

TECHNICAL MEMORANDUM

To: John Kmiec, Interim Utility Director, Tucson Water

From: Harold Smith, Raftelis Financial Consultants, 

Subject: Phase 2 Outside Differential Analysis

CC: Deborah Galardi, Galardi Rothstein Group

On June 22, 2021, the City of Tucson (City) Mayor and Council approved a rate differential for Tucson Water customers located within unincorporated Pima County (Outside City Customers). This differential will be in addition to the rates assessed to all other customers (Inside City Customers). This decision was policy based and goes into effect on December 1, 2021. Mayor and Council further directed Tucson Water to conduct a cost-of-service analysis using standard industry practices to determine a potential cost basis for differential rates. The results of the cost-of-service analysis are supplemental to the policy basis already used to approve the differential rate. In making this decision to assess a higher rate, Mayor and Council made a policy decision that Outside City Customers would be considered “non-owners” of the Tucson Water system from a rate-setting perspective and should be assessed rates consistent with that status.

Tucson Water engaged Galardi Rothstein Group and Raftelis (GRG/Raftelis) to perform a cost-of-service analysis to assess various options for calculating rate differentials to be applied to non-owner customers. The Phase 1 analysis performed by GRG/Raftelis used readily available data to develop revenue requirements for the Tucson Water system. Using a utility basis structure, revenue requirements were allocated between Inside City Customers and Outside City Customers based solely on annual water use. The Outside City Customer revenue requirements were compared to the revenue generated by Outside City Customers under Tucson Water’s existing rates. The difference between the calculated revenue requirements and revenue at existing rates serves as an approximation of a cost-based rate differential. The results of the Phase 1 analysis indicated outside city rate differentials ranging between 6.1% and 25.7%, depending on the cost of equity applied to Outside City Customers for determining a return on investment for Inside City Customers.

Upon completion of the Phase 1 analysis, Tucson Water tasked GRG/Raftelis with performing a Phase 2 analysis. Phase 2 involved exploring potential differences in the costs to serve Outside City Customers in more detail, and to narrow the range of returns on investment that could be used to calculate a differential rate. The results of the Phase 2 analysis are presented in this memo.

Overview of the Utility Basis with Differential Rates of Return Approach

As discussed in Chapter IV.1 of the American Water Works Association (AWWA) Manual of Water Supply Practices M-1 “Principle of Water Rates, Fees and Charges” (M-1 Manual), the utility basis with differential rates of return approach is an industry standard method of determining rates to be assessed to non-owner customers of a utility. This approach involves first determining the revenue requirements of the entire system using the cash-needs approach. The cash-needs revenue requirements include all costs necessary to provide utility service during the rate year and in the future. Cash-needs revenue requirements include O&M expenses, taxes, and capital costs (debt service and annual rate funded capital).

The next step is to recast the cash-needs capital requirements as utility basis revenue requirements (depreciation and a return on investment), and then determine the return on rate base that would be required to generate a return on investment equal to the cash-needs capital costs. The required return on investment is calculated by subtracting the annual O&M expenses and depreciation from the cash-needs revenue requirements. An imputed rate of return on rate base is then calculated by dividing the required return by the rate base.¹

Next, in order to recognize the owner/non-owner relationship, differential rates of return are developed for Inside City and Outside City Customers to generate an equivalent overall return on investment sufficient to meet the annual cash-needs revenue requirements.

Finally, the utility basis O&M and capital components are allocated between Inside City Customers and Outside City Customers based on the different usage characteristics and ownership status of the two groups of customers. The allocated costs of both groups of customers are divided by their respective annual water usage to determine an overall unit cost of service for each group. The difference between the Inside City unit cost of service and the Outside City unit cost of service represents the cost-based rate differential for Outside City Customers.

Data Used in the Analysis

Data used for the analysis were derived from a variety of sources. Brief descriptions of each data set are provided below. It should be noted that data used in the Phase 1 analysis was further refined in Phase 2 to represent Outside City Customer characteristics more precisely. New data were developed in Phase 2 to allow for consideration of additional usage characteristics as outlined below.

