NOTICE OF POSTING

OF INFRASTRUCTURE IMPROVEMENTS PLAN FOR WATER AND WASTEWATER DEVELOPMENT FEES

Under ARS §9-463.05, a Necessary Public Service is defined as any facility that has a life expectancy of 3 or more years and that are owned and operated by or on behalf of the city. A city desiring to assess a development fee to offset the cost of providing a Necessary Public Service must adopt a Land Use Assumption Report (separate posting) and Infrastructure Improvements Plan before adopting the Development Fee Report establishing any new development fees.

In the City of Scottsdale, the only Necessary Public Services for which development fees are collected are for Water and Wastewater services.

Posted with this NOTICE is the City of Scottsdale's proposed Infrastructure Improvement Plan.

The Infrastructure Improvement Plan is a written document identifying growth driven water and wastewater infrastructure needs within a 10-year planning period. These needs along with other considerations serve to establish the basis for projected development fees.

The backup documents on which the Infrastructure Improvement Plan is based are available for review at The Administrative Offices of the Water Resources Division, 9379 E. San Salvador Dr., Scottsdale, Arizona.

Contact Jordan Fasano, Water Resources Finance Manager (480) 312-5466 EnterpriseFinance@ScottsdaleAZ.Gov.

A public hearing for the Land Use Assumptions Report, the Infrastructure Improvements Plan, and a notice of intent to modify development fees is scheduled for the City Council meeting on February 11, 2025. The plans are scheduled for adoption at the City Council meeting on April 8, 2025. 3939 Drinkwater Blvd. Scottsdale, Arizona.

ATTACHMENT 2

SCOTTSDALE WATER

2025 LUA, IIP, AND DEVELOPMENT FEES UPDATE

Infrastructure Improvements Plan
Water and Wastewater

PROPOSED / December 2024

carollo

2025 LUA, IIP, AND DEVELOPMENT FEES UPDATE

Infrastructure Improvements Plan Water and Wastewater

PROPOSED / December 2024

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Abbreviations

2021 IIP	July 2021 Infrastructure Improvements Plan: Water and Wastewater
A.R.S.	Arizona Revised Statutes
AACE	Association for the Advancement of Cost Engineering
AADF	annual average daily flow
ADWR	Arizona Department of Water Resources
AFY	acre-feet per year
ASR	aquifer storage and recovery
AWT	advanced water treatment
AWWA	American Water Works Association
CAP	Central Arizona Project
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CGTF	Central Groundwater Treatment Facility
City	City of Scottsdale
EDU	Equivalent Dwelling Units
ENR-CCI	Engineering News-Record 20-Cities Average Construction Cost Index
gpd	gallons per day
gpm	gallons per minute
IIP	Infrastructure Improvements Plan
IWRMP	Integrated Water Resources Master Plan
LUA	Land Use Assumptions
MG	million gallons
mgd	million gallons per day
NGTF	North Groundwater Treatment Facility
RCNLD	replacement cost new less depreciation
SMOC	safe maximum operating capacity
SROG	Sub-Regional Operating Group
SRP	Salt River Project
TGTF	Thomas Groundwater Treatment Facility
WDUA	Water Delivery and Use Agreement
WRA	Whitman, Requardt & Associates LLP
WRF	water reclamation facility
WTP	water treatment plant
WWTP	wastewater treatment plant

SECTION 1 INTRODUCTION

The City of Scottsdale (City) is a growing, vibrant community of nearly 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 growth areas that include the Greater Airpark, Downtown, and the Scottsdale/McDowell Road Corridor. The 2023 Maricopa Association of Governments growth trends indicate Scottsdale's estimated population will increase to 281,220 in 2035.

This 2025 Infrastructure Improvements Plan (IIP) is an update to the previous IIP, which was completed in 2021. The 2025 Land Use Assumptions (LUA) Report, being updated in tandem with this IIP, contains the land use and growth assumptions that form the basis of water demand and wastewater flow projections for the 2026 through 2035 planning period.

1.1 Statement of Intent – Determination of Development Fees

The City assesses development fees to fund the infrastructure needed to accommodate new growth. Development fees are one-time payments that 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. Water supply is an essential part of water services. A portion of the water development 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.
- **Wastewater Development Fees** provide funds for the cost of sewers, lift stations, reclamation plants, wastewater treatment plants (WWTP) 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 Infrastructure Improvements Plan

The purpose of this document is to meet the requirements of an IIP as defined in Arizona Revised Statutes (A.R.S.) 9-463.05 and to serve as the basis for the Development Fee Update. This IIP has been developed for the 10-year period beginning in 2026 through 2035. It is anticipated that the IIP will be updated at least once every five years.

1.3 Prepared by Licensed Professionals

The IIP was prepared by licensed professionals from Carollo Engineers.

SECTION 2 WATER INFRASTRUCTURE PLAN

2.1 Water Service Area

The City's water service area largely coincides with the City boundary and is approximately 185 square miles, as shown in Figure 1. It encompasses the area 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 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. For City engineering planning purposes, the water service area is sub-divided into four regional planning areas: Desert Mountain, Northern, Central, and Southern. The water system is further subdivided into pressure zones to regulate water pressure for customers across the City's various elevation ranges. The water system is also flexible in that water supplies from the north may be conveyed to the south, and vice versa, although there are some limitations to the amount of water that can be moved north from the Chaparral Water Treatment Plant (WTP) or south from the CAP WTP. 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.

The City's primary water supplies include Colorado River water delivered via the CAP Aqueduct, Salt River Project (SRP) water delivered via the Arizona Canal, and groundwater wells. Some of Scottsdale's groundwater supplies are used to conduct remediation activities at the Central Groundwater Treatment Facility (CGTF), the Thomas Groundwater Treatment Facility (TGTF) and the North Groundwater Treatment Facility (NGTF) in the Southern regional planning area.

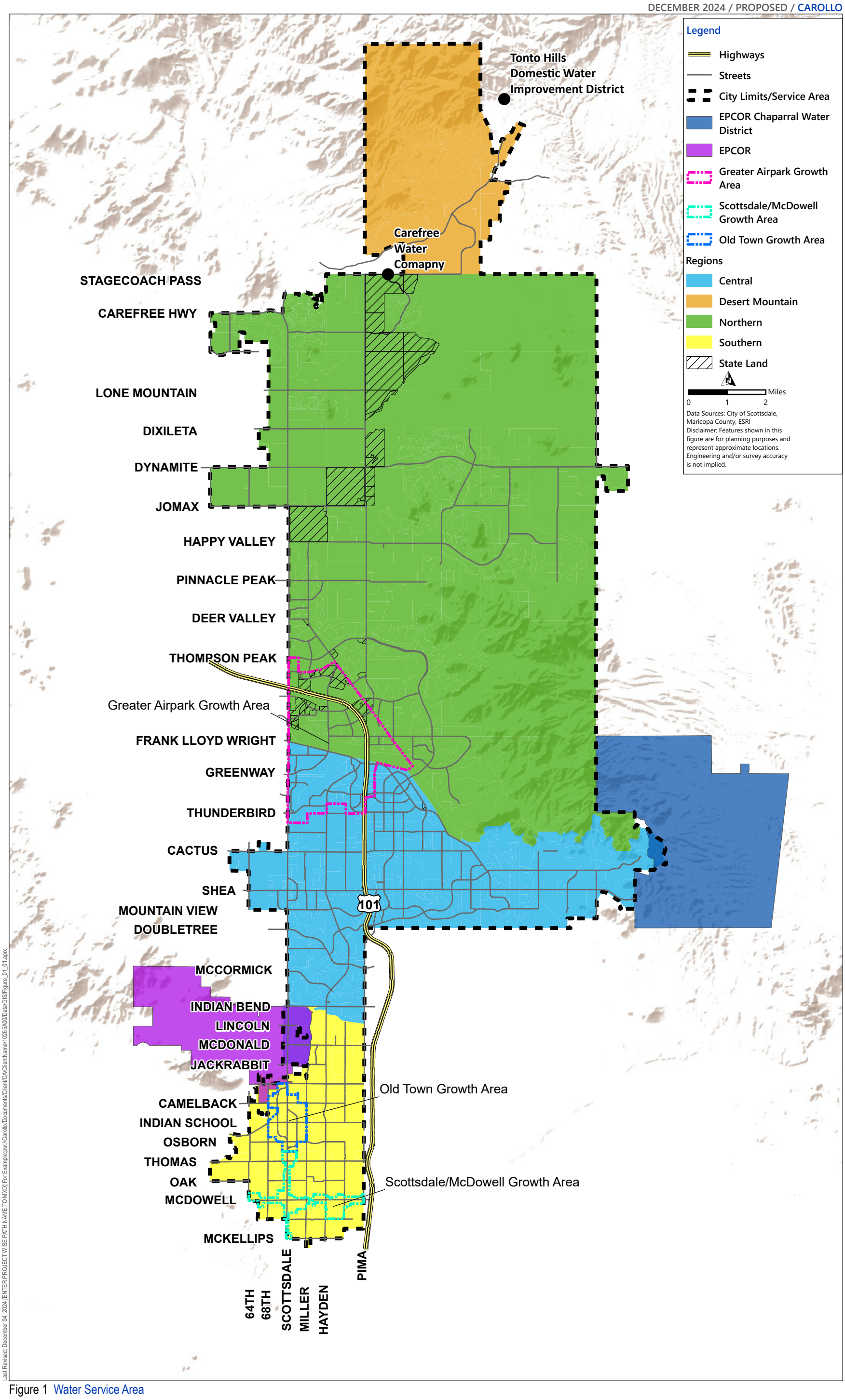

Figure 1 Water Service Area
CITY OF SCOTTSDALE
2025 LUA, IIP AND DEVELOPMENT FEES UPDATE

Water treatment facilities are capable of serving multiple regions in the City, as shown in Table 1, since the water distribution systems are interconnected. Although the CAP WTP, the Chaparral WTP, the CGTF/TGTF, and the NGTF represent the primary drinking water supply sources, the City also has additional groundwater wells to supplement supplies in various regions across the water system.

