CITY OF

PEORIA

Utilities Development Impact Fee Report and Infrastructure Improvement Plan

DRAFT Final Report / December 14, 2018

RAFTELIS

1. INTRODUCTION

Raftelis Financial Consultants, Inc. (Raftelis) and Confluence Consulting, LLC (Confluence) are pleased to provide this Utility Expansion Fee Report (Report) to the City of Peoria (City). This report documents the City's Utility Infrastructure Improvements Plan (IIP) and presents the results of the 2018 Water and Wastewater Expansion Fee Calculation Update (2018 Utility Expansion Fee Update) under the legal requirements of Arizona Revised Statutes (ARS) §9-463.05. ARS §9-463.05 requires that fee structures be based on an adopted Land Use Assumptions (LUA) and an adopted Infrastructure Improvements Plan (IIP) which is a central document disclosing existing infrastructure, available capacity, units of demand, and planning for new infrastructure required to serve development.

The 2018 Utility Expansion Fee Update reflects an update of the approach to determining the fees that was developed by Raftelis as part of its 2014 Utility Expansion Fee Update as well as additional modifications detailed within this report. Modifications were made in the 2014 Utility Expansion Fee Update to address legislative requirements passed by the State of Arizona and changes in the City's planning approach to providing necessary public services to different planning areas. Specifically, as part of the 2014 Utility Expansion Fee Update the City modified its planning and expansion fee approach to recognize multiple water, wastewater, and water resources service areas. ARS §9-463.05 requires that the City account for and use development fee monies solely for the benefit of the service area in which the fees are assessed and to recover the costs of infrastructure improvements in those areas. ARS §9-463.05 also requires a reimbursement or credit against the fee to those developments that have constructed or financed infrastructure improvements or facility expansions that will benefit those developments. Because several developments have and will continue to finance infrastructure improvements and facility expansions within specific areas and the City serves different areas with different facilities, this multiple service area approach allows the City to more appropriately provide fee credits and ensure the fees are used to benefit the service areas in which the fees are assessed. Finally, since much of the City's existing utilities capacity was recently constructed and because ARS §9-463.05 requires that available capacity in existing facilities be considered as part of the IIP, the approach developed in the 2014 Utility Expansion Fee Update and maintained in the 2018 Utility Expansion Fee Update determines fees based on a combined system buy-in and marginal incremental cost approach. This hybrid approach considers both existing capacity (system buy-in) available and planned capacity (marginal incremental) necessary to serve development.

1.1 Utility Service Areas

As the City's utility service area has evolved and based on the planned infrastructure required to serve development, the City decided during the 2018 Utility Expansion Fee Update to make an adjustment to the water, wastewater and water resources service areas and a separate adjustment affecting only the water service area. First, the boundaries of the both water, wastewater and water resources services areas are modified to exclude the portion of the City that is north of State Route (SR) 74. This northern most area of the City will require additional infrastructure to serve major developments and as part of identifying the infrastructure if major development(s) are proposed, the City would initiate a

modification of the LUA, IIP and resulting DIFs. Second, the City has split the previous water service area north of Bell Road into two separate service areas north of Bell Road and separated by the Agua Fria River.

Water

Three water service areas are proposed for the City's water system. The three proposed service areas include the following:

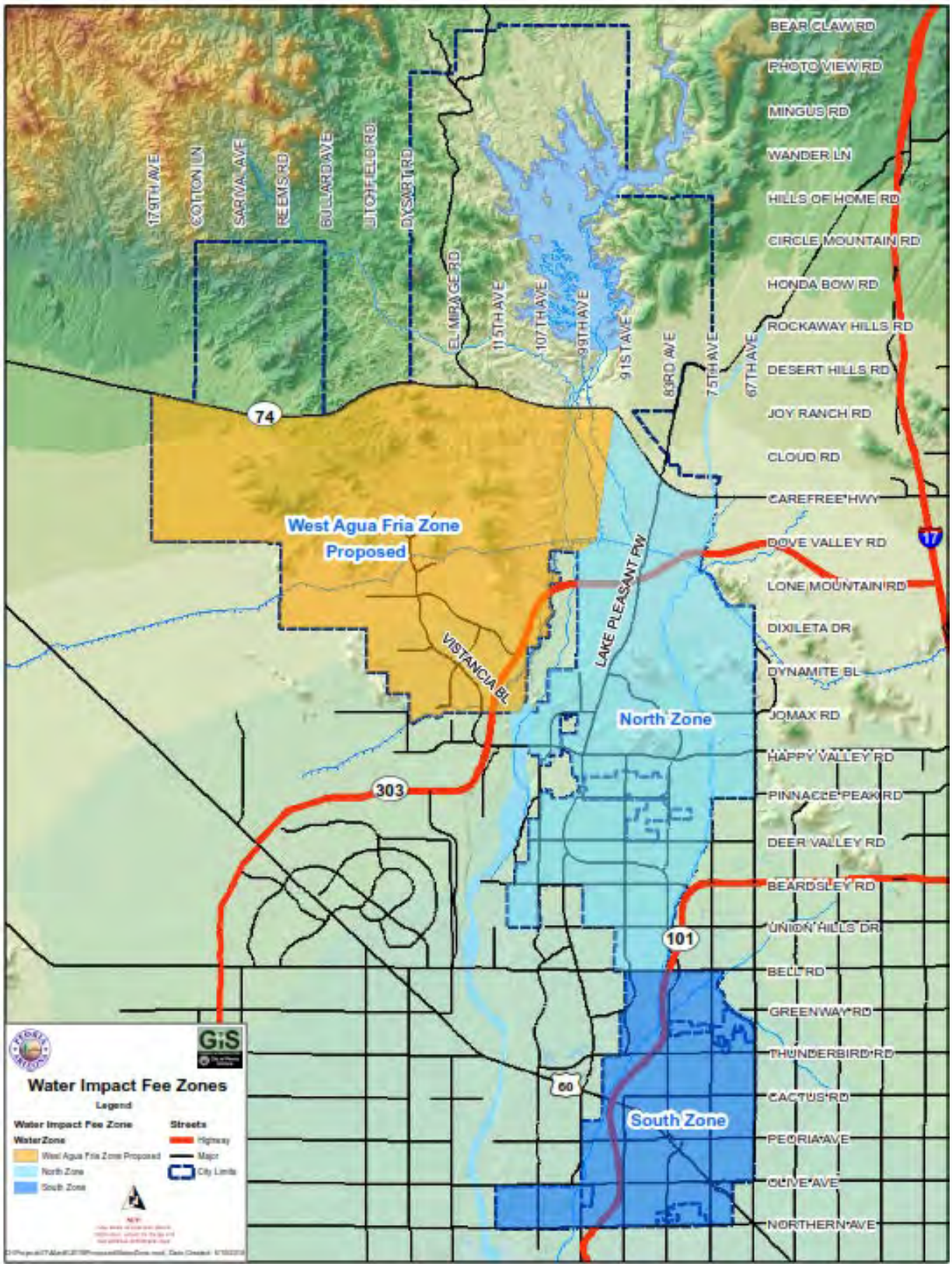
1. **South of Bell Road:** The portion of the City located south of Bell Road is served by the 16.00 million gallons per day (MGD) Greenway Water Treatment Plant (WTP) and has a water collection network that is largely built-out. This part of the City is mostly developed and is not anticipated to need substantial infrastructure during the 11-year planning period.

2. **North of Bell Road:** The portion of the City located south of SR 74, north of Bell Road and east of the Agua Fria River is currently served by the City's 11.00 MGD portion of the City of Glendale's Pyramid Peak WTP. This area is where much of the City's development is anticipated to occur and thus includes additional infrastructure and capacity needs. The City anticipates purchasing 7.00 MGD of capacity in the Pyramid Peak WTP to support the additional capacity requirements through the 11-year planning period.

3. **West of Agua Fria (WAF) River:** The portion of the City located west of the Agua Fria River, south of SR 74 and north of Bell Road where additional City development is anticipated to occur. The WAF service area is proposed as part of this Expansion Fee Update to provide current and future Community Facility Districts (CFDs) as well as other developments within this service area with water impact fees that recognize their respective financial contributions while contributing to the pro-rata share of City constructed facilities. The City will administer credits for existing and future CFDs and/or based on development agreement requirements as appropriate reflecting the pro-rata contributions for the same facilities recovered through the started water expansion fees. As with North of Bell Road, the City anticipates purchasing 6.00 MGD of capacity in the Pyramid Peak WTP to support additional capacity requirements through the 11-year planning period.

Exhibit 1 on the next page shows the City of Peoria water service area map. More information on the existing and planned facilities and infrastructure is provided in Section 3, Water IIP.

Exhibit 1. Water Service Area Map



Wastewater

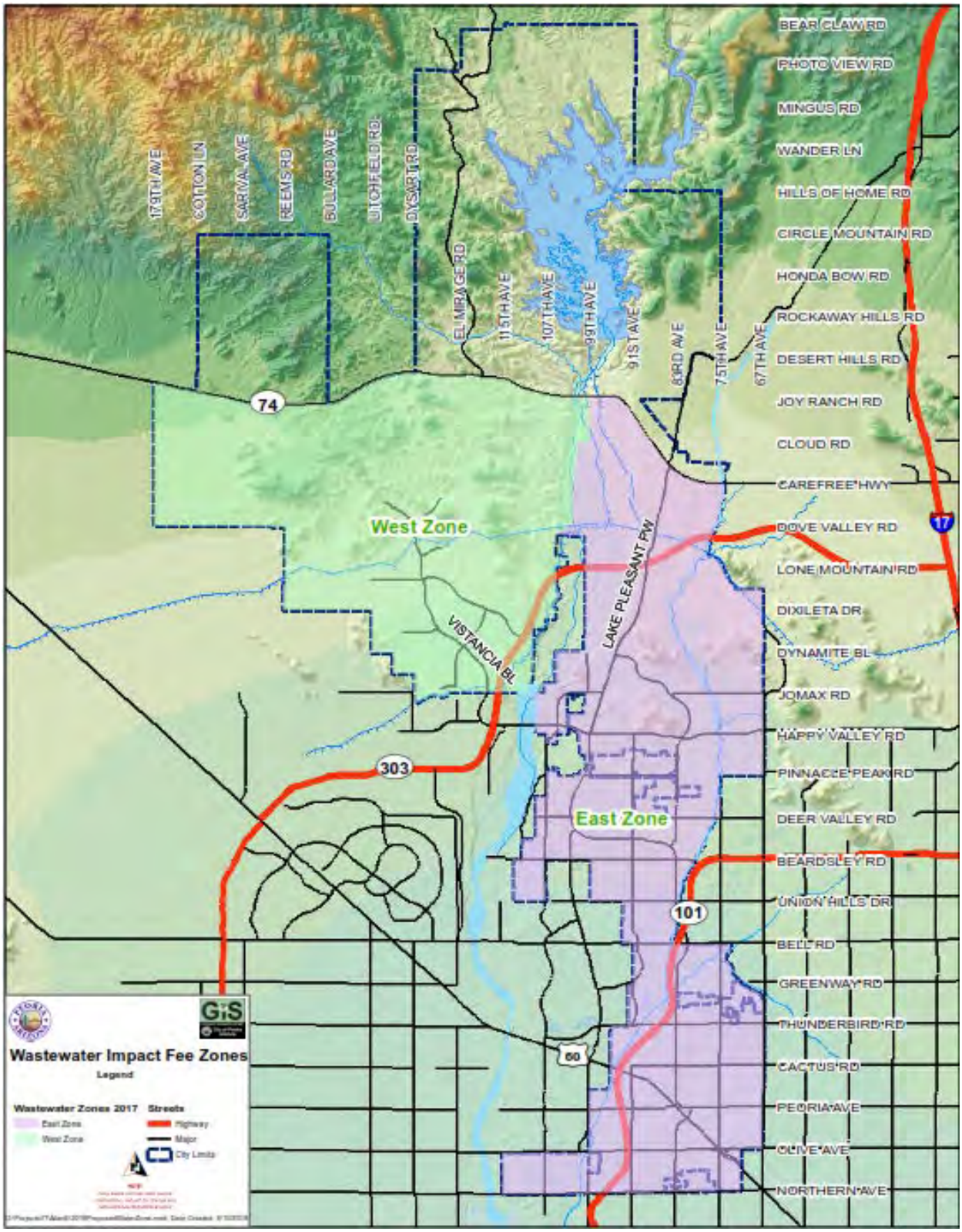
Two wastewater service areas are proposed for the City's wastewater system consistent with those established during the 2014 Utility Expansion Fee Update. The two proposed service areas include the following:

1. **East of the Agua Fria River:** The portion of the City located East of the Agua Fria River is served by the 4.00 MGD Beardsley Water Reclamation Facility (WRF), the 10.00 MGD Butler WRF, and has a wastewater collection network. This part of the City has additional infrastructure needs, including and expansions to the Beardsley WRF, during the 11-year planning period.

2. **West of the Agua Fria River:** The portion of the City located West of the Agua Fria River, is served by the City's 2.25 MGD Jomax WRF. However, only 0.80 MGD of the Jomax WRF was funded by the City to serve this area as the remaining 1.45 MGD was funded through and serves the Vistancia CFD area. Anticipated development in the area results in the need to expand the non-Vistancia CFD capacity of the Jomax WRF by an additional 1.50 MGD during the 11-year planning period. Furthermore, the City requires wastewater transmission facilities to support the development that is anticipated to occur in the area during the 11-year planning period.

Exhibit 2 on the next page shows the City of Peoria wastewater service area map. More information on the existing and planned facilities and infrastructure is provided in Sections 5, Wastewater Infrastructure Improvements Plan.

Exhibit 2. Wastewater Service Area Map



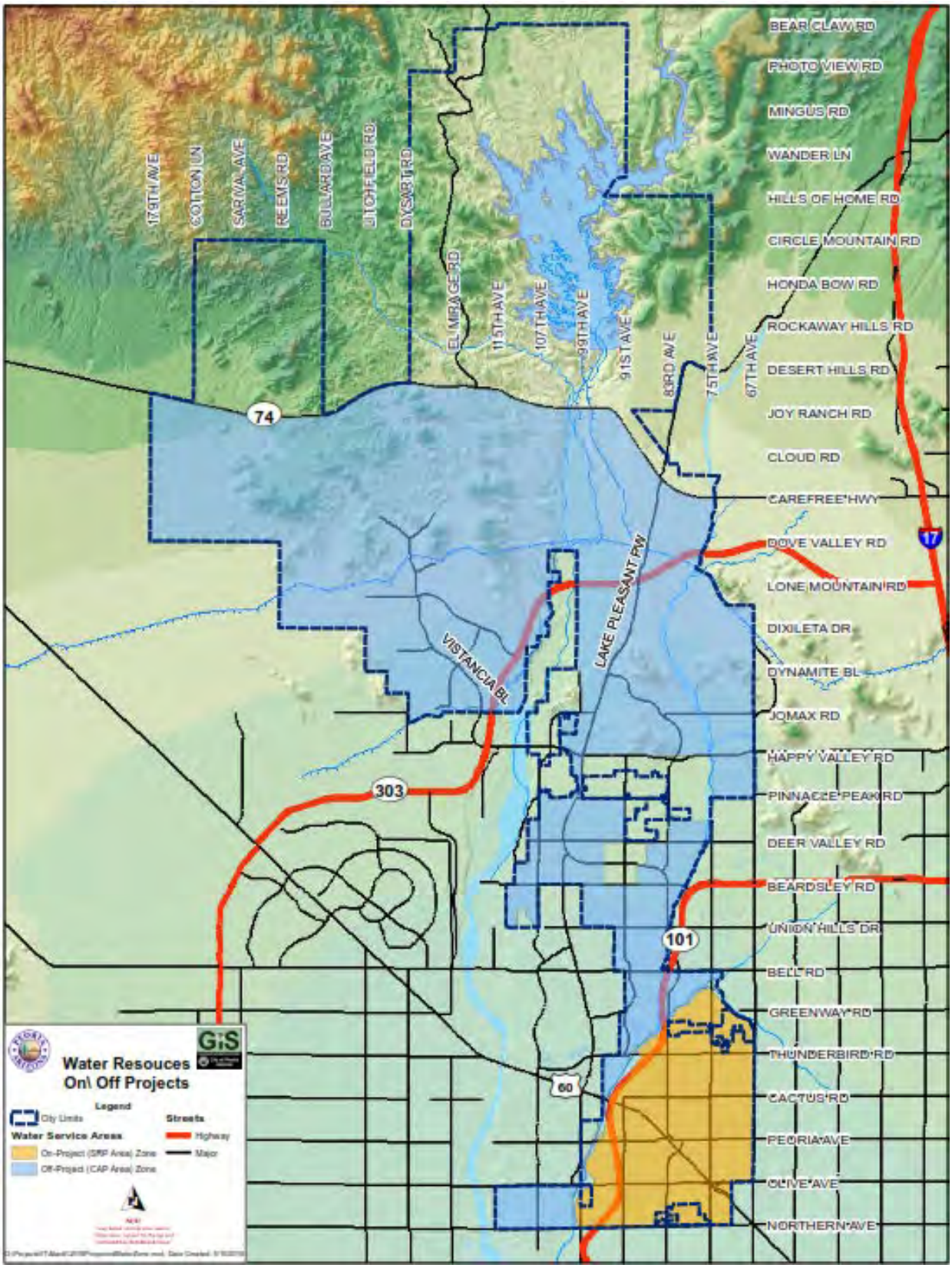
Water Resources

For water resources, two separate service areas based on the Salt River Project (SRP) On-Project and Off-Project lands within the City's service area are appropriate. New customers locating in the On-Project service area will not pay a water resource fee as the City has no capital cost basis to recover from these customers. The SRP water allocation is restricted to those parcels of land used as collateral in the construction of the SRP infrastructure. Property owners of On-Project land own the "rights" to the SRP water allocation associated with that land. Conversely, properties located Off-Project do not own any rights to the SRP water allocations. Under the Arizona Groundwater Management Act (GMA) and Assured Water Supply (AWS), for development to occur a developer must demonstrate that an assured supply of water exists for the area to be developed.

As part of demonstrating an assured water supply, Peoria has developed a program as part of its long-term planning to acquire additional surface water allocations to supplement the City's entitlements to CAP water to address the demand of future development on Off-Project lands. These surface water acquisitions consist of Central Arizona Project (CAP) water reallocations, Gila River Indian Community (GRIC) Water Rights, and White Mountain Apache Tribe Water Lease. For this reason, the City's water resources service area is segregated according to the On-Project and Off-Project SRP land boundaries with those new customers locating Off-Project being assessed the water resources expansion fee.

Exhibit 3 on the next page shows the City of Peoria water resource service area map. More information on the existing and planned facilities and infrastructure is provided in Section 7, Water Resource Infrastructure Improvements Plan.

Exhibit 3. Water Resources Service Area Map



2. UTILITIES LAND USE ASSUMPTIONS

The Utility LUA presented in this chapter cover an 11-year period, Fiscal Year (FY) 2017 though FY 2028, and serve as the basis for the water, wastewater, and water resources IIP and development fee calculations. The ARS requires that LUAs be developed for each impact fee service area pursuant to the City's general plan.

For the LUA, the City provided Raftelis and Confluence with existing development (FY 2017) and anticipated growth in land uses for the utility systems over the 11-year planning period. Since the City's utility billing system is based on three customer classifications (single-family residential, multi-family residential, and commercial), the utility LUA are also developed for those three customer classifications. Furthermore, since the City bills its utility customers and assesses its expansion fees based on utility accounts and water meter size, the projection of land uses for each customer category is expressed by the number of customer accounts and the service units, or equivalent demand units (EDU), determined based on 650 gallons per day (gpd) demand factor per water account and the 160 gpd demand factor per wastewater account.[1] For this reason, and because some of the City's residences and businesses are served by private water companies, the number of current accounts and EDU within each utility customer classification does not necessarily equal the number of housing units developed for the Non-Utility Impact Fee Report's LUAs.

Table 1 summarizes the City's current and projected water customers and EDUs within each of the water expansion fee service areas.

Table 1. Water Expansion Fee Land Use Assumptions by Service Area

Water Land Use Assumptions	Fiscal Year Ending June 30, 2017				Projected by End of Planning Period FY 2028			
	Total	SFR	MFR	Commercial (1)	Total	SFR	MFR	Commercial (1)
Water Accounts (2)								
South of Bell Road	28,015	25,328	377	2,310	28,905	25,830	394	2,681
North of Bell Road	22,223	21,589	39	595	29,530	28,651	47	832
West of Agua Fria	6,739	6,419	0	320	15,519	14,894	60	565
Total	56,977	53,336	416	3,225	73,954	69,375	501	4,078
EDU Multiplier (3)		1.0	11.1	3.1		1.0	11.1	3.1
Water EDU								
South of Bell Road	36,672	25,328	4,183	7,161	38,261	25,830	4,361	8,070
North of Bell Road	23,868	21,589	435	1,845	31,577	28,651	504	2,423
West of Agua Fria	7,411	6,419	0	992	17,102	14,894	617	1,591
Total	67,951	53,336	4,618	9,998	86,939	69,375	5,481	12,084

(1) Commercial includes all landscape meters although these meters may ultimately be classified SFR, MFR, and/or Commercial.
(2) From City of Peoria billing records. Represents current active water metered customers as of June 30, 2017.
(3) Single-family equivalent EDU multiplier. The multi-family multiplier of 11.1 reflects developments over a recent 4-year period showing 18 dwelling units per account with water use per multi-family dwelling unit of approximately 60% of single-family use per dwelling unit. The commercial multiplier of 3.1 reflects average of 3.1 EDUs per account over a recent 4-year period.

[1] An equivalent demand unit represents the equivalent demand of a single-family residential dwelling unit with a 3/4-inch or 1-inch meter.

Table 2 summarizes the City's current and projected wastewater customers and EDU within each of the wastewater expansion fee service areas.