- *Customer Data* – Customer data, including monthly consumption by customer class and meter counts by meter size and customer class, was available for FY2021 and prior years. The data was coded according to whether it was in an incorporated or unincorporated area of Pima County. With a few exceptions, all customers located in unincorporated areas within Tucson Water’s service area are considered Outside City Customers. Policy-based exceptions include customers located in Tribal areas (e.g., Pascua Yaqui, Tohono O’odham) and Tucson Unified School District (TUSD) customers, both of which are considered Inside City customers for the purposes of this analysis.
- *System and Customer Peaking Data* – Average day, max day, max hour, and max month system production data was used to determine three-year averages of max day to max month (MD:MM) and max hour to max month (MH:MM) ratios. These system ratios were then applied to the maximum month to average month use ratio for each customer class to determine Inside City and Outside City Customer class peaking factors, consistent with Tucson Water’s typical rate-setting process. The peaking factors are used to allocate peak-related operating expenses and net plant revenue requirements between Inside City and Outside City Customers.²

¹ Rate base equals the original cost of the assets less contributions and accumulated depreciation.

² The allocations of individual line-item O&M cost and net plant investment categories to service characteristics (average demand, peak demand, etc.) is based on the most recent Tucson Water rate process conducted in FY2019-20.

- *Distribution Lines* – Data on inch-miles of distribution pipeline for Inside City and Outside City Customers were provided by Tucson Water based on GIS data. For the purposes of this analysis, distribution lines for Outside City customers are defined as 8-inch diameter and smaller pipes located in the unincorporated service area. The respective inch-miles of Inside and Outside pipeline are used to allocate distribution-related maintenance expenses and net plant revenue requirements between Inside City and Outside City customers.
- *Cash Basis Revenue Requirements*– O&M and capital expenses (debt service and cash funded capital) net of non-rate revenues reflect a FY2020-21 test year, as it was the most recent year a cost-of-service analysis was conducted, and customer data was available.
- *Rate Base and Depreciation* – Rate base and annual depreciation was determined using asset data from FY2019-20, as it was the most recent fixed asset dataset available. The FY2019-20 fixed asset data was used to determine total Net Plant (the value of assets less contributed capital and accumulated depreciation). Revenues generated from system equity fees were also deducted from the Net Plant value, yielding total rate base which was then allocated between Inside City and Outside City Customers based on relevant service characteristics for each type of asset. System equity fee revenues were also attributed to Inside City and Outside City Customers as reported by Tucson Water’s financial system.

Cash-Needs Revenue Requirements

Each component of the FY2020-21 Test Year (Test Year) revenue requirements is summarized below.

Operation & Maintenance Expenses

Tucson Water’s budget includes projected expenses associated with operating, maintaining, and repairing the infrastructure used to provide water service. For the purposes of this analysis, O&M expenses related to the Reclaimed system have been excluded since a portion of Reclaimed expenses are recovered through Reclaimed rates, and this analysis is focused only on rates for potable water. In addition, a portion of Tucson Water’s O&M expenses are offset by revenue from other sources. After exclusion of the Reclaimed expenses and adjusting for non-rate revenue, net O&M expenses to be included in revenue requirements are \$112,539,677.

Table 1 on the following page provides a summary of net O&M expenses.

Table 1 – Net Operation & Maintenance Expenses

Director's Office	\$ 6,523,190
Customer Services	10,154,100
Business Services	6,294,550
Water Quality and Operations	48,617,890
Planning & Engineering	9,034,690
Maintenance	30,712,260
Other Budgetary Requirements	<u>23,963,040</u>
Total O&M	\$135,299,720
Less: Reclaimed Costs	(5,917,643)
Less: Non-Rate Revenue	<u>(16,842,400)</u>
Net O&M Expenses	\$112,539,677

Taxes

Also included in Tucson Water's budget are two tax expenses: a Utility Tax expense and a Payment in Lieu of Taxes (PILOT) expense. The Utility Tax is a payment to the City equal to 4.5% of revenue generated from water sales from customers located inside the city limits. The PILOT, as the name implies, is a payment to the City in lieu of property taxes. The PILOT is based on the value of the assets located within the City. These two tax expenses total \$8,489,736.

Table 2 provides a summary of tax expenses.

