

City of Scottsdale

2014

IMPACT FEE REPORT



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February 18, 2014

Mr. Brian Biesemeyer
Executive Director
Water Resources Department
City of Scottsdale
9379 San Salvador Drive
Scottsdale, AZ 85258

Dear Mr. Biesemeyer:

Raftelis Financial Consultants, Inc. (RFC) is pleased to submit the attached Impact Fee Report describing the results of our 2014 Impact Fee Study (Study) to provide updated water and wastewater impact fees for the City of Scottsdale (City) under the requirements of Arizona Revised Statutes (ARS) §9-463.05.

The revised legislation requires all existing impact fees be replaced by fees adopted under new adoption procedures, guidelines, and requirements by August 1, 2014. The legislation also requires the fee structures be based on adopted Land Use Assumptions (LUA) and Infrastructure Improvements Plans (IIP). The City formally adopted its LUA and IIP on December 12, 2013.

Finally, the legislation requires the City prepare and make public an Impact Fee Report that documents the methodology used to determine the fees, the approach used to assess the fees to development, and provides a schedule of fees. This Report meets these requirements and describes the City of Scottsdale's updated water and wastewater impact fees.

We have enjoyed this opportunity to again work with the City of Scottsdale on this very important engagement. We appreciate the efforts made by the Water Resources Department in providing timely and accurate input during the project. In particular, we wish to acknowledge the important contributions provided by Gina Kirkland and James Dorf in helping us determine and develop the key financial information necessary to update the water and wastewater impact fees under ARS §9-463.05.

If you have any questions or concerns, please do not hesitate to contact me at (704) 373-1199.

Sincerely yours,

RAFTELIS FINANCIAL CONSULTANTS, INC.

A handwritten signature in black ink, appearing to read 'Frank Davis', with a stylized flourish at the end.

Frank Davis
Manager

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CHAPTER 1. INTRODUCTION

Background

The City of Scottsdale (City or COS) has grown from a small community with a population of 2,000 in 1951, to a vibrant community of more than 217,000 persons encompassing an area of 185 square miles. Scottsdale is transitioning from a growth-oriented community to a mature City environment emphasizing economic development, revitalization, and sustainability. Based on current trends and land uses, Scottsdale's population in 2035 is estimated to approach 280,000.

To address the challenges of providing water and wastewater system capacity to new customers and ensure development pays its proportionate share of the capital costs for that capacity, the City has historically charged impact fees for water, wastewater, and water resources. Impact fees are one-time capital charges to fund the construction of public facilities needed to accommodate new development.

The City last updated its impact fees in 2008. As part of that update, the City engaged Raftelis Financial Consultants, Inc. (RFC) to review the methodology the City had used for many years in determining impact fees. The City had experienced challenges in updating the fees under the former hybrid methodology that resulted in fluctuations in the per unit costs of water and wastewater capacity. These fluctuations, which had significant impacts on developers and COS revenues, resulted from the effects that evolving development trends and legislative changes had on the former methodology. To address these challenges and fluctuations in the impact fee calculations, RFC identified several enhancements to the City's impact fee methodology. These 2008 enhancements included:

- Modifying the hybrid calculation approach, which recovered only a portion of the cost of existing capacity, by implementing a system average cost approach focused on recovering the total value of all existing and planned infrastructure.
- Eliminating the practice of assessing impact fees based on a zonal planning approach since the water and wastewater systems are interconnected and treated as an integrated utility system within the City's entire service area.
- Including all future projects providing capacity to benefit development and all forecasted water, water resources, and wastewater demands through the build-out period as defined in master planning studies as 2035.

In 2011, Arizona enacted Senate Bill (SB) 1525 which requires all existing impact fees be replaced by fees adopted under new adoption procedures, guidelines, and requirements by August 1, 2014. As part of the adoption procedures, the legislation requires fee structures be based on an adopted Land Use Assumptions Report and an Infrastructure Improvements Plan Report which is a central document disclosing existing infrastructure, available capacity, planning and cost estimates for new infrastructure required to serve development. Finally, the legislation requires a report be prepared in order to document the methodology used to calculate and assess the impact fee to new development.

Statement of Intent – Development of Impact Fees

One mechanism used by the City to fund the infrastructure needed to accommodate new growth is the assessment of development impact fees, which will hereinafter be called impact fees in this Impact Fee Report (Report). Impact fees are one-time payments that represent the “proportionate share” of infrastructure capital costs needed to accommodate new Equivalent Demand Units (EDUs). For the purposes of this Report, the City has 2 impact fees, both of which are related to water.

- **Water Impact Fees** provide funds for the cost of new or expanded facilities for the supply, transportation, treatment, purification, and distribution of water, and the pumping and storage infrastructure required by new EDUs within the City’s Service Area. Water Supply is an essential part of Water Services and a portion of the Water Impact Fee attributable to new EDUs for Water Supply pays only for acquiring, transporting, treating, and managing through recharge to, and recovery from, underground aquifers, new or renewable supplies of water required by new EDUs; and
- **Wastewater Impact Fees** pay for the cost of sewers, lift stations, reclamation plants, wastewater treatment plants and facilities for the collection, interception, treatment, transportation, and disposal of wastewater and any appurtenances for new or expanded facilities required by new EDUs.

Purpose of Impact Fee Report

The City must prepare and make public an Impact Fee Report that documents the methodology used to determine the fees, the approach used to assess the fees to development and provides a schedule of fees. This Report meets these requirements and describes the City of Scottsdale’s updated water and wastewater impact fees which were determined based on the analysis and data documented in the Land Use Assumptions Report (LUA) adopted on December 10, 2013 and the Infrastructure Improvements Plan (IIP) Report adopted on December 10, 2013. Consistent with the LUA and IIP reports, the updated water and wastewater impact fees have been developed for a 10-year period, 2013 to 2023, and must be updated at least every 5 years as part of the update of the LUA and IIP that will occur on or before December 10, 2018.

CHAPTER 2. WATER IMPACT FEES

Chapter 2 of the Impact Fee Report documents the methodology used to determine the water impact fee. The Necessary Public Services recovered through the water impact fee includes water treatment, distribution, and water supply.

2.1 Water Service Area

The City's water treatment and distribution system is interconnected and is treated as one integrated system within the City's service area. For more information on the water service area, see the IIP Report.

2.2 Current Water Impact Fee Methodology

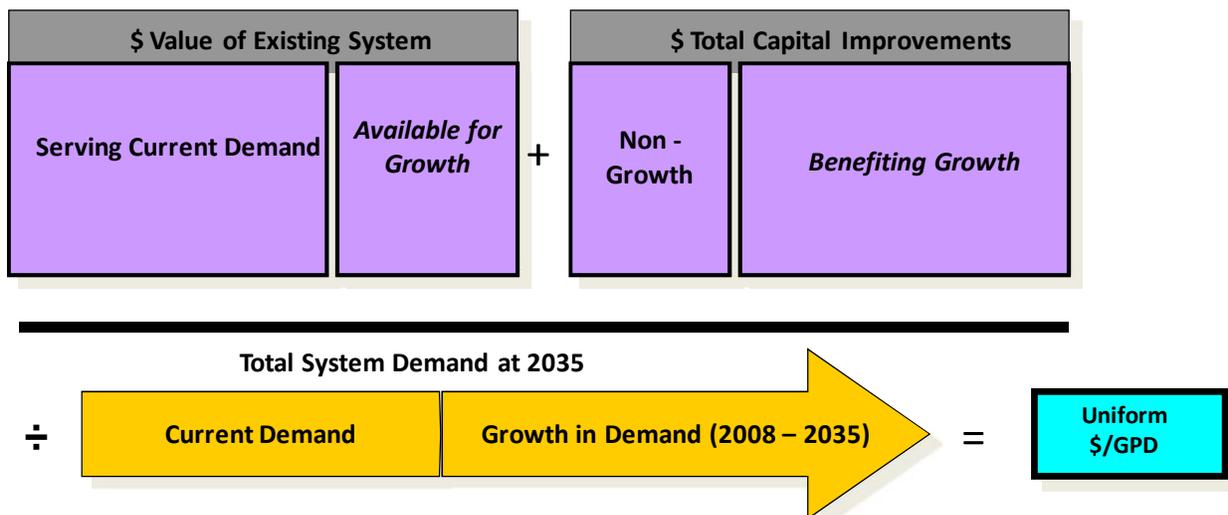
The current water impact fee, adopted in 2008, was determined based on the system average cost approach which focuses on the total value and total demand of the utility systems. Specifically, the approach was designed to recover the current value of all existing facilities available to serve existing current demand and anticipated future demand; plus the total capital improvements to those systems. Since the costs recovered under this current approach represents the total system value, it was appropriate to determine the unit cost per gallon per day (gpd) under this approach by dividing the total system costs by the total system demand anticipated at build-out.

