

City of
AVONDALE

Development Impact Fees for
Parks/Recreation, Fire, Police, Streets,
Water and Wastewater Facilities

Final Report

November 23, 2022

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Executive Summary

The City of Avondale (City) retained Raftelis to conduct a comprehensive update to the non-utility and utility system development impact fees (SDFs or fees). Fees were last updated in 2019, including a fee for library facilities being used for debt service. Since the library debt will be paid off this fiscal year, Raftelis recommends suspension of the impact fee for libraries. This report documents the service units and the calculation of the proposed fees. A companion report documents land use assumptions (LUA) and Avondale's infrastructure improvement plan (IIP). The 2022 development impact fees include:

- Park/Recreation Facilities
- Fire Facilities
- Police Facilities
- Streets Facilities
- Water Facilities
- Wastewater Facilities

Impact Fee Definition

Development fees are one-time payments used to construct system improvements needed to accommodate new development. The fees represent future development's proportionate share of infrastructure capacity. Development fees may only be used for capital improvements or debt service for growth-related infrastructure. In contrast to general taxes, development fees may not be used for operations, maintenance, replacement or correcting existing deficiencies. Arizona Revised Statute §9-463.05 (Statute) identifies the specific requirements for municipalities to assess system development fees.

Findings and Conclusions

Figure 1 summarizes the methods and cost components for each type of infrastructure included in Avondale's 2022 DIF update. Arizona's enabling legislation also requires a determination of service areas, within which a substantial nexus exists between public facilities and the development being served. A citywide service area is appropriate for Avondale's parks/recreation, police, fire, and streets facilities. The City-Wide service area is considered north of the Estrella Mountains.

Figure 1 – Development Fee Methods and Cost Components

Type of Infrastructure	Service Area	Cost Recovery (past improvements)	Incremental Expansion (current standards)	Plan-Based (future improvements)	Cost Allocation
<i>Parks and Recreation</i>	Citywide N. of Estrella Mtns.	Recoupment of General Fund Loan	Improved Parks Acreage		Daytime Population (Persons and Jobs)
<i>Fire</i>	Citywide N. of Estrella Mtns.		Fire Buildings and Apparatus		Functional Population (Persons and Vehicle Trips)
<i>Police</i>	Citywide N. of Estrella Mtns.		Police Vehicles	Police Buildings	Functional Population (Persons and Vehicle Trips)
<i>Streets</i>	Citywide N. of Estrella Mtns.		Intersection Improvements	Growth Share of Arterial Capacity Expansion	Inbound, Primary, Average Daily Vehicle Miles of Travel
<i>Water</i>	Citywide N. of Estrella Mtns.	North Avondale Water Supply		Growth Share of Backbone Facility Expansion	Average and Peak Water Demand [1]
<i>Wastewater</i>	Citywide N. of Estrella Mtns.			Growth Share of Backbone Facility Expansion	Peak Wastewater Flow

[1] Water DIF is comprised of a water resources fee and an infrastructure fee. The water resources fee is calculated using average day demand the the infrastructure fee is calculated on peak day demand.

Proposed fees per residential dwelling are summarized in Figure 2. Residential fees per dwelling unit are provided for two types of housing. Fees for nonresidential development are listed per square foot of floor area. Proposed fees are provided for three general types of nonresidential development. Industrial includes all goods production and warehouse development. Office/Services includes business service and personal services, such as health care. Commercial (e.g., retail and restaurants) includes the uses found in a typical shopping center, plus eating/drinking places.

Figure 2 – Proposed Non-Utility Development Impact Fees

Citywide Service Area	Parks and Recreation	Fire	Police	Streets	Maximum Supportable	Current Total with Library	Increase or Decrease
<i>Residential (per dwelling)</i>							
Multifamily	\$1,207	\$1,553	\$1,485	\$1,279	\$5,524	\$3,807	\$1,717
Single Family	\$1,697	\$2,184	\$2,089	\$1,790	\$7,760	\$6,394	\$1,366
<i>Nonresidential (per square foot of floor area)</i>							
Industrial	\$0.07	\$0.04	\$0.04	\$0.21	\$0.36	\$0.45	(\$0.09)
Commercial	\$0.11	\$0.65	\$0.62	\$2.50	\$3.88	\$5.55	(\$1.67)
Office/Services	\$0.16	\$0.29	\$0.27	\$1.33	\$2.05	\$2.85	(\$0.80)