Table 2 – Tax Expenses

Utility Tax	\$ 6,489,736
PILOT	<u>2,000,000</u>
Total Taxes	\$ 8,489,736

Capital Expenses

Capital expenses included in revenue requirements consist of Tucson Water's debt service payments (both principal and interest) plus budgeted annual costs associated with projects funded with rate revenues. Capital expenses related to Reclaimed projects were excluded for the reason discussed above. Capital expenses included in revenue requirements are \$101,562,771.

Table 3 on the following page provides a summary of net capital expenses.

Table 3 – Net Capital Expenses

Bond Debt Service Payments	\$ 58,908,186
Capital Improvements from Annual Revenues	63,750,000
Capitalizable Equipment	2,250,000
Additions to Working Capital	<u>(7,996,433)</u>
Total Capital Costs	\$ 116,911,752
Less: Reclaimed Capital Costs	\$ (10,973,981)
Less: Non-Rate Revenue	<u>\$ (4,375,000)</u>
	\$ 101,562,771

As shown below in Table 4, Tucson Water’s Test Year cash-needs potable water revenue requirements are \$222,592,184.

Table 4 – Cash-Needs Revenue Requirements

Operation & Maintenance Expenses	\$112,539,677
Utility Tax	6,489,736
Pilot/In Lieu of Property Tax	2,000,000
Capital Requirements	<u>101,562,771</u>
Total Revenue Requirements	\$ 222,592,184

Imputed Rate of Return

The first step in determining the imputed rate of return is to recast Tucson Water’s cash-needs revenue requirements as utility basis revenue requirements, as described previously. Annual depreciation is derived from Tucson Water’s fixed asset records and the required return on rate base is determined by subtracting O&M expenses and depreciation from the cash-needs revenue requirements. The remainder is the required return on rate base necessary to ensure that Tucson Water can meet its annual cash needs.

Tucson Water’s Test Year utility basis revenue requirements related to potable water are shown below.

Table 5 – Utility Basis Revenue Requirements

Operation & Maintenance Expenses	\$ 112,539,677
Utility Tax	6,489,736
Pilot/In Lieu of Property Tax	2,000,000
Depreciation	29,691,941
Required Return on Investment	<u>71,870,830</u>
	\$ 222,592,184

Imputed Rate of Return

As discussed earlier, the potable water rates that Tucson Water assesses to its customers must generate \$222,592,184 in revenue, which under the utility basis includes a \$71,870,830 return on rate base. By dividing the required return on rate base by Tucson Water’s rate base, an imputed rate of return can be determined. This imputed rate of return is the rate of return that would need to be used to calculate

rates for all of Tucson Water’s customers if Tucson Water’s rates were determined using the utility basis. Calculation of the imputed system-wide rate of return is show below.

Calculation of Imputed Rate of Return

Required Return on Rate Base	\$	71,870,830
Divided by Rate Base	\$	<u>810,386,764</u>
		8.87%

Allocation of Utility Basis Revenue Requirements

The next step in the process is the allocation of the utility basis revenue requirements between the Inside City Customers and Outside City Customers. For this analysis, total O&M expenses, depreciation, and rate base were allocated to each customer group based on service characteristics, following the Base/Extra Capacity allocation approach used in prior Tucson Water cost-of-service analyses. The costs by service characteristic are then allocated to the Outside City Customers and Inside City Customers based on their service requirements. Schedules summarizing the allocation of O&M expenses, depreciation and rate base can be found in Appendix A to this memo.

Allocation to Base/Extra Capacity Cost Categories

O&M and capital costs are allocated to service characteristic categories in a manner consistent with the way in which they are allocated during Tucson Water’s regular rate setting process. It should be noted that costs allocated to the “Readiness-To-Serve” category are primarily costs associated with Tucson Water’s distribution system. Both readiness-to-serve O&M and capital costs associated with distribution assets are allocated between the Inside City and Outside City customer groups based on inch-miles of mains.

Schedule 1 shows the allocation of O&M costs to Base/Extra Capacity cost categories.

Schedules 2 and 3 show the allocation of depreciation and rate base to service characteristic categories.

Allocation to Inside City and Outside City Customers

Once O&M costs, depreciation and rate base have been allocated to service characteristic categories, they are then allocated between Inside City Customers and Outside City Customers using the allocation factors shown in Table 6 on the following page.