Chart 1 below demonstrates that the total system value was identified and included in the value used to determine the development fees under the current system average cost approach.

Chart 1:

System Average Cost Approach

Focuses on Total System Value and Total Demand at Build-Out



The above diagram demonstrates the general method used to determine development fees under the current system average cost approach. However, other components may be included such as future interest payments on debt benefiting new customers and the debt principal credit on debt that is recovered through monthly customer utility charges.

The current system average cost approach is highlighted by the following observations:

- Reflects the average costs of current and future facilities through build-out.
- Less potential for volatility in future fee updates as the planning period extended through build-out.
- Recognized that the City's water facilities were near build-out and that existing water treatment facilities could meet future demands.

2.3 New Water Impact Fee Methodology Under SB 1525

One of the primary objectives of the prior Impact Fee Update (2008) was to identify enhancements to the City's impact fee methodology that would reduce the periodic fluctuations in unit cost per gpd that had occurred in previous impact fee updates. However, certain provisions of SB 1525 require some modifications to the impact fee methodology the City implemented as part of the 2008 Impact Fee Update. In order to comply with SB 1525, RFC and City staff recommends the following modifications to the existing water impact fee methodology and notes additional matters in the overall fee structure:

- Determine impact fees based on a 10-year water IIP planning period (2013 through 2023).
- Continue to exclude capital improvements identified as replacements or upgrades to the existing water facilities in the capital expansion component of the impact fee.
- Continue to recover approximately 15% of the buy-in value for the Advanced Water Treatment (AWT) facilities as a water supply component.
- Integrate the current water resource (for water supply) into the updated water impact fee.
- Exclude a buy-in value for the existing water rights available to serve new EDUs in the IIP or in the costs to be recovered through the water impact fee.
- Determine the capacity available for new water EDUs using peak day water usage.
- Determine the system average cost per gpd of water capacity by dividing the costs of existing capacity plus the planned capital improvements benefitting new customers by the total existing and planned water treatment capacity during the 10-year planning period.
- The water buy-in facilities consists of replacement cost new less depreciation (RCNLD) of the city's current facilities necessary to serve new EDUs.
- Include all planned expansion costs for facilities needed to serve new EDUs.

- A debt principal credit is provided for outstanding principal on funds borrowed, or anticipated to be borrowed, to construct the facilities that benefit new customers but are repaid through the user rates generated by those new customers.
- Exclude facilities contributed by developers and others from the total value eligible to serve new EDUs.

This hybrid approach recognizes that new customers of utility systems benefit from both facilities already in place and planned capital projects required to expand and extend capacity. The impact fees are determined to reflect the average unit cost of the planned system capacity based on previous and planned investments in the system divided by the total capacity in those facilities. This hybrid approach essentially puts the unit cost of capacity for existing and future customers on par.

2.3.1 Water Treatment Component

The water treatment component includes water treatment facilities, purification, and wells eligible to serve new EDUs. As noted in the table below, the total capacity of the City's existing treatment and production facilities that are eligible to serve new EDUs is 147.5 million gallons per day (mgd) and consists of the Central Arizona Project (CAP) Water Treatment Plant (WTP), the Chaparral WTP, and various groundwater well production sites. Excluded from the City's treatment facilities eligible to serve new EDUs is the Central Groundwater Treatment Facility (CGTF) which was funded through private contributions and relates solely to a superfund site. Also excluded is a reserve capacity, as described in Chapter 6 of the City's IIP Report, from the capacity eligible to serve new EDUs. The total RCNLD of the City's existing water treatment facilities eligible to serve new EDUs is \$437.8 million. See Table 2-7 in the IIP Report.

**TABLE 2.3.1
CAPACITY OF TREATMENT AND
PRODUCTION FACILITIES**

Facility	Capacity (mgd)
CAP WTP	70.00
Chaparral WTP	27.00
CGTF	12.30
Wells	50.90
Total	160.20
Less CGTF	(12.30)
Less Reserved Capacity	(0.40)
Total Eligible For New EDUs	147.50
Less Peak Day Demand	(94.14)
Capacity Available for New EDUs	53.36

As noted above there is available treatment and production capacity of 53.36 mgd to serve new demand. With the addition of 21,275 EDUs and a level of service of 709 gpd/EDU noted in section 2.7.3 of the IIP, the new EDUs will require only 15.1 mgd of the 53.36 mgd to meet maximum day demand, as stated in section 2.8.1 of the IIP Report. The available capacity exceeds the projected maximum day demand of the new EDUs; therefore, no projects to expand water treatment or production capacity are required during the 10-year planning period.

Based on the total value of the water treatment component of \$437.8 million and 147.5 mgd of capacity in treatment facilities eligible to serve new EDUs, the unit cost of treatment is \$2.97 per gpd.

For more information on the City's existing and planned treatment facilities and capacity eligible to serve new EDUs, see Table 2-4 in the City's IIP Report.

2.3.2 Water Distribution Component

The water distribution component includes pumping facilities, transmission structures, distribution reservoirs, and distribution mains eligible to serve new EDUs. These facilities provide total capacity eligible to serve new EDUs equal to the current treatment and production capacity. While the water distribution system consists of a network of individual components, all of which have a unique capacity, many of these components have been designed to accommodate both current and new EDUs beyond the 10-year planning period. Hence, the collective capacity of the treatment facilities can be used as a measure of the capacity of the entire water distribution system.

As discussed in Section 2.8 Required Capital Facilities in the IIP Report and shown in Table 2-12, approximately \$26.4 million in water distribution infrastructure is needed during the 10-year planning period. This infrastructure is needed to extend and expand the City's water distribution system to address expanded development and new development in the Wildcat Development, State Land near Legend Trails, East Dynamite, and Crossroads.

As shown in Table 2-13 of the IIP Report, the RCNLD of the existing distribution facilities eligible to serve new EDUs is approximately \$254.2 million and the planned infrastructure during the 10-year IIP planning period is approximately \$26.4 million.

Based on the total value of the water distribution component of \$280.6 million and 147.5 mgd of capacity in distribution facilities eligible to serve new EDUs, the unit cost of the distribution system is \$1.90 per gpd.

For more information on the City's existing and planned distribution facilities and capacity eligible to serve new EDUs, see Table 2-5 in the City's IIP Report.

2.3.3 Water Supply Component

The water supply (recharge) component includes approximately 15% of the buy-in value of the City's AWT facilities located at the Water Campus Water Reclamation Facility. The AWT treats effluent from the Water Campus Water Reclamation Facility and recharges a portion of that effluent into the aquifer. This recharged water represents a water supply as it can be withdrawn from the aquifer and treated to meet potable water demands by existing and new EDUs. As shown in Table 2-6 of the IIP Report, the total recharge capacity eligible to serve new EDUs is 13.5 mgd of the total 20.0 mgd of AWT capacity, since 6.5 mgd is reserved for the Reclaimed Water Distribution System (RWDS) which supplies reclaimed water to local golf courses. Chapter 6 of the City's IIP Report describes the reserve capacity of the AWT. As shown in Table 2-13 of the IIP Report, the RCNLD of the AWT facilities included in the water impact fee that eligible to serve new EDUs is approximately \$11.1 million.

**TABLE 2.3.3
CAPACITY OF WATER SUPPLY FACILITIES**

Facility	Capacity (mgd)
AWT	20.00
Capacity Added During Planning Period	3.00
Less Reserved Capacity	(6.50)
Total Eligible For New EDUs	16.50
Less Current Demand	(5.84)
Capacity Available for New EDUs	10.66

As discussed in Section 2.8 Required Capital Facilities in the IIP Report, the City’s available water supply exceeds the future 2025 demand projections and additional acquisitions of new water resources are not needed; however, additional activities related to the recharge of a portion of Scottsdale’s available renewable supply of reclaimed wastewater are planned. Eight (8) additional reclaimed water vadose zone recharge wells that will add 3.0 mgd of effluent for water recharge are planned for implementation in the year 2017 at a cost of \$3.2 million.

Based on the total value of the water supply component of \$14.3 million and 16.50 mgd of capacity to recharge effluent eligible at the AWT to serve new EDUs, the unit cost of recharge facilities is \$0.86 per gpd as shown in Table 2.3.7.

For more information on the City’s existing and planned supply facilities and capacity eligible to serve new EDUs, see Table 2-6 in the City’s IIP Report.

2.3.4 Water Interest Expense Component

The water impact fee also recovers the interest expense on expansion related debt the City has issued to fund capital improvements benefiting new customers. The interest cost includes annual scheduled interest payments starting as of FY 2013 and continuing through maturity. The annual interest payments are divided by the annual peak day water demands and discounted back to present value based on a discount rate of 4.84%, which is the weighted average cost of debt for the City’s currently outstanding water and wastewater debt issues. No interest payments are included for planned or anticipated debt needed beyond FY 2013 that fund future capital improvements benefiting the new customers.