Figure 3 - Proposed Water Utility Development Impact Fees

<i>Meter Size</i>	<i>Meter Capacity Ratio [1]</i>	<i>Current Fees</i>	<i>Maximum Supportable</i>	<i>Change - \$</i>
<i>inches</i>				
0.75	1.00	\$3,822	\$3,519	(\$303)
1.00	1.67	6,383	5,865	(518)
1.50	3.33	12,728	11,730	(998)
2.00	5.33	20,372	18,768	(1,604)
3.00	10.67	40,782	37,536	(3,246)
4.00	16.67	63,715	58,650	(5,065)
6.00	33.33	127,392	117,300	(10,092)

[1] American Water Works Association M1 Manual, Principles of Water Rates, Fees, and Charges. 7th Ed.
Based on the meter's maximum allowable safe operating capacity to that of a 3/4" meter.

Figure 4 - Proposed Wastewater Utility Development Impact Fees

<i>Meter Size (inches)</i>	<i>Meter Capacity Ratio [1]</i>	<i>Current Fees</i>	<i>Maximum Supportable</i>	<i>Change - \$</i>
0.75	1.00	\$5,808	\$3,153	(\$2,655)
1.00	1.67	9,700	5,255	(4,445)
1.50	3.33	19,342	10,510	(8,832)
2.00	5.33	30,959	16,816	(14,143)
3.00	10.67	61,976	33,632	(28,344)
4.00	16.67	96,826	52,550	(44,276)
6.00	33.33	193,595	105,100	(88,495)

[1] American Water Works Association M1 Manual, Principles of Water Rates, Fees, and Charges. 7th Ed.
Based on the meter's maximum allowable safe operating capacity to that of a 3/4" meter.

Introduction

Arizona Development Impact Fees

Arizona Revised Statute §9-463.05 (Statute) identifies the specific requirements for municipalities to assess system development fees. DIFs can only be calculated and assessed for expansion-related existing or proposed improvements included in an approved IIP. The IIP must be tied to the LUA or growth projections that is tied to the service area in which fees will be enacted. The Statute also provides for strict notification, public hearing, and implementation schedules, among other provisions. This report provides an IIP and LUA for the various necessary public infrastructure to meet the demands of growth over the next 10-year period, FY 2022 – FY 2031 (LUA period).

Arizona's enabling legislation for development fees (ARS § 9-463.05) calls for three integrated products: 1) Land Use Assumptions (LUA) for at least 10 years, 2) Infrastructure Improvements Plan (IIP), and 3) Development Impact Fees (DIF). Given the State's two-phase adoption process, the LUA and IIP are being reviewed, refined, and approved before focusing on the development fees.

In contrast to many General Plans and Master Plans for specific types of infrastructure, the IIP is limited to 10 years. Another important feature in Arizona's impact fee enabling legislation is the requirement that fees must be based on the same Level-Of-Service (LOS) provided to existing development. LOS to existing development may increase, but not by means of development fees. A final highlight of the enabling legislation is specific limitations on necessary public services. For example, only 10,000 square feet of a new library may be funded with development fees.

Arizona Development Fee Enabling Legislation

Arizona Revised Statutes § 9-463.05 governs how development fees are calculated for municipalities in Arizona. During the state legislative session of 2011, Senate Bill 1525 (SB 1525) was introduced which significantly amended the development fee enabling legislation. The changes included:

- Amending existing development fee programs by January 1, 2012.
- Abandoning existing development fee programs by August 1, 2014.
- New development fee program structure revolving around Land Use Assumptions and Infrastructure Improvements Plan.
- New adoption procedures for the Land Use Assumptions, Infrastructure Improvements Plan, and development fees.
- New definitions, including "necessary public services" which specify what categories and types of infrastructure may be funded with development fees.
- Time limitations in development fee collections and expenditures.
- New requirements for credits, "grandfathering" rules, and refunds.