Table 1 Regions Served by Water Treatment Facilities

Water Treatment Facility	Desert Mountain	Northern	Central	Southern
CAP WTP	Yes	Yes	Yes	Yes
Chaparral WTP(1)			Yes	Yes
CGTF/TGTF			Yes	Yes
NGTF			Yes	Yes

Note:
(1) SRP water treated at the Chaparral WTP may be conveyed to regions other than the Southern region but must be tracked so that a balance is maintained per the City's Water Delivery and Use Agreement (WDUA) with SRP.

The governing policies with respect to the City's water rights are complex and more fully documented in the City's 2022 Integrated Water Resources Master Plan Update (IWRMP). For the purposes of this IIP, a summary of the use restrictions for each surface water supply is provided.

2.1.1 Central Arizona Project

The City's CAP water is typically treated at and distributed from the CAP WTP, located at the Scottsdale Water Campus. CAP water can be used anywhere within the City's water service area. CAP water can also be treated and stored in underground aquifers and recovered through groundwater wells throughout the City's service area.

2.1.2 Salt River Project

The City's SRP supply is treated at and distributed from the Chaparral WTP and must be used on land within the SRP service area south of the Arizona Canal (these lands are known as "On-Project"). However, when experiencing maximum day demand conditions, SRP water may be used to supplement water needs Off-Project (locations in the City's water service area not on SRP lands) if a water exchange is made in accordance with the WDUA that the City has in place with SRP. Therefore, by tracking and accounting for deliveries of SRP water to areas of Scottsdale that are Off-Project, the City can balance available supplies and demands on a monthly and annual basis.

2.2 Land Use

The LUA are described and documented separately in an accompanying 2025 LUA Report. The 2025 LUA includes the City's current demographic estimates, and its projections for future dwelling unit, and employment development within the City's service area from 2026 through 2035.

2.3 Existing Level of Service

To calculate development fees, various customer types must be standardized into a measure of demand attributable to an individual unit of development termed a service unit. For the water category of Necessary Public Services, as defined by State Statute, service units are translated into an EDU, which is equivalent to the water demand of one detached single-family dwelling unit. Note that one EDU may differ from one dwelling unit. Standardization of other customer types to a single-family dwelling unit applies capacity ratios of associated meter sizes.

Single-family dwelling units within the City have historically utilized the 5/8-inch water meter for typical residential water service, as it typically meets demands of a standard single-family unit. One-inch meters have the additional capability of supporting an increased increment of flow and accommodate fire suppression.

For this IIP, it is appropriate to establish the 5/8-inch meter capacity (20 gallons per minute [gpm]) as the base rate of flow, 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 consolidates all meter sizes of one inch or less into a single meter class equivalent to one EDU. Meter capacities expressed in gpm by type and size are based on standards established from the American Water Works Association (AWWA) Manual M1 *Principles of Water Rates, Fees and Charges*, Seventh Edition. Ratios of EDUs by meter size are based on the safe maximum operating capacity (SMOC), which are summarized in Table 2.

Table 2 Water Meter Equivalent Demand Unit Conversions

Land Use - Size/Type	SMOC(1) (gpm)	EDU Multiplier	Unit
Single Family (up to 1-inch meter size)	20 - 50	1.0	Per Dwelling Unit
Multi Family (individually metered up to 1-inch meter size)	20 - 50	1.0	Per Dwelling Unit
All Other Land Uses or Additional Meters			
<= 1-inch Turbine	20 - 50	1.0(2)	Per Meter
1.5-inch Turbine	100	5.0	Per Meter
2-inch Turbine	160	8.0	Per Meter
3-inch Compound	350	17.5	Per Meter
3-inch Turbine	435	21.8	Per Meter
4-inch Compound	600	30.0	Per Meter
4-inch Turbine	750	37.5	Per Meter
6-inch Compound	1,350	67.5	Per Meter
6-inch Turbine	1,600	80.0	Per Meter
8-inch Compound	1,600	80.0	Per Meter
8-inch Turbine	2,800	140.0	Per Meter

Notes:
(1) Meter capacities are the SMOC, as documented in AWWA M1, Seventh Edition (2017).
(2) In addition to all commercial meters, single-family meters greater than 1 inch and multifamily meters greater than 1 inch are accounted for in this section.
(3) The City has determined that a 1-inch meter is the minimum sized meter for a new service. A 5/8-inch or 3/4-inch meter may be requested for outside irrigation of lawns and gardens. This IIP will account for meter sizes equal to or less than 1 inch, as being equivalent to one EDU.

Using the City's database of water meter records through June 2024, the existing EDUs within the City's water service area were summarized as shown in Table 3.

Table 3 Existing Water Service Area EDUs

Meter Type	Number of Meters	EDU Conversion	No. of EDUs
Residential <=1 inch	83,732	1.0	83,732
Residential = 1.5 inch	1,993	5.0	9,965
Residential = 2 inch	1,941	8.0	15,528
Residential = 3-inch Compound	40	17.5	700
Residential = 3-inch Turbine	5	21.8	109
Residential = 4-inch Compound	26	30.0	780
Residential = 4-inch Turbine	0	37.5	0
Residential = 6-inch Compound	25	67.5	1,688
Residential = 6-inch Turbine	1	80.0	80
Residential = 8-inch Compound	4	80.0	320
Residential Subtotal	**87,767**		**112,901**
Non-Residential <=1 inch	2,540	1.0	2,540
Non-Residential = 1.5 inch	1,570	5.0	7,850
Non-Residential = 2 inch	1,600	8.0	12,800
Non-Residential = 3-inch Compound	147	17.5	2573
Non-Residential = 3-inch Turbine	22	21.8	480
Non-Residential = 4-inch Compound	68	30.0	2040
Non-Residential = 4-inch Turbine	17	37.5	637.5
Non-Residential = 6-inch Compound	24	67.5	1,620
Non-Residential = 6-inch Turbine	18	80.0	1440
Non-Residential = 8-inch Compound	1	80.0	80
Non-Residential = 8-inch Turbine	2	140.0	280
Non-Residential Subtotal	**6,009**		**32,340**
Total	**93,776**		**145,241**

The existing level of service of the water system is defined as meeting the peak or maximum day demand, which is defined as the highest volume of water used by customers in a single day during the year. In water systems, the maximum day demand typically occurs on a summer day when water usage for outdoor irrigation and other indoor uses are highest. Historical maximum day demands for the last five calendar years are shown in Table 4.

Table 4 Historical Maximum Day Demand

Calendar Year	Maximum Day Demand (gpd)
2019	92,400,000
2020	97,300,000
2021	94,900,000
2022	90,900,000
2023	97,400,000
Average	**94,580,000**

gpd - gallons per day

The average maximum day demand between calendar years 2019 and 2023 was 94,580,000 gpd. The 94.6 million gallons per day (mgd) value is used to calculate the current number of EDUs served, as water treatment facilities are rated and permitted based on firm treatment/production capacity.

The existing level of service for both residential and non-residential EDUs is calculated using the volumetric flow for each customer class from the City's utility billing database for year 2023 and the respective number of EDUs or employees, as established in the 2025 LUA Report. A summary of the volumetric flow delivered to residential and non-residential customers for calendar years 2019 through 2023 is shown in Table 5. Approximately 79 percent of the City's total water demand is attributed to residential customers, while the remaining 21 percent of the City's total water demand is attributed to non-residential customers.

Table 5 Volumetric Demand by Customer Class

Calendar Year	Residential Volume (MG)	Residential Use (%)	Non-Residential Volume (MG)	Non-Residential Use (%)
2019	17,265.72	79%	4,530.51	21%
2020	18,880.16	81%	4,406.44	19%
2021	18,204.43	80%	4,471.22	20%
2022	17,759.37	77%	5,304.26	23%
2023	17,745.62	78%	4,899.18	22%
Average	**17,971.06**	**79%**	**4,722.32**	**21%**

MG - million gallons

Based on the number of existing residential EDUs as shown in Table 3, the existing residential level of service (meeting maximum day demand) per EDU is shown in the following calculation:

(94,580,000 gpd x 79%) ÷ 112,901 EDUs = 661.8 gpd per EDU

The LUA's estimated number of people employed within Scottsdale is 205,555. The existing non-residential level of service (meeting maximum day demand) per employee is shown in the following calculation:

(94,580,000 gpd x 21%) ÷ 205,555 employees = 96.6 gpd per employee

The water system calculations are based on the existing level of service per residential water EDU and expressed as 661.8 gpd per EDU, while the existing level of service per employee is expressed as 96.6 gpd per employee.

2.4 Future Level of Service

The future level of service provided to new customers will remain consistent with the existing level of service described above. Any capital improvements proposed for the water system to accommodate new growth will be designed to accommodate maximum day water demands of 661.8 gpd, per EDU and 96.6 gpd per employee, respectively.

2.5 Existing Capacity of Water Capital Facilities

The following sections summarize the existing capacity of the capital facilities in the water service area, the utilization of available capacity by existing EDUs, and the available excess capacity to serve new EDUs, including existing and planned commitments or agreements the City has made for use of system capacity. Capital facilities that provide water within the service area include water supply and treatment, water distribution, and water recharge.