Based on the total outstanding interest due on debt issued to fund facilities benefiting new customers, the average unit cost of water interest expense is \$0.25 per gpd as shown below in Table 2.3.7.

For more information on the water interest expense calculation, see Schedule 4, Calculation of Interest Expense Components in the Appendix.

2.3.5 Present Value of Annual Principal Credit on Existing Debt Service

The debt principal credit represents the annual principal payments on debt issued to fund existing facilities included in the system buy-in costs that are also included in the revenue requirements recovered through monthly customer utility charges. These annual principal

payments do not include principal payments on those debt issues identified as benefiting new customers and eligible to be included in the interest expense component recovered through the impact fees. Each of the annual principal payments is divided by the annual system demand that serves as the basis for determining the estimated user rates and charges per gpd for the principal payments. Since new customers will pay for these debt principal payments through their monthly user rates and charges, this credit prevents the new customer from being double charged through the impact fee and the user rates and charges. Each of the annual per gpd principal payments remaining on the outstanding debt is discounted back to present value based on a discount rate of 4.84%, which is the weighted average cost of debt for the City's currently outstanding water and wastewater debt issues and summed to determine the debt principal per gpd that is credited against the total cost per gpd. The present value of annual principal on existing debt service is \$1.24 gpd. This credit is deducted from the sum of the four costs components per gpd to determine the net capital cost per gpd.

For more information on the water debt principal credit calculation, see Schedule 5, Debt Service Principal Credits Calculations in the Appendix.

2.3.6 Proposed Water Impact Fee Unit Cost Per GPD

The per unit cost of capacity is \$4.75 per gpd as shown below in Table 2.3.7. This represents the sum of the cost per gpd for the water treatment and production component, water distribution component, water supply (recharge) component, and water interest expense component, less the net present value of annual principal on existing debt service.

2.3.7 Proposed Water Impact Fee Cost per EDU

The cost per service unit is determined by multiplying the per unit cost of capacity of \$4.75 times the demand factor for the base service unit/EDU, or the 709 gpd peak demand for the typical residential dwelling unit. This results in a water impact fee per service unit of **\$3,365**.

Table 2.3.7 summarizes the unit costs per gpd for each of components of the water impact fee and the determination of the proposed water impact fee unit cost per gpd.

**TABLE 2.3.7
WATER IMPACT FEE COST
PER GPD PER EDU**

Water Impact Fee Components	Unit Cost
Water Treatment and Production (gpd)	\$2.968
Water Distribution (gpd)	\$1.902
Water Supply (Recharge) (gpd)	\$0.865
Interest Expense (gpd)	\$0.254
Total Cost of Capacity (gpd)	\$5.989
Less Debt Principal Credit	\$(1.243)
Net Cost of Capacity (gpd)	\$4.746
Peak Demand Factor (gallons)	709
Water Impact Fee Per EDU	<u>\$3,365</u>

For more information on the water impact fee calculation, see Schedule 2, Calculation of Water Impact Fee in the Appendix.

2.3.8 Proposed Water Impact Fees by Meter Type

The City will assess its water impact fees based on the size of the meter needed by the new customer. The maximum water impact fees per meter type that may be adopted by the City based on this study are presented below:

Table 2.3.8. Proposed Water Impact Fees by Meter Type

Meter Size/Type	EDUs Per Meter	Impact Fee
5/8, 3/4 and 1 Inch	1.0	\$ 3,365
1 1/2 Inch	5.0	\$ 16,825
2 Inch	8.0	\$ 26,920
3 Inch Compound	16.0	\$ 53,840
3 Inch Turbine	22.0	\$ 74,030
4 Inch Compound	25.0	\$ 84,125
4 Inch Turbine	42.0	\$ 141,330
6 Inch Compound	50.0	\$ 168,250
6 Inch Turbine	86.5	\$ 291,073
8 Inch Compound	80.0	\$ 269,200

Single-family dwelling units in the City have historically utilized the 5/8" water meter for typical residential water service as it meets the demands of a standard single-family unit. The 1" meter has the additional capability of supporting an increased increment of flow for fire suppression. To standardize its residential meter sizes, the City is adopting the 1" meter as the minimum meter size for a single-family unit. For determining demands for the various meter sizes, it is appropriate, however, to establish the 5/8" meter capacity as the base rate of flow of 10 gpm, with subsequent meter size EDU multipliers based on the potential flow rates of those larger meters in relation to this base flow rate. The City is, therefore, consolidating all meter sizes of 1" or less into a single meter class that is equivalent to one EDU. The meter capacities, or EDU expressed by size and type are based on standards from the American Water Works Association (AWWA).

CHAPTER 3. WASTEWATER IMPACT FEES

Chapter 3 of the Impact Fee Report documents the methodology used to determine the wastewater impact fee. The Necessary Public Services recovered through the wastewater impact fee includes wastewater treatment and collection.

3.1 Wastewater Service Area

The City's wastewater treatment and collection system is interconnected and is treated as one integrated system within the City's service area. For more information on the wastewater service area, see the IIP Report.

3.2 Current Wastewater Impact Fee Methodology

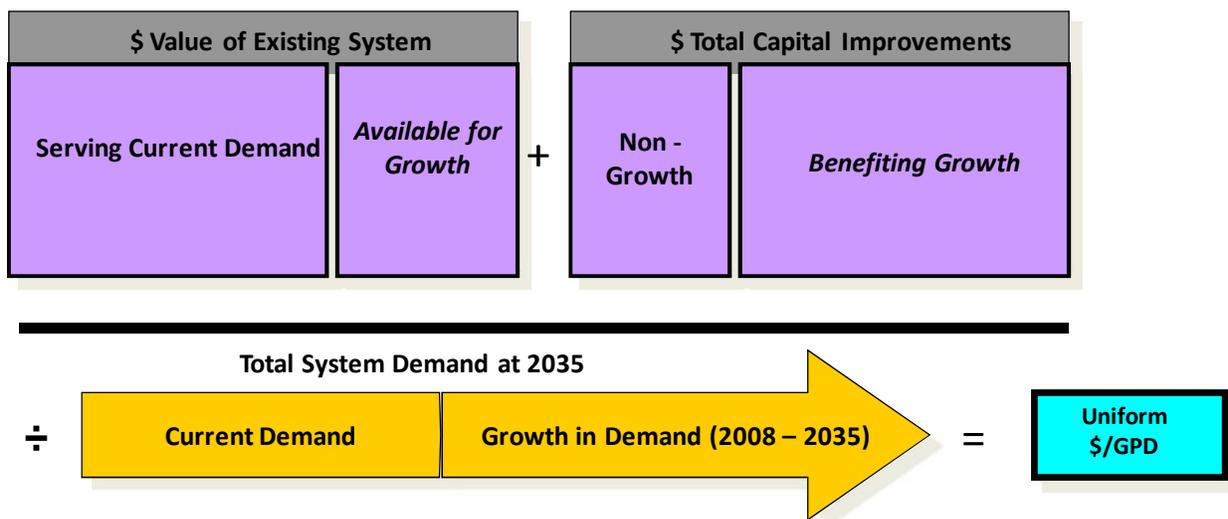
The current wastewater impact fee, adopted in 2008, was determined based on the same system average cost approach used for the water impact fee, which focuses on the total value and total demand of the utility systems. Specifically, the approach was designed to recover the current value of all existing facilities available to serve existing current demand and anticipated future demand; plus the total capital improvements to those systems. Since the costs recovered under this approach represent the total system value, it was appropriate to determine the unit cost per gallon per day (gpd) under this approach by dividing the total system costs by the total system demand anticipated at build-out.

Chart 2 below demonstrates that the total system value is identified and included in the value used to determine the development fees under the system average cost approach.

Chart 2:

System Average Cost Approach

Focuses on Total System Value and Total Demand at Build-Out



The above diagram demonstrates the general method used to determine development fees under the current system average cost approach. However, other components may be included such as future interest payments on debt benefiting new customers and the debt principal credit on debt that is recovered through monthly customer utility charges.

The system average cost approach is highlighted by the following observations:

- Reflects the average costs of current and future facilities through build-out.
- Less potential for volatility in future fee updates as the planning period extended through build-out.
- Recognized that the City's wastewater facilities were near build-out and that existing wastewater facilities could meet future demands.

