



City of Scottsdale

2021 Water and Wastewater Development Fees Report

ADOPTED | August 2021





City of Scottsdale

2021 WATER AND WASTEWATER DEVELOPMENT FEES REPORT

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Abbreviations

| | |
|------------|--|
| A.R.S. | Arizona Revised Statutes |
| ASR | Aquifer Storage and Recovery |
| AWT | Advanced Water Treatment |
| AWWA | American Water Works Association |
| CAP | Central Arizona Project |
| Carollo | Carollo Engineers, Inc. |
| CGTF | Central Groundwater Treatment Facility |
| City | City of Scottsdale, Arizona |
| Confluence | Confluence Consulting, LLC |
| DIAs | Development Intensity Areas |
| EDU | Equivalent Dwelling Units |
| FY | fiscal year |
| gpd | gallons per day |
| gpm | gallons per minute |
| IIP | Infrastructure Improvements Plan |
| IWRMP | Integrated Water Resources Master Plan |
| LUA | Land Use Assumptions |
| MAG | Maricopa Association of Governments |
| MDD | maximum day demand |
| mgd | million gallons per day |
| NGTF | North Groundwater Treatment Facility |
| RCNLD | replacement cost new less depreciation |
| RWDS | reclaimed water distribution system |
| SB | Senate Bill |
| sq ft | square feet |
| SROG | Sub-Regional Operating Group |
| TGTF | Thomas Groundwater Treatment Facility |
| WRF | water reclamation facility |
| WTP | water treatment plant |

1.0 Introduction

The City of Scottsdale (City) is a growing, vibrant community of more than 250,000 people encompassing an area of nearly 185 square miles. Growth in Scottsdale includes both residential and non-residential development. The City is actively pursuing opportunities for economic development and revitalization throughout the City, specifically focusing on three Development Intensity Areas (DIAs) that include: (1) the Greater Airpark, 2) Downtown, and 3) the Scottsdale Rd/McDowell Rd Corridor. The Maricopa Association of Governments (MAG) growth trends indicate Scottsdale's estimated population will increase to 281,700 by 2030.

The City's Integrated Water Resources Master Plan (IWRMP) is being completed by Carollo Engineers, Inc. (Carollo) in tandem with the Infrastructure Improvement Plan (IIP) and this Development Fee update. The IWRMP contains land use and growth assumptions that form the basis of water demand and wastewater flow projections for the planning period beginning in 2020 through 2055. The IIP uses the same land use assumptions as the IWRMP.

1.1 Statement of Intent – Development Fees

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

The City last updated its development fees in 2018 under the requirements of Arizona Revised Statutes (A.R.S.) §9-463.05.

In 2011, Arizona enacted Senate Bill (SB) 1525, which required all development fees existing at that time be replaced by August 1, 2014, with fees adopted under new adoption procedures, guidelines, and requirements. As part of the adoption procedures, the legislation requires that fee structures be based on an adopted Land Use Assumptions (LUA) Report and an IIP 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 this report be prepared to document the methodology used to calculate and assess the development fees to new development.

The City assesses development fees to fund infrastructure necessary for new growth. Development fees represent the "proportionate share" of infrastructure capital costs needed to serve new Equivalent Dwelling Units (EDUs). The City has two development fees:

- **Water Development 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 to serve new EDUs. Additionally, water supply is an essential part of water services. A portion of the water fee attributable to new EDUs for water supply pays for acquiring, transporting, treating, and managing recharge to and recovery from underground aquifers, new or renewable water supplies required to serve new EDUs; while
- **Wastewater Development 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 to serve new EDUs.

1.2 Purpose of Development Fee Report

The City must prepare, and make public, a Development Fee Report documenting the methodology used to determine the development fees, the approach used to assess the development fees to development and provide a schedule of development fees. This Report meets these requirements and describes the City's updated water and wastewater development fees, which were determined based on the analysis and data documented in the LUA Report adopted on July 1, 2021, and the IIP Report adopted on July 1, 2021. Consistent with the LUA and IIP reports, the updated water and wastewater development fees report has been prepared for the 10-year period of 2021 through 2030 with an update required every 5 years.

This Development Fees Report, like the LUA Report and IIP Report, has been prepared by Carollo to meet the requirements of A.R.S. §9-463.05, summarizing the methodology, analysis, findings, and recommendations for updating the City's water and wastewater development fees. Both the IIP and LUA reports are available on the City's website and are referenced throughout this document.

2.0 Water Development Fees

Chapter 2 of the Development Fee Report documents the methodology used to determine water development fees. The Necessary Public Services funded by water development fees include water treatment, distribution, and water supply. Necessary Public Services, as defined in A.R.S. §9-463.05, are "facilities that have a life expectancy of three or more years and are owned and operated by or on behalf of the [City]."

2.1 Water Service Area

Scottsdale's water service area is approximately 185 square miles as shown in Figure 1. The water service area includes all areas within City limits, with two exceptions:

- EPCOR Water (private water company) serves approximately 1,420 customers in the built out area west of the Arizona Canal between Jackrabbit Road and Indian Bend Road, which is about one square mile.
- EPCOR Water serves approximately 200 customers in the built out area near the City boundary with the Town of Fountain Hills.

The City also serves approximately 1,400 customers in the built out area outside the City limits in Maricopa County, north of Dynamite Boulevard, generally between 56th Street and 68th Street.

In addition, the City has agreements with the Tonto Hills Domestic Water Improvement District and Carefree Water Company to treat and deliver their Central Arizona Project (CAP) allocations to areas outside the City limits; however, these customers are subject to the rates, charges, and development fees of their respective utilities.

The City's water treatment and distribution system is interconnected and treated as one integrated system within the City's service area. This single service area approach is consistent with implementation of the development fees wherein the "system average cost" is used, which focuses on the total value and total demand placed on the water system.