As documented in this report, the City of Avondale (City) has complied with Arizona's development fee enabling legislation and applicable legal precedents. Development fees are proportionate and reasonably related to the capital improvement demands of new development. Specific costs have been identified using local data and current dollars. With input from City staff, Raftelis determined demand indicators for each type of infrastructure and calculated proportionate share factors to allocate costs by type of development. This report documents the formulas and input variables used to calculate the development fees for each type of public facility. Development fee methodologies also identify the extent to which new development is entitled to various types of credits to avoid potential double payment of growth-related capital costs.

Necessary Public Services

Consistent with Arizona’s development fee enabling legislation, development fees may be only used for construction, acquisition or expansion of public facilities that are necessary public services. Necessary public facilities must have a life expectancy of three or more years and be owned or operated on behalf of the municipality.

Evaluation of Credits

New development should not be required to pay twice for the cost of new facilities – once through development fees and again through other taxes or fees that are used to fund the same facilities. To avoid potential double-payment, development fees may be reduced, and such a reduction is referred to as an offset or revenue credit that is incorporated into the development fee calculation. In general, offsets are only required for funding that is dedicated for capacity-expanding improvements of the type addressed by the development fee. A municipality is not required to use general fund revenue to pay for growth-related improvements.

SB 1525 amended the “offset” provision in the state enabling act to add a mandate regarding construction contracting excise tax, as highlighted in the following provision ARS § 9-463.05(B)(12)):

The municipality shall forecast the contribution to be made in the future in cash or by taxes, fees, assessments or other sources of revenue derived from the property owner towards the capital costs of the necessary public service covered by the development fee and shall include these contributions in determining the extent of the burden imposed by the development. Beginning August 1, 2014, for purposes of calculating the required offset to development fees pursuant to this subsection, if a municipality imposes a construction contracting or similar excise tax rate in excess of the percentage amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications, the entire excess portion of the construction contracting or similar excise tax shall be treated as a contribution to the capital costs of necessary public services provided to development for which development fees are assessed, unless the excess portion was already taken into account for such purpose pursuant to this subsection.

Because Avondale does not charge a construction excise tax at a rate higher than for other types of business activities, no such offset is required.

Qualified Professionals

Qualified professionals must prepare the IIP, using generally accepted engineering and planning practices. A qualified professional is defined as “a professional engineer, surveyor, financial analyst or planner providing services within the scope of the person’s license, education, or experience.” Raftelis is a financial consulting firm specializing in the cost of growth services and user charges for utilities. Our services include development fees, infrastructure funding, user fees and cost of service studies. Since 1993, Raftelis has provided consulting services for local governments and utilities across the United States. The total cost of professional services for the 2022 update of impact fees, including all meetings with staff and elected officials, was \$149,426. The cost of professional services was allocated 10% to

parks/recreation, 9% each to police and fire, 15% to streets, 28% to water, and 29% to wastewater facilities.

Methods

In contrast to project-level improvements, development fees fund growth-related infrastructure that will benefit multiple development projects, or the entire jurisdiction (usually referred to as system improvements). There are three general methods for calculating development fees. The choice of a particular method depends primarily on the timing of infrastructure construction (past, concurrent, or future) and service characteristics of the facility type being addressed. Each method has advantages and disadvantages in a particular situation and can be used simultaneously for different cost components.

The process of calculating development impact fees involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, the calculation of development fees can become complicated due to many variables involved in defining the relationship between development and the need for facilities within the designated service area. The following paragraphs discuss three basic methods for calculating development fees and how those methods can be applied.

- The rationale for recoupment, often called cost recovery, is that new development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which new growth will benefit. This methodology is often used for utility systems that must provide adequate capacity before new development can take place.
- The incremental expansion method documents current infrastructure standards for each type of public facility, using both quantitative and qualitative measures. With de facto standards, there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share to maintain current standards for growth-related infrastructure. Fee revenue will be used to expand or provide additional facilities, as needed to keep pace with new development.
- The plan-based method allocates costs for a specified set of improvements to a specified amount of service units. Improvements are typically identified in a facility master plan and development potential is identified by the land use assumptions. There are two options for determining the cost per service unit: 1) total cost of a public facility can be divided by total demand units (average cost approach), or 2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost approach).