3.3 New Wastewater Impact Fee Methodology Under SB 1525

One of the primary objectives of the prior Impact Fee Update (2008) was to identify enhancements to the City's impact fee methodology that would reduce the periodic fluctuations in unit cost per gpd that had occurred in previous impact fee updates. However, certain provisions of SB 1525 and other issues require some modifications to the impact fee methodology the City implemented as part of the 2008 Impact Fee Update. In order to comply with SB 1525, RFC and City staff recommends the following modifications to the existing wastewater impact fee methodology and notes additional matters in the overall fee structure:

- Determine impact fees based on a 10-year wastewater IIP planning period (2013 through 2023).
- Continue to exclude capital improvements identified as replacements or upgrades to the existing wastewater facilities in the capital expansion component of the impact fee.
- Continue to recover approximately 85% of the buy-in value for the AWT facilities as part of the wastewater treatment component of the wastewater impact fee since these facilities allow for disposal of wastewater at the Water Campus Water Reclamation Facility.
- Determine the capacity available for new wastewater EDUs using annual average day demand.
- Determine the system average cost per gpd of wastewater capacity by dividing the costs of existing capacity plus the planned capital improvements benefiting new customers by the total existing and planned wastewater treatment capacity during the 10-year planning period.
- The wastewater buy-in facilities consists of RCNLD of the city's current facilities necessary to serve new EDUs.
- Include all planned expansion costs for facilities needed to serve new EDUs.
- A debt principal credit is provided for any outstanding principal on funds borrowed, or anticipated to be borrowed, to construct the facilities that benefit new customers but are repaid through the user rates generated by those new customers.

- Exclude facilities contributed by developers and others from the total value eligible to serve new EDUs.

This hybrid approach recognizes that new customers of utility systems benefit from both facilities already in place and planned capital projects required to expand and extend capacity. The impact fees are determined to reflect the average unit cost of the planned system capacity based on previous and planned investments in the system divided by the total capacity in those facilities. This hybrid approach essentially puts the unit cost of capacity for existing and future customers on par.

3.3.1 Wastewater Treatment Component

The wastewater treatment component consist of City’s wastewater treatment facilities and its Safe Capacity Ownership in the Multi-City Sub-Regional Operating Group Committee (SROG), As noted in the Table below, the total capacity of the City’s existing treatment facilities that are eligible to serve EDUs is 40.0 million gallons per day (mgd). This 40.0 mgd consists of the Water Campus Water Reclamation Facility (WRF) and Scottsdale’s capacity ownership in the City of Phoenix’s 91st Avenue Wastewater Treatment Plant through the SROG agreement. The Gainey Ranch Water Reclamation Facility is excluded from the Wastewater Treatment Plants’ components since this facility was contributed to the City by the Gainey Ranch development and is used for wastewater treatment solely to produce reclaimed water for irrigation purposes. As such, the Gainey Ranch WRF is not eligible to serve new EDUs. Also, a reserve capacity, as described in Chapter 6 of the City’s IIP Report, is also excluded from the capacity eligible to serve new EDUs. As noted in Table 3-3 of the IIP Report the total RCNLD of the City’s existing wastewater treatment facilities eligible to serve new EDUs is \$300.3 million.

**TABLE 3.3.1
CAPACITY OF WASTEWATER TREATMENT
AND COLLECTION FACILITIES**

Facility	Capacity (mgd)
Gainey Ranch WRF	1.67
Water Campus	20.00
SROG (Scottsdale Safe Capacity Ownership)	20.25
Total	41.92
Less Gainey Ranch	(1.67)
Less Reserved Capacity	(0.25)
Total Eligible For New EDUs	40.00
Less Average Day Demand	(20.13)
Capacity Available for New EDUs	19.87

As noted in Table 3-2 of the City’s IIP Report, there is available wastewater treatment capacity of 19.87 mgd to serve new demand. As noted in Table 3-4, with the addition of 32,110 EDUs and a level of service of 196 gpd/EDU noted in Section 3.4, the new EDUs will require only 6.30 mgd of the 19.87 mgd to meet average day demand. The available capacity exceeds the

projected average day demand of the new EDUs; therefore, no projects to expand wastewater treatment capacity are required during the 10-year planning period for this IIP.

Based on the total value of the wastewater treatment component of \$300.3 million and 40.0 mgd of capacity in treatment facilities eligible to serve new EDUs, the unit cost of treatment is \$7.51 per gpd as shown below in Table 3.3.6.

For more information on the City's existing and planned wastewater treatment facilities and capacity eligible to serve new EDUs, see Table 3-2 in the City's IIP Report.

3.3.2 Wastewater Collection Component

The wastewater collection component includes wastewater conveyance infrastructure such as lift stations, gravity sewers and force mains eligible to serve new EDUs. These facilities provide total capacity eligible to serve new EDUs equal to the current treatment capacity. While the wastewater collection system consists of a network of individual components, all of which have a unique capacity, many of these components have been designed to accommodate both current and new EDUs beyond the 10-year planning period. Hence, the collective capacity of the treatment facilities can be used as a measure of the capacity of the entire wastewater collection system.

As discussed in Section 3.10 Required Capital Facilities in the IIP Report and shown in Table 3-5 of that IIP Report, approximately \$5.0 million in wastewater collection infrastructure is needed during the 10-year planning period to serve new EDUs. This infrastructure is needed to extend and expand the City's wastewater collection system to address expanded development and new development in the City's wastewater service area.

As shown in Table 3-6 the RCNLD of the existing collection facilities eligible to serve new EDUs is approximately \$106.9 million and the planned infrastructure during the 10-year IIP planning period is approximately \$5.0 million.

Based on the total value of the wastewater collection component of approximately \$111.8 million and 40.0 mgd of capacity in collection facilities eligible to serve new EDUs, the unit cost of the collection system is \$2.80 per gpd as shown below in Table 3.3.6.

For more information on the City's existing and planned wastewater collection facilities and capacity eligible to serve new EDUs, see Table 3-2 in the City's IIP Report.

3.3.3 Wastewater Interest Expense Component

The wastewater impact fee also recovers the interest expense on expansion related debt the City has issued to fund capital improvements benefiting new customers. The interest cost includes annual scheduled interest payments starting as of FY 2013 and continuing through maturity. The annual interest payments are divided by the annual average day wastewater demands and discounted back to present value based on a discount rate of 4.84%, which is the weighted average cost of debt for the City's currently outstanding water and wastewater debt issues. No interest payments are included for planned or anticipated debt needed beyond FY 2013 that fund future capital improvements benefiting the new customers.

Based on the total outstanding interest due on debt issued to fund facilities benefitting new EDUs, the average unit cost of water interest expense is \$0.99 per gpd as shown in Table 3.3.6.

For more information on the wastewater debt principal credit calculation, see Schedule 4, Debt Service Principal Credits Calculations.

3.3.4 Present Value of Annual Principal Credit on Existing Debt Service

The debt principal credit represents the annual principal payments on debt issued to fund existing facilities included in the system buy-in costs that are also included in the revenue requirements recovered through customer utility charges. These annual principal payments do not include principal payments on those debt issues identified as benefiting new customers and eligible to be included in the interest expense component recovered through the impact fees. Each of the annual principal payments is divided by the annual system demand that serves as the basis for determining the estimated monthly user rates and charges per gpd for the principal payments. Since new customers will pay for these debt principal payments through their monthly user rates and charges, this credit prevents the new customer from being double charged through the impact fee and the user rates and charges. Each of the annual per gpd principal payments remaining on the outstanding debt is discounted back to present value based in a discount rate of 4.84%, which is the weighted average cost of debt for the City's currently outstanding water and wastewater debt issues. These annual payments are summed to determine the debt principal per gpd that is credited against the total cost per gpd. The present value of annual principal on existing debt service is \$0.88 gpd. This credit is deducted from the sum of the three costs components per gpd to determine the net capital cost per gpd.

For more information on the wastewater interest expense calculation, see Schedule 5, Debt Service Principal Credits Calculations.

3.3.5 Proposed Wastewater Impact Fee Unit Cost Per GPD

The per unit cost of capacity is \$10.42 per gpd as shown below in Table 3.3.6. This represents the sum of the cost per gpd for the wastewater treatment component, wastewater collection component, and wastewater interest expense component, less the net present value of annual principal on existing debt service.

3.3.6 Proposed Wastewater Impact Fee Cost per EDU

The cost per service unit is determined by multiplying the per unit cost of capacity of \$10.42 times the demand factor for the base service unit/EDU, or the 196 gpd for the typical residential dwelling unit. This results in a wastewater impact fee per service unit of **\$2,042**.

Table 3.3.6 below summarizes the unit costs per gpd for each of components of the wastewater impact fee and the determination of the proposed wastewater impact fee unit cost per gpd.

**TABLE 3.3.6
WASTEWATER IMPACT FEE COST
PER GPD PER EDU**

Wastewater Impact Fee Components	Unit Cost
Wastewater Treatment (gpd)	\$7.508
Wastewater Collection (gpd)	\$2.796
Interest Expense (gpd)	\$0.990
Total Cost of Capacity (gpd)	\$11.294
Less Debt Principal Credit	\$(0.877)
Net Cost of Capacity (gpd)	\$10.417
Annual Average Factor (gallons)	196
Wastewater Impact Fee Per EDU	<u>\$2,042</u>

For more information on the wastewater impact fee calculation, see Schedule 3, Calculation of Wastewater Impact Fee in the Appendix.