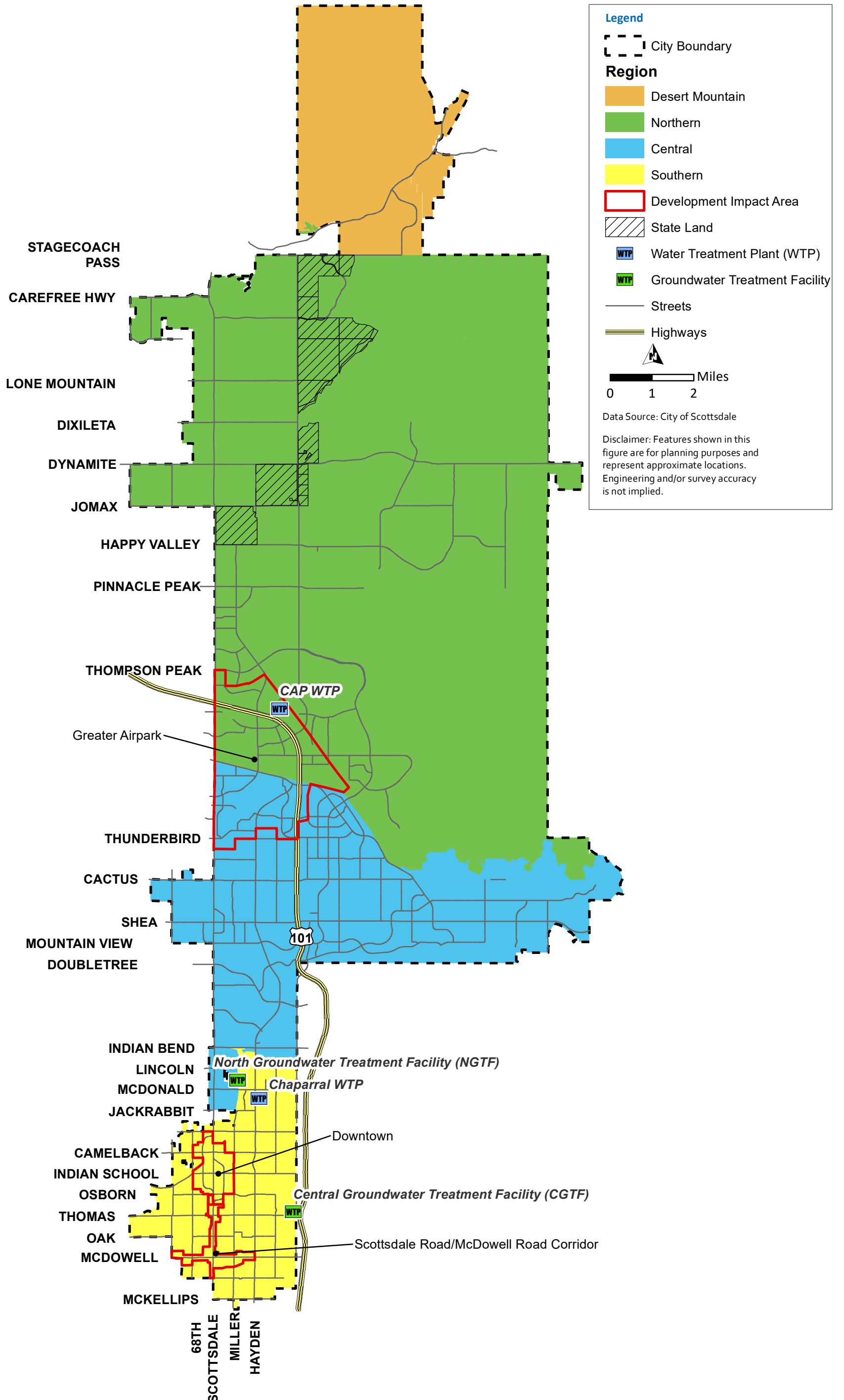


Figure 1 Water Service Area

2.2 Current Water Development Fee Methodology

The current water development fee, adopted as part of the 2018 Development Fee Study, was determined based on the system average cost approach which focuses on the total value and total capacity of the utility's water system. Specifically, the approach was designed to recover the current value of all existing water facilities available to serve existing current demand as well as anticipated future demand; plus, the total capital improvements to those water systems needed to serve anticipated future demands. Since costs recovered under this approach represent the total water system value, it was appropriate to determine the unit cost per gallon per day (gpd) under this approach by dividing the total water system costs by the total existing and planned water system capacity for the 10-year planning period.

Figure 2 demonstrates how total water system value was identified and included in the value used to determine water development fees under the "system average cost" approach.

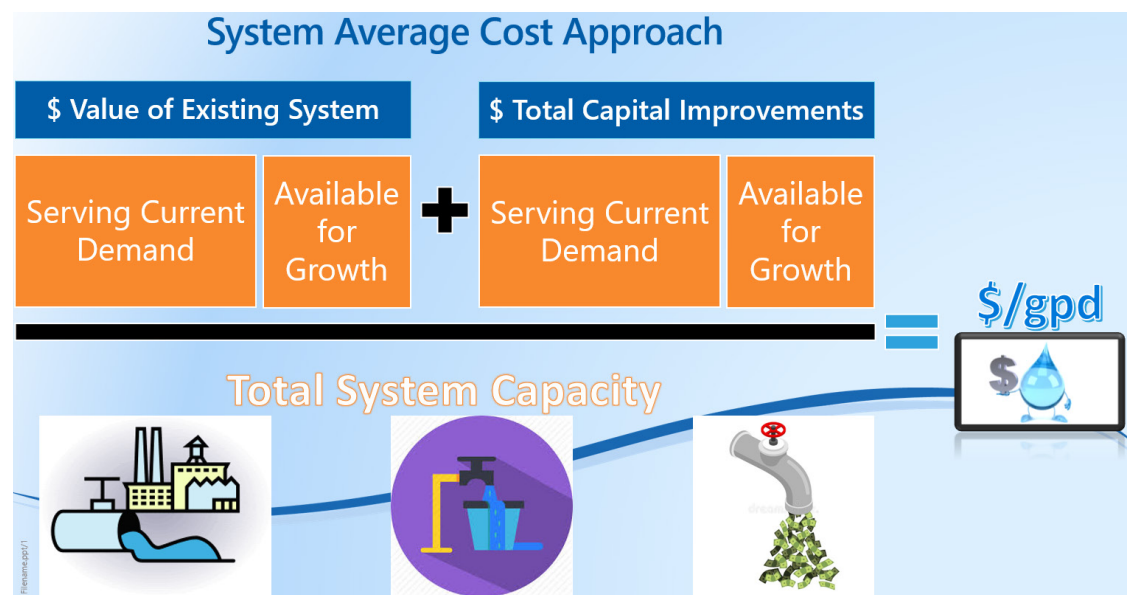


Figure 2 Water System Average Cost Approach

The above diagram illustrates the general method for determining development fees under the system average cost approach. However, A.R.S. §9-463.05 allows other components such as future interest payments on debt, benefiting new customers, and requires a debt principal credit on debt recovered through monthly customer utility rates and charges.

The system average cost approach determines water development fees by:

- Reflecting the average costs of current and future facilities based on a 10-year water IIP planning period.
- Excluding capital improvements identified as replacements or upgrades to the existing water facilities in the capital expansion component of the water development fee.
- Recovering approximately 15 percent of the buy-in value for the Advanced Water Treatment (AWT) facilities as a water supply component.
- Integrating the water supply component into the water development fee.

- Excluding the buy-in value for the existing water rights available to serve new EDUs in the costs to be recovered through the water development fee.
- Determining the capacity available for new water EDUs using peak day water usage.
- Determining the system average cost per gpd of water capacity by dividing the costs of existing capacity plus planned capital improvements benefitting new customers by the total existing and planned water treatment capacity during the 10-year planning period.
- Valuing water buy-in facilities through replacement cost new less depreciation (RCNLD) of the City's current facilities necessary to serve new EDUs.
- Including all planned expansion costs for facilities needed to serve new EDUs.
- Providing a debt principal credit for outstanding principal on borrowed funds, or funds anticipated to be borrowed, to construct facilities benefitting new customers but repaid through user rates generated by those new customers.
- Including future interest expense on borrowed funds, or funds anticipated to be borrowed, to construct facilities benefitting new customers.
- Excluding 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 as well as planned capital projects required to expand and extend capacity. Development fees are reflective of the average unit cost of system capacity based on previous and planned investments in the system divided by the total capacity in those facilities. Through development of the unit cost of capacity, the hybrid approach provides equity between existing and future customers.

2.2.1 Water Treatment/Production Component

The water treatment component includes water treatment facilities, purification, and wells eligible to serve new EDUs. As noted below in Table 1, the total eligible capacity of the City's existing treatment and production facilities is 134.79 mgd and consists of the 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 are the Central Groundwater Treatment Facility (CGTF) and the Northern Groundwater Treatment Facility (NGTF) which are funded through private contributions and relate solely to a superfund site. Also excluded is a reserve capacity, as described in Chapter 6 of the IIP Report. The total RCNLD of the existing water treatment facilities serving EDUs is \$552.3 million, see table 9 in the accompanying IIP report.

Table 1 presents the existing and planned capacity of water treatment and production facilities.

Table 1 Existing and Planned Capacity of Water Treatment and Production Facilities

| Facility | Capacity (mgd) |
|--|----------------|
| CAP WTP | 70.00 |
| Chaparral WTP | 27.00 |
| CGTF / Thomas Groundwater Treatment Facility (TGTF) | 12.30 |
| NGTF | 3.58 |
| Wells | <u>38.16</u> |
| Total Existing Capacity | 151.04 |
| Less Ineligible: CGTF/TGTF and NGTF | (15.88) |
| Less Ineligible: Reserved Capacity | <u>(0.37)</u> |
| Total Eligible Capacity for New EDUs | 134.79 |
| Less: Maximum Day Demand (MDD) | <u>(95.04)</u> |
| Existing Capacity Available (Unused) for New EDUs | 39.75 |
| Plus: Planned CAP WTP Capacity | 20.00 |
| Plus: ASR Well 53A Production Capacity | 1.60 |
| Plus: ASR Well 159 Production Capacity | <u>3.60</u> |
| Total Capacity Available for New EDUs | 64.95 |

As noted above, there is available existing treatment and production capacity of 39.75 mgd to serve new demand. With the forecasted addition of 18,713 EDUs and a level of service of 680.8 gpd per EDU noted in sections 2.3, 2.4, 2.8 and 2.9.2 of the IIP, the new EDUs will require 12.70 mgd of the 39.75 mgd to meet maximum day demand, as stated in section 2.8 of the IIP Report.

As discussed in Section 2.9.2 of the IIP Report entitled, "Water Treatment/Production," the CAP WTP is planned for a 20.0 mgd expansion totaling \$50.1 million during the 10-year planning period for the IIP. An additional 5.2 mgd of capacity will be made available through addition of Aquifer Storage and Recovery (ASR) Well 53A and ASR Well 159 an estimated cost of \$9.1 million each during the 10-year planning period.