2.5.1 Water Supply and Treatment

The City must demonstrate the ability to deliver a 100-year sustainable water supply in compliance with requirements of the Assured Water Supply program, as regulated by the Arizona Department of Water Resources (ADWR). The City's water supply strategy utilizes surface water provided by CAP and SRP and delivered to the City's two surface WTPs (CAP WTP and Chaparral WTP, respectively) and groundwater wells that are distributed throughout the water system. The City recharges advanced treated wastewater (recycled water), potable water, and surface water to offset groundwater pumping.

The City's water system also includes the CGTF and NGTF, which treat contaminated groundwater as part of clean-up efforts under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These facilities were not funded by the City; therefore, development fees are not assessed for the capacity they provide. However, they are included in the 2025 IIP capacity tables for completeness.

The City's TGTF further treats a partial stream of water produced by the CGTF. This provides improved operational flexibility of wells that supply the CGTF and enhance blended water quality delivered by Site 80, which is co-located with the CGTF and TGTF. Accordingly, development fees are not assessed in association with the TGTF, but it is included in the IIP capacity tables in association with the CGTF for completeness.

2.5.2 Water Distribution

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.

2.5.3 Water Recharge

The City recharges treated wastewater (recycled water), potable water, and treated CAP water to offset groundwater pumping. The City has multiple vadose zone injection wells and aquifer storage and recovery (ASR) wells that can be used to manage recharge and recovery efforts.

2.5.4 Summary of Existing Water Facilities Capacity

The existing capacity of the three components of the water system eligible to serve new EDUs and recovered through the water development fee are summarized in Table 6 (Treatment Facilities), Table 7 (Distribution System), and Table 8 (Recharge Facilities).

The net eligible capacity available to serve new EDUs in the water system is the difference between the total component capacity and deductions for reserved capacity, and current demands, as follows:

- **Water Treatment and Distribution –** the net capacity available to serve new EDUs is the difference between the total capacity and deductions for reserved capacity and the average maximum day demand 2019 through 2023, since the water system must be capable of continuing to meet the highest demands from existing EDUs.
- **Water Recharge –** the net capacity available to serve new EDUs is the difference between the total capacity and deductions for reserved capacity and current demand, which is the average annual Water Campus advanced water treatment (AWT) recharge for 2019 through 2023.

Table 6 summarizes the existing capacity of water treatment facilities and the net capacity available for new EDUs. The net capacity available to serve new EDUs is the difference between total capacity and deductions for the CGTF/TGTF and NGTF (not eligible for assessing development fees), reserved capacity (see Table 20), which includes the estimated remaining capacity to provide service to the Berneil Water Company, Carefree Water Company, and Tonto Hills Irrigation District and current demand (existing customers). There is 38.45 mgd of net capacity in the City's system to serve new EDUs.

Table 6 Existing Capacity of Water Supply and Treatment Facilities

Facility	Capacity (mgd)
CAP WTP	70.0
Chaparral WTP	27.0
CGTF/TGTF	12.3
NGTF	3.6
Wells(1)	36.4
Total Capacity	**149.3**
Less CGTF/TGTF and NGTF(2)	(15.9)
Less Reserved Capacity(3)	(0.37)
Total Eligible (unused capacity) for New EDUs	**133.03**
Less: Maximum Day Demand	(94.58)
Capacity Available for New EDUs	**38.45**

Notes:
(1) Available well capacity per Table 4.1 of the 2022 IWRMP.
(2) The CGTF/TGTF and NGTF are excluded from the available capacity calculation because these facilities are not eligible to serve new EDUs.
(3) Includes capacity associated with wheeling or transportation agreements the City has with other entities. See Table 20.

Table 7 summarizes existing capacity of the water distribution system and the net capacity available for new EDUs. The net eligible distribution system capacity available to serve new EDUs is the difference between the total capacity of the distribution system, and deductions for reserved capacity (see Table 20) and current demand (existing customers). There is 38.45 mgd of net capacity available in the City's system to serve new EDUs.

Table 7 Existing Capacity of Water Distribution System

Facility	Capacity (mgd)
Current Pipe Capacity	133.40
Less Reserved Capacity(1)	(0.37)
Total Eligible (unused capacity) for New EDUs	**133.03**
Less: Maximum Day Demand	(94.58)
Capacity Available for New EDUs	**38.45**

Note:
(1) Includes capacity associated with wheeling or transportation agreements the City has with other entities. See Table 20.

Table 8 shows existing capacity of the recharge facilities and capacity available for new EDUs. The net eligible recharge capacity available to serve new EDUs is the difference between the total capacity of the Water Campus AWT Facility and deductions for reserved capacity (see Table 20), which includes the estimated remaining capacity to provide service to the Reclaimed Water Distribution System, which supplies reclaimed water to golf courses and current demand (existing customers). There is 0.85 mgd of net capacity in the City's system to serve new EDUs.

Table 8 Existing Capacity of Water Recharge Facilities

Facility	Capacity (mgd)
Current Water Campus AWT Facility Capacity	20.00
Less Reserved Capacity(1)	(6.50)
Total Eligible (unused capacity) for New EDUs	**13.50**
Less Active Recharge(2)	(12.65)
Capacity Available for New EDUs	**0.85**

Notes:
(1) Includes capacity associated with reclaimed water delivery commitment the City has with other entities. See Table 21.
(2) Estimate of the current annual average recharge from the AWT.

2.6 Buy-In to Existing Water System

The buy-in value of the existing water system represents the replacement cost new less depreciation (RCNLD) of each component of the water system. This is an estimate of the value of existing water facilities and infrastructure that is already in place to meet new customer demands. RCNLD is a common approach in the valuation of assets used by water, wastewater and other utilities that have excess capacity available for new development. RCNLD represents the estimated fair market value of assets in service at today's cost (based on their estimated remaining service life) which generally would support the overall business activities in providing service. RCNLD is determined by escalating depreciated facility asset values based on the Engineering News-Record 20-Cities Average Construction Cost Index (ENR-CCI). The value of any assets that are reserved, contributed by developers or other parties, or possessing contractual restrictions, are excluded from the buy-in value of facilities eligible to serve new EDUs. Table 9 summarizes the buy-in value of the existing water system.

New connections are required to buy-in to each component of the existing water system as shown in Table 6, Table 7, and Table 8, and are allocated costs based on the portion of existing capacity, for each component, available to serve new EDUs.

Table 9 Buy-In to Existing Water System

Plant Investment – Water System Buy-In	Total Value RCNLD 6/30/24(1)	Used by Existing EDUs(2)	Available for New EDUs(3)
Water Treatment Plants(4)	$576,696,537	$410,012,467	$166,684,070
Distribution System(5)	$357,960,510	$254,498,272	$103,462,239
Recharge Facilities(6)	$8,291,891	$7,769,809	$522,082
Total Water System	**$942,948,938**	**$672,280,548**	**$270,668,391**

Notes:

(1) Represents the total RCNLD value of those facilities eligible to serve new EDUs. The facilities eligible to serve new EDUs do not represent the entirety of the City's water system facilities, nor the replacement value of all system assets owned by the City, as the values of certain facilities are excluded from the total replacement costs eligible to serve new EDUs. Those facilities excluded from the facilities eligible to serve new EDUs include facilities contributed by developers or other parties, replacements benefiting existing EDUs, and facilities or portions of facilities that will not benefit new development.

(2) Represents the portion of the total RCNLD value for each component of the City's water system that is either reserved or associated with meeting current demands of existing EDUs. The current demand, or level of service, for each component of the system is determined based on five-year average water treatment and customer use data.

(3) Represents the portion of the total RCNLD value for each component of the City's water system that is available to meet anticipated demands of new EDUs (which may be added beyond year 2035). The available capacity in each component of the system is determined by deducting reserved capacity and current demand from the total capacity of the facilities eligible to serve new EDUs.

(4) WTPs includes the 70.0 mgd CAP WTP, the 27.0 mgd Chaparral WTP, and 36.4 mgd of available ground water well capacity. The CGTF/TGTF and NGTF are excluded from the WTPs component since these facilities are not eligible to serve new EDUs. The total capacity of the facilities eligible to serve new EDUs in the WTPs component is adjusted to reflect reserved capacities. For more information on existing capacity eligible to serve new EDUs, see Table 6.

(5) Distribution System includes pumping facilities, transmission structures, distribution reservoirs, and distribution mains eligible to serve new EDUs. Any Distribution System facilities contributed by developers or other parties have been excluded from the total value eligible to serve new EDUs. These facilities provide total capacity eligible to serve new EDUs equal to the current eligible treatment capacity. For more information on existing capacity eligible to serve new EDUs, see Table 7.

(6) Recharge Facilities includes the Water Campus AWT Facility, which treats effluent from the Water Campus Water Reclamation Facility and recharges a portion of that recycled water 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. For more information on the existing capacity eligible to serve new EDUs see Table 8.

2.7 Grandfathered Capital Facilities

There are no grandfathered capital facilities in the City's water system. Grandfathered capital facilities would have been identified at the time A.R.S. 9-463.05 was enacted, and the City would have been able to continue collecting development fee revenue to pay for pledged debt service associated with the grandfathered facilities. The City did not identify any grandfathered facilities at that time.

2.8 Future EDUs

A summary of the total growth in the Desert Mountain, Northern, Central, and Southern regions for the period 2026 through 2035, in terms of maximum day demand and EDUs, is shown in Table 10.