3.3.7 Proposed Wastewater Impact Fees by Meter Type

The City will assess its wastewater impact fees based on the size of the meter needed by the new customer. The maximum wastewater impact fees per meter type that may be adopted by the City based on this study are presented below:

Table 3.3.7. Proposed Wastewater Impact Fees by Meter Type

Meter Size/Type	EDUs Per Meter	Impact Fee
5/8, 3/4 and 1 Inch	1.0	\$ 2,042
1 1/2 Inch	5.0	\$ 10,210
2 Inch	8.0	\$ 16,336
3 Inch Compound	16.0	\$ 32,672
3 Inch Turbine	22.0	\$ 44,924
4 Inch Compound	25.0	\$ 51,050
4 Inch Turbine	42.0	\$ 85,764
6 Inch Compound	50.0	\$ 102,100
6 Inch Turbine	86.5	\$ 176,633
8 Inch Compound	80.0	\$ 163,360

CHAPTER 4. FORECAST OF IMPACT FEE REVENUES AND CASH FLOWS

The City may assess impact fees as a means to offset costs associated with providing Necessary Public Services to a development, including the costs of infrastructure, improvements, real property, engineering and architectural services, financing and professional services required for the preparation or revision of impact fees, including the relevant portion of the infrastructure improvements plan. Costs that can be included in the impact fee calculation and are eligible to be offset by the impact fee revenues are projected interest charges and other finance costs on the portion of the bonds, notes or other obligations issued to finance construction of Necessary Public Services or facility expansions identified in the infrastructure improvements plan.

This section forecasts the anticipated impact fee revenues and the extent to which those revenues will offset the costs associated with providing the water and wastewater capacity to new EDUs that are included in the water and wastewater IIPs.

4.1 Forecast of Water Impact Fee Revenues and IIP Capital Costs

The annual water impact fee revenue forecast is based on the assumption in the LUA forecast that an additional 21,275 water EDUs will be added during the 10-year IIP planning period. However, since the fees will not go into effect until FY 2014, the additional EDUs have been adjusted to 19,469.

The IIP capital costs include the planned capital projects benefitting new EDUs identified in the IIP plus the principal and interest payments on water debt issued to fund infrastructure benefitting growth and included in the impact fee calculation.

The forecast of water impact fee revenues and 10-year IIP capital cost requirements are presented below:

Table 4.1

	FY 13 - 23
Forecasted Water Impact Fee Revenues	\$ 65,510,283
Planned Capital Projects Benefitting New EDUs	\$ 29,555,500
Water Principal on Growth Related Projects	\$ 24,992,501
Water Interest on Growth Related Projects	<u>\$ 24,272,625</u>
Total 10-Year Water IIP Costs	<u>\$ 78,820,626</u>
Surplus / (Deficit)	<u>\$ (13,310,343)</u>

As Table 4.1 demonstrates, the forecast of water impact fee revenue will generate a deficit of approximately \$13.3 million during the 10-year IIP planning period. Since the determination of the water impact fee includes the buy-in value of facilities eligible to serve new customers, the forecast of impact fee revenues will not necessarily equal the capital requirements during the 10-year IIP planning period.

For more information on the annual impact fee revenues and capital requirements of the IIP, see Schedule 2.1, Annual Forecast of Water Impact Fee Revenues and Capital Requirements in the Appendix.

4.2 Forecast of Wastewater Impact Fee Revenues and IIP Capital Costs

The annual wastewater impact fee revenue forecast is based on the assumption in the LUA forecast that an additional 32,110 wastewater EDUs will be added during the 10-year IIP planning period. However, since the fees will not go into effect until FY 2014, the additional EDUs have been adjusted to 29,516.

The IIP capital costs include the planned capital projects benefitting new EDUs identified in the IIP plus the principal and interest payments on wastewater debt issued to fund infrastructure benefitting growth and included in the impact fee calculation.

The forecast of wastewater impact fee revenues and 10-year IIP capital cost requirements are presented below:

Table 4.2

	FY 13 - 23
Forecasted Impact Fee Revenues	\$ 60,266,414
Planned Capital Projects Benefitting New EDUs	\$ 4,970,600
Wastewater Principal on Growth Related Projects	\$ 50,357,420
Wastewater Interest on Growth Related Projects	<u>\$ 23,904,627</u>
Total 10-Year Wastewater IIP Costs	<u>\$ 79,232,647</u>
Surplus / (Deficit)	<u>\$ (18,966,233)</u>

As Table 4.2 demonstrates, the forecast of wastewater impact fee revenue will generate a deficit of approximately \$19.0 million during the 10-year IIP planning period. Since the determination of the wastewater impact fee includes the buy-in value of facilities eligible to serve new customers, the forecast of impact fee revenues will not necessarily equal the capital requirements during the 10-year IIP planning period.

For more information on the annual impact fee revenues and capital requirements of the IIP, see Schedule 3.1, Annual Forecast of Wastewater Impact Fee Revenues and Capital Requirements in the Appendix.

CHAPTER 5. IMPACT OF UPDATED WATER AND WASTEWATER IMPACT FEES

In general, the proposed impact fees are lower than current impact fees due to the shorter planning period required by SB 1525 and reduced future expansion expectations.

The current impact fees used a planning period of 27 years (assumed build-out in 2035) while the proposed impact fees will use a 10-year planning period. The City is required to update LUAs and IIPs, upon which the impact fees are based, at least every five years. Therefore, capital projects outside the current 10- year planning period will be captured by the updated IIPs.

The proposed capital projects for growth related expansion projected over the 10-year period versus the 27 years used in the previous impact fee study has reduced the total impact fee growth component as follows:

Category	Prior Study	Current Study	Reduction
Growth Capital Expansion - Water	\$365,373,300	\$26,355,500	(\$339,017,800)
Growth Capital Expansion - Supply	\$47,652,069	\$3,200,000	(\$44,452,069)
Growth Capital Expansion - Wastewater	\$318,392,303	\$4,970,698	(\$313,421,605)
Total Reduction	\$731,417,672	\$34,526,198	(\$696,891,474)

The impact fee buy-in component is equal to infrastructure RCNLD. As the City completes growth related expansions, the capacity that is added through capital investments to the water and wastewater systems is increased and available for new EDUs. This increase to the asset base is reflected below:

Category	Prior Study	Current Study	Increase/ Reduction
Buy-In - Water	\$469,239,187	\$692,014,402	\$222,775,211)
Buy-In - Supply	\$11,395,242	\$11,068,379	(\$326,863)
Buy-In - Wastewater	\$339,432,431	\$407,179,484	\$67,747,053
Total Increase	\$820,066,860	\$1,110,262,265	\$290,195,405

The reduction in the growth related expansion projects is partially offset by the higher buy-in value. The net changes to growth related expansions and buy-in used to calculate impact fees is as follows:

Category	Prior Study	Current Study	Reduction
Growth & Buy-In - Water	\$834,612,487	\$718,369,902	(\$116,242,285)
Growth & Buy-In - Supply	\$59,047,311	\$14,268,379	(\$44,778,932)
Growth & Buy-In - Wastewater	\$657,824,734	\$412,150,182	(\$245,674,552)
Total Reduction	\$1,551,484,532	\$1,144,788,463	(\$406,696,069)

This represents an overall reduction of twenty-six percent (-26%) in the growth related expansions and buy-in components of the impact fees.

5.1 Impact Fee Revenue Forecast

The projection of impact fee revenue is challenging due to the various uncertainties associated with current residential and commercial development. Although fiscal year 2013 impact fee collections totaled \$12.4 million, the previous four fiscal years only averaged \$3.2 million due to the sustained economic downturn. The City anticipates that the revised impact fees which are proposed to be effective starting in fiscal year 2014/15 will reduce impact fee revenue primarily due to the shorter planning period and reduced future expansion expectations discussed above. A summary of the proposed decreases for each fee category are described below.

Based upon assumptions regarding the annual increase in EDUs documented in the City’s LUA report, water and wastewater impact fee revenues would approximate between \$13.5 million in 2013 and \$19.8 million in 2023.