Based on the total value of the water treatment component of \$620.5 million and 159.99 mgd of existing and planned capacity in treatment facilities eligible to serve new EDUs, the unit cost of treatment is \$3.879 per gpd, as shown in Table 4.

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

2.2.2 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 134.79 mgd of total existing treatment/production capacity eligible for new EDUs can be used as a reasonable measure of the eligible capacity of the entire water distribution system.

As discussed in Section 2.9.3 of the IIP Report and shown in Appendix A of that report, approximately \$134.9 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 support the ultimate capacity needs of the system.

As shown in Table 9 of the IIP Report, the total RCNLD of the existing distribution facilities serving EDUs is \$308.0 million.

Table 2 summarizes existing and planned capacity of the water distribution system and the net capacity available for new EDUs.

Table 2 Existing and Planned Capacity of Water Distribution System

| Facility | Capacity (mgd) |
|--|---------------------|
| Current Pipe Capacity | 135.16 |
| Less Ineligible: Reserved Capacity | <u>(0.37)</u> |
| Total Eligible Capacity for New EDUs | 134.79 |
| Less: Maximum Day Demand | <u>(95.04)</u> |
| Existing Capacity Available (Unused) for New EDUs | <u>39.75</u> |
| Plus: Planned Capacity Expansions | <u>25.20</u> |
| Total Capacity Available for New EDUs | 64.95 |

Based on the total value of the water distribution component of \$443.0 million and 159.99 mgd of capacity in distribution facilities eligible to serve new EDUs, the unit cost of the distribution system is \$2.769 per gpd, as shown below in Table 4.

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

2.2.3 Water Recharge Component

The water recharge component includes approximately 15 percent 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 from both existing and new EDUs. As shown in Table 8 of the IIP Report, the total recharge capacity eligible to serve new EDUs is 13.20 mgd of the total 20.00 mgd of AWT capacity, since 6.80 mgd is reserved for the Reclaimed Water

Distribution System (RWDS) which supplies reclaimed water to local golf courses. Chapter 6 of the IIP Report describes the reserve capacity of the RWDS. As shown in Table 9 of the IIP Report, the RCNLD of the AWT facilities eligible to serve new EDUs and included in the water development fee is approximately \$12.5 million. Below Table 3 presents the existing capacity of water recharge facilities.

Table 3 Existing Capacity of Water Recharge Facilities

| Facility | Capacity (mgd) |
|--|----------------|
| Current Water Campus AWT Capacity | 20.00 |
| Less Ineligible: Reserved Capacity | <u>(6.80)</u> |
| Total Eligible Capacity for New EDUs | 13.20 |
| Less: Current Demand (active recharge) | <u>(12.65)</u> |
| Total Capacity Available for New EDUs | 0.55 |

Based on the total value of the water supply component of \$12.5 million and 13.20 mgd of existing and planned capacity to recharge effluent eligible at the AWT to serve new EDUs, the unit cost of recharge facilities is \$0.944 per gpd, as shown below in Table 4.

For more detailed information on the City's existing and planned supply facilities and capacity eligible to serve new EDUs, see Chapter 2 in the IIP Report.

2.2.4 Water Interest Expense Component

The water development fee also recovers the interest expense on expansion related debt the City has issued to fund capital improvements benefiting new customers. Interest cost includes annually scheduled interest payments beginning FY 2020 and continue through maturity in FY 2037. Annual interest payments total \$22.8 million and are divided by the 27.19 mgd of additional future water demands anticipated during the next 20 years (2021 through 2040). Interest payments for newly issued debt beyond FY 2020 and funding future capital improvements benefiting new customers have been appropriately excluded from this analysis.

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 \$0.839 per gpd, as shown in Table 4.

For more detailed information on the water interest expense calculation, see Schedule 1, Calculation of Interest Expense Components in Appendix A.

2.2.5 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 also included in the revenue requirements recovered through customer utility charges. 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 new customers from being double-charged through the development fee and their user rates and charges. The average unit cost of principal on existing debt service is \$1.432 gpd. This credit is deducted from the sum of the four cost components, on a uniform gpd basis, to determine the net capital cost per gpd.

For more detailed information on the water debt principal credit calculation, see Schedule 2, Debt Service Principal Credit Calculation in Appendix A.

2.2.6 Proposed Water Development Fee Unit Cost per gpd

The total unit cost of capacity is \$6.999 per gpd, as shown below in Table 4. 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 annual principal credit on existing debt service.

2.2.7 Proposed Water Development Fee Unit Cost per EDU

The cost per service unit is determined by multiplying the per unit cost of capacity (\$6.999) times the demand factor for the base service unit (EDU), or the 680.8 gpd peak demand for a typical residential dwelling unit. This results in a water development fee, per service unit, of \$4,765.

Table 4 summarizes unit costs per gpd for each component of the water development fee and determines the proposed water development fee unit cost per gpd and per EDU.

For more detailed information on the water development fee calculation, see Schedule 3, Calculation of Water Development Fee in Appendix A.

Table 4 Water Development Fee Cost per gpd and per EDU

| Water Development Fee Component | Unit Cost |
|--------------------------------------|----------------|
| Water Treatment (gpd) | \$3.879 |
| Water Distribution (gpd) | 2.769 |
| Water Supply (gpd) | 0.944 |
| Interest Expense (gpd) | 0.839 |
| Total Cost of Capacity (gpd) | \$8.431 |
| Less: Debt Principal Offset (gpd) | (1.432) |
| Net Cost of Capacity (gpd) | \$6.999 |
| Peak Demand Factor per EDU (gpd) | 680.8 |
| Water Development Fee per EDU | \$4,765 |

2.2.8 Proposed Water Development Fee by Meter Size and Type

The City assesses water development fees for new customers based on their meter size and type. Based on the findings in this Report, water development fees, by meter size and type, are presented below in Table 5.

Table 5 Proposed Water Development Fees by Meter Size and Type

| Meter Type | EDU Conversion | Fee |
|-------------------------------|----------------|---------|
| Single Family <=1" | 1.0 | \$4,765 |
| Single Family = 1.5" | 5.0 | 23,825 |
| Single Family = 2" | 8.0 | 38,120 |
| Single Family = 3" Compound | 17.5 | 83,388 |
| Single Family = 3" Turbine | 21.8 | 103,877 |
| Multi-Family <=1" | 1.0 | 4,765 |
| Multi Family = 1.5" | 5.0 | 23,825 |
| Multi Family = 2" | 8.0 | 38,120 |
| Multi Family = 3" Compound | 17.5 | 83,388 |
| Multi Family = 3" Turbine | 21.8 | 103,877 |
| Multi Family = 4" Compound | 30.0 | 142,950 |
| Multi Family = 4" Turbine | 37.5 | 178,688 |
| Multi Family = 6" Compound | 67.5 | 321,638 |
| Multi Family = 6" Turbine | 80.0 | 381,200 |
| Multi Family = 8" Compound | 80.0 | 381,200 |
| Non-Residential <=1" | 1.0 | \$4,765 |
| Non-Residential = 1.5" | 5.0 | 23,825 |
| Non-Residential = 2" | 8.0 | 38,120 |
| Non-Residential = 3" Compound | 17.5 | 83,388 |
| Non-Residential = 3" Turbine | 21.8 | 103,877 |
| Non-Residential = 4" Compound | 30.0 | 142,950 |
| Non-Residential = 4" Turbine | 37.5 | 178,688 |
| Non-Residential = 6" Compound | 67.5 | 321,638 |
| Non-Residential = 6" Turbine | 80.0 | 381,200 |

Single-family dwelling units in the City have historically utilized either the 5/8-inch or 3/4-inch water meter for typical residential water service, as these historically met the demands of a standard single-family unit. The 1-inch 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-inch meter as the minimum meter size for a single-family unit. In determining demands for various meter sizes, it is appropriate, however, to establish the 5/8-inch meter capacity as the base rate of flow (assumes 20 gpm), incorporating EDU multipliers for subsequent meter sizes based on potential flow rates of those larger meters in relation to the base flow rate (5/8-inch meter size). The City is, therefore, consolidating all meter sizes of 1-inch or less into a single meter class equivalent to one EDU. Meter capacities, or EDUs expressed by size and type are based on standards established by the American Water Works Association (AWWA).

3.0 Wastewater Development Fees

Chapter 3 of the Development Fee Report documents the methodology used to determine wastewater development fees. The Necessary Public Services funded by wastewater development fees include wastewater treatment and collection. Necessary Public Services, as defined in A.R.S. §9-463.05, are "facilities that have a life expectancy of three or more years and are owned and operated by or on behalf of the [City]."