Table 10 Maximum Day Water Demand and EDU Projections: 2026 through 2035

Regional Planning Area	2026 through 2035 Maximum Day Demand Increase (mgd)	2026 through 2035 EDU Increase (EDU)(1)
Desert Mountain	0.3	418
Northern	4.7	7,109
Central	1.0	1,464
Southern	2.6	3,972
Total through 2035	**8.6**	**12,963**

Note:
(1) One EDU is equal to 661.8 gpd of maximum day demand.

Through 2035, it is expected that 12,963 EDUs will be added to the water system, which represents 8.6 mgd of maximum day demand.

The total EDUs that will need to be served through year 2035 is 159,755, as summarized in Table 11. The estimated number of EDUs through December 2025 was estimated by starting with the number of EDUs calculated through June 2024 (145,241, see Table 3), and then adjusting by the average number of water EDUs added to the system each year (1,034 per year) based on the City's historical data, and prorating this EDU growth for 18 months (July 2024 through December 2025). This results in 146,792 Water EDUs through December 2025. The associated maximum day demand for this number of EDUs is 97.1 mgd. The estimated maximum day demand in year 2035 is 105.7 mgd.

Table 11 Existing and 2035 Maximum Day Demands and EDUs

Time Period	Maximum Day Demand (mgd)	EDUs
Through December 2025 Estimated(1)	97.1	**146,792(1)**
Future (Additional)	8.6	**12,963**
Total through 2035	**105.7**	**159,755**

Note:
(1) Projected end of year 2025 EDU count includes 145,241 EDUs as of June 2024 (see Table 3) and an additional 1,551 EDUs anticipated to be added from June 2024 through December 2025, based on the City's historical EDU growth rate.

The total maximum day demand and EDUs the water system will need to serve in 2035 includes existing and new residential and non-residential EDUs.

2.9 Required Water Capital Facilities and Improvements

2.9.1 Water Supply

The City derives its water supply from a combination of sources including CAP, SRP, and the use of groundwater. Scottsdale Water also employs recycled water reuse and recharge, treated CAP water recharge, and ASR as strategies to achieve long-term sustainable supplies and compliance with the requirements of ADWR. Scottsdale is required to maintain its status with ADWR as an Assured Water Supply Provider in accordance with State statutes.

The most recent completed review of Scottsdale's Assured Water Supply status by ADWR occurred on June 24, 2013. ADWR reviewed relevant information relating to:

- The use of CAP supplies.
- The use of SRP supplies.
- Hydrologic information for proposed groundwater supply utilization.
- Water demands.
- Overall consistency with the ADWR Management Plan.

As a product of this standard review, ADWR issued its findings in a formal Decision and Order and notified Scottsdale of its approval of the City's Designation of Assured Water Supply.

The City's Designation of Assured Water Supply from ADWR, as of June 24, 2013, states the following:

- The annual estimated water demand in 2025 (which is current demand, committed demand and 2025 projected demand) is 130,977 acre-feet per year (AFY). (An acre-foot of water is one square acre of water, one-foot deep, or equivalent to 325,851 gallons.)
- ADWR has determined the total volume of available water supply is 140,791.74 AFY. It should be noted that this available supply is based on legal guidelines associated with an Assured Water Supply approved by ADWR and does not necessarily reflect the fact that water management strategies are needed to produce the necessary supply at the right time of year to meet system demands.

As a part of the Water Development Fee, a Water Supply Fund is established to acquire, transport, treat, and manage through recharge to and recovery from underground aquifers, new and renewable supplies of water. The Water Development Fee is charged as one fee but is accounted for in two separate funds, one for Water Service and one for Water Supply.

To meet additional system demands, two new ASR wells are planned. One at Site 159 that will provide increased capacity to recharge and recover treated CAP water and another at Site 53 that will provide additional water production capacity. The Site 159 ASR well project is near the Loop 101 and Hayden Road and is currently underway. The Site 53 ASR well (53A) is located along Jomax Road at 62nd street.

2.9.2 Water Treatment/Production

As noted in Table 6, there is available treatment/production capacity of 38.45 mgd to serve new demand. With the addition of 12,293 EDUs and a level of service of 661.8 gpd per EDU, new EDUs will require 8.6 mgd to meet maximum day demand.

Due to this growth, the CAP WTP is planned for a 20 mgd expansion projected at $70 million during the 10-year planning period for this IIP. In recent years, the CAP WTP's 70 mgd capacity has been nearly reached during the high-demand summer months. Additional capacity provided by this 20 mgd expansion will allow the City to meet peak system demands using renewable resources, which would otherwise require additional wells. The City is also evaluating the potential to produce advanced potable recycled water in conjunction with the CAP WTP improvements. Both of these efforts help the City maintain safe yield as required by State regulations after 2025.

2.9.3 Water Distribution Improvements

Water distribution system improvements will be needed to provide capacity to serve growth that occurs through 2035. Because additional capacity is anticipated to be required to serve development beyond 2035, the City plans to size the infrastructure to support the ultimate capacity needs of the system. Adjustments are made allocating costs for the growth that is anticipated to occur within the 10-year planning period of this IIP.

Some of the City's July 2021 IIP: Water and Wastewater (2021 IIP) projects are partially constructed. The need for the remaining IIP projects was re-evaluated in the 2025 IIP.

2.10 Water System Projects and Cost Estimates

Cost estimates were developed in accordance with guidelines of the Association for the Advancement of Cost Engineering (AACE) International for a Class 5 estimate. These project costs are escalated to the beginning of the calendar year that construction is anticipated to commence. The escalation rate begins at 10 percent for the first year and declines by 0.5 percent per year over the 10-year planning period, resulting in a 5.5-percent escalation rate for the last year of the planning period (1/1/2035 through 12/31/2035).

These rates are consistent with the Whitman, Requardt & Associates LLP (WRA) *Handy-Whitman Index® of Public Utility Construction Costs™*. The Handy-Whitman Index is based on basic materials, equipment, wage rates, and other prices specific to common types of construction in each market. The Handy-Whitman water utility construction index includes water source facilities, pumping plants, treatment plants, transmission facilities, and distribution facilities. The Handy-Whitman Plateau Region Index (applies to Arizona) shows a 3-year average escalation rate of 11.8 percent from the period of 7/1/2021 (date of the City's previously adopted IIP) through January 2024. The 1-year average escalation rate from January 2023 through January 2024 was 7.8 percent, which indicates that the steep escalation observed over the past three years is declining. This was the basis for the annually declining cost escalation assumptions applied to the IIP project costs.

Unless otherwise noted, water pipeline project costs were developed assuming pipelines would be upsized, meaning removing the existing pipe and installing a new, larger pipe. Parallel lines may also be an option to augment capacities, but any consideration of pipe replacement versus parallel augmentation would be addressed during project design.

The allocation of costs associated with rates (existing customers) or development fees (growth) was prepared using the water demands for current customers and the estimated water demands for growth through 2035. The costs associated with capacity provided by the infrastructure improvements that was estimated to be utilized after 2035 were also accounted for, but are not included, in the 2025 IIP or in the development fees.

A tabulation of the water supply, treatment, and distribution system projects, including costs, are included in Appendix A.1.

2.11 Water System Summary

Table 12 summarizes the estimated buy-in cost (defined in Section 2.6) and necessary water system improvements to serve existing and new EDUs. These total costs are used to calculate unit costs to determine the maximum development fee per EDU, which will be presented in the Development Fee Report.

Table 12 Water System Cost Summary

Description	Estimated Cost ($)
Water System Buy-In(1)	$942,948,938
2025 IIP Water Projects	$239,910,500
Total	**$1,182,859,438**

Note:
(1) The estimated water system buy-in cost is based on the total RCNLD value of those facilities eligible to serve new EDUs. The facilities eligible to serve new EDUs do not represent the entirety of the City's water system facilities, nor the replacement value of all system assets owned by the City, as the values of certain facilities are excluded from the total replacement costs eligible to serve new EDUs. Those facilities excluded from the facilities eligible to serve new EDUs include facilities contributed by developers or other parties, replacements benefiting existing EDUs, and facilities or portions of facilities that will not benefit new development.

The costs presented in Table 12 do not include changes to levels of service or upgrades to existing capital facilities to meet stricter safety, environmental, or regulatory standards, improve efficiency, or upgrades that would expand, correct, or replace equipment to provide water service for existing EDUs.

SECTION 3 WASTEWATER INFRASTRUCTURE PLAN

3.1 Wastewater Service Area

The City's wastewater service area largely coincides with the City boundary and is approximately 185 square miles as shown in Figure 2.

In addition to wastewater flows 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:

- **Phoenix –** Some City of Phoenix wastewater flows enter the Scottsdale collection system through a metering station at Mountain View Road south of Shea Boulevard and pass through the Scottsdale collection system to the Sub-Regional Operating Group (SROG) system, per an existing contract. Some Phoenix flows per contractual arrangements 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.
- **Black Mountain Sewer Company –** Flows from the Black Mountain Sewer Company (owned by Liberty Utilities, a private water and sewer company) enter the City's collection system on North Scottsdale Road near the Carefree Highway.
- **Fountain Hills –** A development in the Town of Fountain Hills discharges to Scottsdale's collection system. There is also a small area within the City limits on the east side at approximately Cactus Road, which conveys sewer flows to the Fountain Hills Sanitary District facilities.