5.2 Single Family Residential

As noted above, the City is proposing to change the method of assessing fees from residential lot size to meter size. Under the proposed impact fee structure, single family residential development with a one inch meter would see a decrease of approximately twenty-eight percent (28%) for a 6,000 square foot lot. The decrease for a one acre lot is approximately sixty-three percent (63%). Conversely, a one and a half inch meter for a one acre lot would see an increase of eighty-six percent (86%). A summary of the single family fee comparison is presented below:

Single Family Residential Fee Comparison				
Lot Size	Current	Proposed	Inc. (Dec.)	%
1 Inch Meter				
6,999 SF	\$7,477	\$5,407	(\$2,070)	-28%
11,799 SF	\$10,321	\$5,407	(\$4,914)	-48%
22,799 SF	\$13,165	\$5,407	(\$7,758)	-59%
43,556 SF	\$14,596	\$5,407	(\$9,189)	-63%
1.5 Inch Meter				
43,556 SF	\$14,596	\$27,035	\$12,439	85%
87,119 SF	\$16,009	\$27,035	\$11,026	69%
121,799 SF	\$20,271	\$27,035	\$6,764	33%

5.3 Multi-Family Residential

As noted above, the City is proposing to change the method of assessing fees from the current multi-family construction envelop method to meter size. The impact will vary depending on the approximate square footage of the dwelling unit and the number and size of the meters selected to serve the development. Using meter size rather than a per-dwelling unit charge will, in

general, produce a lower impact fee. A summary of the multi-family fee comparison is presented below:

Multi-Family Residential Fee Comparison
--

300 Unit Apartment, Average Density 1,500 SF

Meters	Current	Proposed	Inc. (Dec.)	%
Ten 2" Meters	\$1,609,608	\$432,500	(\$1,177,048)	-73%

100 Unit Apartment, Average Density 1,600 SF

Meters	Current	Proposed	Inc. (Dec.)	%
Five 1.5" Meters	\$555,000	\$135,175	(\$419,825)	-76%

8 Unit Duplex, Average Density 1,800 SF

Meters	Current	Proposed	Inc. (Dec.)	%
One 1.5" Meter	\$44,400	\$27,035	(\$17,365)	-39%

5.4 Non Residential

Non-residential development is currently assessed impact fees based on meter size. Because of the reduced planning period and reduced future expansion expectations used for developing the proposed fees, non-residential development would experience a decrease in impact fees. A summary of the non-residential fee comparison is presented below:

Non-Residential Fee Comparison

Meter Size	Current	Proposed	Inc. (Dec.)	%
5/8 Inch	\$7,878	\$5,407	(\$2,471)	-31%
1 Inch	\$20,953	\$5,407	(\$15,546)	-74%
1.5 Inch	\$43,861	\$27,035	(\$16,826)	-38%
2 Inch	\$86,540	\$43,256	(\$43,284)	-50%
3 Inch	\$134,962	\$86,512	(\$48,450)	-36%
4 Inch	\$496,636	\$135,175	(\$361,461)	-73%
6 Inch	\$831,234	\$270,350	(\$560,884)	-67%
8 Inch	\$1,256,056	\$432,560	(\$823,496)	-66%

APPENDIX

Schedule 1
Summary of Water and Wastewater Replacement Cost New Less
City of Scottsdale Impact Fee Model

Plant	Total Eligible
Water	
Pumping Plant Structures	\$ 25,380,535
Electric Pumping Equipment	\$ 1,443,217
Other Pumping Equipment	\$ 2,164,765
Transmission Structures	\$ 11,575,207
Distribution Reservoirs	\$ 16,507,675
Transmission & Distribution Mains	\$ 197,146,708
Total Distribution	\$ 254,218,106
Treatment Plant	\$ 379,576,035
Total Water	\$ 633,794,142
Water Supply	
Recharge Facilities	\$ 11,068,379
Wells	\$ 58,220,260
Total Water Supply	\$ 69,288,640
Total Water System	\$ 703,082,781
Wastewater	
Structures and Improvements	\$ 33,355,924
Main Lines	\$ 51,205,245
Trunk Lines	\$ 22,231,820
Power Operated Equipment	\$ 62,894
Total Distribution	\$ 106,855,883
Treatment Plant	\$ 300,323,601
Total Wastewater System	\$ 407,179,484
Grand Total	\$ 1,110,262,266

Schedule 2
Calculation of Water Impact Fees
City of Scottsdale Impact Fee Model

	Total
Water Treatment Component	
Buy-In Value of Existing System (RCNLD) ¹	\$ 437,796,296
Growth Related Capital Project (IIP)	0
Total Water Treatment Component	\$ 437,796,296
Component Capacity (MGD) ²	147.50
Cost Per Gallon Per Day of Capacity	\$ 2.968
Water Distribution Component	
Buy-In Value of Existing System (RCNLD) ¹	\$ 254,218,106
Growth Related Capital Project (IIP) ³	26,355,500
Total Water Distribution Component	\$ 280,573,606
Component Capacity (MGD) ⁴	147.50
Cost Per Gallon Per Day of Capacity	\$ 1.902
Water Supply Component	
Buy-In Value of Existing System (RCNLD) ¹	\$ 11,068,379
Growth Related Capital Project (IIP) ⁵	3,200,000
Total Water Distribution Component	\$ 14,268,379
Component Capacity (MGD) ⁶	16.50
Cost Per Gallon Per Day of Capacity	\$ 0.865
Present Value of Growth Related Interest Expense (gpd) ⁷	\$ 0.254
Total Water System Cost Per Gallon Per Day of Capacity	\$5.989
Less: Net Present Value of Annual Principal Payments Credit (gpd) ⁸	\$ (1.243)
Net Water System Cost Per Gallon Per Day of Capacity	\$ 4.746
Peak Demand Factor Per EDU (Gallons Per Day) ⁹	709
Full Cost Water Impact Fee Per EDU	\$ 3,364.87

1 From Table 2.7 - Buy-In of Existing Water System, in the Infrastructure Improvements Plan (IIP) Report.

2 From Table 2-4 - Existing Water Production Capacity, in the IIP Report.

3 From Table 2-12 - Water Distribution Cost Estimates; in the IIP Report.

4 From Table 2-5 - Existing Capacity of Water Distribution Facilities; in the IIP Report.

5 From Section 2.9 Water Supply; in the IIP Report.

6 From Table 2-6 - Existing Water Supply Capacity; in the IIP Report.

7 From Schedule 4: Calculation of Interest Expense Fee Component.

8 From Schedule 5: Debt Service Principal Credits Calculation.

9 From Section 2.3 Existing Level of Service in the IIP Report.

Schedule 2.1
Annual Forecast of Water Impact Fee Revenues and Capital Requirements
City of Scottsdale Development Fee Model

Water Demand Projections Planning Area ¹	Current	Fiscal Year Ending June, 30											Total
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Total COS Peak Day Water Demand	94.14	95.42	96.72	98.04	99.37	100.73	102.10	103.49	104.90	106.32	107.77	109.24	
Total COS EDUs	132,779	134,585	136,416	138,271	140,152	142,059	143,991	145,949	147,935	149,947	151,987	154,054	
Annual Water EDU Added		1,806	1,831	1,856	1,881	1,906	1,932	1,959	1,985	2,012	2,040	2,067	
COS Water Impact Fee per EDU			\$ 3,365	\$ 3,365	\$ 3,365	\$ 3,365	\$ 3,365	\$ 3,365	\$ 3,365	\$ 3,365	\$ 3,365	\$ 3,365	\$ 3,365
Annual Water Impact Fee Revenue			\$ 6,159,966	\$ 6,243,756	\$ 6,328,686	\$ 6,414,770	\$ 6,502,026	\$ 6,590,469	\$ 6,680,115	\$ 6,770,980	\$ 6,863,081	\$ 6,956,435	\$ 65,510,283
Projected IIP Costs													
Annual Water Capital Projects			\$ -	\$ 450,000	\$ 2,900,000	\$ 2,406,700	\$ 4,250,000	\$ 8,577,000	\$ 2,821,300	\$ 6,950,000	\$ 1,200,500	\$ -	\$ 29,555,500
Water Principal Impact Fees			\$ 1,982,500	\$ 2,080,000	\$ 2,193,750	\$ 2,291,250	\$ 2,421,250	\$ 2,535,000	\$ 2,665,000	\$ 2,795,000	\$ 2,941,251	\$ 3,087,500	\$ 24,992,501
Water Interest Impact Fees			\$ 2,939,056	\$ 2,839,931	\$ 2,735,931	\$ 2,626,244	\$ 2,511,681	\$ 2,390,619	\$ 2,263,869	\$ 2,130,619	\$ 1,990,869	\$ 1,843,806	\$ 24,272,625
Total IIP Costs			\$ 4,921,556	\$ 5,369,931	\$ 7,829,681	\$ 7,324,194	\$ 9,182,931	\$ 13,502,619	\$ 7,750,169	\$ 11,875,619	\$ 6,132,620	\$ 4,931,306	\$ 78,820,626
Surplus / (Deficit)			\$ 1,238,410	\$ 873,825	\$ (1,500,995)	\$ (909,424)	\$ (2,680,905)	\$ (6,912,150)	\$ (1,070,054)	\$ (5,104,639)	\$ 730,461	\$ 2,025,129	\$ (13,310,343)
Total Water Impact Fee Revenue			\$ 65,510,283										