3.1 Wastewater Service Area

The City of Scottsdale's wastewater service area largely coincides with the City boundary and is approximately 185 square miles as shown in Figure 3.

In addition to wastewater flows that are generated within Scottsdale, the City has entered into agreements with neighboring communities and providers to transport and/or treat portions of wastewater originating in those communities and service areas as follows:

- **City of Phoenix** – Some City of Phoenix wastewater flows enter the Scottsdale collection system through a metering station and pass through the Scottsdale collection system to the Sub-Regional Operating Group (SROG) system per an existing contract. Per contractual arrangements, some of these Phoenix flows can be pumped to the Water Campus Water Reclamation Facility (WRF) for treatment.
- **Paradise Valley** – The Town of Paradise Valley flows enter through numerous connections along the border between the Town and City of Scottsdale.
- **Black Mountain Sewer Company** – Flows from the Black Mountain Sewer Company enter the City's collection system on North Scottsdale Road near the Carefree Highway.
- **Town of Fountain Hills** – A development in the Town of Fountain Hills discharge to Scottsdale's collection system. There is also a small area within the City limits on the east side at approximately Cactus Road which convey sewer flows to the Fountain Hills Sanitary District facilities.

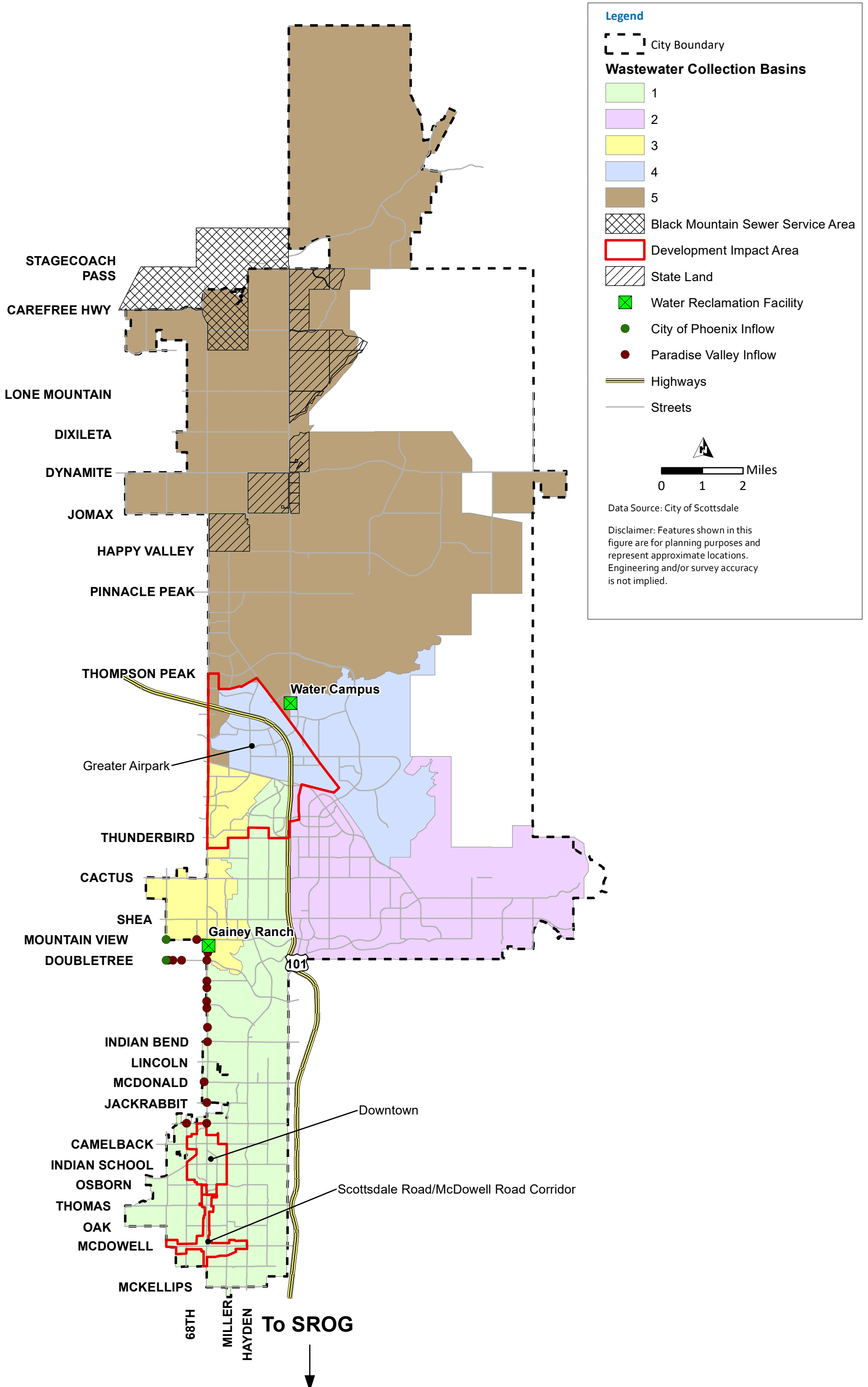
For collection system planning purposes, the wastewater system is divided into five wastewater flow basins operated as one single service area. This single service area approach is consistent with implementation of development fees wherein a "system average cost" is used, which focuses on the total value and total demand placed on the wastewater system.

The City's wastewater system includes collection, conveyance, treatment, and reclamation of wastewater for beneficial purposes. The City's wastewater and recycled water systems are treated as a single, integrated system for the IIP.

Wastewater flow projections were developed based on relevant land use assumptions described in the LUA and established City standards related to the conveyance and treatment of wastewater.

3.1.1 Septic System Areas

Some areas in the City have existing septic systems and therefore do not contribute wastewater flows to the collection system or water reclamation facilities. Reclaimed water is a valuable resource to the City of Scottsdale and new IIP projects have been proposed to enable the capture/collection of effluent from these septic areas. The IIP projects involve installing new trunk and interceptor sewer collection pipelines in Major and Minor Collector designated Transportation corridors, as defined in the Scottsdale Transportation Master Plan (July 2016) in each of the septic system areas.



3.2 Current Wastewater Development Fee Methodology

The current wastewater development fee, adopted as part of the 2018 Development Fee Report, was determined based on the same system average cost approach used for the water development fee, which focuses on the total value and total capacity of the utility's wastewater system. Specifically, the approach was designed to recover the current value of all existing wastewater facilities available to serve current demand as well as anticipated future demand; plus, the total capital improvements to those wastewater systems needed to serve anticipated future demands. Since costs recovered under this approach represent the total wastewater system value, it was appropriate to determine the unit cost per gpd under this approach by dividing the total wastewater system costs by the total existing and planned wastewater system capacity for the 10-year planning period.

Figure 4 demonstrates how total wastewater system value was identified and included in the value used to determine wastewater development fees under the current "system average cost" approach.

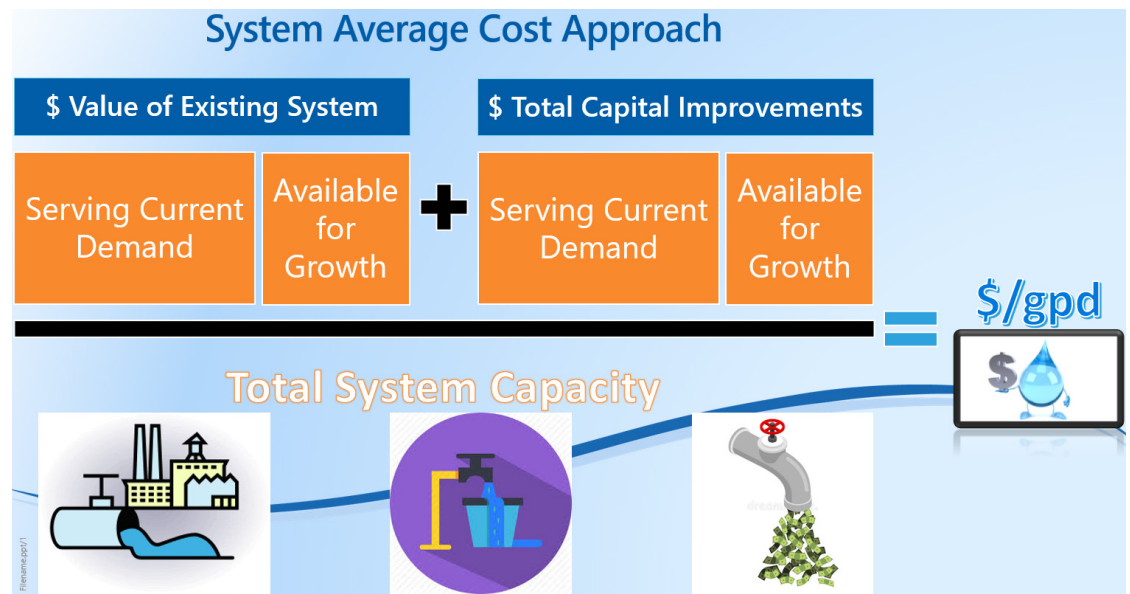


Figure 4 Wastewater System Average Cost Approach

The above diagram illustrates the general method for determining development fees under the system average cost approach. However, A.R.S. §9-463.05 allows other components such as future interest payments on debt, benefiting new customers, and requires a debt principal credit on debt recovered through monthly customer utility rates and charges.