Reliance on City Provided Data

During the course of this project, the City provided Raftelis with a variety of information including financial reports, planning documents, and projected capital expenditures for each fee area. Raftelis has reviewed the data for reasonableness and general representation of cost and related activities. Raftelis did not independently assess or verify the accuracy of such data – historic or projected. We have relied on this data in the formulation of our findings and recommendations, as well as in the preparation of this report. There will be differences between actual and projected data, and these differences may be significant. Therefore, we take no responsibility for the accuracy of data or projections provided by or prepared on behalf of the City, nor does Raftelis have any responsibility for updating this report for

events occurring after the date of this report. Below is a list of the major source documents used for this study:

- Maricopa Association of Government 2022 Economic Data
- Institute of Transportation Engineers Trip Generation Manual
- City of Avondale 2018 Integrated Utility Master Plan
- City of Avondale debt documents
- Infrastructure Improvement Plans by type of public facility

Legal Disclaimer

The City of Avondale retained Raftelis to conduct the DIF study. During the technical review and analysis, Raftelis relied on City data and discussions with City staff to develop the SDFs. In addition, Raftelis used industry-standard resources including data from the Maricopa Association of Governments (MAG) and the Institute of Transportation Engineers (ITE) in the development of growth projections, levels of service, and fees.

These fees have been developed in accordance with the Statute. In calculating the fees for the City, the analysis shows that the proposed fees for each service area provide the additional necessary funding needed for the indicated public services and that the fees bear a reasonable relationship to the burden imposed. If a fee-payer believes the development has a non-standard impact on the City, the fee-payer is responsible to provide written documentation to the City describing the anticipated impact and why application of the standard DIF would not bear a reasonable relationship to the burden imposed.

Parks/Recreation Facilities

ARS § 9-463.05(T)(7)(g) defines the parks and recreation facilities eligible for development fee funding.

“Neighborhood parks and recreational facilities on real property up to thirty acres in area, or parks and recreational facilities larger than thirty acres if the facilities provide a direct benefit to the development. Park and recreational facilities do not include vehicles, equipment or that portion of any facility that is used for amusement parks, aquariums, aquatic centers, auditoriums, arenas, arts and cultural facilities, bandstand and orchestra facilities, bathhouses, boathouses, clubhouses, community centers greater than three thousand square feet in floor area, environmental education centers, equestrian facilities, golf course facilities, greenhouses, lakes, museums, theme parks, water reclamation or riparian areas, wetlands, zoo facilities or similar recreational facilities, but may include swimming pools.”

Input variables for parks/recreation facilities, documented in the IIP, are summarized in the upper portion of Figure PR1. The conversion of costs per service unit into a cost per development unit is also shown in the figure below. For residential development, average number of persons per housing unit provides the necessary conversion. For nonresidential development, average jobs per square foot of floor area are derived from trip generation rates by type of development, published by the Institute of Transportation Engineers (ITE 2022). Additional details on nonresidential prototypes are provided in the LUA report. Proposed development fees for parks/recreation facilities are shown in the column with light green shading.

Figure PR1 – Parks/Recreation Service Units and Fees per Development Unit**Input Variables**

<i>Infrastructure Type</i>	<i>Infrastructure Units</i>	<i>Growth Quantity Over Ten Years</i>	<i>Cost Factor per Unit</i>	<i>IIP Cost (rounded)</i>
Parks and Recreation Facilities	improved acres	9.8	\$431,000	\$4,224,000
Recoupment of General Fund Loan				\$2,500,000
Professional Services for LUA, IIP, and DIF				\$14,943
Total =>				\$6,738,943

Cost Allocation

Residential	92%			
Nonresidential	8%			
<i>Growth 2022 to 2032</i>		<i>Cost per Service Unit</i>	<i>Credit per Service Unit</i>	<i>Net Cost per Service Unit</i>
Residential (persons)	11,992	\$516	\$0	\$516
Nonresidential (jobs)	6,948	\$77	\$0	\$77

Residential Impact Fees (per housing unit) for Parks and Recreation

<i>Type</i>	<i>Persons per Housing Unit</i>	<i>Maximum Parks and Recreation Impact Fees</i>	<i>Current Fees</i>	<i>Increase or Decrease</i>
Multifamily	2.34	\$1,207	\$1,002	\$205
Single Family	3.29	\$1,697	\$1,497	\$200

Nonresidential Impact Fees (per square foot of building floor area) for Parks and Recreation