Table 2. Wastewater Expansion Fee Land Use Assumptions by Service Area

Wastewater Land Use Assumptions	Fiscal Year Ending June 30, 2017				Projected by End of Planning Period FY 2028			
	Total	SFR	MFR	Commercial	Total	SFR	MFR	Commercial
Wastewater Accounts (1)								
East of Agua Fria	51,465	49,686	463	1,316	60,523	58,387	486	1,651
West of Agua Fria	6,394	6,365	0	29	15,062	14,840	60	162
Total	57,859	56,051	463	1,345	75,585	73,227	546	1,812
EDU Multiplier (2)		1.0	11.1	3.1		1.0	11.1	3.1
Wastewater EDU								
East of Agua Fria	58,905	49,686	5,139	4,080	68,889	58,387	5,386	5,117
West of Agua Fria	6,455	6,365	0	90	15,958	14,840	617	501
Total	65,360	56,051	5,139	4,170	84,847	73,227	6,003	5,618

(1) From City of Peoria billing records. Represents current active water metered customers as of June 30, 2017.

(2) Single-family equivalent EDU multiplier. The multi-family multiplier of 11.1 reflects developments over a recent 4-year period showing 18 dwelling units per account with water use per multi-family dwelling unit of approximately 60% of single-family use per dwelling unit. The commercial multiplier of 3.1 reflects average of 3.1 EDUs per account over a recent 4-year period.

Table 3 summarizes the City's current and projected water resources customers and EDU within each of the water expansion fee service areas.

Table 3. Water Resources Fee Land Use Assumptions by Service Area

Resources Land Use Assumptions	Fiscal Year Ending June 30, 2017				Projected by End of Planning Period FY 2028			
	Total	SFR	MFR	Commercial (1)	Total	SFR	MFR	Commercial (1)
Water Resources Acct. (2)								
On-SRP Project	28,015	25,328	377	2,310	28,905	25,830	394	2,681
Off-SRP Project	28,962	28,008	39	915	45,049	43,545	107	1,397
Total	56,977	53,336	416	3,225	73,954	69,375	501	4,078
EDU Multiplier (3)		1.0	11.1	3.1		1.0	11.1	3.1
Water Resources EDU								
On-SRP Project	36,672	25,328	4,183	7,161	38,261	25,830	4,361	8,070
Off-SRP Project	31,279	28,008	435	2,837	48,679	43,545	1,120	4,014
Total	67,951	53,336	4,618	9,998	86,939	69,375	5,481	12,084

(1) Commercial includes all landscape meters although these meters may ultimately be classified SFR, MFR, and/or Commercial.

(2) From City of Peoria billing records. Represents current active water metered customers as of June 30, 2017.

(3) Single-family equivalent EDU multiplier. The multi-family multiplier of 11.1 reflects developments over a recent 4-year period showing 18 dwelling units per account with water use per multi-family dwelling unit of approximately 60% of single-family use per dwelling unit. The commercial multiplier of 3.1 reflects average of 3.1 EDUs per account over a recent 4-year period.

3. UTILITIES EXPANSION FEES METHODOLOGY

There are typically three approaches to determining utility expansion fees (also known as impact fees) most often used and recognized in the industry. These three approaches are the system buy-in method, the incremental cost method and the hybrid method which combine the weighted average of the system buy-in and incremental cost methods.

Under the **System Buy-In Method**, impact fees are based upon the "buy-in" concept that existing users, through service charges and other up-front charges, have developed a valuable public capital facility. This method is appropriate for utility systems, or components of utility systems, with additional capacity already in place, and provides an estimate of the cost of providing a unit of capacity based upon the net equity of the existing assets. This method calculates a fee based upon the proportional cost of each user's share of the existing system capacity available for new customers. The costs of the facilities are based on a review of fixed asset records and can be based on original asset costs or may include escalation of the original asset costs to current dollars. Excluded from the calculation are local service lines that are dedicated to serving existing customers. The City administers development impact fee credits and/or reimbursements based on the agreements and facilities contributed and will continue to administer these aspects of the individual development-related credits for completed or future facilities. Also, outstanding principal on funds borrowed to construct the core assets is deducted, since this cost will be recovered from all present and future customers through the retail utility rates based on the long-standing City policy and practice.

The **Incremental Cost Method** focuses on the cost of adding additional facilities to serve new customers. It is most appropriate in situations where additional capacity provides service to new customers and the costs of the capacity can be tied to an approved capital improvement plan (CIP), IIP, or master plan. Under this method, it is important that any proposed capital projects required to address deficiencies in the existing facilities be excluded from the determination of the impact fee. This includes projects required to meet new or existing regulatory requirements and/or renewals and replacements of existing facilities. The process of identifying projects required to address deficiencies is also important in meeting the requirements of ARS §9-463.05, as a substantial nexus must exist between the demand generated by new customers and the need for new or expanded capital facilities. As previously noted, credits may be appropriate for future facilities if developers contribute and/or construct and dedicate facilities that are included in the recovery of the City's Utility Expansion Fees (e.g., Utility Development Impact Fees).

Another approach that has become increasing more common for determining water and wastewater impact fees is a **Hybrid Approach** that combines the system buy-in method and the incremental cost method. This hybrid approach recognizes that new customers of water and wastewater systems benefit from both facilities already in place and improvements to expand or extend those facilities. Under this method, the fee is determined to reflect the weighted average unit cost of the planned system capacity at the end of the capital planning period based on previous and planned investments in the system divided by the total capacity available in those facilities. Credits may also be appropriate and

administered by the City for previous or future contributions for the same types of facilities recovered through the Utility Expansion Fees.

Current and Proposed Methodology

The current methodology was developed as part of the 2014 Utility Expansion Fee Update and reflects a **hybrid approach** that combines the system buy-in and incremental cost approach and this approach is used to develop the proposed water, wastewater and water resource expansion fees. In addition, the proposed approach involved the creation of an additional water service area to more accurately reflect the evolving development, developer contributed infrastructure, and infrastructure needs in different areas of the City. Raftelis proposed updates maintain the hybrid method for water and wastewater utility expansion fees.

This hybrid approach recognizes that new customers of utility systems benefit from both facilities already in place and planned capital projects required to expand and extend capacity. The impact fees are determined to reflect the average unit cost of the planned system capacity at the end of the capital planning period based on previous and planned investments in the system divided by the total capacity available to new customers in those facilities. This hybrid approach essentially puts the unit cost of capacity for existing and future customers on par. As with both the system buy-in and incremental cost methodologies, local service lines and assets contributed or to be contributed by developers are excluded. Offsets are provided for any outstanding principal on funds borrowed, or anticipated to be borrowed, to construct the facilities that benefit new customers but are repaid through the user rates generated by those new customers.

The **system buy-in component** of the utilities impact fees consists of the replacement cost new less depreciation (RCNLD) value of existing facilities with capacity available to serve new customers. This replacement value represents the current value of the City's original investment in water and wastewater system assets as of July 1, 2017.[2] However, only the available portion of the replacement value for the various system infrastructure is included in the impact fee calculations. The available portion of existing facilities reflect FY 2017 customer peak demands.

The **incremental cost component** of the utilities impact fee consists of the planned capital project costs included in the City's utilities IIP which benefit growth and development. Since these projects benefit growth and development, the capital costs associated with these projects are divided by the total capacity to be added during the 11-year planning period.

For development within the WAF water service area and WAF wastewater service area, we have updated a "full" recovery fee applicable to developments that have not contributed to the same facilities that are recovered through the water and sewer utility expansion fees will be administered

[2]For CAP water rights associated with the water resources impact fee, the system buy-in costs represent the original value since the water rights are not depreciated nor do they represent facilities that would be appropriate for escalation by a construction cost index.

by the City. The updated fees reflect constructed facilities as well as those identified within the 11-year IIP. For example, the City anticipates using a combination of future surface water facilities and contributed ground water facilities with IIP-related facilities to provide treated water service to customers during the 11-year IIP period and that change is reflected within the fees as currently, only ground water facilities provide water service to existing developments within the area.

4. WATER INFRASTRUCTURE IMPROVEMENTS PLAN

The purpose of this section is to meet the requirements of a Water IIP as defined in the subject ARS §9-463.05 and to provide a basis for the Expansion Fee Study. This IIP has been developed for a 11-year period, FY 2017 to FY 2028.

Water Expansion Fee Level of Service

In general, the available portion of the City's existing water system facilities is tied to the surface water treatment plant capacities less the current level of service based on FY peak surface water production data. The current capacities and level of service for the various components of the water service facilities in each of the water expansion fee service areas are discussed below.

4.1 Water Treatment Facilities Capacities and Level of Service

The water treatment component for each of the expansion fee areas includes surface water treatment, 25% of water reclamation facilities which provide treated wastewater effluent for ground water recharge, and ground water wells.

Surface Water Treatment Facilities

The surface water treatment facilities for each water expansion fee service area are discussed below.

South of Bell Road Surface Water Treatment Level of Service: The total capacity of the Greenway WTP is 16.00 MGD and the current level of service is 14.60 MGD. The current level of service for water is the peak day water production during FY 2017 since water systems are sized to meet peak period demands. Thus, the capacity available at the Greenway WTP is 1.40 MGD, or approximately 9% of the current treatment capacity in the South of Bell Road Area. Since 1.40 MGD of capacity is available in Greenway WTP, the RCNLD value for this water treatment facility is reduced to reflect only that portion of the value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

North of Bell Road Surface Water Treatment Level of Service: The City's ownership stake in the City of Glendale Pyramid Peak WTP is 11.00 MGD and the current level of service is 10.09 MGD. The current level of service for water is the peak day water production during FY 2017 since water systems are sized to meet peak period demands. Thus, the capacity available at the Pyramid Peak WTP is 0.91 MGD, or approximately 8% of the current treatment capacity in the North of Bell Road Area. Since 0.91 MGD of capacity is available in Pyramid Peak WTP, the RCNLD value for this water treatment facility is reduced to reflect only that portion of the value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities. It should be noted however, that the City does have ground water well capacity available as a redundant, or emergency supply to augment the Pyramid Peak during its peak periods. These ground water wells will continue to be used during the interim period until the City acquires

and/or constructs additional water treatment capacity in the Pyramid Peak WTP service area in FY 2019 and 2020. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

West of Agua Fria River Surface Water Treatment Level of Service: There are currently no surface water treatment facilities located in the WAF area. Ground water wells serve the full capacity to this area currently. These ground water wells will continue to be used during the interim period until the City constructs additional water treatment capacity in the Pyramid Peak WTP service area in FY 2019 and FY 2020. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

The total current water treatment capacity, existing level of service, and available capacity for the South of Bell Road, North of Bell Road, and West of Agua Fria River Areas are shown in Table 4.

Table 4. Total Water Treatment Plant Capacities and Current Level of Service

	Million Gallons Per Day		
Water Treatment Plant Capacities	**Current**	**Planned**	**Total**
South of Bell Road			
Greenway Water Treatment Plant	16.00	-	16.00
Current Level of Service	14.60		14.60
Available Capacity to Serve New Customers	1.40	-	1.40
North of Bell Road			
Pyramid Peak Water Treatment Service Area (1)	11.00	7.00	18.00
Northern Peoria Water Treatment Capacity	-	-	-
Total Capacity	11.00	7.00	18.00
Current Level of Service	10.09	-	10.09
Available Capacity to Serve New Customers	0.91	7.00	7.91
West Agua Fria			
Pyramid Peak Water Treatment Service Area (1)	-	6.00	6.00
Northern Peoria Water Treatment Capacity	-	-	-
Total Capacity	-	6.00	6.00
Current Level of Service	-	-	-
Available Capacity to Serve New Customers	-	6.00	6.00
Total Available Capacity to Serve New Customers	2.31	13.00	15.31

(1) The City currently owns 11.0 MGD of capacity at the City of Glendale's Pyramid Peak Water Treatment Plant.

Planned Water Treatment Capital Improvements Benefiting New Customers

In addition to available capacity in the existing system, the City plans to increase its surface treatment water capacity at the City of Glendale's Pyramid Peak WTP by 13.00 MGD. Of this additional capacity, 7.00 MGD is necessary to meet anticipated demands in the North of Bell Road area and 6.00 MGD is necessary to meet anticipated demands in the WAF service area. No additional surface treatment water capacity is planned in the South of Bell Road area. The capital costs of adding the 13.00 MGD of treatment capacity at the Pyramid Peak WTP is $54.4 million over the 11-year IIP planning period.

For more information on the planned water improvements, see Schedule 1, Water Infrastructure Improvements Plan in Appendix A of this Report.

4.2 Water Portion of Water Reclamation Facilities

The water reclamation facilities for each expansion fee service area are discussed below.

NOTE: Because water reclamation facilities also provide wastewater treatment services, the total RCNLD of water reclamation facilities are allocated 25% to water expansion fees and 75% to wastewater expansion fees before the reduction in RCNLD value is made based on the capacity available to serve new customers.

South of Bell Road Water Reclamation Facilities and Level of Service: The total capacity of the South of Bell water reclamation facilities is 10.00 MGD and the current level of service is 7.47 MGD. The current level of service is the average day wastewater effluent that was available for recharge during FY 2017 at the Butler WRF which is located South of Bell Road. Thus, the capacity available in the South of Bell Road area is 2.53 MGD, or approximately 25% of the current capacity of the Butler WRF. Since 2.53 MGD of capacity is available for recharge at the Butler WRF, the RCNLD value for the water reclamation facilities allocated to the water expansion fee is reduced to reflect only that portion of value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

North of Bell Road Water Reclamation Facilities and Level of Service: The total capacity of the North of Bell area water reclamation facilities is 4.00 MGD and the current level of service is 3.10 MGD. The current level of service is the average day wastewater effluent that was available for recharge during FY 2017 at the Beardsley WRF which is located and serves north of Bell Road. Thus, the capacity available in the North of Bell Road area is 0.90 MGD, or approximately 23% of the current capacity of the Beardsley WRF. Since 0.90 MGD of capacity is available for recharge, the RCNLD value for the water reclamation facilities allocated to the water expansion fee is reduced to reflect only that portion of value for the water reclamation facility serving the North of Bell Road area that is available to serve new customers. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

West of Agua Fria River Water Reclamation Facilities and Level of Service: The total capacity of the West of Agua Fria River area water reclamation facilities is 2.25 MGD and the current level of service is 0.82 MGD. The full capacity of the Jomax WRF is included in the calculation to recognize the potential benefit new customers will receive from the available capacity, including the portion funded by Vistancia CFD. The current level of service is the average day wastewater effluent that was available for recharge during FY 2017 at the Jomax WRF which is located and serves west of the Agua Fria River. Thus, the capacity available in the West of Agua Fria River area is 1.43 MGD, or approximately 64% of the current capacity of the Jomax WRF. Since 1.43 MGD of capacity is available for recharge, the RCNLD value for the water reclamation facilities allocated to the water expansion fee is reduced to reflect only that portion of value for the water reclamation facility serving the West of Agua Fria area that is available to serve new customers. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

The total current water reclamation facilities capacity, existing level of service, and available capacity for both the South of Bell Road, North of Bell Road, and West of Agua Fria River Areas are shown in Table 5.

Table 5. Water Reclamation Facility for Recharge Capacities and Current Level of Service

	Million Gallons Per Day		
Water Reclamation Facility Capacities (Water Fee)	**Current**	**Planned**	**Total**
South of Bell Road			
Butler Water Reclamation Facility	10.00	-	10.00
Current Level of Service	7.47	-	7.47
Available Capacity to Serve New Customers	2.53	-	2.53
North of Bell Road			
Beardsley Water Reclamation Facility	4.00	2.00	6.00
Current Level of Service	3.10	-	3.10
Available Capacity to Serve New Customers	0.90	2.00	2.90
West Agua Fria			
Jomax Reclamation Facility	2.25	1.50	3.75
Current Level of Service	0.82	-	0.82
Available Capacity to Serve New Customers	1.43	1.50	2.93
Total Available Capacity to Serve New Customers	4.86	3.50	8.36

Planned Water Reclamation Facilities Improvements Benefiting New Customers

In addition to available capacity in the existing system, the City plans to increase its water reclamation facility capacity in the North of Bell Road service area by expanding the Beardsley WRF by 2.00 MGD and in the West of Agua Fria River service area by expanding the Jomax WRF by 1.50 MGD. The capital costs of adding the 2.00 MGD of reclamation capacity for recharge in the North of Bell Road

area is $8.3 million over the 11-year IIP planning period. The capital costs of adding the 1.50 MGD of reclamation capacity for recharge in the WAF Area is $15.5 million over the 11-year IIP planning period.

For more information on the planned water improvements, see Schedule 1, Water Infrastructure Improvements Plan in Appendix A of this Report.

4.3 Ground Water Well Facilities

Ground water well facilities for each service area were reviewed to determine which wells provide peak month capacity to water customers. The capacity of the wells that are utilized in the peak month are considered part of the treatment related capacity for purposes of the impact fee calculation. While some of these wells currently provide capacity in the short term, the intent of the City is to transition to surface water treatment long term. Based on engineering estimates, the capacity of the wells utilized during the peak month were adjusted down to the extent surface water treatment plants within the 11-year planning period are anticipated to replace the well utilization for peak months. This adjustment is referred to in the calculations as a "Treatment Plant Expansion Adjustment". The ground water well facilities for each expansion fee service area are discussed below, along with the total capacity of all wells, wells utilized for peak month capacity requirements, current levels of service, and treatment plant expansion adjustments.

South of Bell Road Ground Water Well Capacities and Level of Service: The total capacity of the South of Bell Road ground water wells is 7.00 MGD[3]. Total capacity of wells utilized during the peak month of June for FY 2017 is 4.40 MGD[4] and the current level of service in the peak month is 1.31 MGD. The City uses the ground water wells located in pressure zones 1 and 2 (located South of Bell Road) primarily for redundancy and emergency backup facilities. As a result, only the ground water well service level (used amounts) and capacity in zones 1 and 2 that are utilized during peak month consumption to meet customer demands are considered to be a component of treated water capacity in addition to the existing 16.00 MGD Greenway WTP. The full 4.40 MGD of well capacity utilized during the peak month is projected to be available for future demand. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

North of Bell Road Ground Water Well Capacities and Level of Service: The total capacity of the North of Bell Road ground water wells is 22.6 MGD[5]. Total capacity of wells utilized during the

[3] 7.0 MGD of total well capacity in the South of Bell Road service area comprised of the following wells: W102 (1.3 MGD), W103 (1.3 MGD), W116 (1.8 MGD), W108 (1.3 MGD), and W106 (1.3 MGD).

[4] 4.4 MGD of total capacity of wells utilized to meet peak month demand comprised of the following wells: W102 (1.3 MGD), W116 (1.8 MGD), and W106 (1.3 MGD).

[5] 22.6 MGD of total well capacity in the North of Bell Road service area comprised of the following wells: W204 (1.2 MGD), W205 (2.7 MGD), W203 (1.8 MGD), W202 (2.2 MGD), W206 (2.2 MGD), W211 (1.3 MGD), W213 (0.7 MGD), W214 (2.2 MGD), W221 (1.2 MGD), W222 (0.4 MGD), W224 (0.4 MGD), W226 (1.4 MGD), W210 (1.4 MGD), W209 (2.1 MGD), and W301 & W302 (1.4 MGD).

peak month of June for FY 2017 is 18.70 MGD[6] and the current level of service in the peak month is 7.38 MGD. Although the City does use the ground water wells located in pressure zones 3 and 5, which are located north of Bell Road, it is the utility's policy that a portion of the ground water wells in these zones serve as an emergency and redundant source of water to the surface water treated at the Pyramid Peak WTP for the North of Bell Road service area. As a result, only the ground water wells in zones 3 and 5 that are utilized during peak month consumption to meet customer demands are considered to be a component of capacity in addition to the 11.00 MGD Pyramid Peak WTP. It is the City's intent to transition its daily water demand to be provided through its surface water supplies. The Pyramid Peak WTP expansion project included in the IIP is expected to increase surface water supply to the North of Bell Road area by 7.00 MGD. While the current capacity of the wells providing peak month, capacity is 18.70 MGD, it is estimated that only 3.50 MGD of available well capacity will be utilized to meet peak customer demands after the Pyramid Peak WTP expansion becomes operational. This equates to a 7.82 MGD treatment plant expansion adjustment to available well capacities. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

West of Agua Fria River Ground Water Well Capacities and Level of Service: All wells in the WAF service area are utilized during the peak month of June for FY 2017. The total capacity of the wells in the WAF service area is 10.20 MGD[7] and the current level of service is 4.43 MGD, equating to 5.77 MGD available capacity. Currently, the City uses the ground water wells located in pressure zone 4, which are located in the West of Agua Fria area, to meet all of the zone's demands. While it is the utility's intent that a portion of the ground water wells in this zone will eventually serve as an emergency and redundant source of water to the surface water treated at the Pyramid Peak WTP for the West of Agua Fria service area, the City anticipates serving peak demands through both surface and ground water facilities during the 11-year IIP period. The Pyramid Peak WTP expansion project included in the IIP is expected to increase surface water supply to the West of Agua Fria area by 6.00 MGD. As a result, the current available well capacity of 5.77 MGD will not be necessary to meet peak demands. It is estimated that 3.77 MGD of available well capacity may be utilized to meet peak customer demands after the Pyramid Peak WTP expansion becomes operational, which equates to a treatment plant expansion adjustment of 2.00 MGD. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

The total current ground water well capacity, existing level of service, and available capacity for the South of Bell Road, North of Bell Road, and West of Agua Fria River Areas are shown in Table 6.

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[6] 18.7 MGD of total capacity of wells utilized to meet peak month demand comprised of the following wells: W204 (1.2 MGD), W205 (2.7 MGD), W203 (1.8 MGD), W202 (2.2 MGD), W206 (2.2 MGD), W211 (1.3 MGD), W214 (2.2 MGD), W221 (1.2 MGD), W222 (0.4 MGD), W226 (1.4 MGD), and W209 (2.1 MGD).