The system average cost approach determines wastewater development fees by:

- Reflecting the average costs of current and future facilities based on a 10-year wastewater IIP planning period.
- Excluding capital improvements identified as replacements or upgrades to the existing wastewater facilities in the capital expansion component of the wastewater development fee.
- Recovering approximately 85 percent of the buy-in value for the AWT facilities as part of the wastewater treatment component of the wastewater development fee since these facilities allow for disposal of wastewater at the Water Campus Water Reclamation Facility.
- Determining the capacity available for new wastewater EDUs using annual average day demand.
- Determining the system average cost per gpd of wastewater capacity by dividing the costs of existing capacity plus planned capital improvements benefitting new customers by the total existing and planned wastewater treatment capacity during the 10-year planning period.
- Valuing wastewater buy-in facilities through RCNLD of the City's current facilities necessary to serve new EDUs.
- Including all planned expansion costs for facilities needed to serve new EDUs.
- Providing a debt principal credit for outstanding principal on borrowed funds, or funds anticipated to be borrowed, to construct facilities benefitting new customers but repaid through user rates generated by those new customers.
- Including future interest expense on borrowed funds, or funds anticipated to be borrowed, to construct facilities benefitting new customers.
- Excluding 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 as well as planned capital projects required to expand and extend capacity. Development fees are reflective of the average unit cost of system capacity based on previous and planned investments in the system divided by the total capacity in those facilities. Through development of the unit cost of capacity, the hybrid approach provides equity between existing and future customers.

3.2.1 Wastewater Treatment Component

The wastewater treatment component includes wastewater treatment facilities and its Safe Capacity Ownership in the Multi-City SROG. As noted below in Table 6, the total capacity of the City's existing treatment facilities eligible to serve new EDUs is 39.51 mgd. This 39.51 mgd consists of the Water Campus and Scottsdale's capacity ownership in the SROG agreement. The Gainey Ranch WRF 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 ineligible to serve new EDUs. Also, reserve capacity, as described in Chapter 6 of the IIP Report, is excluded from the capacity eligible to serve new EDUs. As noted in Table 16 of the IIP Report, the total RCNLD of the City's existing wastewater treatment facilities serving EDUs is \$323.7 million.

Table 6 Existing Wastewater Treatment and Collection Facilities

| Facility | Capacity (mgd) |
|--|----------------|
| Gainey Ranch WRF ⁽¹⁾ | 1.67 |
| Water Campus ⁽²⁾ | 20.00 |
| SROG (Scottsdale Safe Capacity Ownership) ⁽³⁾ | <u>20.25</u> |
| Total Existing Capacity | 41.92 |
| Less Ineligible: Gainey Ranch WRF | (1.67) |
| Less Ineligible: Reserved Capacity | <u>(0.74)</u> |
| Total Eligible Capacity for New EDUs | 39.51 |
| Less: Annual Average Daily Flow | <u>(21.62)</u> |
| Existing Capacity Available (Unused) for New EDUs | 17.89 |

Notes:

- (1) Gainey Ranch WRF will not provide capacity to new EDUs.
(2) Water Campus includes both the WRF and the AWT facility.
(3) Represents liquids stream treatment capacity at the 91st Avenue Wastewater Treatment Plant

As noted above, there is available wastewater treatment capacity of 17.89 mgd to serve new demand. As noted in Section 3.3 and 3.4 and Table 17 of the IIP Report, with the addition of 23,278 EDUs and a level of service of 176.1 gpd per EDU, new EDUs will require only 4.10 mgd of the 17.89 mgd to meet average day demand. Available capacity exceeds the projected average day demand of 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 \$323.7 million and 39.51 mgd of capacity in treatment facilities eligible to serve new EDUs, the unit cost of treatment is \$8.192 per gpd as shown below in Table 7.

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

3.2.2 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 reasonable measure of the capacity of the entire wastewater collection system.

As discussed in Section 3.9.2 of the IIP Report and shown in Appendix B of that report, approximately \$80.8 million in wastewater collection infrastructure is needed during the 10-year planning period to serve new EDUs. This infrastructure will extend and expand the City's wastewater collection system to address growth.

As shown in Table 16 of the IIP Report, the total RCNLD of the existing collection facilities serving EDUs is \$126.6 million.

Based on the total value of the wastewater collection component of approximately \$207.4 million and 39.51 mgd of capacity in collection facilities eligible to serve new EDUs, the unit cost of the collection system is \$5.249 per gpd, as shown below in Table 7.

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

3.2.3 Wastewater Interest Expense Component

The wastewater development fee also recovers the interest expense on expansion related debt the City has issued to fund capital improvements benefiting new customers. Interest cost includes annually scheduled interest payments beginning FY 2020 and continuing through maturity in FY 2037. Annual interest payments total \$20.5 million and are divided by the 8.98 mgd of additional future wastewater demands anticipated during the next 20 years (2021 through 2040). Interest payments for newly issued debt beyond FY 2020 and funding future capital improvements benefiting new customers have been appropriately excluded from this analysis.

Based on the total outstanding interest due on debt issued to fund facilities benefitting new EDUs, the average unit cost of wastewater interest expense is \$2.283 per gpd as shown below in Table 7.

For more detailed information on the wastewater interest expense calculation, see Schedule 1, Calculation of Interest Expense Components, in Appendix A.

3.2.4 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 also included in the revenue requirements recovered through customer utility charges. 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 new customers from being double charged through the development fee and their user rates and charges. The average unit cost of principal on existing debt service is \$1.139 gpd. This credit is deducted from the sum of the three cost components, on a uniform basis, to determine the net capital cost per gpd.

For more detailed information on the wastewater debt principal credit calculation, see Schedule 2, Debt Service Principal Credit Calculation in Appendix A.

3.2.5 Proposed Wastewater Development Fee Unit Cost per gpd

The total unit cost of capacity is \$14.585 per gpd as shown below in Table 7. This represents the sum of the cost per gpd for the wastewater treatment component, wastewater collection component, and wastewater interest expense component, less annual principal credit on existing debt service.

3.2.6 Proposed Wastewater Development Fee Unit Cost per EDU

The cost per service unit is determined by multiplying the per unit cost of capacity (\$14.585) times the demand factor for the base service unit (EDU), or the 176.1 gpd average day demand for a typical residential dwelling unit. This results in a wastewater development fee, per service unit, of \$2,568.

Table 7 summarizes unit costs per gpd for each component of the wastewater development fee and determines the proposed wastewater development fee unit cost per gpd and per EDU.

For more detailed information on the wastewater development fee calculation, see Schedule 4, Calculation of Wastewater Development Fee in Appendix A.

Table 7 Wastewater Development Fee Cost per gpd and per EDU

| Wastewater Development Fee Component | Unit Cost |
|---|-----------------|
| Wastewater Treatment (gpd) | \$8.192 |
| Wastewater Collection (gpd) | 5.249 |
| Interest Expense (gpd) | 2.283 |
| Total Cost of Capacity (gpd) | \$15.724 |
| Less: Debt Principal Offset (gpd) | (1.139) |
| Net Cost of Capacity (gpd) | \$14.585 |
| Annual Average Day Factor per EDU (gpd) | 176.10 |
| Wastewater Development Fee per EDU | \$2,568 |

3.2.7 Proposed Wastewater Development Fees by Meter Size and Type

The City assesses wastewater development fees for new customers based on their water meter size and type. Based on the findings in this Report, wastewater development fees, by water meter size and type, are presented in Table 8.