Table 6 – Inside City and Outside City Allocation Factors

Allocation Factors	Inside	Outside
Usage	73.07%	26.93%
Max Day	70.43%	29.57%
Max Hour	72.27%	27.73%
Customer Accounts	71.62%	28.38%
Meter Equivalents	73.44%	26.56%
Inch-Miles	63.65%	36.35%
All Inside	100.00%	0.00%
Neither	0.00%	0.00%
O&M	71.70%	28.30%
Assets	70.70%	29.30%
Depreciation	71.13%	28.87%

Base O&M Costs, Depreciation and Rate Base – Allocated based on total annual consumption using the Usage allocation factor.

Max Day O&M Costs, Depreciation and Rate Base – Allocated based on the Max Day demands of each customer group using the Max Day allocation factor.

Max Hour O&M Costs, Depreciation and Rate Base – Allocated based on the Max Hour demands of each customer group using the Max Hour allocation factor.

Meters and Services O&M Costs, Depreciation and Rate Base – Allocated based on the number of 5/8” meter equivalents using the Meter Equivalents allocation factor.

Billing O&M Costs, Depreciation and Rate Base – Allocated based on the number of customer accounts using the Customer Accounts allocation factor.

Readiness-To-Serve O&M Costs, Distribution Depreciation and Distribution Rate Base – Allocated based on inch-miles of distribution pipe 8” inches or less in diameter using the Inch-Miles allocation factor. This allocation factor recognizes that more distribution system piping per customer is required to serve Outside City Customers, based on data provided by Tucson Water.

Fire Protection O&M Costs, Depreciation and Rate Base – Since Tucson Water recovers its fire protection costs through its fixed monthly service charge (consistent with industry practice), these costs are allocated based on the number of 5/8” meter equivalents using the Meter Equivalents allocation factor.

CAP O&M Costs, Depreciation and Rate Base – Allocated based on the total annual consumption using the Usage allocation factor.

Reclaimed O&M Costs, Depreciation and Rate Base – As discussed previously, costs associated with the reclaimed system are excluded from this analysis and are not allocated to either customer group.

After rate base has been allocated between the Inside City and Outside City customer groups, rate base is adjusted to recognize the investment in the system made by both groups through the payment of System Equity Fees.

The results of the process to allocate O&M costs, depreciation and rate base between the Inside City and Outside City Customer groups are shown in Schedules 4, 5, and 6. Rate base is adjusted to recognize contributions made through the payment of System Equity Fees is shown in Schedule 7.

The detailed allocation of O&M expenses indicates that 71.70% of the O&M component of the utility basis revenue requirements should be allocated to Inside City Customers and 28.30% should be allocated to Outside City Customers.

The detailed allocation of depreciation indicates that 71.13% of depreciation should be allocated to Inside City Customers and 28.87% should be allocated to Outside City Customers.

The Utility Tax expense is allocated 100% to Inside City Customers since this tax is only assessed to customers living within the city limits.

The PILOT is allocated between Inside City Customers and Outside City Customers based on the allocation of assets to each group. While the amount of the PILOT is based on the value of Tucson Water assets located within the City, these assets are used to serve all customers and therefore both customer groups contribute to the recovery of this expense. 70.07% of the PILOT is allocated to Inside City Customers and 29.30% is allocated to Outside City Customers.

Once O&M costs, depreciation and taxes have been allocated between the Inside City Customers and the Outside City Customers, the next step in the process is to determine the allocation of the required return on investment. As discussed previously, the total return on rate base that must be recovered from rates is \$71,870,830. The rate of return required to generate this return from the system as a whole is 8.87%.

The use of the “utility basis with differential rates of return” approach allows for the recognition of the risks borne by the Inside City owners by applying a higher rate of return to the rate base allocated to Outside City Customers. Given that Tucson Water’s Outside City differentials were established based on policy, a range of rate of return differentials were analyzed. Each rate of return scenario involved applying a rate of return to the rate base allocated to each customer group such that the combined return on rate base was equal to the required return for the system as a whole.