Current Average Day Demand	94.14
Projected 2023 Demand	109.24
Annual Growth Rate	1.36%
Current EDU	132,779
Projected 2023 EDUs	154,054
Annual Growth Rate	1.36%

Schedule 2.2
Water Infrastructure Improvements Plan (IIP)
City of Scottsdale Development Fee Model

		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Total Water Capital Project Benefiting Growth												
1	W0501 Crossroads, AKA Core North/South - Water	\$ -	\$ 450,000	\$ 2,900,000	\$ 1,256,700	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,606,700
2	W9912 State Land near Legend Trails	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 525,000	\$ 3,750,000	\$ 1,200,500	\$ -	\$ 5,475,500
3	W9912 East Dynamite	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,827,000	\$ -	\$ -	\$ -	\$ -	\$ 1,827,000
4	W0603 Wildcat Development	\$ -	\$ -	\$ -	\$ 1,150,000	\$ 4,250,000	\$ 6,750,000	\$ 2,296,300	\$ -	\$ -	\$ -	\$ 14,446,300
5	VA03A Water Campus Vadose Well	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,200,000	\$ -	\$ -	\$ 3,200,000
TOTAL		\$ -	\$ 450,000	\$ 2,900,000	\$ 2,406,700	\$ 4,250,000	\$ 8,577,000	\$ 2,821,300	\$ 6,950,000	\$ 1,200,500	\$ -	\$ 29,555,500

**Schedule 3
Calculation of Wastewater Impact Fees
City of Scottsdale Impact Fee Model**

	Total
Wastewater Treatment Component	
Buy-In Value of Existing System (RCNLD) ¹	\$ 300,323,601
Growth Related Capital Project (IIP)	0
Total Water Treatment Component	\$ 300,323,601
Component Capacity (MGD) ²	40.00
Cost Per Gallon Per Day of Capacity	\$ 7.508
Wastewater Collection Component	
Buy-In Value of Existing System (RCNLD) ¹	\$ 106,855,883
Growth Related Capital Project (IIP) ³	4,970,696
Total Water Distribution Component	\$ 111,826,579
Component Capacity (MGD) ²	40.00
Cost Per Gallon Per Day of Capacity	\$ 2.796
Present Value of Growth Related Interest Expense (gpd) ⁴	\$0.990
Total Wastewater System Cost Per Gallon Per Day of Capacity	\$11.294
Less: Net Present Value of Annual Principal Payments Credit (gpd) ⁵	(\$0.877)
Net Wastewater System Cost Per Gallon Per Day of Capacity	\$10.417
Average Annual Demand Factor Per EDU (Gallons Per Day) ⁶	196
Full Cost Wastewater Impact Fee Per EDU	\$ 2,041.82

1 From Table 3-3 - Buy-In to Existing Wastewater Facilities; in the Infrastructure Improvements Plan (IIP) Report.

2 From Table 3-2 - Existing Wastewater Treatment and Collection System Capacity; in the IIP Report.

3 From Table 3-5 - Collection System Capital Facilities; in the IIP Report.

4 From Schedule 4: Calculation of Interest Expense Fee Component.

5 From Schedule 5: Debt Service Principal Credits Calculation.

6 From Section 3.4 Existing Level of Service in the IIP Report.

Schedule 3.1
Annual Forecast of Wastewater Impact Fee Revenues and Capital Requirements
City of Scottsdale Development Fee Model

Sewer Demand Projections	Current	Fiscal Year Ending June, 30											Total
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Total COS Wastewater Demand (MGD)	21.80	22.31	22.83	23.36	23.91	24.47	25.04	25.62	26.22	26.83	27.46	28.10	
Total COS EDUs	111,091	113,685	116,340	119,056	121,836	124,681	127,592	130,572	133,621	136,741	139,934	143,201	
Annual Wastewater EDU Added		2,594	2,655	2,717	2,780	2,845	2,911	2,979	3,049	3,120	3,193	3,267	
COS Wastewater Impact Fee per EDU			\$ 2,042	\$ 2,042	\$ 2,042	\$ 2,042	\$ 2,042	\$ 2,042	\$ 2,042	\$ 2,042	\$ 2,042	\$ 2,042	
Annual Wastewater Impact Fee Revenue			\$ 5,420,159	\$ 5,546,721	\$ 5,676,238	\$ 5,808,780	\$ 5,944,416	\$ 6,083,219	\$ 6,225,264	\$ 6,370,625	\$ 6,519,381	\$ 6,671,610	\$ 60,266,414
Projected IIP Costs													
Annual Wastewater Capital Projects			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Wastewater Principal Impact Fees			\$ 4,501,461	\$ 3,119,670	\$ 3,251,472	\$ 4,830,464	\$ 5,085,744	\$ 5,333,308	\$ 5,603,379	\$ 5,895,047	\$ 6,204,753	\$ 6,532,122	\$ 50,357,420
Wastewater Interest Impact Fees			\$ 3,341,935	\$ 3,136,862	\$ 3,000,679	\$ 2,858,656	\$ 2,617,132	\$ 2,362,845	\$ 2,096,180	\$ 1,806,697	\$ 1,502,120	\$ 1,181,521	\$ 23,904,627
Total IIP Costs			\$ 7,843,396	\$ 6,256,532	\$ 6,252,151	\$ 7,689,120	\$ 7,702,876	\$ 7,696,153	\$ 7,699,559	\$ 7,701,744	\$ 7,706,873	\$ 7,713,643	\$ 74,262,047
Surplus / (Deficit)			\$ (2,423,237)	\$ (709,811)	\$ (575,913)	\$ (1,880,340)	\$ (1,758,460)	\$ (1,612,934)	\$ (1,474,295)	\$ (1,331,119)	\$ (1,187,492)	\$ (1,042,033)	\$ (13,995,633)
Total Wastewater Impact Fee Revenue			\$60,266,414										
Current Average Day Demand	21.8												
Projected 2023 Demand	28.1												
Annual Growth Rate	2.33%												
Current EDU	111,091												
Projected 2023 EDUs	143,201												
Annual Growth Rate	2.34%												

Schedule 3.2
Wastewater Infrastructure Improvements Plan (IIP)
City of Scottsdale Development Fee Model

Total Wastewater Projects Benefitting Growth

Collection System Elements

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
1 V0501 Crossroads	\$ -	\$ 375,000	\$ 2,850,000	\$ 605,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,830,000
2 V3704 Sewer Collection Improvements	\$ -	\$ 71,600	\$ 175,600	\$ 177,300	\$ 154,300	\$ 82,400	\$ -	\$ 90,000	\$ 204,000	\$ 185,400	\$ 1,140,600
											\$ -
TOTAL	\$ -	\$ 446,600	\$ 3,025,600	\$ 782,300	\$ 154,300	\$ 82,400	\$ -	\$ 90,000	\$ 204,000	\$ 185,400	\$ 4,970,600

Schedule 4
Calculation of Interest Expense Fee Component
City of Scottsdale Development Fee Model

	Fiscal Year Ending June, 30					Forecast					Forecast					
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Interest Recovered Through Water Development Fees																
<i>Annual Interest Expense</i>																
Interest Assessed Directly To Fees	3,033,306	2,939,056	2,839,931	2,735,931	2,626,244	2,511,681	2,390,619	2,263,869	2,130,619	1,990,869	1,843,806	1,689,431	1,526,931	1,357,119	1,178,369	
Total Peak System Demand (mgd) ¹	1.36%	94.14	95.42	96.72	98.04	99.38	100.74	102.11	103.50	104.91	106.34	107.79	109.26	110.75	112.26	113.79
Debt Credit (gpd)	\$	0.032	\$ 0.031	\$ 0.029	\$ 0.028	\$ 0.026	\$ 0.025	\$ 0.023	\$ 0.022	\$ 0.020	\$ 0.019	\$ 0.017	\$ 0.015	\$ 0.014	\$ 0.012	\$ 0.010
Present Value of Annual Interest Expense (gpd)	\$	0.032	\$ 0.028	\$ 0.025	\$ 0.023	\$ 0.021	\$ 0.019	\$ 0.017	\$ 0.015	\$ 0.013	\$ 0.012	\$ 0.010	\$ 0.009	\$ 0.007	\$ 0.006	\$ 0.005
Weighted Average Cost of Debt	4.84%															
Present Value of Growth Related Interest Expense (gpd)		\$	0.254													
Interest Recovered Through Wastewater Development Fees																
<i>Annual Interest Expense</i>																
Interest Assessed Directly To Fees	3,380,646	3,341,935	3,136,862	3,000,679	2,858,656	2,617,132	2,362,845	2,096,180	1,806,697	1,502,120	1,181,521	843,977	730,903	642,987	550,677	
Total System Demand (mgd) ¹	2.33%	21.80	22.31	22.83	23.36	23.91	24.47	25.04	25.62	26.22	26.83	27.46	28.10	28.76	29.43	30.11
Debt Credit (gpd)	\$	0.155	\$ 0.150	\$ 0.137	\$ 0.128	\$ 0.120	\$ 0.107	\$ 0.094	\$ 0.082	\$ 0.069	\$ 0.056	\$ 0.043	\$ 0.030	\$ 0.025	\$ 0.022	\$ 0.018
Present Value of Annual Interest Expense (gpd)	\$	0.155	\$ 0.136	\$ 0.119	\$ 0.106	\$ 0.094	\$ 0.081	\$ 0.068	\$ 0.056	\$ 0.045	\$ 0.035	\$ 0.026	\$ 0.017	\$ 0.014	\$ 0.011	\$ 0.009
Weighted Average Cost of Debt	4.84%															
Present Value of Growth Related Interest Expense (gpd)		\$	0.990													

¹ Total peak system demands for water and total system demands wastewater are anticipated to increase at escalation rates determined as part of the City's water and wastewater master plans.