Table 8 Proposed Wastewater Development Fees by Meter Size and Type

| Meter Type | EDU Conversion | Fee |
|-------------------------------|----------------|---------|
| Single Family <=1" | 1.0 | \$2,568 |
| Single Family = 1.5" | 5.0 | 12,840 |
| Single Family = 2" | 8.0 | 20,544 |
| Single Family = 3" Compound | 17.5 | 44,940 |
| Single Family = 4" Compound | 30.0 | 77,040 |
| Single Family = 6" Compound | 67.5 | 173,340 |
| Multi-Family <=1" | 1.0 | \$2,568 |
| Multi Family = 1.5" | 5.0 | 12,840 |
| Multi Family = 2" | 8.0 | 20,544 |
| Multi Family = 3" Compound | 17.5 | 44,940 |
| Multi Family = 3" Turbine | 21.8 | 55,982 |
| Multi Family = 4" Compound | 30.0 | 77,040 |
| Multi Family = 4" Turbine | 37.5 | 96,300 |
| Multi Family = 6" Compound | 67.5 | 173,340 |
| Multi Family = 6" Turbine | 80.0 | 205,440 |
| Multi Family = 8" Compound | 80.0 | 205,440 |
| Non-Residential <=1" | 1.0 | 2,568 |
| Non-Residential = 1.5" | 5.0 | 12,840 |
| Non-Residential = 2" | 8.0 | 20,544 |
| Non-Residential = 3" Compound | 17.5 | 44,940 |
| Non-Residential = 3" Turbine | 21.8 | 55,982 |
| Non-Residential = 4" Compound | 30.0 | 77,040 |
| Non-Residential = 4" Turbine | 37.5 | 96,300 |
| Non-Residential = 6" Compound | 67.5 | 173,340 |
| Non-Residential = 6" Turbine | 80.0 | 205,440 |

4.0 Forecast of Development Fee Revenues and Cash Flows

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

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

4.1 Forecast of Water Development Fee Revenues and IIP Capital Costs

The annual water development fee revenue forecast is based on assumptions in the LUA forecast that an additional 18,713 water EDUs will be added during the 10-year IIP planning period.

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

Forecasted water development fee revenues and 10-year IIP capital cost requirements are presented in Table 9.

Table 9 Forecasted Water Development Fee Revenues and Capital Requirements

| Description | FY 2021-2030 Costs |
|---|------------------------|
| Forecasted Water Development Fee Revenues | \$89,167,445 |
| Planned Water Capital Projects Benefitting New EDUs | 203,200,600 |
| Water Principal on Growth-Related Projects | 40,941,859 |
| Water Interest on Growth-Related Projects | <u>24,654,404</u> |
| Total 10-Year Water IIP Costs | \$268,796,863 |
| Surplus / (Deficit) | (\$179,629,418) |

As Forecasted water development fee revenues and 10-year IIP capital cost requirements are presented in Table 9.

Table 9 demonstrates, forecasted water development fee revenues will produce a deficit of approximately \$179.6 million during the 10-year IIP planning period. Since determination of the water development fee includes the buy-in value of facilities eligible to serve new customers and available capacity to serve new customers connecting to the system, while also paying for capacity well beyond the 10-year planning period, forecasted water development fee revenues will not necessarily equal capital requirements during the 10-year IIP planning period.

For more detailed information on annual water development fee revenues and capital requirements of the IIP, see Schedule 5, Annual Forecast of Water Development Fee Revenues and Capital Requirements in Appendix A.

4.2 Forecast of Wastewater Development Fee Revenues and IIP Capital Costs

The annual wastewater development fee revenue forecast is based on assumptions in the LUA forecast that an additional 23,278 wastewater EDUs will be added during the 10-year IIP planning period.

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

Forecasted wastewater development fee revenues and 10-year IIP capital cost requirements are presented in Table 10.

Table 10 Forecasted Wastewater Development Fee Revenues and Capital Requirements

| Description | FY 2021-2030 Costs |
|--|-----------------------------|
| Forecasted Wastewater Development Fee Revenues | \$59,777,904 |
| Planned Wastewater Capital Projects Benefitting New EDUs | 80,793,000 |
| Wastewater Principal on Growth-Related Projects | 41,434,317 |
| Wastewater Interest on Growth-Related Projects | <u>24,011,660</u> |
| Total 10-Year Wastewater IIP Costs | <u>\$146,238,977</u> |
| Surplus / (Deficit) | (\$86,461,073) |

As Table 10 demonstrates, forecasted wastewater development fee revenues will produce a deficit of approximately \$86.5 million during the 10-year IIP planning period. Since determination of the wastewater development fees includes the buy-in value of facilities eligible to serve new customers and available capacity to serve new customers connecting to the system, while also paying for capacity well beyond the 10-year planning period, forecasted wastewater development fee revenues will not necessarily equal capital requirements during the 10-year IIP planning period.

For more detailed information on annual wastewater development fee revenues and capital requirements of the IIP, see Schedule 5, Annual Forecast of Wastewater Development Fee Revenues and Capital Requirements in Appendix A.

5.0 Development of Updated Water and Wastewater Development Fees

Proposed development fees reflect a net increase over current development fees due to updated buy-in values, additional planned infrastructure necessary to accommodate anticipated future demands during the 10-year planning period, and updated interest expenses on growth related debt.

Current development fees reflect the City's RCNLD buy-in value for existing facilities as of June 30, 2017, while proposed fees reflect the RCNLD buy-in value as of June 30, 2020, which includes additional infrastructure constructed and amortized depreciation on existing facilities since the previous development fees were determined. As the City completes growth related expansions, added capacity through capital investments to the water and wastewater systems is increased and available to serve new EDUs. These changes to the asset base are reflected below in Table 11. Appendix B contains comparisons of water and wastewater development fees.

Table 11 Comparison of Changes to Asset Base

| | 2017 IIP | 2021 IIP | Variance |
|---------------------|------------------------|------------------------|----------------------|
| Buy-In – Water | \$748,138,285 | \$860,298,001 | \$112,159,716 |
| Buy-In – Recharge | 10,430,104 | 12,466,101 | 2,035,997 |
| Buy-In – Wastewater | <u>\$391,288,342</u> | <u>450,246,697</u> | <u>58,958,355</u> |
| Total | \$1,149,856,731 | \$1,323,010,799 | \$173,154,068 |

Proposed capital projects for growth related expansions projected over the 2021 IIP 10-year period versus the 2017 IIP 10-year planning period, has increased the total development fee growth component as follows in Table 12.

Table 12 Comparison of Changes to Growth-Related Capital Projects

| | 2017 IIP | 2021 IIP | Variance |
|---|---------------------|----------------------|----------------------|
| Growth-Related Capital Expansion – Water | \$78,867,200 | \$203,200,600 | \$124,333,400 |
| Growth-Related Capital Expansion – Recharge | 7,150,000 | 0 | (7,150,000) |
| Growth-Related Capital Expansion – Wastewater | <u>12,574,600</u> | <u>80,793,000</u> | <u>68,218,400</u> |
| Total | \$98,591,800 | \$283,993,600 | \$185,401,800 |

Net changes to growth related expansions and buy-in used to calculate development fees are as follows in Table 13.

Table 13 Comparison of Changes to Growth-Related Expansions and Buy-In Facilities

| | 2017 IIP | 2021 IIP | Variance |
|--------------------------------|------------------------|------------------------|----------------------|
| Growth & Buy-In – Water | \$827,005,485 | \$1,063,498,601 | \$236,493,116 |
| Growth & Buy-In – Water Supply | 17,580,104 | 12,466,101 | (5,114,003) |
| Growth & Buy-In – Wastewater | 403,575,525 | 531,039,697 | 127,464,172 |
| Total | \$1,248,161,114 | \$1,607,004,399 | \$358,843,285 |

This represents an overall increase of approximately 28.7 percent in the growth-related expansions and buy-in infrastructure components of the development fees.

5.1 Development Fee Revenue Forecast

The projection of development fee revenue is challenging due to various uncertainties associated with current residential and non-residential development. The City anticipates revised development fees, which are proposed to be effective starting January 1, 2022, will result in increased development fee revenue due to higher expected growth in new EDUs added during the 10-Year planning period. The 2017 IIP anticipated adding 17,136 water and 16,657 wastewater EDUs during the previous 10-year planning period as compared to current estimates of 18,713 water and 23,278 wastewater EDUs. A summary of the proposed increases for each fee category are described below.

5.2 Single Family Residential

Under the combined (water and wastewater) proposed development fees, a single-family residential development with a 1-inch meter would see an increase of approximately 12.5 percent. Similarly, a single-family residential development with a 1-1/2-inch meter would also see an increase of 12.5 percent. A summary of the single-family development fee comparison is presented in Table 14.

