highland Park Sewer Payment History</u>	<u>Billings</u>	<u>Payments</u>	<u>Net</u>	<u>Balance</u>	<u>Collection Rate</u>
FY 2012				10,207,956	
FY 2013	4,987,635	2,206,211	2,781,424	12,989,380	44%
FY 2014	6,980,442	1,612,633	5,367,809	18,357,189	23%
FY 2015	5,553,123	1,444,623	4,108,500	22,465,689	26%
FY 2016	5,612,167	2,022,335	3,589,832	26,055,521	36%
FY 2017	5,802,000	2,309,186	3,492,814	29,548,335	40%
FY 2018	5,657,101	4,108,108	1,548,993	31,097,328	73%
FY 2019	5,617,100	5,241,583	375,517	31,472,845	93%
FY 2020	5,665,400	3,026,117	2,639,283	34,112,128	53%
FY 2021 (5 months)	2,362,500	1,783,080	579,420	34,691,548	75%
Cumulative	48,237,468	23,753,876	24,483,592		49%
FY 2013 - FY 2017	28,935,367	9,594,988	19,340,379		33%
FY 2018 - FY 2021 (5 months)	19,302,101	14,158,888	5,143,213		73%

- Through the end of FY 2019, (via a combination of *prospective* bad debt recovery and bad debt *true up* recovery) Member Partners had been charged approximately \$324,500 more than the actual bad debt incurred by Highland Park. We’ll refer to that figure as the “**Cumulative Balance**” herein.
- We took this information into consideration when designing the FY 2021 Sewer Charges. When we designed the FY 2021 suburban wholesale Sewer charges we projected a bad debt *true-up* adjustment of \$985,500 for FY 2020, and used that projection to balance the *prospective* FY 2021 figure, thus resulting in NO bad debt related elements in the FY 2021 Charges. (The preliminary summary from that proposal from a year ago is shown below).

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	<u>FY 2020</u>	<u>FY 2021</u> (a)	<u>Change</u>
1 Allocated Revenue Requirement	5,620,600	<b>5,828,600</b>	208,000
2 Assumed Collection Rate	60%	77.5%	18%
3 Projected Bad Debt Expense	2,250,000	1,310,000	(940,000)
4 Bad Debt True Up Adjustment thru FY 2019	0	(324,500)	(324,500)
5 Subtotal Bad Debt Expense Revenue Req't	2,250,000	<b>985,500</b>	(1,264,500)
6 <i>Relative Impact on Wholesale Charges</i>	0.83%	0.35%	-0.48%
7 <b>Potential</b> FY 2020 Collection Rate (a)	77.5%		
8 <b>Potential</b> FY 2020 Bad Debt	1,266,000		
9 <b>Potential</b> FY 2020 Bad Debt True-Up (8) - (3)	(984,000)	(984,000)	
10 Potential FY 2021 Bad Debt Expense Revenue Req't		<b>1,500</b>	

(a) Preliminary, subject to change during final charge development.

- The strategy employed for the FY 2021 charges was designed to result in a Cumulative balance of ~ \$0 at the end of FY 2021.
- The FY 2020 Sewer bad debt expense for Highland Park was \$2.64 million. This figure:
  - is \$0.38 million higher than the \$2.26 million prospective amount included in FY 2020 Charges to suburban wholesale Customers;
  - is \$1.38 million higher than projected when we prepared the FY 2021 Charges
- The Cumulative Balance at the end of FY 2020 is \$58,600. This amount is technically due from suburban wholesale Customers via a surcharge to their allocated FY 2022 revenue requirements. However, there are further complexities related to this matter.

	<u>Bad Debt Prospective</u>	<u>Bad Debt True Up</u>	<u>Total Bad Debt Collected</u>	<u>Bad Debt Incurred</u>	<u>Cumulative Balance</u>
pre 2016				17,295,300	17,295,300
2016	5,569,200	0	5,569,200	2,975,200	14,701,300
2017	5,600,000	3,459,100	9,059,100	2,782,200	8,424,400
2018	4,390,000	2,810,600	7,200,600	2,100,800	3,324,600
2019	2,780,000	1,871,300	4,651,300	1,002,200	(324,500)
2020	<u>2,260,800</u>	<u>0</u>	<u>2,260,800</u>	<u>2,643,900</u>	58,600
Subtotal	20,600,000	8,141,000	28,741,000	28,799,600	<b>58,600</b>
2021 *	1,130,400		1,130,400		(1,071,800)
2021	1,310,000	(1,310,000)	0	<b>1,440,000</b>	<b>368,200</b>
<i>Estimated Balance @ 12/31/2020</i>					<b>(351,800)</b>

\* via continuation of the FY 2020 Charges for the first 6 months

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- Subsequently, the Board deferred implementation of the FY 2021 Charges, leaving the FY 2020 Charges (and the ~ \$188,000 per month of bad debt related amounts that they contained) in effect for the first six months of FY 2020. As a result, suburban wholesale Member Partners will have been charged an additional \$1.13 million in bad debt related charges that would not have been collected had the FY 2021 Charges been implemented as originally scheduled.
- This amount will help offset bad debt expense incurred during FY 2021, particularly considering that none was included in the prospective charges.
  - *We estimate that the effective Cumulative Balance as of 12/31/2020 is approximately \$350,000 owed from the System to Member Partners.*
- Assuming a 75% collection rate during FY 2021, we forecast a Cumulative Balance of approximately \$368,000 (due from Member Partners to the System) at the end of FY 2021. We note that a collection rate of ~ 82% would result in a zero Cumulative Balance at that point.

Given the relatively small magnitude of the Cumulative Balance relative to the entirety of the bad debt amounts, we believe it is prudent to continue the effective “holiday” in recovery of bad debt expense amounts via charge to Suburban Wholesale Member Partners in the FY 2022 Sewer service charges. The proposed charges in our December 30, 2020 “FY 2020 Cost of Service Study and Service Charge Recommendations” report embrace this approach.

We are prepared to discuss this matter at your convenience.