[7] 10.20 MGD of total well capacity in the West Agua Fria service area comprised of the following wells: W401 (1.2 MGD), W402 (1.4 MGD), W403 (1.3 MGD), W404 (1.3 MGD), W405 (0.4 MGD), W406 (0.9 MGD), W407 (1.1 MGD), W408 (0.7 MGD), W409 (1.1 MGD), W410 (0.8 MGD).

Table 6. Total Ground Water Well Capacities and Current Level of Service

Ground Water Well Capacities	Million Gallons Per Day Current	Planned	Total
South of Bell Road			
Pressure Zone 1	3.10	-	3.10
Pressure Zone 2	1.30	-	1.30
Total Capacity	4.40	-	4.40
Current Level of Service	1.31		1.31
Available Capacity to Serve New Customers	3.09	-	3.09
North of Bell Road			
Pressure Zone 3	18.70	2.80	21.50
Pressure Zone 5	-	-	-
Total Capacity	18.70	2.80	21.50
Current Level of Service	7.38		7.38
Treatment Plant Expansion Adjustment	7.82		7.82
Available Capacity to Serve New Customers	3.50	2.80	6.30
West Agua Fria			
Pressure Zone 4	10.20	-	10.20
Current Level of Service	4.43	-	4.43
Treatment Plant Expansion Adjustment	2.00		2.00
Available Capacity to Serve New Customers	3.77	-	3.77
Total Available Capacity to Serve New Customers	10.36	2.80	13.16

Planned Ground Water Well Capital Improvements Benefiting New Customers

In addition to the ground water wells necessary to serve as an emergency and redundant source of water to the surface water treatment plants serving the South of Bell Road, North of Bell Road, and West of Agua Fria River areas, the City plans approximately $10.4 million in ground water improvements that will benefit new customers in the South of Bell Road area and $5.9 million that will benefit new customers in the North of Bell Road area. The City will also add an additional 2.80 MGD of ground water well capacity in the North of Bell Road area. The capital costs of adding the 2.80 MGD of ground water well capacity in the North of Bell Road area is $8.5 million over the 11-year IIP planning period. The additional well capacity may be through drilling new wells or through repairing wells that are not active so that the capacity and facilities may be brought back into service.

For more information on the planned water improvements, see Schedule 1, Water Infrastructure Improvements Plan in Appendix A of this Report.

4.4 Underground Storage and Recharge Facilities Capacities and Levels of Service

As mentioned above, the City utilizes the wastewater effluent from its WRFs for ground water recharge. In addition, the City currently uses a portion of its non-SRP surface water rights for ground water recharge. In order to recharge these water resources, the City has and will continue to invest in underground recharge and storage facilities. These facilities recharge and store raw surface and reclaimed water into the aquifer to be withdrawn later through the City's well facilities and/or banked as ground water credits that can be used for future demands. It is the City's plan to eventually use most of its raw surface water to supply the surface water treatment facilities and recharge 100% of the wastewater effluent from the water reclamation facilities.

NOTE: Because recharged water represents ground water resources that benefit all areas of the City, this component of the water expansion fee is not allocated among the service areas and is included in the service area fees. Furthermore, since the underground recharge and storage facilities dispose of effluent from the water reclamation facilities which is ultimately withdrawn from the ground and treated by the ground water well facilities, these facilities are considered to have a dual benefit to both water and wastewater. As such, the underground recharge and storage facilities are allocated 75% to the water expansion fees and 25% to the wastewater expansion fees.

City-Wide Underground Storage and Recharge Facilities and Level of Service: The total capacity of the City's existing underground storage and recharge facilities is 16.25 MGD and the current level of service is 11.39 MGD. The total capacity is equal to the combined capacity of the City's three water reclamation facilities and the current level of service is the combined average day wastewater effluent from the City's three water reclamation facilities. Thus, the capacity available in the underground recharge and storage facilities is 4.86 MGD, or approximately 30% of the current capacity of the three water reclamation facilities. Since 4.86 MGD of capacity is available for recharge at the water reclamation facilities, 75% of the total RCNLD value of the underground recharge and storage facilities allocated to the water expansion fee is reduced to reflect only that portion of value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

The total current underground recharge and storage capacity, existing level of service, and available capacity for the South of Bell Road, North of Bell Road, and West of Agua Fria River Areas are shown in Table 7.

Table 7. Total Underground Recharge and Storage Capacities and Current Level of Service

Underground Recharge & Storage Facilities Capacity	Million Gallons Per Day Current	Planned	Total
Beardsley Water Reclamation Facility	4.00	2.00	6.00
Butler Water Reclamation Facility	10.00	-	10.00
Jomax Reclamation Facility	2.25	1.50	3.75
Total Capacity	16.25	3.50	19.75
Current Level of Service			
Beardsley Water Reclamation Facility	3.10		
Butler Water Reclamation Facility	7.47		
Jomax Reclamation Facility	0.82		
Current Level of Service	11.39	-	11.39
Available Capacity to Serve New Customers	4.86	3.50	8.36

Planned Underground Storage and Recharge Improvements Benefiting New Customers

In addition to the existing underground storage and recharge facilities serving the South of Bell Road, North of Bell Road, and West of Agua Fria River Areas, the City has plans to add facilities to support the 3.50 MGD planned expansions to the City's water reclamation facilities. The capital costs of adding the additional underground storage and recharge facilities is $8.6 million over the 11-year IIP planning period.

For more information on the planned water improvements, see Schedule 1, Water Infrastructure Improvements Plan in Appendix A of this Report.

4.5 Water Distribution Facilities Capacities and Levels of Service

The water distribution system component of the expansion fee includes water distribution lines, storage facilities, and pumping stations. The water distribution facilities for each expansion fee service area are discussed below.

South of Bell Road Water Distribution System Capacities and Level of Service: The total capacity of the South of Bell Road water distribution system is 24.00 MGD and the current level of service is 15.91 MGD. Although the current treatment capacity of the Greenway WTP is 16.00 MGD, the City has already constructed the existing water distribution system in the South of Bell Road service area to support the 24.00 MGD build-out capacity of the Greenway WTP. Although the City will not construct the 8.00 MGD treatment plant capacity expansion during the 11-year planning period, excluding the full 24.00 MGD of capacity from the existing distribution system would result in an incorrect value of the South of Bell Road water distribution system.

The current level of service for the South of Bell Road water distribution system is the current peak day water production during FY 2017 at the Greenway WTP and well facilities. Thus, the capacity available in the South of Bell Road water distribution system is 8.09 MGD, or approximately 50% of the current distribution system in the South of Bell Road Area. Since 8.09 MGD of capacity is available

in the distribution system, the RCNLD value for the existing distribution system is reduced to reflect only that portion of the value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

North of Bell Road Water Distribution System Capacities and Level of Service: The total capacity of the North of Bell Road water distribution system is 24.30 MGD. Currently, 11.0 MGD of the total capacity is serving the Pyramid Peak WTP and 13.30 MGD is supporting well distribution capacity. When the 13.0 MGD Pyramid Peak WTP expansion is completed, 7.00 MGD of which is for the North of Bell Road area, the total distribution capacity will remain at 24.30 MGD, but an additional 7.00 MGD will serve the Pyramid Peak WTP, reducing the well distribution capacity. The current level of service is 17.47 MGD. While the Pyramid Peak WTP plant is not yet completed, excluding the full 24.30 MGD of capacity from the existing distribution system would result in an incorrect value for the North of Bell Road water distribution system.

The current level of service for the North of Bell Road water distribution system is the current peak day water production during FY 2017 at the Pyramid Peak WTP and well facilities. Thus, the capacity available in the North of Bell Road water distribution system is 6.83 MGD, or approximately 28% of the current distribution system in the North of Bell Road Area. Since 6.83 MGD of capacity is available in the distribution system, the RCNLD value for the existing distribution system is reduced to reflect only that portion of the value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

West of Agua Fria River Water Distribution System Capacities and Level of Service: The total capacity of the West of Agua Fria River water distribution system is 14.20 MGD and the current level of service is 4.43 MGD. In addition to the existing 10.20 MGD of zone 4 well distribution capacity, the West of Agua Fria distribution system already includes sufficient capacity to support the 6.0 MGD West of Agua Fria River Area's portion of the total 13.00 MGD of Pyramid Peak WTP capacity the City plans to acquire and/or construct in the next phase of its treatment expansion. 2.0 MGD of the current well distribution capacity is anticipated to support the Pyramid Peak WTP expansion after its completion. While the Pyramid Peak WTP plant is not yet completed, excluding the full 14.20 MGD of capacity from the existing distribution system would result in an incorrect value for the West of Agua Fria River water distribution system.

The current level of service for the West of Agua Fria River water distribution system is the current peak day water production during FY 2017 from the zone 4 ground water wells. Thus, the capacity available in the West of Agua Fria River water distribution system is 9.77 MGD, or approximately 69% of the current distribution system in the North of Bell Road Area. Since 9.77 MGD of capacity is available in the distribution system, the RCNLD value for the existing distribution system is reduced to reflect only that portion of the value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 4.6, Buy-In to Existing Water Facilities.

The total current water distribution capacity, existing level of service, and available capacity for the South of Bell Road, North of Bell Road, and West of Agua Fria Areas are shown in Table 8.

Table 8. Total Distribution System Capacities and Current Level of Service

	Million Gallons Per Day		
Water Distribution Line Capacities	**Current**	**Planned**	**Total**
South of Bell Road			
Greenway Water Treatment Facility (1)	16.00	8.00	24.00
Current Level of Service	15.91	-	15.91
Available Capacity to Serve New Customers	0.09	8.00	8.09
North of Bell Road			
Pyramid Peak Water Treatment Service Area (2)	11.00	7.00	18.00
Well Distribution Capacities	13.30	(7.00)	6.30
Total Capacity	24.30	-	24.30
Current Level of Service	17.47		17.47
Available Capacity to Serve New Customers	6.83	-	6.83
West Agua Fria			
Pyramid Peak Water Treatment Service Area (3)	-	6.00	6.00
Well Distribution Capacities	10.20	(2.00)	8.20
Total Capacity	10.20	4.00	14.20
Current Level of Service	4.43		4.43
Available Capacity to Serve New Customers	5.77	4.00	9.77
Total Available Capacity to Serve New Customers	12.69	12.00	24.69

(1) Although the 8.0 MGD expansion to the Greenway WTP is not planned during the IIP planning period, the water distribution system the City has constructed in the South of Bell Road area are sized to meet that eventual treatment capacity. Thus, the total existing distribution capacity in the South of Bell Road area is 24.0 MGD.

(2) The City currently owns 11.0 MGD of capacity at the Pyramid Peak WTP. However, the City has already constructed 18.0 MGD of capacity in the distribution system serving the North of Bell Road area.

(3) Current Pyramid Peak WTP capacity in the West Agua Fria area is 0.0 MGD. An additional 13.0 MGD expansion is planned during the IIP planning period, 6.0 MGD of which is related to the North of Bell Road area. The total distribution capacity in the West Agua Fria area is 14.20 MGD, a portion of which will be used by the treatment plant when it becomes operational, the remainder from wells.

Planned Water Distribution System Improvements Benefiting New Customers

In addition to available capacity in the existing distribution systems serving the South of Bell Road and North of Bell Road areas, the City has plans to extend and expand its water distribution systems in the North of Bell Road Area and West of Agua Fria River Area. No additional distribution facilities to benefit new customers are planned in the South of Bell Road area. The distribution system capital costs of supporting the North of Bell Road Area is $15.6 million, while the distribution system capital costs supporting the West of Agua Fria River Area is $31.6 million over the 11-year IIP planning period.

For more information on the planned water improvements, see Schedule 1, Water Infrastructure Improvements Plan in Appendix A of this Report.

4.6 Buy-In to Existing Water Facilities

The Buy-In value of the existing water system represents the replacement cost new less depreciation of each component of the water system. This RCNLD is determined by escalating depreciated facility asset values based on the Engineering News Record (ENR) construction cost index. Again, the value of any assets that are reserved, were contributed by developers, contributed by other parties, or have contractual restrictions, are excluded from the Buy-In value of facilities available to serve new EDUs. By including the RCNLD of the water facilities available to serve new EDUs, the City can use water expansion revenues to pay annual payments on, or retire debt issued to fund the existing water facilities.

The allocation of the total buy-in value of the existing facilities eligible to be recovered from new customers among the three service areas is shown in Tables 9a and 9b.

Table 9a. Buy-In to Existing Water Facilities

Water Utility	RCNLD	Adjustments (1)	Total Buy-In (2)
Water Treatment Facilities	$ 39,775,714	$ -	$ 39,775,714
Wells	38,674,460	(6,980,785)	31,693,676
Water Reclamation (3)	47,984,008	-	47,984,008
Recharge Facilities (4)	4,653,093	-	4,653,093
Water Distribution System	220,644,292	(147,582,851)	73,061,441
Storage Facilities	14,491,644	-	14,491,644
Pumping Stations	8,374,650	-	8,374,650
SCADA System (5)	596,586	-	596,586
TOTAL	$ 375,194,447	$ (154,563,636)	$ 220,630,811

(1) Adjustments represent assets that were reserved, and/or contributed.

(2) The total buy-in represents the value of all water system facilities eligible to be included in the water expansion fee.

(3) Includes 25% of the City's water reclamation facilities which provide reclaimed water for recharge purposes.

(4) Since recharge facilities benefit both water service areas equally, 75% of the buy-in value for these facilities is allocated 50/50 to these areas. However, in the calculation of the expansion fees for each area, the entire cost and capacity of these facilities is reflected. Since these recharge facilities also benefit wastewater customers, only 75% of the value for these facilities are recovered through the water expansion fee.

(5) SCADA system are recovered through the billing and customer service component of the water expansion fee. Since the billing and customer service component is allocated to all service areas equally, the buy-in cost for the SCADA system are allocated equally among the three service areas.

Table 9b. Buy-In to Existing Water Facilities – By Service Area

Water Utility	South of Bell	North of Bell	West Agua Fria	Common to All
Water Treatment Facilities	$ 25,252,699	$ 14,523,015	$ -	$ -
Wells	8,560,660	12,863,158	10,269,857	-
Water Reclamation (3)	34,226,612	6,488,198	7,269,198	-
Recharge Facilities (4)	-	-	-	4,653,093
Water Distribution System	30,490,083	34,501,229	8,070,129	-
Storage Facilities	9,790,428	4,171,180	530,036	-
Pumping Stations	548,049	151,039	7,675,562	-
SCADA System (5)	-	-	-	596,586
TOTAL	$ 108,868,532	$ 72,697,819	$ 33,814,782	$ 5,249,679

(3) Includes 25% of the City's water reclamation facilities which provide reclaimed water for recharge purposes.

(4) Since recharge facilities benefit both water service areas equally, 75% of the buy-in value for these facilities is allocated 50/50 to these areas. However, in the calculation of the expansion fees for each area, the entire cost and capacity of these facilities is reflected. Since these recharge facilities also benefit wastewater customers, only 75% of the value for these facilities are recovered through the water expansion fee.

(5) SCADA system are recovered through the billing and customer service component of the water expansion fee. Since the billing and customer service component is allocated to all service areas equally, the buy-in cost for the SCADA system are allocated equally among the three service areas.

New connections in each service area are required to buy into the portion of capacity in each component of the existing water system that is available to serve new customers as shown in Tables 10a and 10b.

Table 10a. Buy-In to Available Existing Water Facilities by Service Area

	South of Bell			North of Bell		
Water Utility	Total RCNLD	% Available (1)	Available RCNLD	Total RCNLD	% Available (1)	Available RCNLD
Water Treatment Facilities	$ 25,252,699	8.75%	$ 2,209,611	14,523,015	8.27%	$ 1,201,449
Wells	$ 8,560,660	100.00%	$ 8,560,660	12,863,158	100.00%	$ 12,863,158
Water Reclamation (2)	$ 34,226,612	25.30%	$ 8,659,333	6,488,198	22.50%	$ 1,459,845
Recharge Facilities (3)	$ -		$ -	-		$ -
Water Distribution System	$ 30,490,083	33.71%	$ 10,277,699	34,501,229	28.11%	$ 9,697,259
Storage Facilities	$ 9,790,428	33.71%	$ 3,300,190	4,171,180	28.11%	$ 1,172,393
Pumping Stations	$ 548,049	33.71%	$ 184,738	151,039	28.11%	$ 42,453
SCADA System (4)	$ -	0.00%	$ -	-	0.00%	$ -
TOTAL	$ 108,868,532		$ 33,192,231	$ 72,697,819		$ 26,436,557

(1) The percent available for each component of the water facilities reflects the weighted average of facilities within that component. For example, the percent available for two treatment facilities would reflect the weighted value of the portion of facilities values in each treatment plant.

(2) Since wells provide redundancy and emergency back-up capacity for the surface water treatment plants, 100% of the buy-in value for those facilities is available to serve new customers.

(3) Since recharge facilities benefit both water service areas equally, the buy-in value of available capacity for these facilities is included in the common-to-all category and is allocated 50/50 to the two areas. However, in the calculation of the expansion fees for each area, the entire costs and capacity available at these facilities is reflected.

(4) Since SCADA system benefits all water service areas equally, the buy-in value for the portion of the system assets that will benefit new customers is included in the common-to-all category and is allocated equally among the three service areas as part of the billing and customer service component of the water expansion fee.

Table 10b. Buy-In to Available Existing Water Facilities by Service Area

Water Utility	West Agua Fria Total RCNLD	% Available (1)	Available RCNLD	Common to All
Water Treatment Facilities	-		$ -	$ -
Wells	10,269,857	100.00%	$ 10,269,857	$ -
Water Reclamation (2)	7,269,198	63.56%	$ 4,619,979	$ -
Recharge Facilities (3)	-		$ -	$ 3,255,812
Water Distribution System	8,070,129	68.80%	$ 5,552,476	$ -
Storage Facilities	530,036	68.80%	$ 364,680	$ -
Pumping Stations	7,675,562	68.80%	$ 5,281,003	$ -
SCADA System (4)	-	0.00%	$ -	$ 136,953
TOTAL	$ 33,814,782		$ 26,087,995	$ 3,392,765

(1) The percent available for each component of the water facilities reflects the weighted average of facilities within that component. For example, the percent available for two treatment facilities would reflect the weighted value of the portion of facilities values in each treatment plant.

(2) Since wells provide redundancy and emergency back-up capacity for the surface water treatment plants, 100% of the buy-in value for those facilities is available to serve new customers.

(3) Since recharge facilities benefit both water service areas equally, the buy-in value of available capacity for these facilities is included in the common-to-all category and is allocated 50/50 to the two areas. However, in the calculation of the expansion fees for each area, the entire costs and capacity available at these facilities is reflected.

(4) Since SCADA system benefits all water service areas equally, the buy-in value for the portion of the system assets that will benefit new customers is included in the common-to-all category and is allocated equally among the three service areas as part of the billing and customer service component of the water expansion fee.

4.7 Water Service Units

A service unit creates a nexus between the available water capacity and the demand for water services. An appropriate service unit basis for water impact fees is the typical daily water use for a residential dwelling unit. To determine the typical peak daily demand for a residential dwelling unit, the demands for various customer types should be standardized using a common unit of measure, or an EDU. An EDU represents the equivalent demand of a single-family residential dwelling unit with a 3/4-inch or 1-inch meter. Because single-family residential customers typically use 3/4-inch meters and the City assesses its utility expansion fees to customers based on meter size, the number of EDU or service units currently served by the City can be determined based on the current number of water metered accounts by customer type multiplied by a factor that estimates demand on a single-family equivalent basis. The multiplier for commercial accounts, 3.1 times, is equal to the weighted average of capacity for commercial meters installed between July 1, 2014 and April 30, 2018. The multiplier for multifamily accounts, 11.1, is equal to the average number of units per account for multifamily meters installed between July 1, 2014 and April 30, 2018, or 18.4, adjusted by 60% to recognize the lower use per multifamily unit compared to a single-family residential dwelling unit. The total current number of metered accounts and the resulting number of EDU are shown in Table 11.

Table 11. Water Service Units by Customer Class

Water Land Use Assumptions	Fiscal Year Ending June 30, 2017 Total	SFR	MFR	Commercial (1)
Water Accounts (2)				
South of Bell Road	28,015	25,328	377	2,310
North of Bell Road	22,223	21,589	39	595
West of Agua Fria	6,739	6,419	0	320
Total	56,977	53,336	416	3,225
EDU Multiplier (3)		1.0	11.1	3.1
Water EDU				
South of Bell Road	36,672	25,328	4,183	7,161
North of Bell Road	23,868	21,589	435	1,845
West of Agua Fria	7,411	6,419	0	992
Total	67,951	53,336	4,618	9,998

(1) Commercial includes all landscape meters although these meters may ultimately be classified SFR, MFR, and/or Commercial.
(2) From City of Peoria billing records. Represents current active water metered customers as of June 30, 2017.
(3) Single-family equivalent EDU multiplier. The multi-family multiplier of 11.1 reflects developments over a recent 4-year period showing 18 dwelling units per account with water use per multi-family dwelling unit of approximately 60% of single-family use per dwelling unit. The commercial multiplier of 3.1 reflects average of 3.1 EDUs per account over a recent 4-year period.

The typical peak daily demand is then determined by dividing the peak day water use (44.6 MGD) during FY 2017 by the total number of current service units (67,951). This results in a peak daily demand, or demand factor of approximately 650 gpd per service unit. A demand factor for each meter size can be determined by multiplying the number of service units per meter size times the 650 gpd demand factor. Table 12 presents the water service units and demand factors by meter size.