<i>Type</i>	<i>Jobs per 1,000 Square Feet</i>	<i>Maximum Parks and Recreation Impact Fees</i>	<i>Current Fees</i>	<i>Increase or Decrease</i>
Industrial	0.93	\$0.07	\$0.08	(\$0.01)
Commercial	1.51	\$0.11	\$0.54	(\$0.43)
Office/Services	2.19	\$0.16	\$0.68	(\$0.52)

Projected Revenue for Parks/Recreation Facilities

Parks/recreation development fee revenue is expected to match the growth cost of infrastructure, which has a ten-year total cost of approximately \$6.7 million (see the upper portion of Figure PR2). The figure below indicates Avondale should receive approximately \$6.7 million in development fee revenue over the next ten years, if actual development matches the land use assumptions. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the need for infrastructure and development fee revenue.

Figure PR2 – Parks/Recreation Development Fee Revenue

Parks and Recreation Growth Cost Over 10 Years **\$6,738,943**

Parks and Recreation Impact Fee Revenue

		<i>Average Residential</i> \$1,584 per housing unit	<i>Industrial</i> \$70 per 1000 Sq Ft	<i>Commercial</i> \$110 per 1000 Sq Ft	<i>Office/Services</i> \$160 per 1000 Sq Ft	
		<i>Housing Units</i>	<i>KSF</i>	<i>KSF</i>	<i>KSF</i>	
Base	2022	29,911	2,900	7,800	4,600	
Year 1	2023	30,318	3,000	8,000	4,800	
Year 2	2024	30,724	3,000	8,300	4,900	
Year 3	2025	31,130	3,100	8,500	5,000	
Year 4	2026	31,536	3,200	8,700	5,200	
Year 5	2027	31,942	3,300	8,900	5,300	
Year 6	2028	32,349	3,400	9,200	5,400	
Year 7	2029	32,755	3,500	9,400	5,600	
Year 8	2030	33,160	3,500	9,600	5,700	
Year 9	2031	33,489	3,600	9,800	5,800	
Year 10	2032	33,818	3,700	10,000	5,900	
<i>Ten-Yr Increase</i>		3,907	800	2,200	1,300	
Projected Revenue =>		\$6,189,000	\$56,000	\$242,000	\$208,000	
		Total Revenue Over 10 Years (rounded) =>				\$6,695,000

Fire Facilities

Input variables for fire facilities, documented in the IIP, are summarized in the upper portion of Figure F1. The conversion of costs per service unit into a cost per development unit is also shown in the figure below. For residential development, average number of persons per housing unit provides the necessary conversion. For nonresidential development, average weekday, inbound, primary, vehicle trips per square foot of floor area are derived from trip generation rates by type of development, published by the Institute of Transportation Engineers (ITE 2022). Additional details on nonresidential prototypes are provided in the LUA report. Proposed development fees for fire facilities are shown in the column with light orange shading.

Figure F1 – Fire Service Units and Fees per Development Unit

Input Variables

Infrastructure Type	Infrastructure Units	Growth Quantity Over Ten Years	Cost Factor per Unit	IIP Cost (rounded)
Fire Buildings	square feet	11,240	\$668	\$7,508,000
Fire Vehicles (3+ years of useful life)	count	6	\$386,800	\$2,321,000
Professional Services for LUA, IIP, and DIF				\$13,448
Total =>				\$9,842,448

Cost Allocation

Residential	81%			
Nonresidential	19%			
Growth 2022 to 2032		Cost per Service Unit	Revenue Credit per Service Unit	Net Cost per Service Unit
Residential (persons)	11,992	\$664	\$0	\$664
Nonresidential (vehicle trips)	34,599	\$54	\$0	\$54

Residential Impact Fees (per housing unit) for Fire

Type	Persons per Housing Unit	Maximum Supportable Fire Impact Fees	Current Fees	Increase or Decrease
Multifamily	2.34	\$1,553	\$519	\$1,034
Single Family	3.29	\$2,184	\$775	\$1,409

Nonresidential Impact Fees (per square foot of floor area) for Fire

Type	Avg Wkdy Veh Trip Ends per 1,000 Sq Ft	Trip Adjustment Factors	Maximum Supportable Fire Impact Fees	Current Fees	Increase or Decrease
Industrial	1.71	50%	\$0.04	\$0.05	(\$0.01)
Commercial	37.01	33%	\$0.65	\$0.78	(\$0.13)
Office/Services	10.84	50%	\$0.29	\$0.31	(\$0.02)

Projected Revenue for Fire Facilities

Fire development fee revenue is expected to match the growth cost of fire infrastructure, which has a ten-year total cost of approximately \$9.8 million (see the upper portion of Figure F2). The figure below indicates Avondale should receive approximately \$9.8 million in fire development fee revenue over the next ten years, if actual development matches the land use assumptions. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the need for infrastructure and development fee revenue.