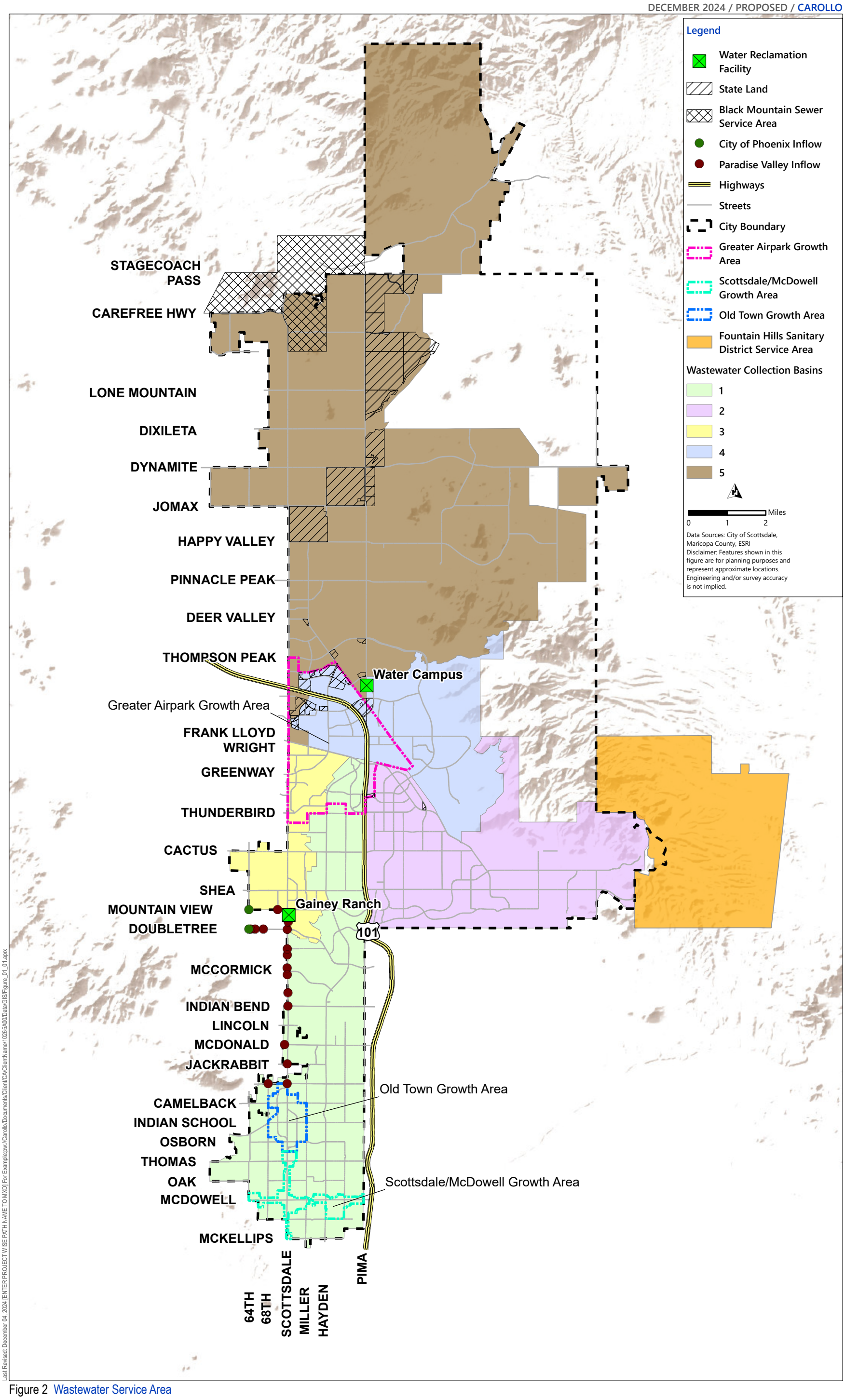

Figure 2 Wastewater Service Area

For collection system planning purposes, the wastewater system is divided into five wastewater flow basins. While there are many ways the collection system can be subdivided, ultimately, the entire wastewater system is managed and operated as a 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 LUA described in the 2025 LUA and established City standards related to the conveyance and treatment of wastewater.

3.1.1 Unsewered Septic System Areas

Some areas in the City are unsewered and served by septic systems and do not contribute sewer flows to the collection system or water reclamation facilities. Reclaimed water is a valuable resource to the City, and new IIP projects have been proposed to enable the capture/collection of water for reclamation from these unsewered areas that are on septic systems. 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 unsewered areas on septic systems included in the IIP.

3.2 Land Use

The LUA are described and documented separately in an accompanying LUA Report. The LUA includes the City's current demographic estimates, and its projections for future dwelling units and employment development within the City's service area between 2025 and 2035.

3.3 Existing Level of Service

In order to calculate development fees, the usage of various customer types must be standardized into a measure of demand attributable to an individual unit of development termed a service unit. For the wastewater category of Necessary Public Services, service units are translated into an EDU, which is equivalent to the approximate wastewater flow from one detached single-family dwelling unit. Standardization of other customer types to a single-family dwelling unit applies capacity ratios of associated meter sizes.

Based on the approach that overall water usage is a reasonable predictor of wastewater production, and to be consistent with Section 2.3 of the IIP, water meter size is used to determine the existing wastewater EDU level of service.

Single-family dwelling units in the City typically have a meter size less than or equal to 1 inch. Meter capacities by type and size are listed in Table 13.

Using sewer meter data provided by the City through June 2024, Table 13 summarizes the calculations of EDUs within the City's wastewater service area.

It is important to note, the number of meters featured in Table 13 represent those customers that are provided sewer service by the City and do not necessarily correlate to the number of water meters. For example, some water customers have septic systems rather than a connection to the sewer system and certain sewer customers are supplied water from a different water service provider.

Table 13 Existing Wastewater Service Area EDUs

Meter Type	Number of Meters	EDU Conversion	No. of EDUs
Up to 1 inch	78,790	1.0	78,790
1.5-inch Turbine	2,578	5.0	12,890
2-inch Turbine	2,645	8.0	21,160
3-inch Compound	184	17.5	3,220
3-inch Turbine	7	21.8	153
4-inch Compound	89	30.0	2,670
4-inch Turbine	4	37.5	150
6-inch Compound	52	67.5	3,510
6-inch Turbine	10	80.0	800
8-inch Compound	5	80.0	400
8-inch Turbine	0	140.0	0
Total	**84,364**		**123,743**

For purposes of the Wastewater IIP, the existing level of service of the wastewater system is defined as the annual average daily flow (AADF). AADF are used since wastewater treatment facilities are rated and permitted on AADF conditions. Historical AADF for the last several calendar years is shown in Table 14.

Table 14 Historical Annual Average Daily Wastewater Flow

Calendar Year	AADF (gpd)
2019	21,600,000
2020(1)	21,450,000
2021	21,300,000
2022	22,600,000
2023	24,200,000
2019 – 2023 Average	**22,230,000**

Note:
(1) Flow meter issue for Basin 5. The AADF originally was reported as 18,300,000 but had missing data for a portion of the year, therefore, the 2020 AADF presented in the Table is the average of 2019 and 2021 AADFs.

The City's average AADF from 2019 through 2023 is 22.23 mgd. This average flow rate is used to calculate the current EDU value. To be consistent with the water system EDU definition analysis, and assuming the same proportion of residential wastewater customers to non-residential customers from the 2021 IIP, it was assumed that the portion of residential water demand that becomes wastewater is 80 percent of the total flow, and the non-residential water demand that becomes wastewater is 20 percent of the total flow.

The existing level of service for both residential and non-residential EDUs is calculated using each customer's class of volumetric flow from the City's meter billing database for planning year 2024 and the respective number of EDUs or employees, as established in the LUA.

Based on the number of existing wastewater EDUs, as shown in Table 13, the existing residential level of service (meeting AADF) per EDU is shown in the following calculation:

(22,230,000 gpd x 80%) ÷ 98,994 EDUs = 179.6 gpd per EDU

The LUA's estimated number of people employed within Scottsdale is currently 205,555. The existing non-residential level of service (meeting AADF) per employee is shown in the following calculation:

(22,230,000 gpd x 20%) ÷ 205,555 employees = 21.6 gpd per employee

The wastewater IIP calculations are based on the existing level of service per residential wastewater EDU and expressed as 179.6 gpd per EDU, while the existing level of service per employee is expressed as 21.6 gpd per employee.

While the basis for enumerating the level of service is calculated based on the wastewater AADFs, the infrastructure needed to convey and treat the wastewater considers both peak dry weather and peak wet weather flows.

3.4 Future Level of Service

The level of service provided to new customers will be consistent with the existing level of service described above. Any capital improvements proposed for the wastewater system to accommodate new growth will be designed to accommodate wastewater AADFs of 179.6 gpd per EDU and 21.6 gpd per employee, respectively.

3.5 Existing Capacity of Wastewater Capital Facilities

The following sections summarize the existing capacity of the capital facilities in the wastewater service area, the utilization of available capacity by existing EDUs, and the available excess capacity to serve new EDUs, including existing or planned commitments or agreements the City has made for the use of system capacity. Capital facilities described here include the wastewater collection and treatment systems.

3.5.1 Summary of Existing Wastewater Facilities Capacity

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 wastewater treatment facilities can be used as a measure of the capacity of the entire wastewater collection system.

The existing capacity of the treatment and collection systems are the two components of the wastewater system that are eligible to serve new EDUs and have costs recovered through the wastewater development fee, as summarized in Table 15.