Table 12. Water Service Units and Demand Factors by Meter Size

Meter Size	Meter Type	Flow (gpm)	Capacity Ratio	Service Units	Demand Factor (gpd)
3/4"	Displacement	30	1.00	1.00	650
1"	Displacement	50	1.67	1.67	1,083
1.5"	Displacement	100	3.33	3.33	1,805
2"	Displacement	160	5.33	5.33	3,008
3"	Compound	300	10.00	10.00	5,013
4"	Compound	500	16.67	16.67	8,355
6"	Compound	1,000	33.33	33.33	13,925
8"	Compound	2,000	66.67	66.67	23,208

5. WATER EXPANSION FEES CALCULATION

The water expansion fees for the South of Bell Road, North of Bell Road, and West of Agua Fria River Areas are calculated based on the same hybrid approach that recognizes that new customers of water utility systems benefit from both facilities already in place and planned capital projects required to expand and extend capacity. The expansion fees for all areas are determined to reflect the average unit cost of the planned system capacity at the end of the capital planning period based on previous and planned investments in the system divided by the total capacity available to new customers in those facilities. This hybrid approach essentially puts the unit cost of capacity for existing and future customers on par. As with both the system buy-in and incremental cost methodologies, local service lines and assets contributed or to be contributed by developers are excluded. However, since the West of Agua Fria River Area includes the Vistancia CFD and several other planned developments that will provide funding for infrastructure through either developer agreements or CFDs, the expansion fees for this new area will be adjusted by development specific credits to related to specific infrastructure funded by developers. Offsets are provided for any outstanding principal on funds borrowed, or anticipated to be borrowed, to construct the facilities that benefit new customers but are repaid through the user rates generated by those new customers.

5.1 Water Expansion Fee (Capacity Component)

The water expansion fees for the three service areas are designed to recover the unit cost of capacity, or the cost per gpd for the following water system components:

1. Water Treatment Component: Includes the value of available and planned capacity in surface water treatment facilities, 25% of water reclamation facilities providing reclaimed water for recharge purposes, and ground water wells that provide an emergency and redundant source of water for the surface water facilities.

2. Water Storage and Recharge Component: Includes 75% of the value of available and planned capacity in facilities that will allow underground storage and recharge of reclaimed water effluent produced at the City's three water reclamation facilities.

3. Water Distribution Facilities Component: Includes the value of available and planned capacity in water distribution lines, storage facilities, and pumping stations.

Table 13 presents the calculation of the South of Bell Road Area unit cost of capacity and impact fee per EDU. The water capacity expansion fee component is **$3,947.51**.

Table 13. Calculation of South of Bell Road Water Expansion Fee

SOUTH OF BELL ROAD AREA Water Treatment Component	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Water Costs	Debt Principal Credit (NPV)	Net Water Costs	Available Capacity (MGD) (2)	Per Unit Cost (GPD)
Greenway Water Treatment Plant (3)	$ 2,209,611	$ -	$ 2,209,611	$ (61,265)	$ 2,148,346	1.40	
Butler Water Reclamation Facility (4)	$ 8,659,333	$ -	$ 8,659,333	$ (2,768,502)	$ 5,890,831	2.53	
Well Facilities (5)	$ 8,560,660	$ 10,407,039	$ 18,967,699	$ -	$ 18,967,699	4.40	
Total Water Treatment Component	$ 19,429,604	$ 10,407,039	$ 29,836,643	$ (2,829,767)	$ 27,006,877	8.33	$ 3.242
Underground Storage and Recharge							
Recharge Facilities (6)	$ 3,255,812	$ 8,621,070	$ 11,876,882		$ 11,876,882		
Total Underground Storage and Recharge	$ 3,255,812	$ 8,621,070	$ 11,876,882	$ -	$ 11,876,882	8.36	$ 1.421
Water Distribution System Component (7)							
Water Distribution Lines	$ 10,277,699	$ -	$ 10,277,699	$ (2,353,340)	$ 7,924,358		
Storage Facitlities	$ 3,300,190	$ -	$ 3,300,190	$ -	$ 3,300,190		
Pumping Stations	$ 184,738	$ -	$ 184,738	$ -	$ 184,738		
Total Water Distribution System	$ 13,762,627	$ -	$ 13,762,627	$ (2,353,340)	$ 11,409,287	8.09	$ 1.410
Water Utility Unit Cost (GPD)							**$ 6.073**
Seasonal Water Demand Factor (3/4-inch Meter)							**650**
Water System Expansion Fee Per 3/4-Inch Residential Meter							**$ 3,947.51**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's water system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each water system component.

(3) Includes available capacity in the City's Greenway WTP which serves customers located south of Bell Road. For more information on the existing and planned water treatment capacity south of Bell Road, see Level of Service Table 1.

(4) Includes 25% of the costs for the Butler WRF which provides effluent for water recharge south of Bell Road. For more information on the existing and planned WRF capacity south of Bell Road, see Level of Service Table 2.

(5) Well facilities include only potable water producing wells. The water producing wells in pressure zones 1 & 2 serve the area South of Bell Road. Only well capacity that is anticipated to provide peaking capacity is included for these facilities as the remainder of wells are used to augment the Greenway WTP for redundancy and emergency purposes in the area south of Bell Road.

(6) Represents 75% of the value of facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities and these facilities benefit areas south and north of Bell Road. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(7) The water distribution system facilities provide distribution, storage, and pumping capacity to convey potable water produced at the City's Greenway WTP and potable water wells in pressure zones 1 & 2. The capacity for these facilities is limited to the available potable water capacity of the Greenway WTP plus the eventual 8 MGD of capacity at the Greenway WTP. Although the Greenway WTP expansion is not included in the IIP planning period the distribution lines are sized to meet that eventual capacity. For more information on the existing and planned water distribution system capacity, see Level of Service Table 2.

Table 14 presents the calculation of the North of Bell Road Area unit cost of capacity and impact fee per EDU. The water capacity expansion fee component is **$4,877.27.**

Table 14. Calculation of North of Bell Road Water Expansion Fee

NORTH OF BELL ROAD AREA	System Buy-In	Marginal Cost	Total	Debt Principal	Net	Available	Per Unit Cost
Water Treatment Component	**Replacement Costs** (1)	**IIP Costs**	**Water Costs**	**Credit (NPV)**	**Water Costs**	**Capacity (MGD)** (2)	**(GPD)**
Pyramid Peak Water Treatment Capacity (3)	$ 1,201,449	$ 29,809,853	$ 31,011,302	$ (19,452,557)	$ 11,558,745	7.91	
Beardsley Water Reclamation Facility (4)	$ 1,459,845	$ 8,250,000	$ 9,709,845	$ (146,271)	$ 9,563,574	2.90	
Well Facilities (5)	$ 12,863,158	$ 14,349,636	$ 27,212,795	$ (5,415,866)	$ 21,796,929	6.30	
Total Water Treatment Component	$ 15,524,452	$ 52,409,489	$ 67,933,941	$ (25,014,694)	$ 42,919,247	17.11	$ 2.508
Underground Storage and Recharge							
Recharge Facilities (6)	$ 3,255,812	$ 8,621,070	$ 11,876,882		$ 11,876,882		
Total Underground Storage and Recharge	$ 3,255,812	$ 8,621,070	$ 11,876,882	$ -	$ 11,876,882	8.36	$ 1.421
Water Distribution System Component (7)							
Water Distribution Lines	$ 9,697,259	$ 15,627,863	$ 25,325,122	$ (2,068,044)	$ 23,257,079		
Storage Facitlities	$ 1,172,393	$ -	$ 1,172,393	$ (58,940)	$ 1,113,453		
Pumping Stations	$ 42,453	$ -	$ 42,453	$ -	$ 42,453		
Total Water Distribution System	$ 10,912,105	$ 15,627,863	$ 26,539,968	$ (2,126,984)	$ 24,412,985	6.83	$ 3.574
Water Utility Unit Cost (GPD)							**$ 7.503**
Seasonal Water Demand Factor (3/4-inch Meter)							**650**
Water System Expansion Fee Per 3/4-Inch Residential Meter							**$ 4,877.27**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's water system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each water system component.

(3) Pyramid Peak Water Treatment Capacity. This facility (or facilities) will serve the area north of Bell Road. For more information on the existing and planned water treatment capacity north of Bell Road, see Level of Service Table 1.

(4) Includes 25% of the costs for the Beardsley WRF which provides effluent for water recharge north of Bell Road. For more information on the existing and planned WRF capacity in the area north of Bell Road, see Level of Service Table 2.

(5) Well facilities include only potable water producing wells. The water producing wells in pressure zones 3 & 5 serve the area north of Bell Road. Only well capacity that is anticipated to provide peaking capacity is included for these facilities as the remainder of wells are used to augment the WTPs for redundancy and emergency purposes in the area north of Bell Road.

(6) Represents 75% of the value of facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities and these facilities benefit areas south and north of Bell Road. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(7) The water distribution system facilities provide distribution, storage, and pumping capacity to convey potable water produced at the Pyramid Peak WTP a northern Peoria treatment facility, and potable water wells in pressure zones 1 & 2. The capacity for these facilities is limited to the available distribution capacity to serve the Pyramid Peak WTP and the additional treatment capacity to be acquired or constructed in the northern area of the City. For more information on the existing and planned water distribution system capacity, see Level of Service Table 2.

Table 15 presents the calculation of the West of Agua Fria Area unit cost of capacity and impact fee per EDU. The water capacity expansion fee component is **$5,737.04.**

This amount reflects the full recovery fee that would be assessed to new development without consideration of credits due to an individual developer. Developer agreement(s) may provide for developer constructed and/or dedicated facilities which are also recovered through the full recovery WAF fee. City Staff will administer credits resulting in adjusted WAF Utility Expansion Fees reflecting the equitable treatment of previous and/or future capital facilities and/or contributions towards the capital facilities as may be applicable.

Table 15. Calculation of West of Agua Fria Water Expansion Fee

WEST AGUA FRIA AREA Water Treatment Component	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Water Costs	Debt Principal Credit (NPV)	Net Water Costs	Available Capacity (MGD) (2)	Per Unit Cost (GPD)
Pyramid Peak Water Treatment Capacity (3)		$ 24,625,588	$ 24,625,588	$ (16,673,621)	$ 7,951,967	6.00	
Jomax Water Reclamation Facility (4)	$ 4,619,979	$ 15,536,000	$ 20,155,979	$ -	$ 20,155,979	2.93	
Well Facilities (5)	$ 10,269,857	$ -	$ 10,269,857		$ 10,269,857	3.77	
Total Water Treatment Component	$ 14,889,836	$ 40,161,588	$ 55,051,424	$ (16,673,621)	$ 38,377,803	12.70	$ 3.022
Underground Storage and Recharge							
Recharge Facilities (6)	$ 3,255,812	$ 8,621,070	$ 11,876,882		$ 11,876,882		
Total Underground Storage and Recharge	$ 3,255,812	$ 8,621,070	$ 11,876,882	$ -	$ 11,876,882	8.36	$ 1.421
Water Distribution System Component (7)							
Water Distribution Lines	$ 5,552,476	$ 31,630,141	$ 37,182,617	$ -	$ 37,182,617		
Storage Facitlities	$ 364,680	$ -	$ 364,680	$ -	$ 364,680		
Pumping Stations	$ 5,281,003	$ -	$ 5,281,003	$ -	$ 5,281,003		
Total Water Distribution System	$ 11,198,159	$ 31,630,141	$ 42,828,299	$ -	$ 42,828,299	9.77	$ 4.384
Water Utility Unit Cost (GPD)							**$ 8.826**
Seasonal Water Demand Factor (3/4-inch Meter)							**650**
Water System Expansion Fee Per 3/4-Inch Residential Meter							**$ 5,737.04**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's water system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each water system component.

(3) Planned Pyramid Peak Water Treatment Capacity. This planned facility expansion will serve the West Agua Fria area. For more information on the existing and planned water treatment capacity for the West of Agua Fria area, see Level of Service Table 1.

(4) Includes 25% of the costs for the Jomax WRF which provides effluent for water recharge to the West of Agua Fria area. For more information on the existing and planned WRF capacity in the West of Agua Fria area, see Level of Service Table 2.

(5) Well facilities include only potable water producing wells. Only well capacity that is anticipated to provide peaking capacity is included for these facilities as the remainder of wells are used to augment the WTPs for redundancy and emergency purposes in the West Agua Fria area.

(6) Represents 75% of the value of facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities and these facilities benefit areas south and north of Bell Road, including the West Agua Fria area. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(7) The water distribution system facilities provide distribution, storage, and pumping capacity to convey potable water produced at the Pyramid Peak WTP for the West Agua Fria area, and potable water wells in the West Agua Fria area. The capacity for these facilities is limited to the available distribution capacity to serve the existing wells and the additional treatment capacity to be acquired or constructed in the West Agua Fria area. For more information on the existing and planned water distribution system capacity, see Level of Service Table 2.

5.2 Calculation of Billing and Customer Service Component of Water Expansion Fee

The customer service component of the water expansion fee recovers costs related to the Beardsley Operations Building, the new utility billing system, SCADA system, and updates to the expansion fees and master plans during the planning period. The water customer service component is calculated separately from the other capacity-related components of the water expansion fees because it would not be equitable to determine the unit costs for these billing and customer service costs by system capacity. Similarly, it would not be appropriate to assess this customer-related component based on meter size since all customers receive an equal benefit regardless of the number of demand units each customer places on the water system. Finally, since the billing and customer service component benefits all customers, this component represents the water expansion fee that will be assessed to the Vistancia service area.

It should be noted that portions of the Beardsley Operations Building and SCADA system serve existing utility customers. As a result, the portion of these projects that will serve new water utility customers is determined based on the portion of new water accounts (16,977) to existing water accounts (56,977).

Table 16 presents the calculation of the billing and collection component of the water expansion fees to be assessed per new customer account.

Table 16. Calculation of Billing and Collection Component of Water Expansion Fee

Water Component (Common to All)	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Water Costs	Debt Principal Credit (NPV)	Net Water Costs	Total Water Accounts (2)	Cost Per Account
Beardsley Operations Center	$ 12,089		$ 12,089		$ 12,089	-	
Billing System		$ 850,000	$ 850,000		$ 850,000		
Update Impact Fees		$ 200,000	$ 200,000		$ 200,000		
Integrated Utility Infrastructure Master Plan		$ 280,000	$ 280,000		$ 280,000		
Water/Wastewater Hyrdraulic Model Update		$ 300,000	$ 300,000		$ 300,000		
SCADA	$ 136,953	$ 225,000	$ 361,953		$ 361,953		
Total Water Billing and Customer Service Component	$ 149,043	$ 1,855,000	$ 2,004,043	$ -	$ 2,004,043	16,977	**$ 118.04**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's billing and customer related system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Projected total accounts/ERUs added to the system from 2018 - 2028 for the given area.

5.3 Proposed Water Expansion Fees by Meter Size and Fee Area

The City will continue to assess its water expansion fees to different customers based on the size of the meter needed by the new customers. The current and maximum water impact fees per meter type that may be adopted by the City, within the three expansion fee service areas based on this study, are presented in Table 17.

Table 17. Proposed Water Expansion Fee by Meter Size and Service Area

Meter Size	EDU	South of Bell Road			Current Fee
		Capacity	Customer	Total	
3/4"	1.00	$ 3,948	$ 118	$ 4,066	$ 2,172
1"	1.67	$ 6,579	$ 118	$ 6,697	$ 3,544
1.5"	3.33	$ 13,158	$ 118	$ 13,276	$ 6,973
2"	5.33	$ 21,053	$ 118	$ 21,171	$ 11,088
3"	10.00	$ 39,475	$ 118	$ 39,593	$ 20,690
4"	16.67	$ 65,792	$ 118	$ 65,910	$ 34,407
6"	33.33	$ 131,584	$ 118	$ 131,702	$ 68,698
8"	66.67	$ 263,168	$ 118	$ 263,286	$ 137,281

Meter Size	EDU	North of Bell Road			Current Fee
		Capacity	Customer	Total	
3/4"	1.00	$ 4,877	$ 118	$ 4,995	$ 3,816
1"	1.67	$ 8,129	$ 118	$ 8,247	$ 6,281
1.5"	3.33	$ 16,258	$ 118	$ 16,376	$ 12,444
2"	5.33	$ 26,012	$ 118	$ 26,130	$ 19,840
3"	10.00	$ 48,773	$ 118	$ 48,891	$ 37,097
4"	16.67	$ 81,288	$ 118	$ 81,406	$ 61,750
6"	33.33	$ 162,576	$ 118	$ 162,694	$ 123,381
8"	66.67	$ 325,151	$ 118	$ 325,269	$ 246,645

Meter Size	EDU	West of Agua Fria			Current Fee (1)
		Capacity	Customer	Total	
3/4"	1.00	$ 5,737	$ 118	$ 5,855	$ 118
1"	1.67	$ 9,562	$ 118	$ 9,680	$ 118
1.5"	3.33	$ 19,123	$ 118	$ 19,241	$ 118
2"	5.33	$ 30,598	$ 118	$ 30,716	$ 118
3"	10.00	$ 57,370	$ 118	$ 57,488	$ 118
4"	16.67	$ 95,617	$ 118	$ 95,735	$ 118
6"	33.33	$ 191,235	$ 118	$ 191,353	$ 118
8"	66.67	$ 382,469	$ 118	$ 382,587	$ 118

(1) Current fee assessed to Vistancia CFD related to water billing and customer service component; currently all other new connections within the West Agua Fria service area outside of Vistancia CFD are assessed the North of Bell Road fee.

6. WASTEWATER INFRASTRUCTURE IMPROVEMENTS PLAN

The purpose of this section is to meet the requirements of a Wastewater IIP as defined in the subject ARS and to provide a basis for the Expansion Fee Study. This IIP has been developed for a 11-year period, FY 2017 to FY 2028.

Wastewater Expansion Fee Level of Service

In general, the available portion of the City's existing wastewater system facilities are tied to the water reclamation facilities capacities less the current level of service based on FY 2017 average wastewater influent data. The current capacities and level of service for the various components of the wastewater service facilities in each of the wastewater expansion fee service areas are discussed below.

6.1 Wastewater Treatment Facilities Capacities and Level of Service

The wastewater treatment component for each expansion fee service area includes 75% of water reclamation facilities which provide treatment of wastewater influent. The water reclamation facilities for each expansion fee service area are discussed below.

NOTE: Because wastewater reclamation facilities also provides reclaimed water for recharge, the total RCNLD of the water reclamation facilities are allocated 25% to water expansion fees and 75% to wastewater expansion fees before the reduction in RCNLD values are made based on the capacity available to serve new customers.

East of Agua Fria River Reclaimed Wastewater Facilities and Level of Service: The total capacity of the East of Agua Fria River wastewater reclamation facilities is 14.00 MGD and the current level of service is 10.11 MGD. The current level of service is the average day wastewater treated during FY 2017 at the Beardsley WRF and Butler WRF which are located East of the Agua Fria River. Thus, the capacity available to EDU located East of the Agua Fria River area is 3.89 MGD, or approximately 28% of the current capacity of the 4.00 MGD Beardsley WRF and 10.00 MGD Butler WRF. Since 3.89 MGD of capacity is available for wastewater treatment at the Beardsley WRF and Butler WRF, the RCNLD value for the water reclamation facilities allocated to the wastewater expansion fee is reduced to reflect only that portion of value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 6.4, Buy-In to Existing Wastewater Facilities.

West of Agua Fria River Reclaimed Wastewater Facilities and Level of Service: The total capacity of the West of Agua Fria River area water reclamation facilities is 2.25 MGD and the current level of service is 0.76 MGD. The current level of service is the average day wastewater treated at the Jomax WRF which is located West of Agua Fria River. Thus, the capacity available in the West of Agua Fria River area is 1.49 MGD, or 66% of the current capacity at the Jomax WRF. Since 1.49 MGD of capacity at the Jomax WRF is available for new customers, the RCNLD value for the water reclamation facilities allocated to the wastewater expansion fee is reduced to reflect only that portion

of value that is available to serve new customers located West of the Agua Fria River. For more information on the RCNLD buy-in value see Section 6.4, Buy-In to Existing Wastewater Facilities.

The total current reclaimed water facilities capacity, existing level of service, and available capacity for both the East of Agua Fria River and West of Agua Fria River Areas are shown in Table 18.

Table 18. Water Reclamation Facility for Recharge Capacities and Current Level of Service

	Million Gallons Per Day		
Water Reclamation Facility Capacities (Wastewater Fee)	**Current**	**Planned**	**Total**
East of Agua Fria River			
Butler Reclamation Facility	10.00	-	10.00
Beardsley Reclamation Facility	4.00	2.00	6.00
Current Level of Service	10.11	-	10.11
Available Capacity to Serve New Customers	3.89	2.00	5.89
West of Agua Fria			
Jomax Reclamation Facility	2.25	1.50	3.75
Total Capacity	2.25	1.50	3.75
Current Level of Service	0.76	-	0.76
Available Capacity to Serve New Customers	1.49	1.50	2.99
Total Available Capacity to Serve New Customers	5.38	3.50	8.88

Planned Wastewater Treatment Improvements Benefiting New Customers

In addition to available capacity in the existing system, he City plans to increase its water reclamation facility capacity in the East of Agua Fria River Area by expanding the Beardsley WRF by 2.00 MGD. An additional 1.50 MGD expansion is planned for the Jomax WRF that will benefit the West Agua Fria service area. The capital costs of adding the 2.00 MGD of treatment capacity in the East of the Agua Fria River area is $24.8 million and the capital costs of adding the 1.50 MGD of treatment capacity in the West of Agua Fria River area is $46.6 million over the 11-year IIP planning period.

For more information on the planned wastewater improvements, see Schedule 2, Wastewater Infrastructure Improvements Plan in Appendix A of this Report.