Finally, the respective rate of return values for Inside and Outside City were added to the other allocated revenue requirements to determine the total requirements for each group under the various rate of return scenarios. The total requirements of each group were then divided by the annual consumption for that group to arrive at a unit cost of service for each group. The difference between the calculated unit cost for each group under each rate of return scenario is the calculated rate differential based on the cost-of-service analysis. Table 7 on the following page shows the unit costs and cost-of-service based differentials resulting from rate of return (ROR) differentials ranging from 1% to 5% in 0.5% increments.

Table 7 – Range of Rate Differentials

ROR Differential	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
Inside City ROR	8.57%	8.43%	8.28%	8.13%	7.98%	7.83%	7.69%	7.54%	7.39%
Outside City ROR	9.57%	9.93%	10.28%	10.63%	10.98%	11.33%	11.69%	12.04%	12.39%
Inside City Unit Cost	\$5.33	\$5.30	\$5.28	\$5.25	\$5.22	\$5.19	\$5.16	\$5.13	\$5.11
Outside City Unit Cost	\$5.82	\$5.90	\$5.98	\$6.05	\$6.13	\$6.21	\$6.28	\$6.36	\$6.44
Outside City Differential	9%	11%	13%	15%	17%	20%	22%	24%	26%

As shown in Table 7, depending on the differential in the rate of return between Inside City and Outside City Customers, cost-based rate differentials range between 9% and 26%. The choice of an appropriate rate of return differential is a policy decision; however, it should be noted that even if there is no rate of return differential, there is still a cost-based differential of approximately 5%. This 5% differential is driven by the higher peak demands of the Outside City Customers as well as the greater relative cost of constructing, operating, and maintaining the distribution system that serves the Outside City Customers.

Appendix A to Phase 2 Outside City Differential Analysis

Appendix A – Cost Allocation Schedules

Schedule 1 – Allocation of O&M Expenses to Base/Extra Capacity Cost Categories

Operating and Maintenance Expenses - Total

	<u>Total</u>	<u>Base</u>	<u>Max Day</u>	<u>Max Hour</u>	<u>Meters/Services</u>	<u>Billing</u>	<u>Readiness-to-Serve</u>	<u>Fire Protection</u>	<u>CAP</u>
Director's Office	6,295,797	\$ 2,077,307	\$ 645,282	\$ 40,778	\$ 196,454	\$ 2,645,059	\$ 511,732	\$ 179,185	\$ -
Customer Services	10,154,100	-	-	-	-	10,154,100	-	-	-
Business Services	6,240,915	380,835	86,719	9,618	46,337	5,554,438	120,702	42,264	-
Water Quality and Operations	44,480,047	22,924,267	3,682,713	452	14,675	-	18,788	853,452	16,985,700
Planning & Engineering	7,942,589	3,332,881	1,693,350	1,485,387	680,328	-	440,417	310,226	-
Maintenance	30,424,437	9,372,266	3,217,096	403,888	4,070,775	-	10,549,885	2,810,527	-
Other Budgetary Requirements	23,844,191	5,730,095	233,558	(878,914)	103,916	2,014,335	1,664,195	467,445	14,509,560
<i>Total O&M</i>	<i>\$ 129,382,077</i>	<i>\$ 43,817,652</i>	<i>\$ 9,558,718</i>	<i>\$ 1,061,210</i>	<i>\$ 5,112,485</i>	<i>\$ 20,367,932</i>	<i>\$ 13,305,719</i>	<i>\$ 4,663,100</i>	<i>\$ 31,495,260</i>