Schedule 4
Calculation of Interest Expense Fee Component
City of Scottsdale Development Fee Model

	Forecast					Forecast														
	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037										
Interest Recovered Through Water Development Fees																				
<i>Annual Interest Expense</i>																				
Interest Assessed Directly To Fees	991,494	794,869	609,131	414,619	212,061	0	0	0	0	0										
Total Peak System Demand (mgd) ¹	1.36%	115.35	116.92	118.51	120.13	121.77	123.43	125.11	126.82	128.55	130.30									
Debt Credit (gpd)	\$	0.009	\$	0.007	\$	0.005	\$	0.003	\$	0.002	\$	-	\$	-	\$	-	\$	-	\$	-
Present Value of Annual Interest Expense (gpd)	\$	0.004	\$	0.003	\$	0.002	\$	0.001	\$	0.001	\$	-	\$	-	\$	-	\$	-	\$	-
Weighted Average Cost of Debt	4.84%																			
Present Value of Growth Related Interest Expense (gpd)																				
Interest Recovered Through Wastewater Development Fees																				
<i>Annual Interest Expense</i>																				
Interest Assessed Directly To Fees	454,214	352,874	254,163	150,770	77,114	0	0	0	0	0										
Total System Demand (mgd) ¹	2.33%	30.82	31.54	32.27	33.03	33.80	34.59	35.39	36.22	37.07	37.93									
Debt Credit (gpd)	\$	0.015	\$	0.011	\$	0.008	\$	0.005	\$	0.002	\$	-	\$	-	\$	-	\$	-	\$	-
Present Value of Annual Interest Expense (gpd)	\$	0.007	\$	0.005	\$	0.003	\$	0.002	\$	0.001	\$	-	\$	-	\$	-	\$	-	\$	-
Weighted Average Cost of Debt	4.84%																			
Present Value of Growth Related Interest Expense (gpd)																				

¹ Total peak system demands for water and total system demands wast

**Schedule 5
Debt Service Principal Credits Calculation
City of Scottsdale Development Fee Model**

	Fiscal Year Ending June, 30					Forecast					Forecast					
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Water Principal Credit																
Total Water Principal Funded Through User Rates and Charges	\$ 5,295,320	\$ 4,748,688	\$ 6,206,760	\$ 6,776,931	\$ 6,948,752	\$ 7,270,851	\$ 7,619,756	\$ 7,986,812	\$ 8,372,019	\$ 8,777,470	\$ 9,207,633	\$ 9,653,854	\$ 5,054,026	\$ 5,319,728	\$ 5,601,488	
Total System Demand (mgd) ¹	1.36%	60.820	61.648	62.488	63.338	64.201	65.075	65.961	66.859	67.769	68.692	69.627	70.575	71.536	72.510	73.498
Debt Credit (gpd)	\$ 0.08707	\$ 0.07703	\$ 0.09933	\$ 0.10700	\$ 0.10823	\$ 0.11173	\$ 0.11552	\$ 0.11946	\$ 0.12354	\$ 0.12778	\$ 0.13224	\$ 0.13679	\$ 0.07065	\$ 0.07336	\$ 0.07621	
Present Value of Annual Debt Credits (gpd)	\$ 0.08305	\$ 0.07008	\$ 0.08620	\$ 0.08857	\$ 0.08547	\$ 0.08416	\$ 0.08299	\$ 0.08186	\$ 0.08075	\$ 0.07967	\$ 0.07865	\$ 0.07760	\$ 0.03823	\$ 0.03787	\$ 0.03752	
Weighted Average Cost of Debt	4.84%															
Net Present Value Credit (gpd)	\$ 1.2435															

Wastewater Principal Credit

Total Wastewater Principal Funded Through User Rates and Charges	\$ 327,680	\$ 510,760	\$ 449,934	\$ 564,324	\$ 693,966	\$ 838,860	\$ 983,754	\$ 1,143,900	\$ 1,319,298	\$ 1,502,322	\$ 1,692,972	\$ 1,906,500	\$ 2,127,654	\$ 2,364,060	\$ 2,623,344	
Total System Demand (mgd) ¹	2.33%	21.80	22.31	22.83	23.36	23.91	24.47	25.04	25.62	26.22	26.83	27.46	28.10	28.76	29.43	30.11
Debt Credit (gpd)	\$ 0.01503	\$ 0.02289	\$ 0.01971	\$ 0.02415	\$ 0.02903	\$ 0.03429	\$ 0.03929	\$ 0.04465	\$ 0.05032	\$ 0.05599	\$ 0.06165	\$ 0.06785	\$ 0.07399	\$ 0.08034	\$ 0.08711	
Present Value of Annual Debt Credits (gpd)	\$ 0.01434	\$ 0.02083	\$ 0.01710	\$ 0.02000	\$ 0.02292	\$ 0.02582	\$ 0.02823	\$ 0.03060	\$ 0.03289	\$ 0.03491	\$ 0.03667	\$ 0.03849	\$ 0.04004	\$ 0.04147	\$ 0.04289	
Weighted Average Cost of Debt	4.84%															
Net Present Value Credit (gpd)	\$ 0.87675															

¹ Total system demands for water and wastewater are anticipated to increase at escalation rates determined as part of the City's water and wastewater master plans.

Schedule 5
Debt Service Principal Credits Calculation
City of Scottsdale Development Fee Model

	Forecast					Forecast					
	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	
Water Principal Credit											
Total Water Principal Funded Through User Rates and Charges	\$ 5,907,959	\$ 6,221,553	\$ 6,566,700	\$ 1,187,000	\$ 1,296,204	\$ 1,410,156	\$ 1,533,604	\$ 1,664,174	\$ 1,851,721	\$ -	
Total System Demand (mgd) ¹	1.36%	74.498	75.513	76.541	77.583	78.640	79.710	80.796	81.896	83.011	84.141
Debt Credit (gpd)	\$ 0.07930	\$ 0.08239	\$ 0.08579	\$ 0.01530	\$ 0.01648	\$ 0.01769	\$ 0.01898	\$ 0.02032	\$ 0.02231	\$ -	
Present Value of Annual Debt Credits (gpd)	\$ 0.03724	\$ 0.03691	\$ 0.03666	\$ 0.00624	\$ 0.00641	\$ 0.00656	\$ 0.00671	\$ 0.00686	\$ 0.00718	\$ -	
Weighted Average Cost of Debt	4.84%										
Net Present Value Credit (gpd)											

Wastewater Principal Credit											
Total Wastewater Principal Funded Through User Rates and Charges	\$ 2,890,254	\$ 3,180,042	\$ 3,485,084	\$ 3,813,000	\$ 4,163,796	\$ 4,529,844	\$ 4,926,396	\$ 5,345,826	\$ 5,948,284	\$ -	
Total System Demand (mgd) ¹	2.33%	30.82	31.54	32.27	33.03	33.80	34.59	35.39	36.22	37.07	37.93
Debt Credit (gpd)	\$ 0.09379	\$ 0.10084	\$ 0.10799	\$ 0.11545	\$ 0.12320	\$ 0.13097	\$ 0.13919	\$ 0.14759	\$ 0.16048	\$ -	
Present Value of Annual Debt Credits (gpd)	\$ 0.04405	\$ 0.04517	\$ 0.04614	\$ 0.04706	\$ 0.04790	\$ 0.04857	\$ 0.04923	\$ 0.04980	\$ 0.05165	\$ -	
Weighted Average Cost of Debt	4.84%										
Net Present Value Credit (gpd)											

¹ Total system demands for water and wastewater are anticipated to inc