6.2 Underground Storage and Recharge Facilities and Level of Service

The City utilizes the wastewater effluent from its water reclamation facilities for ground water recharge. In addition, the City currently uses a portion of its non-SRP surface water rights for ground water recharge. In order to recharge these water resources, the City has and will continue to invest in underground recharge and storage facilities. These facilities store and recharge raw surface and reclaimed water into the aquifer to be withdrawn later through the City's well facilities and/or banked as ground water credits that can be used for future demands. It is the City's plan to eventually use all

of its raw surface water to supply the surface water treatment facilities and recharge 100% of the wastewater effluent from the water reclamation facilities. Since the City would otherwise need to dispose of wastewater effluent from its water reclamation facilities, 25% of the underground storage and recharge facilities are allocated to the wastewater expansion fees.

City-Wide Underground Storage and Recharge Facilities and Level of Service: The total capacity of the City's existing underground storage and recharge facilities is 16.25 MGD and the current level of service is 11.39 MGD. The total capacity is equal to the combined capacity of the City's three water reclamation facilities and the current level of service is the combined average day wastewater effluent from the City's three water reclamation facilities. Thus, the capacity available in the underground recharge and storage facilities is 4.86 MGD, or approximately 30% of the current capacity of the three water reclamation facilities. Since 4.86 MGD of capacity is available for recharge at the water reclamation facilities, 25% of the total RCNLD value of the underground recharge and storage facilities allocated to the wastewater expansion fee is reduced to reflect only that portion of value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 6.4, Buy-In to Existing Wastewater Facilities.

The total current water treatment capacity, existing level of service, and available capacity for both the East of Agua Fria River and West of Agua Fria River areas are shown in Table 19.

Table 19. Total Underground Recharge and Storage Capacities and Current Level of Service

	Million Gallons Per Day		
Underground Recharge & Storage Facilities Capacity	**Current**	**Planned**	**Total**
Beardsley Water Reclamation Facility	4.00	2.00	6.00
Butler Water Reclamation Facility	10.00	-	10.00
Jomax Reclamation Facility	2.25	1.50	3.75
Total Capacity	16.25	3.50	19.75
Current Level of Service			
Beardsley Water Reclamation Facility	3.10		
Butler Water Reclamation Facility	7.47		
Jomax Reclamation Facility	0.82		
Current Level of Service	11.39	-	11.39
Available Capacity to Serve New Customers	4.86	3.50	8.36

NOTE: Because underground storage and recharged water represents wastewater effluent disposal that benefits all areas of the City, this component of the wastewater expansion fee is not allocated among the service areas. Furthermore, since the underground recharge and storage facilities have a dual benefit to both water and wastewater, the underground recharge and storage facilities are allocated 75% to the water expansion fees and 25% to the wastewater expansion fees.

Planned Underground Storage and Recharge Improvements Benefiting New Customers

In addition to the existing underground storage and recharge facilities serving the East of Agua Fria River and West of Agua Fria River areas, the City has plans to add facilities to support the 3.50 MGD

planned expansions to the City's water reclamation facilities. The capital costs of adding the additional underground storage and recharge facilities for the benefit of wastewater customers is $2.3 million over the 11-year IIP planning period.

For more information on the planned water recharge improvements included in the wastewater expansion fees, see Schedule 1, Water Infrastructure Improvements Plan in Appendix A of this Report. Note, the underground storage and recharge facilities included in the Water IIP are allocated 25% to wastewater.

6.3 Wastewater Collection System Facilities and Level of Service

The wastewater collection system component of the expansion fee includes wastewater collection lines and lift stations. The water reclamation facilities for each expansion fee service area are discussed below.

East of Agua Fria River Wastewater Collection System Capacities and Level of Service: The total capacity of the East of Agua Fria River wastewater collection system is 16.00 MGD and the current level of service is 10.11 MGD. Although the current combined treatment capacities of the Butler and Beardsley WRFs is 14.00 MGD, the City has already constructed the existing wastewater collection system in the East of Agua Fria River service area to support the 16.00 MGD build-out capacities of the water reclamation facilities. Although the City will not construct the additional 2.00 MGD capacity expansion during the 11-year planning period, excluding the full 16.00 MGD of capacity from the existing collection system would result in an incorrect value of the East of Agua Fria River wastewater collection system.

The current level of service for the East of Agua Fria River wastewater collection system is the current average day wastewater treatment of 10.11 MGD during FY 2017 at Butler and Beardsley WRFs. Thus, the capacity available in the East of Agua Fria River wastewater collection system is 5.89 MGD, or approximately 37% of the current collection system in the East of Agua Fria River area. Since 5.89MGD of capacity is available in the collection system, the RCNLD value for the existing collection system is reduced to reflect only that portion of the value that is available to serve new customers. For more information on the RCNLD buy-in value see Section 6.4, Buy-In to Existing Wastewater Facilities.

West of Agua Fria River Wastewater Collection System Capacities and Level of Service: The total capacity the West of Agua Fria River wastewater collection system is 2.25 MGD and the current level of service is 0.82 MGD. The current level of service is the average day wastewater treated at the Jomax WRF which is located West of Agua Fria River. The resulting available capacity in the West of Agua Fria River wastewater collection system is 1.43 MGD, or approximately 66% of the current collection system in the West of Agua Fria River area. For more information on the RCNLD buy-in value, see Section 6.4, Buy-In to Existing Wastewater Facilities.

The total current wastewater collection capacity, existing level of service, and available capacity for both the East of Agua Fria River and West of Agua Fria River areas are shown in Table 20.

Table 20. Total Collection System Capacities and Current Level of Service

	Million Gallons Per Day		
Wastewater Collection System Capacities	**Current**	**Planned**	**Total**
East of Agua Fria River			
Butler Reclamation Facility	10.00	-	10.00
Beardsley Reclamation Facility	6.00		6.00
Total Capacity	16.00	-	16.00
Current Level of Service	10.11	-	10.11
Available Capacity to Serve New Customers	5.89	-	5.89
West of Agua Fria			
Jomax Reclamation Facility	2.25	1.50	3.75
Current Level of Service	0.82	-	0.82
Available Capacity to Serve New Customers	1.43	1.50	2.93

Planned Wastewater Collection System Improvements Benefiting New Customers

In addition to available capacity in the existing collection systems serving the East of Agua Fria River and West of Agua Fria River areas, the City has plans to construct lift stations to the wastewater collection systems serving the East of Agua Fria River Area and construct wastewater collection facilities to support the 1.50 MGD of capacity in the West of the Agua Fria River area. Although the new lift stations East of the Agua Fria will benefit new customers, the facilities will not expand or add to the overall collection system capacity in that area. The capital costs of extending wastewater collection facilities East of the Agua Fria River is $3.1 million over the 11-year IIP planning period. The capital costs of providing wastewater collection facilities West of the Agua Fria River is $6.8 million over the 11-year IIP planning period.

For more information on the planned wastewater improvements, see Schedule 2, Wastewater Infrastructure Improvements Plan in Appendix A of this Report.

6.4 Buy-In to Existing Wastewater Facilities

The Buy-In value of the existing wastewater system represents the replacement cost new less depreciation of each component of the wastewater system. This RCNLD is determined by escalating depreciated facility asset values based on the ENR construction cost index. Again, the value of any assets that are reserved, were contributed by developers, contributed by other parties, or have contractual restrictions, are excluded from the Buy-In value of facilities available to serve new EDUs. By including the RCNLD of the wastewater facilities available to serve new EDUs, the City can use wastewater expansion revenues to pay annual payments on, or retire debt issued to fund the existing wastewater facilities.

The allocation of the total buy-in value of the existing facilities eligible to be recovered from new customers among the three service areas is shown in Table 21.

Table 21. Buy-In to Existing Wastewater Facilities

Wastewater Utility	RCNLD	Adjustments (1)	Total Buy-In (2)	East of River	West of River	Common to All
Water Reclamation (3)	$ 143,952,024	$ -	$ 143,952,024	$ 122,144,429	$ 21,807,594	$ -
Recharge Facilities (4)	$ 1,551,031	$ -	$ 1,551,031	$ -	$ -	$ 1,551,031
Wastewater Collection System	$ 179,047,438	$ (123,955,125)	$ 55,092,313	$ 47,037,834	$ 9,338,049	$ -
Lift Stations	$ 1,999,449	$ -	$ 1,999,449	$ 1,847,199	$ 152,249	$ -
SCADA System Telemetry	$ 553,521	$ -	$ 553,521	$ 485,279	$ 68,242	$ -
Beardsley Operations Center (5)	$ 106,487	$ (106,487)	$ -	$ -	$ -	$ -
TOTAL	$ 327,209,949	$ (124,061,613)	$ 203,148,337	$ 171,514,741	$ 31,366,135	$ 1,551,031

(1) Adjustments represent assets that were reserved and contributed.

(2) The total buy-in represents the value of all wastewater system facilities eligible to be included in the wastewater expansion fee.

(3) Includes 75% of the City's water reclamation facilities which provide wastewater treatment services.

(4) Since recharge facilities benefit both wastewater service areas equally, 25% of the buy-in value for these facilities is included in the common-to-all category and is allocated 50/50 to these areas. However, in the calculation of the expansion fees for each area, the entire cost and capacity of these facilities is reflected. Since these recharge facilities also benefit water customers, only 25% of the value for these facilities are recovered through the wastewater expansion fee.

(5) The Beardsley Operations Center is recovered through the billing and customer service components of both the water and wastewater expansion fees. As such, the Beardsley Operations Center is excluded from the total buy-in value of the wastewater facilities.

New connections in each service area are required to buy into the portion of capacity in each component of the existing wastewater system that is available to serve new customers as shown in Table 22.

Table 22. Buy-In to Available Existing Wastewater Facilities by Service Area

Wastewater Utility	East of Agua Fria River Total RCNLD	% Available (1)	Available RCNLD
Water Reclamation (2)	$ 122,144,429	28.41%	$ 34,702,676
Recharge Facilities (3)	$ -	0.00%	$ 542,635.28
Wastewater Collection System	$ 47,037,834	27.79%	$ 13,069,798
Lift Stations	$ 1,847,199	27.79%	$ 513,258
SCADA System Telemetry	$ 485,279	0.00%	$ -
TOTAL	$ 171,514,741		$ 48,828,367

Wastewater Utility	West of Agua Fria River Total RCNLD	% Available (1)	Available RCNLD	Common to All
Water Reclamation (2)	$ 21,807,594	66.22%	$ 14,441,474	$ -
Recharge Facilities (3)	$ -	0.00%	$ 542,635	$ 1,551,031
Wastewater Collection System	$ 9,338,049	0.00%	$ 6,183,863	$ -
Lift Stations	$ 152,249	0.00%	$ 100,823	$ -
SCADA System Telemetry	$ 68,242	0.00%	$ -	$ -
TOTAL	$ 31,366,135		$ 21,268,795	$ 1,551,031

(1) The percent available for each component of the wastewater facilities reflects the weighted average of facilities within that component. For example, the percent available for two water reclamation facilities would reflect the weighted value of the portion of facilities values in each treatment plant.

(2) Since the water reclamation facilities also benefit water customers through water recharge capabilities, only 75% of the total RCNLD is included in the wastewater buy-in value.

(3) Since recharge facilities benefit both water service areas equally, the buy-in value of available capacity for these facilities is included in the common-to-all category and is allocated 50/50 to the two areas. However, in the calculation of the expansion fees for each area, the entire costs and capacity available at these facilities is reflected.

6.5 Wastewater Service Units

A service unit creates a nexus between the available wastewater capacity and the demand for wastewater services. An appropriate service unit basis for wastewater impact fees is the typical daily wastewater use for a residential dwelling unit. To determine the typical daily demand for a residential dwelling unit, the demands for various customer types should be standardized using a common unit of measure, or EDU. An EDU represents the equivalent demand of a single-family residential dwelling unit with a 3/4-inch and 1-inch meters. Because single-family residential customers typically use 3/4-inch meters and the City assesses its utility expansion fees to customers based on meter size, the number of EDU or service units currently served by the City can be determined based on the current number of wastewater metered accounts by customer type multiplied by a factor that estimates demand on a single-family equivalent basis. The multiplier for commercial accounts, 3.1 times, is equal to the weighted average of capacity for commercial meters installed between July 1, 2014 and April 30, 2018. The multiplier for multifamily accounts, 11.1, is equal to the average number of units per account for multifamily meters installed between July 1, 2014 and April 30, 2018, or 18.4, adjusted by 60% to recognize the lower use per multifamily unit compared to a single-family residential dwelling

unit. The total current number of metered accounts and the resulting number of EDU are shown in Table 23.

Table 23. Wastewater Service Units and Demand Factors by Meter Size

Wastewater Land Use Assumptions	Fiscal Year Ending June 30, 2017 Total	SFR	MFR	Commercial
Wastewater Accounts (1)				
East of Agua Fria	51,465	49,686	463	1,316
West of Agua Fria	6,394	6,365	0	29
Total	57,859	56,051	463	1,345
EDU Multiplier (2)		1.0	11.1	3.1
Wastewater EDU				
East of Agua Fria	58,905	49,686	5,139	4,080
West of Agua Fria	6,455	6,365	0	90
Total	65,360	56,051	5,139	4,170

(1) From City of Peoria billing records. Represents current active wastewater metered customers as of June 30, 2017.

(2) Single-family equivalent EDU multiplier. The multi-family multiplier of 11.1 reflects developments over a recent 4-year period showing 18 dwelling units per account with water use per multi-family dwelling unit of approximately 60% of single-family use per dwelling unit. The commercial multiplier of 3.1 reflects average of 3.1 EDUs per account over a recent 4-year period.

The typical daily demand is then determined by dividing the average day wastewater flows (10.4 MGD) during FY 2017 by the total number of current service units (65,360). This results in a daily demand, or demand factor of approximately 160 gpd per service unit. A demand factor for each meter size can be determined by multiplying the number of service units per meter size times the 160 gpd demand factor. Table 24 presents the wastewater service units and demand factors by meter size.

Table 24. Wastewater Service Units and Demand Factors by Meter Size

Meter Size	Meter Type	Flow (gpm)	Capacity Ratio	Service Units	Demand Factor (gpd)
3/4"	Displacement	30	1.00	1.00	160
1"	Displacement	50	1.67	1.67	267
1.5"	Displacement	100	3.33	3.33	445
2"	Displacement	160	5.33	5.33	742
3"	Compound	300	10.00	10.00	1,237
4"	Compound	500	16.67	16.67	2,062
6"	Compound	1,000	33.33	33.33	3,437
8"	Compound	2,000	66.67	66.67	5,728

7. WASTEWATER EXPANSION FEES CALCULATION

The wastewater expansion fees for both the East of Agua Fria River and the West of Agua Fria River are calculated based on the same hybrid approach that recognizes that new customers of wastewater utility systems benefit from both facilities already in place and planned capital projects required to expand and extend capacity. The expansion fees for both areas are determined to reflect the average unit cost of the planned system capacity at the end of the capital planning period based on previous and planned investments in the system divided by the total capacity available to new customers in those facilities. This hybrid approach essentially puts the unit cost of capacity for existing and future customers on par. As with both the system buy-in and incremental cost methodologies, local service lines and assets contributed or to be contributed by developers are excluded. Offsets are provided for any outstanding principal on funds borrowed, or anticipated to be borrowed, to construct the facilities that benefit new customers but are repaid through the user rates generated by those new customers.

7.1 Wastewater Expansion Fee (Capacity Component)

The wastewater expansion fees for both service areas are designed to recover the unit cost of capacity, or the cost per gpd for the following wastewater system components:

1. Wastewater Treatment Component: Includes the value of available and planned capacity in 75% of water reclamation facilities providing wastewater treatment services.

2. Water Storage and Recharge Component: Includes the 25% of the value of available and planned capacity in facilities that dispose of wastewater effluent produced at the City's three water reclamation facilities.

3. Wastewater Collection Facilities Component: Includes the value of available and planned capacity in wastewater collection lines and lift stations.

Table 25 presents the calculation of the East of Agua Fria River Area unit cost of capacity and impact fee per EDU. The wastewater capacity expansion fee component is **$1,816.33**.

Table 25. Calculation of East of Agua Fria River Wastewater Expansion Fee

EAST OF AQUA FRIA RIVER Wastewater Treatment Component	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Wastewater Costs	Debt Principal Credit (NPV)	Net Wastewater Costs	Available Capacity (MGD) (2)	Per Unit Cost (GPD)
Beardsley Water Reclamation Facilities (3)	$ 4,720,164	$ 24,750,000	$ 29,470,164	$ (472,943)	$ 28,997,221		
Butler Water Reclamation Facilities (3)	$ 29,982,512	$ -	$ 29,982,512	$ (9,585,800)	$ 20,396,712		
Total Water Treatment Component	$ 34,702,676	$ 24,750,000	$ 59,452,676	$ (10,058,743)	$ 49,393,933	5.89	$ 8.386
Underground Storage and Recharge							
Recharge Facilities (4)	$ 1,085,271	$ 2,287,921	$ 3,373,192	$ -	$ 3,373,192		
Total Underground Storage and Recharge	$ 1,085,271	$ 2,287,921	$ 3,373,192	$ -	$ 3,373,192	8.36	$ 0.403
Wastewater Collection Facilities Component (5)							
Wastewater Collection Lines	$ 13,069,798	$ -	$ 13,069,798	$ (1,609,733)	$ 11,460,065		
Lift Stations	$ 513,258	$ 3,120,000	$ 3,633,258	$ -	$ 3,633,258		
Total Wastewater Distribution System	$ 13,583,056	$ 3,120,000	$ 16,703,056	$ (1,609,733)	$ 15,093,323	5.89	$ 2.563
Wastewater Utility Unit Cost (GPD)							**$ 11.352**
Winter Water Demand Factor (3/4-inch Meter)							**160**
Wastewater System Expansion Fee Per 3/4-Inch Residential Meter							**$ 1,816.33**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's wastewater system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each wastewater system component.

(3) Includes 75% of the costs for the available capacity in the Butler WRF and the Beardsley WRF which serve the area east of the Agua Fria River. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(4) Represents 25% of the value for facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(5) The wastewater collection facilities provide collection and pumping capacity to convey wastewater discharge to the Butler and Beardsley WRFs. The capacity for these facilities is limited to the available and planned wastewater treatment capacity of the WRF's that serve the area east of the Agua Fria River. For more information on the existing and planned wastewater collection facilities capacity, see Level of Service Table 4.

Table 26 presents the calculation of the West of Agua Fria River Area unit cost of capacity and impact fee per equivalent demand unit (EDU). The wastewater capacity expansion fee component is $**3,059.67**.

Table 26. Calculation of West of Agua Fria River Wastewater Expansion Fee

WEST OF AQUA FRIA RIVER Wastewater Treatment Component	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Wastewater Costs	Debt Principal Credit (NPV)	Net Wastewater Costs	Available Capacity (MGD) (2)	Per Unit Cost (GPD)
Jomax Water Reclamation Facilities (3)	$ 14,441,474	$ 46,590,000	$ 61,031,474	$ (18,161,403)	$ 42,870,071	2.99	
Total Water Treatment Component	$ 14,441,474	$ 46,590,000	$ 61,031,474	$ (18,161,403)	$ 42,870,071	2.99	$ 14.338
Underground Storage and Recharge							
Recharge Facilities (4)	$ 1,085,271	$ 2,287,921	$ 3,373,192	$ -	$ 3,373,192		
Total Underground Storage and Recharge	$ 1,085,271	$ 2,287,921	$ 3,373,192	$ -	$ 3,373,192	8.36	$ 0.403
Wastewater Collection Facilities Component (5)							
Wastewater Collection Lines	$ 6,183,863	$ 6,816,350	$ 13,000,213	$ -	$ 13,000,213		
Lift Stations	$ 100,823	$ -	$ 100,823	$ -	$ 100,823		
Total Wastewater Distribution System	$ 6,284,686	$ 6,816,350	$ 13,101,036	$ -	$ 13,101,036	2.99	$ 4.382
Wastewater Utility Unit Cost (GPD)							**$ 19.123**
Winter Water Demand Factor (3/4-inch Meter)							**160**
Wastewater System Expansion Fee Per 3/4-Inch Residential Meter							**$ 3,059.67**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's wastewater system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each wastewater system component.

(3) Includes 75% of the costs for the City funded portion of the Jomax WRF which serve the area west of the Agua Fria River. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(4) Represents 25% of the value for facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(5) The wastewater collection facilities provide collection and pumping capacity to convey wastewater discharge to the Jomax WRF. The capacity for these facilities is limited to the available and planned wastewater treatment capacity of the WRF's that serve the area west of the Agua Fria River. For more information on the existing and planned wastewater collection facilities capacity, see Level of Service Table 4.

7.2 Calculation of Billing and Customer Service Component of Wastewater Expansion Fee

The customer service component of the wastewater expansion fee recovers costs related to the Beardsley Operations Building, the new utility billing system, SCADA system, and updates the expansion fees and master plans during the planning period. The wastewater customer service component is calculated separately from the other capacity-related components of the wastewater expansion fees because it would not be equitable to determine the unit costs for these billing and customer service costs by system capacity. Similarly, it would not be appropriate to assess this customer-related component based on meter size since all customers receive an equal benefit regardless of the number of demand units each customer places on the wastewater system. Finally, since the billing and customer service component benefits all customers, this component represents the wastewater expansion fee that will be assessed to the Vistancia service area.

It should be noted that portions of the Beardsley Operations Building and SCADA system serve existing utility customers. As a result, the portion of these projects that will serve new wastewater utility customers is determined based on the portion of new wastewater accounts (17,726) to existing wastewater accounts (57,859).

Table 27 presents the calculation of the billing and collection component of the wastewater expansion fees to be assessed per new customer account.