Table 15 Existing Wastewater Treatment and Collection Facilities

Facility	Capacity (mgd)
Gainey Ranch WRF	1.67
Water Campus WRF(1)	20.00
SROG (Scottsdale Safe Capacity Ownership)(2)	20.25
Total Capacity	**41.92**
Less Gainey Ranch WRF(3)	(1.67)
Less Reserved Capacity(4)	(4.74)
Total Eligible (unused capacity) for New EDUs	**35.51**
Less AADF	(22.23)
Capacity Available for New EDUs	**13.28**

Notes:
(1) Does not include capacity of the Water Campus AWT facility.
(2) Represents liquids stream treatment capacity at the 91st Avenue WWTP.
(3) Gainey Ranch WRF is not eligible to provide capacity to new EDUs.
(4) Includes purchased wastewater treatment and/or conveyance capacity by entities outside the City. See Table 22.

The net treatment and collection capacity available to serve new EDUs is the difference between the total capacity of the treatment and collection system and deductions for reserved capacity (see Table 21) and the current flow. The capacity available for use to serve new EDUs is 17.28 mgd.

3.6 Buy-In to Existing Wastewater System

Similar to the water system, the buy-in value of the existing wastewater system represents the RCNLD of both collection and treatment components of the wastewater system. This is an estimate of the value of existing wastewater facilities and infrastructure that is already in place to serve new customers. RCNLD is a common approach in the valuation of assets used by water, wastewater and other utilities that have excess capacity available for new development. RCNLD represents the estimated fair market value of the assets in service at today's cost (based on their estimated remaining service life), which generally would support the overall business activities in providing service. RCNLD is determined by escalating depreciated facility asset values based on the ENR-CCI. The value of any assets that are reserved, contributed by developers or other parties, or possessing contractual restrictions, are excluded from the buy-in value of facilities eligible to serve new EDUs.

New connections are required to buy-in to each component of the existing wastewater system, as shown in Table 16, and are allocated costs based on the portion of existing capacity in each component available to serve new EDUs.

Table 16 Buy-In to Existing Wastewater System

Plant Investment – Wastewater System Buy-In	Total Value RCNLD 6/30/24[1]	Used by Existing EDUs[2]	Available for New EDUs[3]
Wastewater Treatment Plants[4]	$234,764,377	$146,967,392	$87,796,985
Wastewater Collection System[5]	$117,976,873	$73,855,981	$44,120,892
Total Wastewater System	**$352,741,250**	**$220,823,373**	**$131,917,877**

Notes:

(1) Represents the total RCNLD value of those facilities eligible to serve new EDUs. The facilities eligible to serve new EDUs do not represent the entirety of the City's wastewater system facilities or the replacement value of all system assets owned by the City, as the values of certain facilities are excluded from the total replacement costs eligible to serve new EDUs. Those facilities excluded from the facilities eligible to serve new EDUs include facilities contributed by developers or other parties, replacements benefiting existing EDUs, and facilities or portions of facilities that will not benefit new development.

(2) Represents the portion of the total RCNLD value for each component of the City's wastewater system that is either reserved or associated with meeting current demands of existing EDUs. The current demand, or level of service, for each component of the system is determined based on five-year average wastewater effluent and customer data.

(3) Represents the portion of the total RCNLD value for each component of the City's wastewater system that is available to meet anticipated flows of new EDUs (which may be added beyond year 2035). The available capacity in each component of the system is determined by deducting reserved capacity and existing customer demands from the total capacity of the facilities eligible to serve new EDUs.

(4) WWTPs includes the 20.0 mgd Water Campus Reclamation Facility and Scottsdale's 20.25 mgd of capacity ownership in the City of Phoenix run WWTP through the SROG agreement. Since it benefits wastewater disposal at the Water Campus, 85 percent of the costs of the AWT are included in WWTPs. The 1.67 of mgd at the Gainey Ranch WRF is excluded from the WWTPs' components, since this facility is not eligible to serve new EDUs. The total capacity of the facilities eligible to serve new EDUs in the WWTPs components is adjusted to reflect reserved capacities. For more information on existing capacity eligible to serve new EDUs, see Table 15.

(5) Wastewater Collection System includes wastewater conveyance infrastructure such as lift stations, gravity sewers, and force mains. Any Wastewater Collection System facilities contributed by developers or other parties have been excluded from the total value eligible to serve new EDUs. These facilities provide total capacity eligible to serve new EDUs of 13.28 mgd, which is equal to the current eligible treatment capacity. This similar capacity is because the existing Wastewater Collection System has been sized to meet existing and future demands. For more information on existing capacity eligible to serve new EDUs, see Table 15.

3.7 Grandfathered Capital Facilities

There are no grandfathered capital facilities in the City's wastewater system. Grandfathered capital facilities would have been identified at the time A.R.S. 9-463.05 was enacted, and the City would have been able to continue collecting development fee revenue to pay for pledged debt service associated with the grandfathered facilities. The City did not identify any grandfathered facilities at that time.

3.8 Future EDUs

A summary of the total growth in each Flow Basin for the period 2026 through 2035, in terms of AADF and EDUs, is shown in Table 17.

Table 17 Average Annual Daily Wastewater Flow and EDU Projections: 2026 through 2035

Flow Basin	2026 through 2035 AADF Increase (mgd)	2026 through 2035 EDU Increase (EDU)(1)
Basin 1	0.9	5,178
Basin 2	0.2	348
Basin 3	0.3	1,925
Basin 4	0.6	3,474
Basin 5	0.2	1,300
Total by 2035	**2.2**	**12,224**

Note:
(1) One EDU is equal to 179.6 gpd of AADF.

Through 2035, it is expected that 12,224 EDUs will be added to the wastewater system, which represents 2.2 mgd of average daily flow.

The total EDUs that will need to be served in 2035 is 137,206, as summarized in Table 18. The estimated number of EDUs through December 2025 was estimated by starting with the number of EDUs calculated through June 2024 (123,743, see Table 13) and then adjusting by the average number of wastewater EDUs added to the system each year (826 per year) based on the City's historical data, and prorating this EDU growth for 18 months (July 2024 through December 2025). This results in 124,982 wastewater EDUs through December 2025. The associated AADF for this number of EDUs is 22.4 mgd. The estimated AADF in year 2035 is 24.7 mgd.

Table 18 Existing and 2035 Annual Average Daily Flows and EDUs

Time Period	AADF (mgd)	EDUs
Through December 2025 Estimated(1)	22.4	124,982
Future (Additional)	2.2	12,224
Total through 2035	**24.6**	**137,206**

Note:
(1) Projected end of year 2025, EDU count includes 123,743 EDUs as of June 2024 (see Table 13) and an additional 1,239 EDUs anticipated to be added from June 2024 through December 2025, based on the City's historical EDU growth rate.

The total average daily flow and EDUs the wastewater system will need to serve in 2035 includes the existing and new residential and non-residential EDUs.

3.9 Required Wastewater Capital Facilities and Improvements

3.9.1 Wastewater Treatment

There are no planned capacity expansions to the Gainey Ranch WRF, Water Campus, or Scottsdale's ownership in the SROG 91st Avenue WWTP to meet existing or future flows through the planning period ending in 2035. There is available capacity in these facilities to accommodate new EDUs.

3.9.2 Wastewater Collection System

Wastewater collection system improvements will be needed to provide capacity to serve growth that occurs through 2035. Because additional capacity is anticipated to be required to serve development beyond 2035, the City plans to size the infrastructure to support the ultimate capacity needs of the system. Adjustments are made in allocating costs for the growth that is anticipated to occur within the 10-year planning period of this IIP.

The 2025 IIP includes some projects that extend sewers into areas that are currently unsewered and served by septic systems.

Some of the City's 2021 IIP projects are partially constructed. The need for the remaining IIP projects was re-evaluated in the 2025 IIP.

3.10 Wastewater System Projects and Cost Estimates

Cost estimates were developed in accordance with the guidelines of AACE for a Class 5 estimate. These costs are escalated in the same manner as the water project costs as described in Section 2.10.

Unless otherwise noted, sewer pipeline project costs were developed assuming pipelines would be upsized, meaning removing the existing pipe and installing a new, larger pipe with cost estimates for bypass pumping. Parallel lines may also be an option to augment capacities, but any consideration of pipe replacement versus parallel augmentation would be addressed during project design.

The allocation of costs associated with rates (existing customers) or development fees (growth) was prepared using the wastewater flows from current customers and the estimated wastewater flows from growth through 2035. The costs associated with capacity provided by the infrastructure improvements that was estimated to be utilized after 2035 were also accounted for but are not included in the 2025 IIP.

Wastewater collection and treatment system project costs by IIP planning period are included in Appendix B.1.

3.11 Wastewater System Summary

Table 19 summarizes the estimated buy-in cost (defined in Section 3.6) and necessary wastewater system improvements to serve existing and new EDUs. These total costs are used to calculate unit costs to determine the maximum development fee per EDU, which will be presented in the Development Fee Report.

Table 19 Wastewater System Cost Summary

Description	Estimated Cost ($)
Wastewater System Buy-In(1)	$352,741,250
2025 IIP Wastewater Projects	$200,552,000
Total	**$553,293,250**

Note:
(1) The estimated wastewater system buy-in cost is based on the total RCNLD value of those facilities eligible to serve new EDUs. The facilities eligible to serve new EDUs do not represent the entirety of the City's wastewater system facilities, nor the replacement value of all system assets owned by the City, as the values of certain facilities are excluded from the total replacement costs eligible to serve new EDUs. Those facilities excluded from the facilities eligible to serve new EDUs include facilities contributed by developers or other parties, replacements benefiting existing EDUs, and facilities or portions of facilities that will not benefit new development.