Table 14 Combined Single Family Residential Development Fee Comparison

| Meter Size | Current | Proposed | Increase | % Change |
|------------|---------|----------|----------|----------|
| 1-Inch | \$6,517 | \$7,333 | \$816 | 12.5% |
| 1.5-Inch | 32,585 | 36,665 | 4,080 | 12.5% |

5.3 Multi-Family Residential

A summary of the combined (water and wastewater) multi-family development fee comparison, based on a represented number of meters for a particular multi-family housing developments, is presented in Table 15.

Table 15 Combined Multi-Family Residential Development Fee Comparison

| Meter Size | Current | Proposed | Increase | % Change |
|--|-----------|-----------|----------|----------|
| 300 Unit Apartment, Average Density 1,500 sq ft | | | | |
| Ten 2-Inch Meters | \$521,360 | \$586,640 | \$65,280 | 12.5% |
| 100 Unit Apartment, Average Density 1,600 sq ft | | | | |
| Five 1.5-Inch Meters | \$162,925 | \$183,325 | \$20,400 | 12.5% |
| 8 Unit Duplex, Average Density 1,800 sq ft | | | | |
| One 1.5-Inch Meter | \$32,585 | \$36,665 | \$4,080 | 12.5% |

Abbreviation:
sq ft = square feet

5.4 Non-Residential

A summary of the combined (water and wastewater) non-residential development fee comparison is presented in Table 16.

Table 16 Combined Non-Residential Development Fee Comparison

| Meter Size | Current | Proposed | Increase | % Change |
|-----------------|---------|----------|----------|----------|
| 1-Inch | \$6,517 | \$7,333 | \$816 | 12.5% |
| 1.5-Inch | 32,585 | 36,665 | 4,080 | 12.5% |
| 2-Inch | 52,136 | 58,664 | 6,528 | 12.5% |
| 3-Inch Compound | 114,048 | 128,328 | 14,280 | 12.5% |
| 3-Inch Turbine | 143,374 | 159,859 | 16,485 | 11.5% |
| 4-Inch Compound | 195,510 | 219,990 | 24,480 | 12.5% |
| 4-Inch Turbine | 273,714 | 274,988 | 1,274 | 0.5% |
| 6-Inch Compound | 439,898 | 494,978 | 55,080 | 12.5% |
| 6-Inch Turbine | 563,721 | 586,640 | 22,919 | 4.1% |

Notes:

- (1) The EDU conversion factors for large turbine meters were updated to be consistent with AWWA standards, which results in changes to the development fees that differ from the change to the proposed development fee for 1.0 EDU.

Appendix A
DEVELOPMENT FEE CALCULATIONS

Schedule 1
City of Scottsdale Development Fee Model
Calculations of Interest Expense Fee Component

| Interest Recovered through Water Development Impact Fees <i>Annual Interest Expense</i> | 20-Year Total | 20-Year Remaining Principal Payments (Fiscal Year ending June 30) | | | | | | | | | | Cumulative | | |
|--|---------------------|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|------------------|
| | | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031-2040 | |
| Interest Payments by Component | Allocation % | | | | | | | | | | | | | |
| Water Facilities ¹ | 75.2% | \$17,137,356 | 2,765,154 | 1,836,728 | 1,867,140 | 1,706,402 | 1,527,852 | 1,335,188 | 1,127,309 | 906,043 | 815,563 | 725,667 | 649,004 | 1,875,307 |
| Water Supply Facilities ² | 24.8% | \$5,662,123 | 601,634 | 631,333 | 606,982 | 583,029 | 545,743 | 501,037 | 447,458 | 388,894 | 348,430 | 304,191 | 240,883 | 462,508 |
| Total Interest Payments | | \$22,799,479 | 3,366,788 | 2,468,061 | 2,474,122 | 2,289,431 | 2,073,595 | 1,836,225 | 1,574,768 | 1,294,937 | 1,163,992 | 1,029,857 | 889,887 | 2,337,815 |

Water Interest Expense (FY 2021 through FY 2040) \$22,799,479

Capacity Required (MGD) to Service Growth (FY 2021 through FY 2040)³ 27.187

Growth Related Interest Expense (gpd) \$0.839

Interest Recovered through Wastewater Development Impact Fees
Annual Interest Expense

| | | | | | | | | | | | | | | |
|---------------------------------------|--|---------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|----------------|------------------|
| Interest Payments by Component | | | | | | | | | | | | | | |
| Wastewater Facilities ⁴ | | \$20,488,747 | 3,431,416 | 2,505,710 | 2,374,002 | 2,069,173 | 1,718,639 | 1,562,955 | 1,413,921 | 1,251,961 | 1,119,255 | 975,883 | 789,722 | 1,276,110 |
| Total Interest Payments | | \$20,488,747 | 3,431,416 | 2,505,710 | 2,374,002 | 2,069,173 | 1,718,639 | 1,562,955 | 1,413,921 | 1,251,961 | 1,119,255 | 975,883 | 789,722 | 1,276,110 |

Wastewater Interest Expense (FY 2021 through FY 2040) \$20,488,747

Capacity Required (MGD) to Service Growth (FY 2021 through FY 2040)⁵ 8.976

Growth Related Interest Expense (gpd) \$2.283

- 1 Includes annual interest payments through maturity on those debt issues that have been identified with paying for water system facilities benefitting new customers. These annual interest payments have been designated to be funded by the water development fee fund.
- 2 Includes annual interest payments through maturity on those debt issues that have been identified with paying for water supply facilities benefitting new customers. These annual interest payments have been designated to be funded by the water supply fee fund.
- 3 Based on the expected amount of water treatment capacity that will be required to serve new customers connecting to the water system from FY 2021 through FY 2040. Since the water development fee fund and water supply fee fund will be funding these payments, these payments are recovered from new customers connecting to the water system during the 20-year period. The expected amount of additional capacity is based on growth and demand estimates from the LUA and IIP.
- 4 Includes annual interest payments through maturity on those debt issues that have been identified with paying for wastewater system facilities benefitting new customers. These annual interest payments have been designated to be funded by the wastewater development fee fund.
- 5 Based on the expected amount of wastewater treatment capacity that will be required to serve new customers connecting to the wastewater system from FY 2021 through FY 2040. Since the wastewater development fee fund will be funding these payments, these payments are recovered from new customers connecting to the wastewater system during the 20-year period. The expected amount of additional capacity is based on growth and demand estimates from the LUA and IIP.

Schedule 2
City of Scottsdale Development Fee Model
Debt Service Principal Credits Calculations

| | 20-Year Remaining Principal Payments (Fiscal Year ending June 30) | | | | | | | | | | | Cumulative 2031-2040 |
|--|---|--------------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-------------------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | |
| Water Principal Credit | | | | | | | | | | | | |
| Total Water Principal Funded through User Rates and Charges | 8,768,647 | 9,167,087 | 9,450,992 | 9,971,625 | 10,418,099 | 5,825,040 | 6,094,663 | 6,539,617 | 6,831,498 | 7,080,600 | 8,086,959 | 14,398,310 |
| Total System Demand (MGD) ¹ | 60.464 | 61.229 | 62.004 | 62.789 | 63.584 | 64.389 | 65.204 | 66.029 | 66.865 | 67.711 | 68.569 | Varies |
| Annual Debt Credit (gpd) | \$0.15 | \$0.15 | \$0.15 | \$0.16 | \$0.16 | \$0.09 | \$0.09 | \$0.10 | \$0.10 | \$0.10 | \$0.12 | |
| Cumulative 20-year Debt Principal Credit (gpd) | | \$1.432 | | | | | | | | | | |
| Cumulative 20-year TOTAL Debt Principal Payments | | \$93,864,490 | | | | | | | | | | |
| Wastewater Principal Credit | | | | | | | | | | | | |
| Total Wastewater Principal Funded through User Rates and Charges | 1,444,293 | 1,561,864 | 1,217,468 | 1,491,421 | 1,287,300 | 1,358,200 | 1,444,100 | 1,184,700 | 2,220,500 | 1,893,800 | 4,360,096 | 10,585,700 |
| Total System Demand (MGD) ¹ | 21.620 | 21.999 | 22.384 | 22.776 | 23.175 | 23.581 | 23.994 | 24.414 | 24.842 | 25.277 | 25.719 | Varies |
| Annual Debt Credit (gpd) | \$0.07 | \$0.07 | \$0.05 | \$0.07 | \$0.06 | \$0.06 | \$0.06 | \$0.05 | \$0.09 | \$0.07 | \$0.17 | |
| Cumulative 20-year Debt Principal Credit (gpd) | | \$1.139 | | | | | | | | | | |
| Cumulative 20-year TOTAL Debt Principal Payments | | \$28,605,149 | | | | | | | | | | |

¹ Total system demands for water and wastewater are anticipated to increase at escalation rates determined as part of the City's Integrated Water Resources Master Plan.