Table 27. Calculation of Billing and Collection Component of Wastewater Expansion Fee

Wastewater Component (Common to All)	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Wastewater Costs	Debt Principal Credit (NPV)	Net Wastewater Costs	Total Wastewater ERU (2)	Cost Per Account
Beardsley Operations Center	$ 12,623		$ 12,623		$ 12,623	-	
Billing System		$ 850,000	$ 850,000		$ 850,000		
Update Impact Fees		$ 200,000	$ 200,000		$ 200,000		
Integrated Utility Infrastructure Master Plan		$ 280,000	$ 280,000		$ 280,000		
Water/Wastewater Hyrdraulic Model Update		$ 300,000	$ 300,000		$ 300,000		
SCADA		$ 75,000	$ 75,000		$ 75,000		
Total WW Billing and Customer Service Component	$ 12,623	$ 1,705,000	$ 1,717,623	$ -	$ 1,717,623	17,726	**$ 96.90**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's wastewater system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Projected total accounts/ERUs added to the system from 2018 - 2028 for the given area.

7.3 Proposed Wastewater Expansion Fees by Meter Size and Fee Area

The City will continue to assess its wastewater expansion fees to different customers based on the size of the meter needed by the new customers. The maximum wastewater impact fees per meter type that may be adopted by the City, within the three expansion fee service areas based on this study, are presented in Table 28. For comparison purposes, the total current wastewater expansion fee assessed is also presented in Table 28.

Table 28. Proposed Wastewater Expansion Fee by Meter Size and Service Area

Meter Size	EDU	East of Agua Fria River			Current Fee
		Capacity	Customer	Total	
3/4"	1.00	$ 1,816	$ 97	$ 1,913	$ 1,078
1"	1.67	$ 3,027	$ 97	$ 3,124	$ 1,738
1.5"	3.33	$ 6,054	$ 97	$ 6,151	$ 3,389
2"	5.33	$ 9,687	$ 97	$ 9,784	$ 5,369
3"	10.00	$ 18,163	$ 97	$ 18,260	$ 9,991
4"	16.67	$ 30,272	$ 97	$ 30,369	$ 16,593
6"	33.33	$ 60,544	$ 97	$ 60,641	$ 33,097
8"	66.67	$ 121,089	$ 97	$ 121,186	$ 66,107

Meter Size	EDU	West of Agua Fria River			Current Fee
		Capacity	Customer	Total	
3/4"	1.00	$ 3,060	$ 97	$ 3,157	$ 2,239
1"	1.67	$ 5,099	$ 97	$ 5,196	$ 3,660
1.5"	3.33	$ 10,199	$ 97	$ 10,296	$ 7,212
2"	5.33	$ 16,318	$ 97	$ 16,415	$ 11,474
3"	10.00	$ 30,597	$ 97	$ 30,694	$ 21,419
4"	16.67	$ 50,994	$ 97	$ 51,091	$ 35,627
6"	33.33	$ 101,989	$ 97	$ 102,086	$ 71,146
8"	66.67	$ 203,978	$ 97	$ 204,075	$ 142,184

8. WATER RESOURCES INFRASTRUCTURE IMPROVEMENTS PLAN

The purpose of this section is to meet the requirements of a Water Resources IIP as defined in the subject ARS and to provide a basis for the Expansion Fee Study. This IIP has been developed for a 11-year period, FY 2017 to FY 2028.

Water Resources Level of Service

There is one component to the water resource fee which recovers the capital costs for the City to secure surface water rights for the Off-SRP Project area. For the water resources fee, the available portion of the City's existing eligible water rights are based on the total current acre-feet of water rights owned by the City less the current level of service determined based on the annual amount of Off-Project surface water used to meet current customer demands.

The Arizona GMA and AWS were enacted into Arizona law to address groundwater overdraft problems experienced throughout the State and other areas of the Southwestern United States. Under the GMA, in order for development to occur a developer must demonstrate to the Arizona Department of Water Resources (ADWR) that an assured or adequate supply of water exists for the area to be developed. To demonstrate an assured water supply, the developer can obtain its own AWS designation or have its development served by an AWS designated water system. The AWS certification is designed to encourage participating water systems to reduce their reliance on groundwater. The City applied for and received an AWS designation in 1998 by demonstrating a sufficient water supply to meet 100 years of projected demand for the existing population, committed demand, and incremental growth.

As part of demonstrating an assured water supply, the City of Peoria's has developed a program as part of its Water Resources Master Plan to acquire surface water allocations adequate to meet the anticipated demands of future development. These surface water acquisitions have consisted of CAP water reallocations and GRIC Water Rights.

8.1 Surface Water Rights and Level of Service

The City's existing water rights consist of SRP entitlements which are rights to surface water associated with the On-Project lands located in Peoria and water rights that can be used for Off-Project lands located in Peoria. (For more information on the On and Off-Project Lands, see the water resources service area map on page 7.) Because the SRP entitlements are restricted to the On-Project area and there is no cost basis for the SRP surface water rights, the SRP entitlements are not considered in the water rights level of service nor recovered through the water resources fee.

Since the City's current Off-Project customer demands are less than its total water rights capacity to serve that area, a portion of the CAP water currently delivered to the City is recharged into the aquifer and banked as ground water credits that can be used for future demands. Therefore, the annual amount of CAP water that is treated at the City's surface water treatment plants to meet current

demands represents the current level of service for water rights. Conversely, the annual amount that is banked as ground water credits for future use represents the water rights that are available for new customers locating on the Off-Project lands within Peoria.

Based on FY 2017 water recharge data, the City treated and delivered to existing customers approximately 4,353 acre-feet (3.89 MGD) of the total 12,527 acre-feet (11.18 MGD) of CAP surface water eligible to be recovered in the water resources fee.[8] Thus, the available capacity of CAP water resources is 8,174 acre-feet (7.30 MGD), or approximately 65%.

The total current water resources capacity eligible to serve new customers in the Off-Project service area, existing level of service, and available capacity are shown in Table 29.

Table 29. Total Water Resources Capacity and Current Level of Service

	Total Water Rights		Treated		Available for Growth	
Off-Project Eligible Water Rights	**Acre-Feet**	**MGD**	**Acre-Feet**	**MGD**	**Acre-Feet**	**MGD**
Gila River Indian Community Water Rights	7,000	6.25	2,432	2.17	4,568	4.08
Central Arizona Water (CAP) Re-allocation	5,527	4.93	1,921	1.71	3,606	3.22
Total	12,527	11.18	4,353	3.89	8,174	7.30

Planned Water Resources Capital Improvements Benefiting New Customers

In addition to available capacity of existing CAP water rights, the City has plans to purchase an additional 1,289 acre-feet (1.15 MGD) of water rights through the WMAT Settlement for approximately $3.6 million. Also, the City has nearly $7.0 million in outstanding principal and interest lease payments on the GRIC water rights that will be recovered through the water resource fee.

For more information on the planned purchases of WMAT Settlement water rights, see Schedule 1, Water Infrastructure Improvements Plan in Appendix A of this Report. The WMAT Settlement is project UT00234.

[8] The City has an additional 6,336 acre-feet of CAP water obtained through its original CAP water allocation. Since this original allocation has no cost basis, this water resource is excluded from the water resource fee. The overall 65% portion of available CAP water resources was based on the City's total allocation of Off-Project water rights and the amount of the Off-Project water that was treated at the City's surface water treatment plants.

8.2 Buy-In to Existing Water Facilities

The Buy-In value of the existing Off-Project water resources represents the acquisition cost of the GRIC water rights and the CAP Re-allocation water rights. Unlike other water and wastewater facilities buy-in values, the water rights are not escalated to a replacement value. This is because the water rights are not applicable to construction replacement values nor are the water rights depreciated similar to capital assets.

The allocation of the total buy-in value of the existing facilities eligible to be recovered from new customers among the three service areas is shown in Table 30.

Table 30. Buy-In to Existing Water Resources

Off-Project Eligible Water Rights	Total Buy-In	Percent Available	Available Buy-In
Gila River Indian Community Water Rights (1)	$10,927,938	65.3%	$ 7,130,483
Central Arizona Water (CAP) Re-allocation	$ 3,670,364	65.3%	$ 2,394,914
Total	$14,598,302		$ 9,525,397

(1) Excludes the $5,740,000 in remaining principal lease payments on the GRIC water rights. The remaining principal lease payments are recovered through the marginal cost component of the water resources fee.

8.3 Water Service Units

A service unit creates a nexus between the available water capacity and the demand for water services. An appropriate service unit basis for water impact fees is the typical daily water use for a residential dwelling unit. To determine the typical peak daily demand for a residential dwelling unit, the demands for various customer types should be standardized using a common unit of measure, or an EDU. An EDU represents the equivalent demand of a single-family residential dwelling unit with a 3/4-inch or 1-inch meter. Because single-family residential customers typically use 3/4-inch meters and the City assesses its water resources fees to customers based on meter size, the number of EDU or service units currently served by the City can be determined based on the current number of water metered accounts by customer type multiplied by a factor that estimates demand on a single-family equivalent basis. The multiplier for commercial accounts, 3.1 times, is equal to the weighted average of capacity for commercial meters installed between July 1, 2014 and April 30, 2018. The multiplier for multifamily accounts, 11.1, is equal to the average number of units per account for multifamily meters installed between July 1, 2014 and April 30, 2018, or 18.4, adjusted by 60% to recognize the lower use per multifamily unit compared to a single-family residential dwelling unit. The EDU or service units are then allocated between the On and Off-Project areas by the proportion of current demand within those two areas. The total current number of metered accounts and the resulting number of EDU are shown in Table 31.

Table 31. Water Service Units and Demand Factors by Meter Size

Resources	Land Use Assumptions	Fiscal Year Ending June 30, 2017 Total	SFR	MFR	Commercial (1)
	Water Resources Acct. (2)				
	On-SRP Project	28,015	25,328	377	2,310
	Off-SRP Project	28,962	28,008	39	915
	Total	56,977	53,336	416	3,225
	EDU Multiplier (3)		1.0	11.1	3.1
	Water Resources EDU				
	On-SRP Project	36,672	25,328	4,183	7,161
	Off-SRP Project	31,279	28,008	435	2,837
	Total	67,951	53,336	4,618	9,998

(1) Commercial includes all landscape meters although these meters may ultimately be classified SFR, MFR, and/or Commercial.
(2) From City of Peoria billing records. Represents current active water metered customers as of June 30, 2017.
(3) Single-family equivalent EDU multiplier. The multi-family multiplier of 11.1 reflects developments over a recent 4-year period showing 18 dwelling units per account with water use per multi-family dwelling unit of approximately 60% of single-family use per dwelling unit. The commercial multiplier of 3.1 reflects average of 3.1 EDUs per account over a recent 4-year period.

The typical peak daily demand is the same peak daily demand determined for the water system, or a demand factor of 650 gpd per service unit. A demand factor for each meter size can be determined by multiplying the number of service units per meter size times the 650 gpd demand factor. Table 32 presents the water service units and demand factors by meter size.

Table 32. Water Service Units and Demand Factors by Meter Size

Meter Size	Meter Type	Flow (gpm)	Capacity Ratio	Service Units	Demand Factor (gpd)
3/4"	Displacement	30	1.00	1.00	650
1"	Displacement	50	1.67	1.67	1,083
1.5"	Displacement	100	3.33	3.33	1,805
2"	Displacement	160	5.33	5.33	3,008
3"	Compound	300	10.00	10.00	5,013
4"	Compound	500	16.67	16.67	8,355
6"	Compound	1,000	33.33	33.33	13,925
8"	Compound	2,000	66.67	66.67	23,208

9. WATER RESOURCE FEES CALCULATION

The water resource fees for the Off-Project service area are calculated based on the same hybrid approach that recognizes that new customers of the Off-Project service area benefit from both water rights already purchased and planned purchases or remaining lease payments on water rights. The water resource fees are determined to reflect the average unit cost of the water rights acquisitions at the end of the capital planning period based on previous and planned investments in water rights divided by the total capacity available, or unused water rights to serve new customers. This hybrid approach essentially puts the unit cost of capacity for existing and future customers on par. As with both the system buy-in and incremental cost methodologies, water rights contributed or with no cost basis are excluded. No offsets are provided because all debt on the water rights included in the water resource fee calculation will be paid directly through the water resource fee revenues and are not recovered through the City's monthly user rates and charges.

9.1 Water Resource Fee

The water expansion fees for Off-Project service area are designed to recover the unit cost of surface water rights, or the cost per gpd. The surface water rights include:

1. Gila River Indian Community Water Rights
2. White Mountain Apache Tribe Settlement
3. Central Arizona Project Re-allocation Water Rights

Table 33 presents the calculation of the Off-Project service unit cost of capacity and water resource fee per EDU. New customers in the On-Project service area will not be assessed a water resource fee. The water resource expansion fee component is **$1,354.87**.

Table 33. Calculation of Off-Project Water Resource Fee

Off-Project Service Area Water Resources	System Buy-In Costs (1)	Marginal Cost IIP Costs	Total Water Resource Costs	Interest on Lease (NPV)	Net Water Costs	Total Capacity (MGD) (2)	Per Unit Cost (GPD)
Gila River Indian Community Water Rights (3)	$ 7,130,483	$ 3,745,352	$ 10,875,835	$730,860	$ 11,606,695	4.08	$ 2.846
White Mountain Apache Tribe Water Lease (4)	$ -	$ 3,607,382	$ 3,607,382		$ 3,607,382	1.15	$ 3.135
Central Arizona Water (CAP) Re-allocation (5)	$ 2,394,914	$ -	$ 2,394,914		$ 2,394,914	3.22	$ 0.744
Total Water Resources	$ 9,525,397	$ 7,352,734	$ 16,878,130	$ 730,860	$ 17,608,990	8.45	$ 2.084
Water Resource Unit Cost of Capacity (GPD)							$ 2.084
Seasonal Water Demand Factor (3/4-inch Meter)							**650**
Water Resource Expansion Fee Per 3/4-Inch Residential Meter							**$ 1,354.87**

(1) System buy-in costs for water resources represent previous investments to acquire long-term water rights.

(2) Total capacity in MGD represents the daily amount of water rights available to the City through various water rights contracts. Although, water rights allocations are expressed in acre-feet per year the capacities for the water resources component are converted into MGD. One acre-foot equates to 325,851 gallons of water.

(3) Represents a 99-year lease of 7,000 acre-feet of Gila River Indian Community water rights. The City made initial payments of $10,927,938 from FY 2008 through FY 2017. The remaining $6,960,987 in lease payments funded through a General Obligation (GO) Bond Issue in FY 2012. The debt principal credit represents the present value of the remaining principal on the GO Bond Issue.

(4) The City has an agreement is to lease 1,289 AF of water rights from the White Mountain Apache Tribe for a period of 99 years. Agreement is estimated to be finalized in FY2019. Prices are tied to the contract costs for two components of CAP Water as of 2009. These prices will be adjusted for inflation to the date that the agreement is executed. City pays 50% of the total contract cost in the first year, followed by four annual payments on the outstanding balance.

(5) Represents available portion of a $3,670,364 acquisition or re-allocated CAP water in FY 2008.

9.2 Proposed Water Resources Expansion Fees by Meter Size and Fee Area

The City will continue to assess its water resources expansion fees to different customers based on the size of the meter needed by the new customers. The maximum water resources impact fees per meter type that may be adopted by the City within Off-Project water resources service areas based on this study are presented in Table 34. For comparison purposes, the total current water resource fee assessed is also presented in Table 34.

Table 34. Proposed Off-Project Water Resource Fees by Meter Size

Meter Size	EDU	Off-Project Service Area			Current Fee
		Capacity	Customer	Total	
3/4"	1.00	$ 1,355	$ -	$ 1,355	$ 1,074
1"	1.67	$ 2,258	$ -	$ 2,258	$ 1,789
1.5"	3.33	$ 4,516	$ -	$ 4,516	$ 3,579
2"	5.33	$ 7,226	$ -	$ 7,226	$ 5,726
3"	10.00	$ 13,549	$ -	$ 13,549	$ 10,736
4"	16.67	$ 22,581	$ -	$ 22,581	$ 17,894
6"	33.33	$ 45,162	$ -	$ 45,162	$ 35,788
8"	66.67	$ 90,325	$ -	$ 90,325	$ 71,575

10. FORECAST OF EXPANSION FEE REVENUES AND CASH FLOWS

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

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

10.1 Forecast of Water Expansion Fee Revenues and IIP Capital Costs

For water, the forecast of annual water impact fee revenues is based on the forecast of additional 18,988 water EDU to be added during the 11-year IIP planning period. The annual expansion fees are assumed to be adjusted 2.98% annually to reflect escalation in construction costs. The 2.98% escalation factor is the average increase in the ENR construction cost index from 2013 through 2017.

The IIP capital costs include the planned capital projects benefitting new EDUs identified in the IIP and included in the impact fee calculation.

A summary of water impact fee revenues and the 11-year IIP capital cost requirements are presented in Table 35.

Table 35. Summary of Water Expansion Fee Cash Flows

Expansion Fee Revenues	**Total Revenue**
South of Bell Road	**$ 6,899,863**
North of Bell Road	**$ 44,743,428**
West of Agua Fria	**$ 67,437,151**
West of Agua Fria Credits	**$ (22,716,519)**
Total	**96,363,923**

IIP Expansionary Project Capital Costs	**Total IIP Costs**
South of Bell Road	**$ 12,960,919**
North of Bell Road	**$ 68,257,369**
West of Agua Fria	**$ 72,776,659**
Total	**153,994,947**

Debt Issuance Credit	**Total Debt**
South of Bell Road	**$ -**
North of Bell Road	**$ 27,276,939**
West of Agua Fria	**$ 23,380,234**
Total	**50,657,173**

Expansion Fee Cash Flow - Surplus / (Deficit)	**Total Surplus/(Deficit)**
South of Bell Road	**$ (6,061,056)**
North of Bell Road	**$ 3,762,998**
West of Agua Fria	**$ (4,675,793)**
Total	**(6,973,851)**

As Table 35 demonstrates, the forecast of water expansion fee revenue will generate a deficit of approximately $7.0 million during the 11-year IIP planning period. Since the determination of the water expansion fee includes the buy-in value of facilities eligible to serve new customers, the forecast of impact fee revenues will not necessarily equal the capital requirements during the 11-year IIP planning period.

For more information on the annual impact fee revenues and capital requirements of the IIP, see Schedule 3, Forecast of Water EDUs, Expansion Fee Revenues, and Cash Flow in Appendix A.

10.2 Forecast of Wastewater Expansion Fee Revenues and IIP Capital Costs

For wastewater, the forecast of annual wastewater expansion fee revenues is based on the forecast of additional 19,487 wastewater EDU to be added during the 11-year IIP planning period. The annual impact fees are assumed to be adjusted 2.98% annually to reflect escalation in construction costs. The 2.98% escalation factor is the average increase in the ENR construction cost index from 2013 through 2017.

The IIP capital costs include the planned capital projects benefitting new EDUs identified in the IIP and included in the impact fee calculation.

The forecast of wastewater impact fee revenues and 11-year IIP capital cost requirements are presented in Table 36.

Table 36. Summary of Wastewater Expansion Fee Cash Flows

Expansion Fee Revenues	Total Revenue
East of Agua Fria River	$ 21,645,764
West of Agua Fria	$ 35,653,858
West of Agua Fria Credits	$ (11,187,726)
Total	$ 46,111,896

IIP Expansionary Project Capital Costs	Total IIP Costs
East of Agua Fria River	$ 29,413,611
West of Agua Fria	$ 55,281,178
Total	84,694,789

Debt Issuance Offsets	Total Debt
East of Agua Fria River	$ -
West of Agua Fria	$ 30,000,000
Total	30,000,000

Expansion Fee Cash Flow - Surplus / (Deficit)	Total Surplus/(Deficit)
East of Agua Fria River	$ (7,767,847)
West of Agua Fria	$ (815,046)
Total	(8,582,893)

As Table 36 demonstrates, the forecast of wastewater impact fee revenue will generate a deficit of approximately $8.6 million during the 11-year IIP planning period. Since the determination of the wastewater impact fee includes the buy-in value of facilities eligible to serve new customers, the forecast of impact fee revenues will not necessarily equal the capital requirements during the 11-year IIP planning period.

For more information on the annual impact fee revenues and capital requirements of the IIP, see Schedule 4, Forecast of Wastewater EDUs, Expansion Fee Revenues, and Cash Flow in Appendix A.

10.3 Forecast of Water Resource Fee Revenues and IIP Capital Costs

For water resources, the forecast of annual water resource fee revenues is based on the forecast of additional 17,400 Off-Project water resource EDU to be added during the 11-year IIP planning period. The annual impact fees are assumed to be adjusted 2.98% annually to reflect escalation in construction costs. The 2.98% escalation factor is the average increase in the ENR construction cost index from 2013 through 2017.

The IIP capital costs include the planned capital projects benefitting new EDUs identified in the IIP plus the principal and interest payments on lease payments to purchase GRIC water rights benefitting growth and included in the water resource fee calculation.

The forecast of water resource fee revenues and 11-year IIP capital cost requirements are presented in Table 37.

Table 37. Summary of Water Resource Fee Cash Flows

Water Resource Fee Revenues	Total Revenue
On-Project	$ -
Off-Project	$ 27,740,765
Total	$ 27,740,765

IIP Project Capital Costs	Total IIP Costs
On-Project	$ -
Off-Project	$ 10,568,369
Total	$ 10,568,369

Resource Fee Cash Flow - Surplus / (Deficit)	Total Surplus/(Deficit)
On-Project	$ -
Off-Project	$ 17,172,395
Total	$ 17,172,395

As Table 37 demonstrates, the forecast of water resource fee revenue will generate a surplus of approximately $17.2 million during the 11-year IIP planning period. Since the determination of the water resource fee includes the buy-in value of previously purchased water rights to serve new customers. The forecast of water resource fee revenues will not necessarily equal the capital requirements during the 11-year IIP planning period.