These costs presented in Table 19 do not include changes to levels of service or upgrades to existing capital facilities to meet stricter safety, environmental, or regulatory standards, improve efficiency, or upgrades that would expand, correct, or replace equipment to provide wastewater service for existing EDUs.

SECTION 4 REVENUES, OFFSETS AND RESERVED CAPACITY

4.1 Forecast Revenues from Taxes, Fees, and Assessments

There are no revenues from taxes, fees, assessments, state-shared revenue, highway user revenue, federal revenue, ad-valorem property taxes, construction contracting or similar taxes, or any portion of utility fees attributable to development, or other sources that will be available to fund new or expanded capital facilities. The portion of transaction privilege taxes on utility fees is used exclusively for rehabilitation and maintenance of existing capital facilities.

4.2 Calculated Required Offsets

There are no funds available from offsets to help fund new or expanded capital facilities.

4.3 Reserved Capacity

Reserved capacity in the water and wastewater system refers to system capacity that has already been paid for by an entity or other provider but has not yet been fully utilized. This capacity is deducted from the overall system capacity, prior to calculating the available capacity for new EDUs. Table 20, Table 21, and Table 22 summarize the reserved capacity in the City's water, water recharge, and wastewater systems, respectively, for which development fees have already been paid.

Table 20 Water System Reserved Capacity

Contract Name	Purchased Water Production and Distribution Capacity (mgd)	Current Water Production (mgd)	Unused Water Production and Distribution Capacity (mgd)
Berneil Water Company	0.233	0.001	0.232
Carefree Water Company	0.401	0.265	0.136
Tonto Hills	0.032	0.027	0.005
Total(1)	**0.666**	**0.293**	**0.373**

Note:
(1) Wheeling or transportation agreements where capacities have not been purchased are not shown.

Table 21 Water Recharge System Reserve Capacity

Contract Name	Purchased Recharge Capacity (mgd)	Current Recharge Production (mgd)	Unused Recharge Capacity (mgd)
Reclaimed Water Distribution System	20.000	13.500	6.500
Total	**20.000**	**13.500**	**6.500**

Table 22 Wastewater System Reserve Capacity

Contract Name	Purchased Wastewater Capacity (mgd)	Current Wastewater Production (mgd)	Unused Wastewater Capacity (mgd)
Black Mountain Sewer	0.401	0.230	0.171
Paradise Valley	1.030	0.460	0.570
City of Phoenix	10.000	6.000	4.000
Total	**11.431**	**6.690**	**4.741**

APPENDIX A.1

WATER PROJECTS TABLE

IIP Project Number[1]	Project Title	Location	Description	Estimated Start of Construction[2]	IIP Costs for Existing EDUs ($)	IIP Costs for New EDUs through 2035[3] ($)	IIP Costs for New EDUs beyond 2035 ($)	Total Project Cost[4] ($)
W IIP-001	Desert Mountain Water Line	Desert Mountain Parkway from Desert Hills Drive to Reservoir 90 (T-90)	Construct 3,900 linear feet of 16-inch diameter water main, parallel to the existing water main, in Desert Mountain Parkway to reduce head loss in the existing main to Reservoir 90 (T-90), increase redundancy for the Desert Hills area, and add capacity for future connections.	2030	$ 4,410,000	$ 7,903,500	$ 312,000	**$ 12,625,500**
W IIP-010	Production Well 53A	Site 53	Drill and equip production well to increase capacity for growth. The production well will be located at Site 53 (northwest corner of Jomax Road and 62nd Street). This project does not include the treatment needed at Well Cluster 3. A project to provide treatment at Well Cluster 3 is included in the City's CIP.	2027	$ 1,511,000	$ 4,533,000	$ 9,067,000	**$ 15,111,000**
W IIP-012	Rio Verde Drive/128th Street Transmission Mains	Rio Verde Drive from 122nd Street to 128th Street, continuing south on 128th Street to Ranch Gate Road; 122nd Street, north of Pinnacle Peak Road right of way	Add new 12-inch diameter, 16-inch diameter, and 24-inch diameter water mains and pressure reducing valves to provide capacity for future connections. Add one 0.5 million-gallon tank on land to be acquired south of Site 145 to replace the existing Site 145 12,000-gallon tank to provide storage capacity for current and future connections. The construction of the 16-inch diameter water main segment on Rio Verde from 122nd to 128th Street is on-going. The new tank and associated piping is in the design phase. The construction of the 12-inch diameter water mains are anticipated to occur in year 2028.	On-going	$ 4,768,000	$ 21,374,000	$ 16,334,000	**$ 42,476,000**
W IIP-014	State Land Near Legend Trails - Water Main	East of Pima Road from Ashler Hills Drive alignment (extended) and 92nd Street alignment (extended), north to Stagecoach Pass Road, and west to Pima Road	Add new 12-inch diameter water mains to support future connections around the Legend Trails Development.	2030	$ -	$ 22,751,000	$ 11,720,000	**$ 34,471,000**
W IIP-015	Zones 8 and 8D Jomax Road Transmission Main	Jomax Road west of Pima Road to Hayden Road	Add new 12-inch diameter transmission pipeline along Jomax Road west of Pima Road extending to Hayden Road. This transmission main will convey water from Pressure Zone 9 from the discharge of Booster Pump Station 42B (BPS-42B) to three new PRV stations feeding Pressure Zones 8 and 8-D. This project definition combines 2021 IIP projects W IIP-011, W IIP-013, and W IIP-015.	2030	$ 4,461,000	$ 5,098,000	$ 1,062,000	**$ 10,621,000**
W IIP-017	Crossroads East - Water Transmission Main and Booster Pump Station Improvements	Union Hills Drive alignment (extended) from Booster Pump Station 55A at the CAP WTP west to Hayden Road	Install approximately 4,700 linear feet of 36-inch diameter transmission main east of Hayden Road north of Loop 101 to serve current and future connections. Includes a 6th pump installed in an existing pump can at Booster Pump Station (BPS) 55A.	2025	$ 2,054,000	$ 6,404,000	$ 3,625,000	**$ 12,083,000**
W IIP-018	CAP WTP Expansion	City of Scottsdale Water Campus	CAP WTP Expansion: Expand Plant 3 at the CAP Water Treatment Plant (CAP WTP) by 20 mgd to increase the combined plant capacity to 90 MGD. This expansion will provide capacity to meet current and future peak summer demands and will provide capacity for current and future connections. This project will include the evaluation of Advanced Potable Recycled Water in conjunction with the connection to the CAP WTP.	2030	$ 11,643,000	$ 34,929,000	$ 69,859,000	**$ 116,431,000**
W IIP-019	New Well North of Loop 101 near Hayden (ASR Well 159)	Legacy Boulevard east of Scottsdale Road	Drill and equip aquifer storage and recovery (ASR) well north of Loop 101 near Hayden Road to increase treated CAP water aquifer storage and recovery capacity for growth. Includes site work (piping, electrical gear, communications, wall, security, etc.)	On-going	$ 1,139,000	$ 3,416,000	$ 6,831,000	**$ 11,386,000**
W IIP-020	Crossroads East - Water System Improvements	Vicinity of Loop 101 and Hayden Road	Install approximately 13,500 linear feet of 16-inch diameter water main, 1,700 linear feet of 20-inch diameter water main, 8,300 linear feet of 24-inch diameter water main, and 1,600 linear feet of 30-inch diameter water main in Pressure Zone 4 between Booster Pump Station 55A and the western City boundary at Scottsdale Rd. These improvements will serve current and future connections in the Greater Airpark Growth Area.	On-going	$ 6,190,000	$ 18,855,000	$ 10,860,000	**$ 35,905,000**

IIP Project Number[1]	Project Title	Location	Description	Estimated Start of Construction[2]	IIP Costs for Existing EDUs ($)	IIP Costs for New EDUs through 2035[3] ($)	IIP Costs for New EDUs beyond 2035 ($)	Total Project Cost[4] ($)
W IIP-024	Booster Pump Station 55A Expansion	CAP WTP	Increase the firm capacity of Booster Pump Station 55A (BPS 55A) to 38 mgd to serve current and future connections. The current capacity is 15.6 mgd (firm)/19.4 mgd (total). This project will require a re-build of the existing booster pump station, including electrical, instrumentation and mechanical equipment, structural changes (wet well configuration), yard piping, and site work. In conjunction with Project W IIP-027, this project will enable realignment of pressure Zone 4 into east/west zones to balance water supplies and maintain system performance levels.	2025	$ -	$ 16,312,000	$ 16,147,000	**$ 32,459,000**
W IIP-025	Booster Pump Station 55B Expansion	CAP WTP	Upsize Booster Pump Station 55B to increase the ultimate firm booster pumping capacity to 39.8 mgd to serve current and future connections. The current capacity is 25.2 mgd (firm)/28.8 mgd (total). This project will require an additional 30-inch diameter transmission main to Tank 115 (T-115).	2030	$ 5,548,000	$ 2,311,000	$ 6,428,000	**$ 14,287,000**
W IIP-026	Booster Pump Station 55C Expansion	CAP WTP	Upsize Booster Pump Station 55C to increase the ultimate firm booster pumping capacity to 36.6 mgd to serve current and future connections. The current capacity is 23.0 mgd (firm)/27.6 mgd (total). This project will require an additional 30-inch diameter transmission main to Tank 115 (T-115).	2030	$ 728,000	$ 32,363,000	$ 17,540,000	**$ 50,631,000**
W IIP-027	Zone 4 West Tank and Transmission Mains	Site 115	Add two, 3 million gallon (MG) storage tanks at the southeast corner of Deer Valley Road and Hayden Road. Includes 13,700 linear feet of 42-inch diameter transmission main from Booster Pump Station 55A northwest along Hayden Road to the new storage tanks and 600 linear feet of 24-inch diameter water main on Legacy Blvd west of Hayden Rd to increase supply in Zone 4 West. Includes land acquisition. Also includes 3,300 linear feet of 24-inch diameter main for Zone 5 distribution system looping.	2030	$ -	$ 30,298,000	$ 74,925,000	**$ 105,223,000**
W IIP-028	Site 42B and Site 56 Improvements	Site 42 and Site 56	Add 7,700 linear feet of 16-inch diameter water main, 21,500 linear feet of 20-inch diameter water main, and 2.6 mgd of additional, firm booster pumping capacity to Site 56. Add 6.6 mgd of additional booster pumping to Site 42B for future demands. These improvements provide a redundant supply path to the eastern system and mitigate high flow velocities to Site 101/143.	2027	$ 30,341,000	$ 28,128,000	$ 9,230,000	**$ 67,699,000**
W IIP-029	Booster Pump Station 115A Expansion	Site 115	Upsize Booster Pump Station 115A to increase ultimate firm booster pump capacity to 31.2 mgd to serve current and future connections. The current capacity is 18.1 mgd (firm)/21.2 mgd (total).	2030	$ 1,436,000	$ 5,235,000	$ 2,809,000	**$ 9,480,000**
Grand Total					**$ 74,229,000**	**$ 239,910,500**	**$ 256,749,000**	**$ 570,888,500**