Schedule 2 - Allocation of Depreciation to Service Characteristic Categories

	<u>Total</u>	<u>Base</u>	<u>Max Day</u>	<u>Max Hour</u>	<u>Meters/Services</u>	<u>Billing</u>	<u>Distribution</u>	<u>Direct Fire Protection</u>
Depreciation - Total								
Land	\$ 46,021	\$ 28,763	\$ 17,258	\$ -	\$ -	\$ -	\$ -	\$ -
Wells	\$ 3,827,681	2,392,301	1,435,380	-	-	-	-	-
CAP/Hayden Udall WTP	\$ 2,387,329	1,492,081	895,248	-	-	-	-	-
Reclaimed Water System	\$ -	-	-	-	-	-	-	-
Buildings	\$ 1,115,886	697,429	418,457	-	-	-	-	-
Pumping Equip. - Well Related	\$ 454,894	284,309	170,585	-	-	-	-	-
Pumping Equip. - Other	\$ 450,869	281,793	169,076	-	-	-	-	-
Tanks and Reservoirs	\$ 4,042,908	1,443,896	-	2,599,012	-	-	-	-
Transmission Mains	\$ 4,499,905	2,812,441	1,687,464	-	-	-	-	-
Distribution Mains	\$ 4,570,911	-	-	-	-	-	4,570,911	-
Services and Meters	\$ 4,529,616	-	-	-	4,529,616	-	-	-
Hydrants	\$ 770,281	-	-	-	-	-	-	770,281
General Plant	\$ 2,995,640	1,214,774	617,195	541,396	503,770	-	-	118,505
<i>Total Depreciation</i>	<i>\$ 29,691,941</i>	<i>\$ 10,647,785</i>	<i>\$ 5,410,664</i>	<i>\$ 3,140,408</i>	<i>\$ 5,033,386</i>	<i>\$ -</i>	<i>\$ 4,570,911</i>	<i>\$ 888,786</i>

Appendix A – Cost Allocation Schedules

Schedule 3 - Allocation of Rate Base to Service Characteristic Categories

	<u>Total</u>	<u>Base</u>	<u>Max Day</u>	<u>Max Hour</u>	<u>Meters/Services</u>	<u>Billing</u>	<u>Distribution</u>	<u>Direct Fire Protection</u>
Rate Base -Total								
Land	\$ 45,540,395	\$ 28,462,747	\$ 17,077,648	\$ -	\$ -	\$ -	\$ -	\$ -
Wells	90,582,823	56,614,264	33,968,559	-	-	-	-	-
CAP/Hayden Udall WTP	47,251,680	29,532,300	17,719,380	-	-	-	-	-
Reclaimed Water System	-	-	-	-	-	-	-	-
Buildings	21,354,533	13,346,583	8,007,950	-	-	-	-	-
Pumping Equip. - Well Related	12,806,625	8,004,141	4,802,485	-	-	-	-	-
Pumping Equip. - Other	7,452,824	4,658,015	2,794,809	-	-	-	-	-
Tanks and Reservoirs	133,677,709	47,742,039	-	85,935,670	-	-	-	-
Transmission Mains	172,152,798	107,595,499	64,557,299	-	-	-	-	-
Distribution Mains	164,709,257	-	-	-	-	-	164,709,257	-
Services and Meters	88,048,688	-	-	-	88,048,688	-	-	-
Hydrants	30,398,590	-	-	-	-	-	-	30,398,590
General Plant	23,027,385	9,337,928	4,744,357	4,161,697	3,872,461	-	-	910,942
<i>Total Rate Base</i>	<i>\$ 837,003,306</i>	<i>\$ 305,293,515</i>	<i>\$ 153,672,486</i>	<i>\$ 90,097,367</i>	<i>\$ 91,921,149</i>	<i>\$ -</i>	<i>\$ 164,709,257</i>	<i>\$ 31,309,531</i>

Appendix A – Cost Allocation Schedules

Schedule 4 – Allocation of O&M Costs Between Inside City and Outside City Customer Groups

Operating and Maintenance Expenses - Allocated to Inside-City

	<u>Total</u>	<u>Base</u>	<u>Max Day</u>	<u>Max Hour</u>	<u>Meters/Services</u>	<u>Billing</u>	<u>Readiness-to-Serve</u>	<u>Fire Protection</u>	<u>CAP</u>
Director's Office	\$ 4,497,740	\$ 1,517,838	\$ 454,484	\$ 29,471	\$ 144,274	\$ 1,894,373	\$ 325,708	\$ 131,592	\$ -
Customer Services	7,272,297	-	-	-	-	7,272,297	-	-	-
Business Services	\$ 4,466,240	278,267	61,078	6,951	34,030	3,978,050	76,825	31,039	-
Water Quality and Operations	\$ 32,404,867	16,750,202	2,593,799	327	10,777	-	11,958	626,768	12,411,036
Planning & Engineering	\$ 5,709,201	2,435,254	1,192,656	1,073,518	499,627	-	280,318	227,827	-
Maintenance	\$ 21,174,226	6,848,086	2,265,857	291,898	2,989,542	-	6,714,816	2,064,027	-
Other Budgetary Requirements	\$ 17,239,399	4,186,841	164,499	(635,208)	76,315	1,442,653	1,059,231	343,288	10,601,781
Total Inside-City O&M	\$ 92,763,970	\$ 32,016,487	\$ 6,732,373	\$ 766,957	\$ 3,754,565	\$ 14,587,374	\$ 8,468,856	\$ 3,424,540	\$ 23,012,817