For more information on the annual impact fee revenues and capital requirements of the IIP, see Schedule 5, Forecast of Water Resource EDUs, Expansion Fee Revenues, and Cash Flow in Appendix A.

APPENDIX A

Schedule 1
Peoria Utility Economic Model
Water Capital Improvements Plan

			1	2	3	4	5	6	7	8	9	10	11	12	
			Fiscal Year Ending June, 30												Total
Water Utility Capital Projects		Exp	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2017-2028
00070	Update Water & Wastewater Expansion Fees	100%		50,000			50,000			50,000			50,000		200,000
00117	Wells (New Wells)	100%	2,324,262	155,818	1,128,800	206,500	1,664,400				1,128,800	206,500	1,664,400		8,479,480
00160	Utility Billing System	65%							850,000						850,000
00170	West Agua Fria Water Lines	100%	792,987	184,830	160,200	310,800	584,250	235,500	1,272,000						3,540,567
00233	Ln Mountain Parkway Oversizing El Mirage-Loop 303	100%	701,901	3,236,382											3,938,283
00234	White Mtn. Apache Tribe Water Right Purchase	100%		1,726,020	509,176	483,286	457,395	431,505							3,607,382
00245	Agua Fria West Booster/PRV - Phase I	100%	44,403	4,147,514	757,500										4,949,417
00269	Lake Plsnt Pkwy 24-inch Waterline; Loop 303- LPWTP	100%											1,685,749	4,796,265	6,482,014
00271	Integrated Utility Infrastructure Master Plan	100%						168,000	112,000						280,000
00272	Wellhead Water Quality Mitigation	100%	267,435	3,854,913											4,122,347
00284	Agua Fria Lift Station/Water Campus Land Purchase	100%				1,080,000									1,080,000
00285	Jomax In-line Booster Station Upgrades	100%		50,000	853,160	2,576,840									3,480,000
00304	Integrated Technology/Security/SCADA Master Plan	100%			225,000										225,000
00309	Butler Recharge Wells (9)	100%	1,602,352	2,111,082	468,081	766,290	196,290	1,145,040							6,289,135
00310	Expansion of Reclaimed System in Old Town Area	50%					1,019,435								1,019,435
00312	Desert Harbor/Arrowhead Shores Well Mixing	100%	132,358	2,363,260	1,000,000										3,495,618
00314	Beardsley WRF Expansion to 6 MGD	100%		629,936	61,987	54,821	54,821	3,857,259	3,591,176						8,250,000
00327	ADOT-Sports Complex Well Mixing	100%					133,640	220,226	2,874,514						3,228,380
00334	Pyramid Peak WTP Expansion - 13 MGD	100%	32,101		29,150,702	24,172,638									53,355,441
00336	Westland Road Reservoir and Booster Station	100%	12,227	2,320,466	-										2,332,693
00388	Jomax WRF Expansion - 1.5 MGD	100%			-			1,250,000		3,750,000	8,750,000				13,750,000
00388	Jomax WRF Expansion - Admin. Bldg.	100%			175,000	493,000	1,118,000								1,786,000
00428	Water/Wastewater Hyrdraulic Model Update	100%		100,000	100,000					100,000					300,000
00430	El Mirage Rd. Waterline Upsizing	100%					1,695,790								1,695,790
00439	Lk. Pleasant Pkwy - 16in Waterline 87th-99th Ave.	100%			226,640	2,357,560									2,584,200
00440	67th Ave. 16in Waterline PinnPk to Hatfield	100%					153,975	-	1,307,500						1,461,475
00441	Weedville Well Rehabilitation	100%			861,600	186,700	1,753,000								2,801,300
00442	Sweetwater Well Rehabiliation	100%					385,950	2,243,600							2,629,550
00445	Lk. Pleasant Hghts. Mystic Water Oversizing Ph.A-1 to C-1	100%			261,097	-	69,930	-	94,538						425,565
TBD	Addt'l 1MGD Recharge well assoc. w/Jomax 1.5MGD Expansion	100%									1,312,500				1,312,500
TBD	Agua Fria West Booster/PRV - Phase II	100%									$5,150,000				5,150,000
TBD	Westland Road Water Campus Ph.2 (City OS portion)	100%									$8,410,000				8,410,000
TBD	Jomax Waterline L303-El Mirage	100%				808,000							2,000,000		2,808,000
															-
Total Water Utility Capital Projects			**5,910,026**	**20,930,220**	**35,938,943**	**33,496,435**	**9,336,876**	**9,551,130**	**10,101,728**	**3,900,000**	**24,751,300**	**206,500**	**5,400,149**	**4,796,265**	**164,319,572**
South of Bell Road			$600,296	$1,937,825	$1,680,127	$442,130	$2,510,426	$2,929,506	$2,958,145	$52,501	$437,500	$0	$2,501	$0	$13,550,956
North of Bell Road			$3,279,468	$6,952,901	$18,391,880	$18,357,876	$2,134,881	$4,322,939	$5,245,832	$76,349	$4,398,800	$206,500	$3,376,498	$4,796,265	$71,540,189
West Agua Fria			$2,030,261	$10,313,475	$15,357,760	$14,213,143	$3,724,456	$1,867,180	$1,600,251	$3,771,150	$19,915,000	$0	$2,021,150	$0	$74,813,827
Total			$5,910,026	$19,204,200	$35,429,767	$33,013,149	$8,369,764	$9,119,625	$9,804,228	$3,900,000	$24,751,300	$206,500	$5,400,149	$4,796,265	$159,904,972
Water Resources			-	1,726,020	509,176	483,286	457,395	431,505	-	-	-	-	-	-	3,607,382
GRIC Lease Payments			$701,900	$697,800	$700,525	$699,825	$700,900	$698,900	$696,100	$692,500	$693,000	$692,094	$689,344	$0	7,662,887
Non-Expansionary Capital Projects			0	0	-	(0)	509,718	-	297,500	-	-	-	-	-	807,218

Schedule 2
Peoria Utility Economic Model
Wastewater Capital Improvements Plan

			1	2	3	4	5	6	7	8	9	10	11	12	
			Fiscal Year Ending June, 30												Total
Wastewater Utility Capital Projects			2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2017-2028
00070	Update Water & Wastewater Expansion Fees	100%		50,000			50,000			50,000			50,000		200,000
00160	Utility Billing System	65%							850,000						850,000
00171	West Agua Fria Wastewater Lines	100%		954,525	767,490	658,425	328,250								2,708,690
00271	Integrated Utility Infrastructure Master Plan	100%						168,000	112,000						280,000
00284	Agua Fria Lift Station/Water Campus Land Purchase	100%		200,000		2,920,000									3,120,000
00304	Integrated Technology/Security/SCADA Master Plan	100%			75,000										75,000
00309	Butler Recharge Wells (9)	100%	67,597	584,845	156,027	255,030	65,430	381,680							1,510,609
00310	Expansion of Reclaimed System in Old Town Area	50%					339,812								339,812
00314	Beardsley WRF Expansion to 6 MGD	100%		1,871,131	186,128	164,610	164,610	11,580,779	10,782,741						24,750,000
00388	Jomax Administration Bldg. [part of WRF Expansion]	100%			525,000	2,445,000	2,370,000								5,340,000
00388	Jomax WRF 1.5MGD Expansion	100%						3,750,000		12,500,000	25,000,000				41,250,000
00404	Dixileta 21in. Sewer Extension	100%	39,479	1,192,704											1,232,183
00428	Water/Wastewater Hyrdraulic Model Update	100%		100,000	100,000					100,000					300,000
00432	El Mirage Road Sewer Infrastructure Upsizing	100%				505,785	303,000								808,785
00446	Lk. Plsnt Hghts Mystic - Sewerlines Oversizing Ph. A-1 to C-1	100%							66,692						66,692
TBD	Addt'l 1MGD Recharge well assoc. w/Jomax 1.5MGD Expansion	100%									437,500				437,500
TBD	Jomax Rd. Sewerline-L303 to El Mirage Rd.	100%											2,000,000		2,000,000
															-
															-
Total Wastewater Utility Capital Projects			**107,076**	**4,953,205**	**1,809,645**	**6,948,850**	**3,621,102**	**15,880,459**	**11,811,433**	**12,650,000**	**25,437,500**	**-**	**2,050,000**	**-**	**85,269,271**
East of Agua Fria River			$ 22,532	$ 2,357,744	$ 345,079	$ 3,169,620	$ 273,611	$ 11,810,670	$ 11,188,815	$ 91,665	$ 145,833	$ -	$ 30,555	$ -	29,436,124
West of Agua Fria River			$ 58,064	$ 2,246,492	$ 1,059,278	$ 2,187,177	$ 1,645,469	$ 3,903,642	$ 171,176	$ 12,523,586	$ 25,145,833	$ -	$ 2,007,862	$ -	50,948,579
Vistancia			$ 26,480	$ 348,969	$ 405,288	$ 1,592,053	$ 1,532,116	$ 166,147	$ 153,942	$ 34,750	$ 145,833	$ -	$ 11,583	$ -	4,417,162
Total			$ 107,076	$ 4,953,205	$ 1,809,645	$ 6,948,850	$ 3,451,196	$ 15,880,459	$ 11,513,933	$ 12,650,000	$ 25,437,500	$ -	$ 2,050,000	$ -	$ 84,801,865

Schedule 3
Peoria Water and Wastewater Expansion Fee Study
Projection of Water EDUs, Expansion Fee Revenues, and Cash Flow

Water Equivalent Dwelling Units (EDU)	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**Total Added**
South of Bell Road	36,672	37,057	37,342	37,688	37,906	38,089	38,170	38,191	38,216	38,231	38,246	38,261	**1,589**
North of Bell Road	23,868	24,433	25,066	25,782	26,540	27,385	28,161	28,964	29,717	30,376	30,989	31,577	**7,709**
West of Agua Fria	7,411	7,900	8,525	9,205	9,983	10,681	11,669	12,709	13,810	14,827	16,014	17,102	**9,691**
Total	67,951	69,390	70,933	72,675	74,429	76,155	77,999	79,864	81,743	83,434	85,248	86,939	**18,988**
Annual EDU Added													
South of Bell Road		385	285	346	218	183	81	21	25	15	15	15	**1,589**
North of Bell Road		565	634	716	758	845	776	803	753	659	613	588	**7,709**
West of Agua Fria		489	625	680	778	698	987	1,040	1,101	1,017	1,186	1,088	**9,691**
Total		1,439	1,543	1,742	1,754	1,726	1,844	1,864	1,879	1,691	1,814	1,691	**18,988**
Water Expansion Fees	**CCI Index** (1)												
South of Bell Road	2.98%	$ 4,066	$ 4,187	$ 4,312	$ 4,440	$ 4,573	$ 4,709	$ 4,849	$ 4,994	$ 5,143	$ 5,296	$ 5,454	
North of Bell Road	2.98%	$ 4,995	$ 5,144	$ 5,298	$ 5,456	$ 5,618	$ 5,786	$ 5,958	$ 6,136	$ 6,319	$ 6,507	$ 6,701	
West of Agua Fria	2.98%	$ 5,855	$ 6,030	$ 6,209	$ 6,395	$ 6,585	$ 6,782	$ 6,984	$ 7,192	$ 7,407	$ 7,627	$ 7,855	
Expansion Fee Revenues													**Total Revenue**
South of Bell Road		$ 1,565,511	$ 1,191,280	$ 1,491,822	$ 967,961	$ 836,783	$ 381,423	$ 101,836	$ 124,848	$ 77,143	$ 79,443	$ 81,812	**$ 6,899,863**
North of Bell Road		$ 2,820,019	$ 3,259,060	$ 3,793,118	$ 4,135,357	$ 4,747,457	$ 4,489,795	$ 4,784,546	$ 4,620,411	$ 4,164,200	$ 3,989,028	$ 3,940,437	**$ 44,743,428**
West of Agua Fria		$ 2,863,134	$ 3,768,541	$ 4,222,432	$ 4,977,139	$ 4,596,530	$ 6,695,745	$ 7,265,543	$ 7,920,905	$ 7,532,470	$ 9,048,647	$ 8,546,066	**$ 67,437,151**
West of Agua Fria Credits		$ (1,631,685)	$ (2,013,288)	$ (1,943,664)	$ (2,335,075)	$ (1,828,548)	$ (2,444,003)	$ (2,325,678)	$ (2,516,235)	$ (1,837,030)	$ (2,229,056)	$ (1,612,256)	**$ (22,716,519)**
Total		5,616,978	6,205,593	7,563,708	7,745,383	8,352,222	9,122,960	9,826,247	10,149,929	9,936,782	10,888,062	10,956,059	**96,363,923**
IIP Expansionary Project Capital Costs													**Total IIP Costs**
South of Bell Road		$ 1,938,506	$ 1,680,127	$ 442,130	$ 2,511,108	$ 2,929,506	$ 2,965,677	$ 53,182	$ 437,500	$ -	$ 3,182	$ -	**$ 12,960,919**
North of Bell Road		$ 6,952,678	$ 18,391,880	$ 18,357,876	$ 2,134,658	$ 4,322,939	$ 5,243,371	$ 76,126	$ 4,398,800	$ 206,500	$ 3,376,275	$ 4,796,265	**$ 68,257,369**
West of Agua Fria		$ 10,313,016	$ 15,357,760	$ 14,213,143	$ 3,723,997	$ 1,867,180	$ 1,595,179	$ 3,770,692	$ 19,915,000	$ -	$ 2,020,692	$ -	**$ 72,776,659**
Total		$ 19,204,200	$ 35,429,767	$ 33,013,149	$ 8,369,764	$ 9,119,625	$ 9,804,228	$ 3,900,000	$ 24,751,300	$ 206,500	$ 5,400,149	$ 4,796,265	**153,994,947**
Debt Issuance Credit													**Total Debt**
South of Bell Road		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
North of Bell Road		$ -	$ 14,911,705	$ 12,365,234	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 27,276,939**
West of Agua Fria		$ -	$ 12,781,462	$ 10,598,772	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 23,380,234**
Total		$ -	$ 27,693,167	$ 22,964,006	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**50,657,173**
Expansion Fee Cash Flow - Surplus / (Deficit)													**Total Surplus/(Deficit)**
South of Bell Road		$ (372,996)	$ (488,847)	$ 1,049,692	$ (1,543,147)	$ (2,092,723)	$ (2,584,254)	$ 48,654	$ (312,652)	$ 77,143	$ 76,261	$ 81,812	**$ (6,061,056)**
North of Bell Road		$ (4,132,659)	$ (221,114)	$ (2,199,524)	$ 2,000,699	$ 424,517	$ (753,576)	$ 4,708,420	$ 221,611	$ 3,957,700	$ 612,752	$ (855,828)	**$ 3,762,998**
West of Agua Fria		$ (9,081,567)	$ (821,045)	$ (1,335,603)	$ (1,081,933)	$ 900,802	$ 2,656,562	$ 1,169,173	$ (14,510,330)	$ 5,695,440	$ 4,798,900	$ 6,933,810	**$ (4,675,793)**
Total		(13,587,222)	(1,531,007)	(2,485,435)	(624,381)	(767,404)	(681,268)	5,926,247	(14,601,371)	9,730,282	5,487,913	6,159,794	**(6,973,851)**

(1) The Construction Cost Index factor represents the average increase in ENR construction costs indices over the past five years.

Schedule 4
Peoria Water and Wastewater Expansion Fee Study
Projection of Wastewater EDUs, Expansion Fee Revenues, and Cash Flow

Wastewater Equivalent Dwelling Units (EDU)		**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**Total Added**
East of Agua Fria River		58,905	60,266	61,398	62,592	63,675	64,690	65,579	66,380	67,126	67,759	68,338	68,889	**9,985**
West of Agua Fria		6,455	6,939	7,559	8,234	9,007	9,700	10,618	11,623	12,698	13,698	14,876	15,958	**9,503**
Total		65,360	67,205	68,957	70,826	72,683	74,391	76,197	78,003	79,825	81,458	83,214	84,847	**19,487**
Annual EDU Added														
East of Agua Fria River			1,362	1,132	1,194	1,083	1,015	889	801	746	633	579	551	**9,985**
West of Agua Fria			484	620	675	773	693	917	1,005	1,075	1,000	1,177	1,082	**9,503**
Total			1,846	1,752	1,869	1,856	1,708	1,806	1,806	1,821	1,633	1,756	1,633	**19,487**
Wastewater Expansion Fees	**CCI Index** (1)													
East of Agua Fria River	2.98%		$ 1,913	$ 1,970	$ 2,029	$ 2,090	$ 2,152	$ 2,216	$ 2,282	$ 2,350	$ 2,420	$ 2,492	$ 2,567	
West of Agua Fria	2.98%		$ 3,157	$ 3,251	$ 3,348	$ 3,447	$ 3,550	$ 3,656	$ 3,765	$ 3,877	$ 3,993	$ 4,112	$ 4,235	
Expansion Fee Revenues														**Total Revenue**
East of Agua Fria River			$ 2,605,058	$ 2,230,490	$ 2,422,663	$ 2,262,964	$ 2,184,116	$ 1,970,025	$ 1,827,945	$ 1,753,193	$ 1,531,987	$ 1,443,080	$ 1,414,243	**$ 21,645,764**
West of Agua Fria			$ 1,527,778	$ 2,015,427	$ 2,259,642	$ 2,666,017	$ 2,460,311	$ 3,353,855	$ 3,785,190	$ 4,169,473	$ 3,992,993	$ 4,841,260	$ 4,581,912	**$ 35,653,858**
West of Agua Fria Credits			$ (841,640)	$ (1,044,894)	$ (979,226)	$ (1,201,419)	$ (906,147)	$ (1,234,717)	$ (1,158,030)	$ (1,265,724)	$ (854,085)	$ (1,033,467)	$ (668,376)	**$ (11,187,726)**
Total			$ 3,291,196	$ 3,201,023	$ 3,703,079	$ 3,727,562	$ 3,738,279	$ 4,089,163	$ 4,455,104	$ 4,656,943	$ 4,670,895	$ 5,250,873	$ 5,327,778	**$ 46,111,896**
IIP Expansionary Project Capital Costs														**Total IIP Costs**
East of Agua Fria River			$ 2,357,746	$ 345,082	$ 3,169,620	$ 273,611	$ 11,810,672	$ 11,188,824	$ 91,667	$ 145,833	$ -	$ 30,556	$ -	**$ 29,413,611**
West of Agua Fria			$ 2,595,459	$ 1,464,564	$ 3,779,230	$ 3,177,585	$ 4,069,787	$ 325,109	$ 12,558,333	$ 25,291,667	$ -	$ 2,019,444	$ -	**$ 55,281,178**
Total			$ 4,953,205	$ 1,809,645	$ 6,948,850	$ 3,451,196	$ 15,880,459	$ 11,513,933	$ 12,650,000	$ 25,437,500	$ -	$ 2,050,000	$ -	**84,694,789**
Debt Issuance Offsets														**Total Debt**
East of Agua Fria River			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
West of Agua Fria			$ -	$ -	$ -	$ -	$ 2,727,273	$ -	$ 9,090,909	$ 18,181,818	$ -	$ -	$ -	**$ 30,000,000**
Total			$ -	$ -	$ -	$ -	$ 2,727,273	$ -	$ 9,090,909	$ 18,181,818	$ -	$ -	$ -	**30,000,000**
Expansion Fee Cash Flow - Surplus / (Deficit)														**Total Surplus/(Deficit)**
East of Agua Fria River			$ 247,311	$ 1,885,408	$ (746,957)	$ 1,989,353	$ (9,626,556)	$ (9,218,799)	$ 1,736,278	$ 1,607,360	$ 1,531,987	$ 1,412,525	$ 1,414,243	**$ (7,767,847)**
West of Agua Fria			$ (1,909,321)	$ (494,031)	$ (2,498,815)	$ (1,712,987)	$ 211,650	$ 1,794,029	$ (840,264)	$ (4,206,099)	$ 3,138,908	$ 1,788,348	$ 3,913,535	**$ (815,046)**
Total			(1,662,009)	1,391,378	(3,245,772)	276,366	(9,414,906)	(7,424,770)	896,014	(2,598,739)	4,670,895	3,200,873	5,327,778	**(8,582,893)**

(1) The Construction Cost Index factor represents the average increase in ENR construction costs indices over the past five years.

Schedule 5
Peoria Water and Wastewater Expansion Fee Study
Projection of Water Resources EDUs, Expansion Fee Revenues, and Cash Flow

Water Resource Equivalent Dwelling Units (EDU)	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**Total Added**
On-Project	36,672	37,057	37,342	37,688	37,906	38,089	38,170	38,191	38,216	38,231	38,246	38,261	**1,589**
Off-Project	31,279	32,333	33,591	34,987	36,524	38,067	39,830	41,673	43,528	45,204	47,003	48,679	**17,400**
Total	67,951	69,390	70,933	72,675	74,429	76,155	77,999	79,864	81,743	83,434	85,248	86,939	**18,988**
Annual EDU Added													
On-Project		385	285	346	218	183	81	21	25	15	15	15	**1,589**
Off-Project		1,054	1,259	1,396	1,536	1,543	1,763	1,843	1,854	1,676	1,799	1,676	**17,400**
Total		1,439	1,543	1,742	1,754	1,726	1,844	1,864	1,879	1,691	1,814	1,691	**18,988**

Water Resource Fees	**CCI Index** (1)												
On-Project	2.98%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Off-Project	2.98%	$ 1,355	$ 1,395	$ 1,437	$ 1,480	$ 1,524	$ 1,569	$ 1,616	$ 1,664	$ 1,714	$ 1,765	$ 1,818	

Water Resource Fee Revenues												**Total Revenue**
On-Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Off-Project	$ 1,427,404	$ 1,755,997	$ 2,005,880	$ 2,273,346	$ 2,351,291	$ 2,767,167	$ 2,978,964	$ 3,086,098	$ 2,872,476	$ 3,175,809	$ 3,046,332	**$ 27,740,765**
Total	$ 1,427,404	$ 1,755,997	$ 2,005,880	$ 2,273,346	$ 2,351,291	$ 2,767,167	$ 2,978,964	$ 3,086,098	$ 2,872,476	$ 3,175,809	$ 3,046,332	**$ 27,740,765**

IIP Project Capital Costs												**Total IIP Costs**
On-Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Off-Project	$ 2,423,820	$ 1,209,701	$ 1,183,111	$ 1,158,295	$ 1,130,405	$ 696,100	$ 692,500	$ 693,000	$ 692,094	$ 689,344	$ -	**$ 10,568,369**
Total	$ 2,423,820	$ 1,209,701	$ 1,183,111	$ 1,158,295	$ 1,130,405	$ 696,100	$ 692,500	$ 693,000	$ 692,094	$ 689,344	$ -	**$ 10,568,369**

Resource Fee Cash Flow - Surplus / (Deficit)												**Total Surplus/(Deficit)**
On-Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Off-Project	$ (996,416)	$ 546,296	$ 822,769	$ 1,115,051	$ 1,220,886	$ 2,071,067	$ 2,286,464	$ 2,393,098	$ 2,180,382	$ 2,486,465	$ 3,046,332	**$ 17,172,395**
Total	$ (996,416)	$ 546,296	$ 822,769	$ 1,115,051	$ 1,220,886	$ 2,071,067	$ 2,286,464	$ 2,393,098	$ 2,180,382	$ 2,486,465	$ 3,046,332	**$ 17,172,395**

(1) The Construction Cost Index factor represents the average increase in ENR construction costs indices over the past five years.