Schedule 3
City of Scottsdale Development Fee Model
Calculation of Water Development Fees

| | TOTAL |
|--|----------------------|
| <u>Water Treatment Component</u> | |
| Buy-In Value of Existing System (RCNLD) ¹ | \$ 552,271,238 |
| Planned Capital Projects (IIP) ⁵ | 68,270,000 |
| TOTAL Water Treatment Component | \$620,541,238 |
| Component Capacity (MGD) ² | 159.990 |
| Cost Per Gallon Per Day of Capacity | \$3.879 |
| <u>Water Distribution Component</u> | |
| Buy-In Value of Existing System (RCNLD) ¹ | \$ 308,026,763 |
| Planned Capital Projects (IIP) ⁶ | 134,930,600 |
| TOTAL Water Distribution Component | \$442,957,363 |
| Component Capacity (MGD) ³ | 159.990 |
| Cost Per Gallon Per Day of Capacity | \$2.769 |
| <u>Water Recharge/Supply Component</u> | |
| Buy-In Value of Existing System (RCNLD) ¹ | \$ 12,466,101 |
| Planned Capital Projects (IIP) | 0 |
| TOTAL Water Recharge/Supply Component | \$12,466,101 |
| Component Capacity (MGD) ⁴ | 13.200 |
| Cost Per Gallon Per Day of Capacity | \$0.944 |
| Growth Related Interest Expense (gpd)⁷ | \$0.839 |
| Total Water System Cost per Gallon per Day | \$8.431 |
| Less: 20-year Debt Principal Credit (gpd) ⁸ | (\$1.432) |
| Net Water System Cost per Gallon per Day | \$6.999 |
| Peak Demand Factor per EDU (gpd)⁹ | 680.80 |
| Water Impact Fee per EDU | \$4,765 |

1 From Table 9 of the IIP Report.

2 From Table 1 - 134.79 mgd of existing treatment capacity, plus 25.20 mgd of planned capacity.

3 From Table 2 - 134.79 mgd of existing distribution system capacity, plus 25.20 mgd of planned capacity.

4 From Table 3 - 13.20 mgd of existing recharge capacity.

5 From Section 2.2.1 - \$50.1 million for CAP WTP expansion plus \$9.1 million each for two AST wells.

6 From Section 2.2.2 - \$134.9 million for distribution system improvements.

7 From Schedule 1.

8 From Schedule 2.

9 From Section 2.3 of the IIP Report.

Schedule 4
City of Scottsdale Development Fee Model
Calculation of Wastewater Development Fees

| | TOTAL |
|--|----------------------|
| <u>Wastewater Treatment Component</u> | |
| Buy-In Value of Existing System (RCNLD) ¹ | \$323,659,055 |
| Planned Capital Projects (IIP) | 0 |
| TOTAL Wastewater Treatment Component | \$323,659,055 |
| Component Capacity (MGD) ² | 39.510 |
| Cost Per Gallon Per Day of Capacity | \$8.192 |
| <u>Wastewater Collection Component</u> | |
| Buy-In Value of Existing System (RCNLD) ¹ | \$126,587,642 |
| Planned Capital Projects (IIP) ³ | 80,793,000 |
| TOTAL Wastewater Distribution Component | \$207,380,642 |
| Component Capacity (MGD) ² | 39.510 |
| Cost Per Gallon Per Day of Capacity | \$5.249 |
| Growth Related Interest Expense (gpd)⁴ | \$2.283 |
| Total Wastewater System Cost per Gallon per Day | \$15.724 |
| Less: 10-year Debt Principal Credit (gpd) ⁵ | (\$1.139) |
| Net Wastewater System Cost per Gallon per Day | \$14.585 |
| Average Daily Flow Per EDU (gpd)⁶ | 176.10 |
| Wastewater Development Fee per EDU | \$2,568 |

1 From Table 16 of the IIP Report.

2 From Table 6.

3 From Section 3.2.2 - \$80.8 million for collection system improvements.

4 From Schedule 1.

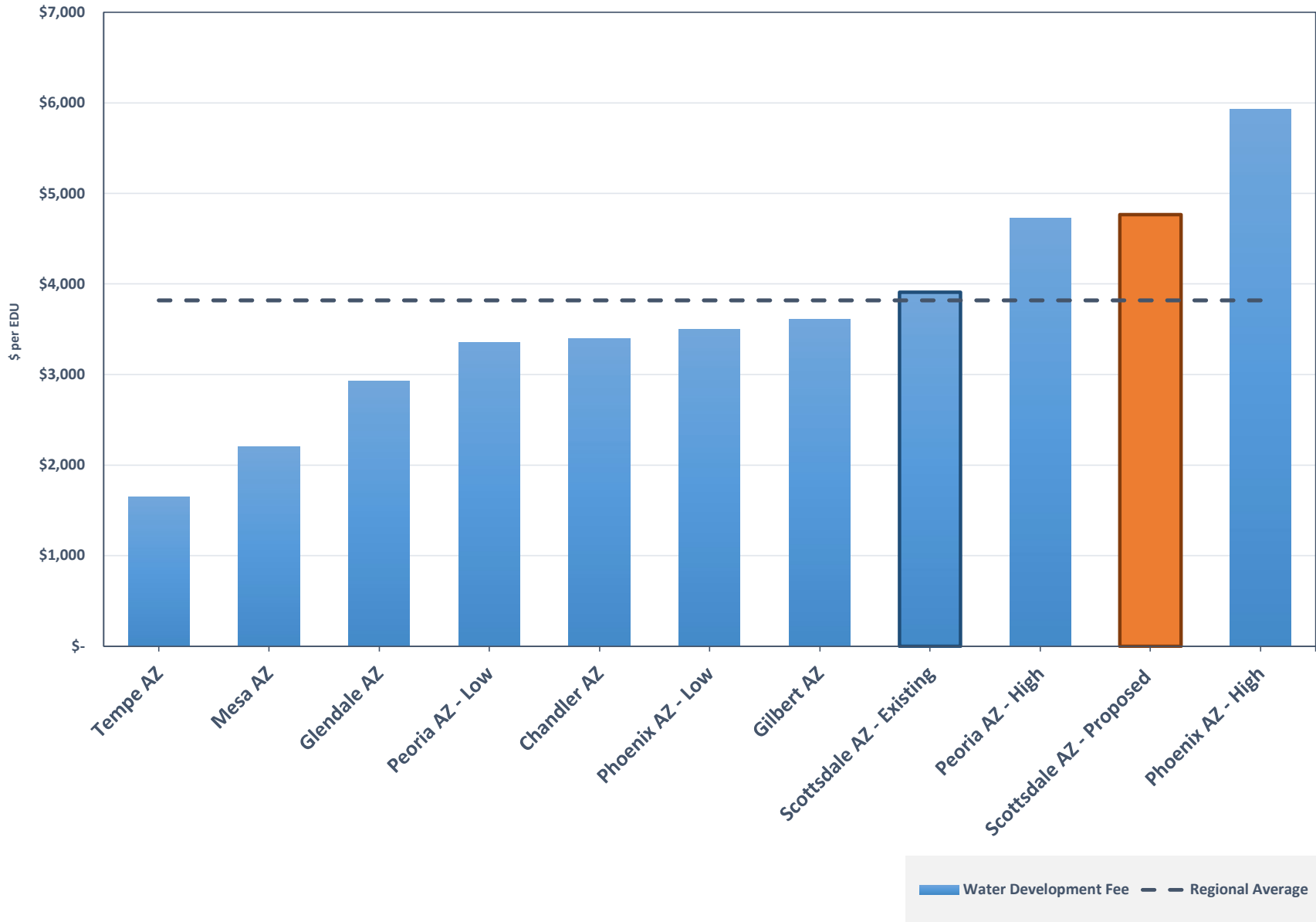
5 From Schedule 2.

6 From Section 3.3 of the IIP Report.

Appendix B

SURVEY OF PEER AGENCY DEVELOPMENT FEES

Comparison of Water Development Fees



Comparison of Wastewater Development Fees