Notes:
(1) Project numbers are not sequential because some previously defined IIP projects have been completed, combined, or redefined.
(2) Refers to calendar year.
(3) IIP costs for new equivalent dwelling units (EDUs) through year 2035 represent the portion of project costs included in the 2025 IIP.
(4) Total project costs are escalated to the beginning of the calendar year in which construction is anticipated to commence as described in Section 2.10 of the 2025 IIP Report.

APPENDIX B.1

WASTEWATER PROJECTS TABLE

IIP Project Number[1]	Project Title	Location	Description	Estimated Start of Construction[2]	IIP Costs for Existing EDUs ($)	IIP Costs for New EDUs through 2035[3] ($)	IIP Costs for New EDUs beyond 2035 ($)	Total Project Cost[4] ($)
WW IIP-001	Camelback Road Sewer Improvement	Camelback Road from 73rd Street to Miller Road	Upsize the existing 15-inch diameter sewer in Camelback Road to a 21-inch diameter sewer to increase capacity for current and future connections.	2027	$ 1,934,000	$ 4,444,000	$ 483,000	**$ 6,861,000**
WW IIP-002	Alma School Parkway Sewer Improvement	Alma School Parkway from Dynamite Boulevard to Happy Valley Road	Upsize the existing 8-inch diameter sewer in Alma School Parkway to a 15-inch diameter sewer to provide capacity for current and future connections. The model predicted depth to diameter (d/D) value is greater than 0.75 by year 2025. This project should be coordinated with Project WW IIP-032, which provides sewer improvements in Happy Valley Road that will convey flows from Alma School Parkway, west to Pima Road.	2025	$ 3,162,000	$ 19,827,000	$ -	**$ 22,989,000**
WW IIP-004	North Airpark Sewer Improvements: Mayo and Miller	Mayo Boulevard from Scottsdale Road to east of Miller Road; Miller Road from south of Loop 101 to Princess Boulevard	Construct new 18-inch and 27-inch diameter sewers in Mayo Blvd and Miller Road to provide capacity for current and future connections. This project relieves capacity deficiencies in the existing sewers that cross the TPC Golf Course (west of Hayden Road), which the model predicted depth to diameter (d/D) value is greater than 0.75 by year 2025.	On-going	$ -	$ 1,736,000	$ 11,215,000	**$ 12,951,000**
WW IIP-005	North Airpark Sewer Improvements: Princess Drive and TPC Golf Course	Princess Drive from Princess Boulevard to Hayden and Crossing the TPC Golf Course to Pima Road	Construct a new 36-inch diameter sewer in the TPC Golf Course, east of Hayden Road to Pima Road to provide capacity for current and future connections. Without this improvement, the model predicted depth to diameter (d/D) value is greater than 0.75 by year 2025.	On-going	$ -	$ 5,547,000	$ 52,678,000	**$ 58,225,000**
WW IIP-007	Thomas Road Sewer Improvement	Thomas Road between 68th Street and Diamante Apartment Complex	Construct a new, parallel 8-inch diameter sewer in Thomas Road from 68th Street, continuing west on Thomas Road for approximately 1,300 linear feet to the Diamante apartment complex service connection.	On-going	$ 1,719,000	$ 257,000	$ -	**$ 1,976,000**
WW IIP-009	McDowell Road Sewer Improvements	McDowell Road from 67th Place to Scottsdale Road	Upsize the existing 10-inch diameter sewer in McDowell Road to a 15-inch diameter sewer to increase capacity for current and future connections.	2028	$ 8,040,000	$ 1,156,000	$ 1,576,000	**$ 10,772,000**
WW IIP-010	64th Street Sewer Improvements	64th Street from Caron Drive to ~¼ mile south of Cactus Road; Shea Boulevard east of 64th Street; Cholla Street east of 67th Street	Construct new 8-inch diameter sewers in major and minor roadway collectors to connect areas served by septic systems to the City's collection system.	2030	$ -	$ 18,590,000	$ 264,000	**$ 18,854,000**
WW IIP-011	Happy Valley Road and Pinnacle Peak Road Sewer Improvements	Pinnacle Peak Road from 81st Street to 84th Street; Happy Valley Road from Hayden to 84th Street	Construct new 8-inch diameter sewers in major and minor roadway collectors to connect area served by septic systems to the City's collection system.	2030	$ -	$ 8,861,000	$ -	**$ 8,861,000**
WW IIP-014	84th Street and Shea Sewer Improvements	84th Street from Shea Boulevard to Paradise Drive	Construct new 8-inch diameter sewers in major and minor roadway collectors to connect areas served by septic systems to the City's collection system.	2028	$ -	$ 9,922,000	$ 147,000	**$ 10,069,000**
WW IIP-015	Dynamite Road Sewer Interceptor	Dynamite Boulevard from Scottsdale Road to 84th Street	Construct new 8-inch diameter sewers in major and minor roadway collectors to connect areas served by septic systems to the City's collection system.	2027	$ -	$ 14,670,000	$ 395,000	**$ 15,065,000**
WW IIP-016	Jomax Road Sewer Improvements	Jomax Road from 56th Street to Scottsdale Road	Construct 8-inch, 15-inch and 21-inch diameter sewer mains in an area currently served by septic systems to a new lift station at the corner of 56st Street and Jomax Road. Construct parallel 12-inch diameter force mains from the lift station to the 18-inch diameter interceptor in Scottsdale Road.	2027	$ -	$ 60,724,000	$ -	**$ 60,724,000**
WW IIP-017	Lift Station 52 Expansion	128th Street north of Happy Valley Road	Expand the Sereno Canyon Lift Station and force main firm capacity from 0.5 mgd to 1.5 mgd. Construct dual 10-inch diameter force mains along Ranch Gate Road and a 10-inch diameter sewer along Ranch Gate Road and south along 118th Street that will parallel the existing 8-inch diameter sewer. This project should be coordinated with Project WW IIP-032, which provides sewer improvements in Happy Valley Road that will convey flows from the Sereno Canyon Lift Station to Pima Road.	2026	$ 1,018,000	$ 20,357,000	$ -	**$ 21,375,000**

IIP Project Number[1]	Project Title	Location	Description	Estimated Start of Construction[2]	IIP Costs for Existing EDUs ($)	IIP Costs for New EDUs through 2035[3] ($)	IIP Costs for New EDUs beyond 2035 ($)	Total Project Cost[4] ($)
WW IIP-031	Crossroads Lift Station Expansion	Crossroads Lift Station	Upsize the Crossroads Lift Station capacity from 1 mgd to 5.4 mgd, firm capacity and add dual 18-inch diameter force mains to accommodate flows from future growth areas. This project will require influent flow modifications at the Water Campus WRF, which will be addressed as part of the City's CIP.	2026	$ 674,000	$ 8,001,000	$ 8,001,000	**$ 16,676,000**
WW IIP-032	Happy Valley Road Sewer Improvements	Happy Valley Road from Glenn Moor Road to Pima Road	Construct a 15-inch diameter sewer in Happy Valley Road in order to alleviate deficiencies in Happy Valley Road and downstream along Pinnacle Peak Road. This pipeline will take all of the flow in Happy Valley Road at Glenn Moor Road and convey it to Pima Road. Additionally, a portion of the flow in Alma School Parkway will be conveyed to this sewer. This project is triggered by additional flow from projects WW IIP-002 and WW IIP-017.	2025	$ 4,669,000	$ 26,459,000	$ -	**$ 31,128,000**
Grand Total					**$ 25,029,000**	**$ 200,552,000**	**$ 74,759,000**	**$ 300,340,000**

Notes:
(1) Project numbers are not sequential because some previously defined IIP projects have been completed, combined, or redefined.
(2) Refers to calendar year.
(3) IIP costs for new equivalent dwelling units (EDUs) through year 2035 represent the portion of project costs included in the 2025 IIP.
(4) Total project costs are escalated to the beginning of the calendar year in which construction is anticipated to commence as described in Section 2.10 of the 2025 IIP Report.