Schedule 6
Water Expansion Fee
Peoria Water, Wastewater, and Water Resource Fee Expansion Fee Study
Calculation of Water System Expansion Fee

SOUTH OF BELL ROAD AREA	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Water Costs	Debt Principal Credit (NPV)	Net Water Costs	Available Capacity (MGD) (2)	Per Unit Cost (GPD)
Water Treatment Component							
Greenway Water Treatment Plant (3)	$ 2,209,611	$ -	$ 2,209,611	$ (61,265)	$ 2,148,346	1.40	
Butler Water Reclamation Facility (4)	$ 8,659,333	$ -	$ 8,659,333	$ (2,768,502)	$ 5,890,831	2.53	
Well Facilities (5)	$ 8,560,660	$ 10,407,039	$ 18,967,699	$ -	$ 18,967,699	4.40	
Total Water Treatment Component	$ 19,429,604	$ 10,407,039	$ 29,836,643	$ (2,829,767)	$ 27,006,877	8.33	$ 3.242
Underground Storage and Recharge							
Recharge Facilities (6)	$ 3,255,812	$ 8,621,070	$ 11,876,882		$ 11,876,882		
Total Underground Storage and Recharge	$ 3,255,812	$ 8,621,070	$ 11,876,882	$ -	$ 11,876,882	8.36	$ 1.421
Water Distribution System Component (7)							
Water Distribution Lines	$ 10,277,699	$ -	$ 10,277,699	$ (2,353,340)	$ 7,924,358		
Storage Facitlities	$ 3,300,190	$ -	$ 3,300,190	$ -	$ 3,300,190		
Pumping Stations	$ 184,738	$ -	$ 184,738	$ -	$ 184,738		
Total Water Distribution System	$ 13,762,627	$ -	$ 13,762,627	$ (2,353,340)	$ 11,409,287	8.09	$ 1.410
Water Utility Unit Cost (GPD)							**$ 6.073**
Seasonal Water Demand Factor (3/4-inch Meter)							**650**
Water System Expansion Fee Per 3/4-Inch Residential Meter							**$ 3,947.51**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's water system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each water system component. Available well facilities capacity represents current capacity of wells used to meet peak month demands.

(3) Includes available capacity in the City's Greenway WTP which serves customers located south of Bell Road. For more information on the existing and planned water treatment capacity south of Bell Road, see Level of Service Table 1.

(4) Includes 25% of the costs for the Butler WRF which provides effluent for water recharge south of Bell Road. For more information on the existing and planned WRF capacity south of Bell Road, see Level of Service Table 2.

(5) Well facilities include only potable water producing wells. The water producing wells in pressure zones 1 & 2 serve the area South of Bell Road. Only well capacity that is anticipated to provide peaking capacity is included for these facilities as the remainder of wells are used to augment the Greenway WTP for redundancy and emergency purposes in the area south of Bell Road.

(6) Represents 75% of the value of facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities and these facilities benefit areas south and north of Bell Road, including the West Agua Fria area. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(7) The water distribution system facilities provide distribution, storage, and pumping capacity to convey potable water produced at the City's Greenway WTP and potable water wells in pressure zones 1 & 2. The capacity for these facilities is limited to the available potable water capacity of the Greenway WTP plus the eventual 8 MGD of capacity at the Greenway WTP. Although the Greenway WTP expansion is not included in the IIP planning period the distribution lines are sized to meet that eventual capacity. For more information on the existing and planned water distribution system capacity, see Level of Service Table 2.

Schedule 7
Water Expansion Fee
Peoria Water, Wastewater, and Solid Waste Expansion Fee Study
Calculation of Water System Expansion Fee

NORTH OF BELL ROAD AREA Water Treatment Component	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Water Costs	Debt Principal Credit (NPV)	Net Water Costs	Available Capacity (MGD) (2)	Per Unit Cost (GPD)
Pyramid Peak Water Treatment Capacity (3)	$ 1,201,449	$ 29,809,853	$ 31,011,302	$ (19,452,557)	$ 11,558,745	7.91	
Beardsley Water Reclamation Facility (4)	$ 1,459,845	$ 8,250,000	$ 9,709,845	$ (146,271)	$ 9,563,574	2.90	
Well Facilities (5)	$ 12,863,158	$ 14,349,636	$ 27,212,795	$ (5,415,866)	$ 21,796,929	6.30	
Total Water Treatment Component	$ 15,524,452	$ 52,409,489	$ 67,933,941	$ (25,014,694)	$ 42,919,247	17.11	$ 2.508
Underground Storage and Recharge							
Recharge Facilities (6)	$ 3,255,812	$ 8,621,070	$ 11,876,882		$ 11,876,882		
Total Underground Storage and Recharge	$ 3,255,812	$ 8,621,070	$ 11,876,882	$ -	$ 11,876,882	8.36	$ 1.421
Water Distribution System Component (7)							
Water Distribution Lines	$ 9,697,259	$ 15,627,863	$ 25,325,122	$ (2,068,044)	$ 23,257,079		
Storage Facitlities	$ 1,172,393	$ -	$ 1,172,393	$ (58,940)	$ 1,113,453		
Pumping Stations	$ 42,453	$ -	$ 42,453	$ -	$ 42,453		
Total Water Distribution System	$ 10,912,105	$ 15,627,863	$ 26,539,968	$ (2,126,984)	$ 24,412,985	6.83	$ 3.574
Water Utility Unit Cost (GPD)							**$ 7.503**
Seasonal Water Demand Factor (3/4-inch Meter)							**650**
Water System Expansion Fee Per 3/4-Inch Residential Meter							**$ 4,877.27**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's water system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each water system component. Available well facilities capacity represents current capacity of wells used to meet peak month demands adjusted down to recognize reduced need once for planned treatment plant expansion is operational.

(3) Northern Peoria Water Treatment Capacity. This facility (or facilties) will serve the area north of Bell Road. For more information on the existing and planned water treatment capacity north of Bell Road, see Level of Service Table 1

(4) Includes 25% of the costs for the Beardsley WRF which provides effluent for water recharge north of Bell Road. For more information on the existing and planned WRF capacity in the area north of Bell Road, see Level of Service Table 2.

(5) Well facilities include only potable water producing wells. The water producing wells in pressure zones 3 & 5 serve the area north of Bell Road. Only well capacity that is anticipated to provide peaking capacity is included for these facilities as the remainder of wells are used to augment the WTPs for redundancy and emergency purposes in the area north of Bell Road.

(6) Represents 75% of the value of facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities and these facilities benefit areas south and north of Bell Road, including the West Agua Fria area. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(7) The water distribution system facilities provide distribution, storage, and pumping capacity to convey potable water produced at the Pyramid Peak WTP a northern Peoria treatment facility, and potable water wells in pressure zones 3 & 5. The capacity for these facilities is limited to the available distribution capacity to serve the Pyramid Peak WTP and the additional treatment capacity to be acquired or constructed in the northern area of the City. For more information on the existing and planned water distribution system capacity, see Level of Service Table 2.

Schedule 8
Water Expansion Fee
Peoria Water, Wastewater, and Solid Waste Expansion Fee Study
Calculation of Water System Expansion Fee

WEST AGUA FRIA AREA **Water Treatment Component**	**System Buy-In Replacement Costs** (1)	**Marginal Cost IIP Costs**	**Total Water Costs**	**Debt Principal Credit (NPV)**	**Net Water Costs**	**Available Capacity (MGD)** (2)	**Per Unit Cost (GPD)**
Pyramid Peak Water Treatment Capacity (3)		$ 24,625,588	$ 24,625,588	$ (16,673,621)	$ 7,951,967	6.00	
Jomax Water Reclamation Facility (4)	$ 4,619,979	$ 15,536,000	$ 20,155,979	$ -	$ 20,155,979	2.93	
Well Facilities (5)	$ 10,269,857	$ -	$ 10,269,857		$ 10,269,857	3.77	
Total Water Treatment Component	$ 14,889,836	$ 40,161,588	$ 55,051,424	$ (16,673,621)	$ 38,377,803	12.70	$ 3.022
Underground Storage and Recharge							
Recharge Facilities (6)	$ 3,255,812	$ 8,621,070	$ 11,876,882		$ 11,876,882		
Total Underground Storage and Recharge	$ 3,255,812	$ 8,621,070	$ 11,876,882	$ -	$ 11,876,882	8.36	$ 1.421
Water Distribution System Component (7)							
Water Distribution Lines	$ 5,552,476	$ 31,630,141	$ 37,182,617	$ -	$ 37,182,617		
Storage Facitlities	$ 364,680	$ -	$ 364,680	$ -	$ 364,680		
Pumping Stations	$ 5,281,003	$ -	$ 5,281,003	$ -	$ 5,281,003		
Total Water Distribution System	$ 11,198,159	$ 31,630,141	$ 42,828,299	$ -	$ 42,828,299	9.77	$ 4.384
Water Utility Unit Cost (GPD)							**$ 8.826**
Seasonal Water Demand Factor (3/4-inch Meter)							**650**
Water System Expansion Fee Per 3/4-Inch Residential Meter							**$ 5,737.04**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's water system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each water system component. Available well facilities capacity represents current capacity of wells used to meet peak month demands adjusted down to recognize reduced need once for planned treatment plant expansion is operational.

(3) Planned Pyramid Peak Water Treatment Capacity. This planned facility expansion will serve the West Agua Fria area. For more information on the existing and planned water treatment capacity for the West of Agua Fria area, see Level of Service Table 1.

(4) Includes 25% of the costs for the Jomax WRF which provides effluent for water recharge the West Agua Fria area. For more information on the existing and planned WRF capacity in the West Agua Fria area, see Level of Service Table 2.

(5) Well facilities include only potable water producing wells. Only well capacity that is anticipated to provide peaking capacity is included for these facilities as the remainder of wells are used to augment the WTPs for redundancy and emergency purposes in the West Agua Fria area.

(6) Represents 75% of the value of facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities and these facilities benefit areas south and north of Bell Road, including the West Agua Fria area. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(7) The water distribution system facilities provide distribution, storage, and pumping capacity to convey potable water produced at the Pyramid Peak WTP for the West Agua Fria area, and potable water wells in the West Agua Fria area. The capacity for these facilities is limited to the available distribution capacity to serve the existing wells and the additional treatment capacity to be acquired or constructed in the West Agua Fria area. For more information on the existing and planned water distribution system capacity, see Level of Service Table 2.

Schedule 9
Wastewater Expansion Fee
Peoria Water, Wastewater, and Solid Waste Expansion Fee Study
Calculation of Wastewater System Expansion Fee (East of Agua Fria River)

EAST OF AQUA FRIA RIVER Wastewater Treatment Component	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Wastewater Costs	Debt Principal Credit (NPV)	Net Wastewater Costs	Available Capacity (MGD) (2)	Per Unit Cost (GPD)
Beardsley Water Reclamation Facilities (3)	$ 4,720,164	$ 24,750,000	$ 29,470,164	$ (472,943)	$ 28,997,221		
Butler Water Reclamation Facilities (3)	$ 29,982,512	$ -	$ 29,982,512	$ (9,585,800)	$ 20,396,712		
Total Water Treatment Component	$ 34,702,676	$ 24,750,000	$ 59,452,676	$ (10,058,743)	$ 49,393,933	5.89	$ 8.386
Underground Storage and Recharge							
Recharge Facilities (4)	$ 1,085,271	$ 2,287,921	$ 3,373,192	$ -	$ 3,373,192		
Total Underground Storage and Recharge	$ 1,085,271	$ 2,287,921	$ 3,373,192	$ -	$ 3,373,192	8.36	$ 0.403
Wastewater Collection Facilities Component (5)							
Wastewater Collection Lines	$ 13,069,798	$ -	$ 13,069,798	$ (1,609,733)	$ 11,460,065		
Lift Stations	$ 513,258	$ 3,120,000	$ 3,633,258	$ -	$ 3,633,258		
Total Wastewater Distribution System	$ 13,583,056	$ 3,120,000	$ 16,703,056	$ (1,609,733)	$ 15,093,323	5.89	$ 2.563
Wastewater Utility Unit Cost (GPD)							**$ 11.352**
Winter Water Demand Factor (3/4-inch Meter)							**160**
Wastewater System Expansion Fee Per 3/4-Inch Residential Meter							**$ 1,816.33**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's wastewater system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.
(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each wastewater system component.
(3) Includes 75% of the costs for the available capacity in the Butler WRF and the Beardsley WRF which serve the area east of the Agua Fria River. For more information on the existing and planned WRF capacity, see Level of Service Table 2.
(4) Represents 25% of the value for facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities. For more information on the existing and planned WRF capacity, see Level of Service Table 2.
(5) The wastewater transmission system facilities provide collection and pumping capacity to convey wastewater discharge to the Butler and Beardsley WRFs. The capacity for these facilities is limited to the available and planned wastewater treatment capacity of the WRF's that serve the area east of the Agua Fria River. For more information on the existing and planned wastewater transmission system capacity, see Level of Service Table 4.

Schedule 10
Wastewater Expansion Fee
Peoria Water, Wastewater, and Solid Waste Expansion Fee Study
Calculation of Wastewater System Expansion Fee (West of Agua Fria River)

WEST OF AQUA FRIA RIVER Wastewater Treatment Component	System Buy-In Replacement Costs (1)	Marginal Cost IIP Costs	Total Wastewater Costs	Debt Principal Credit (NPV)	Net Wastewater Costs	Available Capacity (MGD) (2)	Per Unit Cost (GPD)
Jomax Water Reclamation Facilities (3)	$ 14,441,474	$ 46,590,000	$ 61,031,474	$ (18,161,403)	$ 42,870,071	2.99	
Total Water Treatment Component	$ 14,441,474	$ 46,590,000	$ 61,031,474	$ (18,161,403)	$ 42,870,071	2.99	$ 14.338
Underground Storage and Recharge							
Recharge Facilities (4)	$ 1,085,271	$ 2,287,921	$ 3,373,192	$ -	$ 3,373,192		
Total Underground Storage and Recharge	$ 1,085,271	$ 2,287,921	$ 3,373,192	$ -	$ 3,373,192	8.36	$ 0.403
Wastewater Collection Facilities Component (5)							
Wastewater Collection Lines	$ 6,183,863	$ 6,816,350	$ 13,000,213	$ -	$ 13,000,213		
Lift Stations	$ 100,823	$ -	$ 100,823	$ -	$ 100,823		
Total Wastewater Distribution System	$ 6,284,686	$ 6,816,350	$ 13,101,036	$ -	$ 13,101,036	2.99	$ 4.382
Wastewater Utility Unit Cost (GPD)							**$ 19.123**
Winter Water Demand Factor (3/4-inch Meter)							**160**
Wastewater System Expansion Fee Per 3/4-Inch Residential Meter							**$ 3,059.67**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's water system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Available capacity represents the available capacity to serve new customers in existing facilities and planned facilities for each wastewater system component.

(3) Includes 75% of the costs for the City funded portion of the Jomax WRF which serve the area west of the Agua Fria River. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(4) Represents 25% of the value for facilities that allow City to recharge and storage of effluent from water reclamation facilities and raw Central Arizona Project surface water. The available capacity for these facilities is related to the WRF capacities. For more information on the existing and planned WRF capacity, see Level of Service Table 2.

(5) The wastewater transmission system facilities provide collection and pumping capacity to convey wastewater discharge to the Jomax WRF. The capacity for these facilities is limited to the available and planned wastewater treatment capacity of the WRF's that serve the area west of the Agua Fria River. For more information on the existing and planned wastewater transmission system capacity, see Level of Service Table 4.

Schedule 11
Water Expansion Fee
Peoria Water, Wastewater, and Solid Waste Expansion Fee Study
Calculation of Water Resource Expansion Fee

Off-Project Service Area **Water Resources**	**System Buy-In Costs** (1)	**Marginal Cost IIP Costs**	**Total Water Resource Costs**	**Interest on Lease (NPV)**	**Net Water Costs**	**Total Capacity (MGD)** (2)	**Per Unit Cost (GPD)**
Gila River Indian Community Water Rights (3)	$ 7,130,483	$ 3,745,352	$ 10,875,835	$730,860	$ 11,606,695	4.08	$ 2.846
White Mountain Apache Tribe Water Lease (4)	$ -	$ 3,607,382	$ 3,607,382		$ 3,607,382	1.15	$ 3.135
Central Arizona Water (CAP) Re-allocation (5)	$ 2,394,914	$ -	$ 2,394,914		$ 2,394,914	3.22	$ 0.744
Total Water Resources	$ 9,525,397	$ 7,352,734	$ 16,878,130	$ 730,860	$ 17,608,990	8.45	$ 2.084
Water Resource Unit Cost of Capacity (GPD)							$ 2.084
Seasonal Water Demand Factor (3/4-inch Meter)							**650**
Water Resource Expansion Fee Per 3/4-Inch Residential Meter							**$ 1,354.87**

(1) System buy-in costs for water resources represent previous investments to acquire long-term water rights.
(2) Total capacity in MGD represents the daily amount of water rights available to the City through various water rights contracts. Although, water rights allocations are expressed in acre-feet per year, the capacities for the water resources component are converted into MGD. One acre-foot equates to 325,851 gallons of water.
(3) Represents a 99-year lease of 7,000 acre-feet of Gila River Indian Community water rights. The City made initial payments of $7,284,243 from FY 2008 through FY 2010. The remaining $7,920,000 in lease payments were funded through a General Obligation (GO) Bond Issue in FY 2012. The debt principal credit represents the present value of the remaining principal on the GO Bond Issue.
(4) The City has an agreement is to lease 1,289 AF of water rights from the White Mountain Apache Tribe for a period of 99 years. Agreement is estimated to be finalized in FY2019. Prices are tied to the contract costs for two components of CAP Water as of 2009. These prices will be adjusted for inflation to the date that the agreement is executed. The City pays 50% of the total contract cost in the first year, followed by four annual payments on the outstanding balance.
(5) Represents available portion of a $3,670,364 acquistion or re-allocated CAP water in FY 2008.

Schedule 12
Water Expansion Fee
Peoria Water, Wastewater, and Solid Waste Expansion Fee Study
Calculation of Water Billing and Customer Service Component

Water Component (Common to All)	**System Buy-In Replacement Costs** (1)	**Marginal Cost IIP Costs**	**Total Water Costs**	**Debt Principal Credit (NPV)**	**Net Water Costs**	**Total Water Accounts** (2)	**Cost Per Account**
Beardsley Operations Center	$ 12,089		$ 12,089		$ 12,089	-	
Billing System		$ 850,000	$ 850,000		$ 850,000		
Update Impact Fees		$ 200,000	$ 200,000		$ 200,000		
Integrated Utility Infrastructure Master Plan		$ 280,000	$ 280,000		$ 280,000		
Water/Wastewater Hyrdraulic Model Update		$ 300,000	$ 300,000		$ 300,000		
SCADA	$ 136,953	$ 225,000	$ 361,953		$ 361,953		
Total Water Billing and Customer Service Component	$ 149,043	$ 1,855,000	$ 2,004,043	$ -	$ 2,004,043	16,977	**$ 118.04**

Wastewater Component (Common to All)	**System Buy-In Replacement Costs** (1)	**Marginal Cost IIP Costs**	**Total Wastewater Costs**	**Debt Principal Credit (NPV)**	**Net Wastewater Costs**	**Total Wastewater ERU** (2)	**Cost Per Account**
Beardsley Operations Center	$ 12,623		$ 12,623		$ 12,623	-	
Billing System		$ 850,000	$ 850,000		$ 850,000		
Update Impact Fees		$ 200,000	$ 200,000		$ 200,000		
Integrated Utility Infrastructure Master Plan		$ 280,000	$ 280,000		$ 280,000		
Water/Wastewater Hyrdraulic Model Update		$ 300,000	$ 300,000		$ 300,000		
SCADA		$ 75,000	$ 75,000		$ 75,000		
Total WW Billing and Customer Service Component	$ 12,623	$ 1,705,000	$ 1,717,623	$ -	$ 1,717,623	17,726	**$ 96.90**

(1) The system buy-in costs represent the replacement cost new less depreciation (RCNLD) of the City's billing and customer related system assets. The RCNLD was determined based on annual escalation factors from the Engineering News Record.

(2) Projected total accounts/ERUs added to the system from 2018 - 2028 for the given area.