Operating and Maintenance Expenses - Allocated to Outside-City

	<u>Total</u>	<u>Base</u>	<u>Max Day</u>	<u>Max Hour</u>	<u>Meters/Services</u>	<u>Billing</u>	<u>Readiness-to-Serve</u>	<u>Fire Protection</u>	<u>CAP</u>
Director's Office	\$ 1,798,057	\$ 559,470	\$ 190,799	\$ 11,307	\$ 52,180	\$ 750,686	\$ 186,023	\$ 47,593	\$ -
Customer Services	\$ 2,881,803	-	-	-	-	2,881,803	-	-	-
Business Services	\$ 1,774,675	102,568	25,641	2,667	12,308	1,576,388	43,877	11,226	-
Water Quality and Operations	\$ 12,075,180	6,174,065	1,088,914	125	3,898	-	6,830	226,684	4,574,664
Planning & Engineering	\$ 2,233,388	897,626	500,694	411,869	180,701	-	160,099	82,399	-
Maintenance	\$ 9,250,211	2,524,180	951,239	111,990	1,081,233	-	3,835,069	746,500	-
Other Budgetary Requirements	\$ 6,604,792	1,543,255	69,059	(243,706)	27,601	571,682	604,964	124,157	3,907,779
Total Outside-City O&M	\$ 36,618,107	\$ 11,801,164	\$ 2,826,345	\$ 294,253	\$ 1,357,920	\$ 5,780,559	\$ 4,836,863	\$ 1,238,560	\$ 8,482,443

Schedule 5 – Allocation of Depreciation Between Inside City and Outside City Customer Groups

	<u>Total</u>	<u>Base</u>	<u>Max Day</u>	<u>Max Hour</u>	<u>Meters/Services</u>	<u>Billing</u>	<u>Distribution</u>	<u>Direct Fire Protection</u>
Depreciation - Inside-City	\$ 21,119,033	\$ 7,780,076	\$ 3,810,826	\$ 2,269,635	\$ 3,696,475	\$ -	\$ 2,909,305	\$ 652,717
Depreciation - Outside-City	8,572,908	2,867,709	1,599,838	870,774	1,336,911	-	1,661,607	236,069
Total Depreciation	\$ 29,691,941	\$ 10,647,785	\$ 5,410,664	\$ 3,140,408	\$ 5,033,386	\$ -	\$ 4,570,911	\$ 888,786

Schedule 6 – Allocation of Rate Base Between Inside City and Outside City Customer Groups

	<u>Total</u>	<u>Base</u>	<u>Max Day</u>	<u>Max Hour</u>	<u>Meters/Services</u>	<u>Billing</u>	<u>Distribution</u>	<u>Direct Fire Protection</u>
Rate Base - Inside-City	\$ 591,753,962	\$ 223,070,513	\$ 108,234,229	\$ 65,115,131	\$ 67,506,094	\$ -	\$ 104,834,546	\$ 22,993,448
Rate Base - Outside-City	245,249,344	82,223,002	45,438,257	24,982,235	24,415,055	-	59,874,711	8,316,083
Total Rate Base	\$ 837,003,306	\$ 305,293,515	\$ 153,672,486	\$ 90,097,367	\$ 91,921,149	\$ -	\$ 164,709,257	\$ 31,309,531

Appendix A – Cost Allocation Schedules

Schedule 7 – Allocation of Rate Base Between Inside City and Outside City Customer Groups Adjusted for System Equity Fees

Rate Base Net of System Equity Fee Revenues:

Net Plant - Inside-City	\$ 570,943,150
Net Plant - Outside-City	<u>239,443,614</u>
<i>Bate Base - Adjusted</i>	\$ 810,386,764