Figure F2 – Fire Development Fee Revenue

Fire Facilities Growth Cost Over 10 Years => **\$9,842,448**

Fire Facilities Impact Fee Revenue

		<i>Average Residential</i>	<i>Industrial</i>	<i>Commercial</i>	<i>Office/Services</i>
		\$2,038	\$40	\$650	\$290
		per housing unit	per 1000 Sq Ft	per 1000 Sq Ft	per 1000 Sq Ft
<i>Year</i>		<i>Housing Units</i>	<i>KSF</i>	<i>KSF</i>	<i>KSF</i>
Base	2022	29,911	2,900	7,800	4,600
Year 1	2023	30,318	3,000	8,000	4,800
Year 2	2024	30,724	3,000	8,300	4,900
Year 3	2025	31,130	3,100	8,500	5,000
Year 4	2026	31,536	3,200	8,700	5,200
Year 5	2027	31,942	3,300	8,900	5,300
Year 6	2028	32,349	3,400	9,200	5,400
Year 7	2029	32,755	3,500	9,400	5,600
Year 8	2030	33,160	3,500	9,600	5,700
Year 9	2031	33,489	3,600	9,800	5,800
Year 10	2032	33,818	3,700	10,000	5,900
<i>Ten-Yr Increase</i>		3,907	800	2,200	1,300
Projected Revenue =>		\$7,962,000	\$32,000	\$1,430,000	\$377,000
		Total Revenue Over 10 Years (rounded) =>			\$9,801,000

Police Facilities

ARS § 9-463.05(T)(7)(f) defines the police and fire facilities eligible for development fee funding.

“Fire and Police facilities, including all appurtenances, equipment and vehicles. Fire and Police facilities do not include a facility or portion of a facility that is used to replace services that were once provided elsewhere in the municipality, vehicles and equipment used to provide administrative services, helicopters or airplanes or a facility that is used for training firefighters or officers from more than one station or substation.”

Input variables for police, as documented in the IIP, are summarized in the upper portion of Figure P1. The conversion of infrastructure costs per service unit into a cost per development unit is also shown in the figure below. For residential development, average number of persons per dwelling provides the necessary conversion. For nonresidential development, trip generation rates by type of development are from the Institute of Transportation Engineers (ITE 2022). To ensure the analysis is based on travel demand associated with nonresidential development in Avondale, trip ends (entering and exiting) are converted to inbound, primary trips, using trip adjustment factors. For Industrial and Office/Services, a basic adjustment of 50% is applied. Because commercial development attracts “pass-by” trips, the adjustment factor for commercial is only 33%, based on the average pass-by factor for shopping centers. Maximum supportable development fees for police facilities are shown in the column with blue shading.

Figure P1 – Police Service Units and Fees per Development Unit**Input Variables**

Infrastructure Type	Infrastructure Units	Growth Quantity Over Ten Years	Cost Factor per Unit	IIP Cost (rounded)
Police Buildings	square feet	8,000	\$998	\$7,984,000
Police Vehicles (3+ years of useful life)	count	23	\$61,200	\$1,408,000
Professional Services for LUA, IIP, and DIF				\$13,448
Total =>				\$9,405,448

Cost Allocation

Residential	81%			
Nonresidential	19%			
Growth 2022 to 2032		Cost per Service Unit	Revenue Credit per Service Unit	Net Cost per Service Unit
Residential (persons)	11,992	\$635	\$0	\$635
Nonresidential (vehicle trips)	34,599	\$51	\$0	\$51

Residential Impact Fees (per housing unit) for Police

Type	Persons per Housing Unit	Maximum Supportable Police Impact Fees	Current Fees	Increase or Decrease
Multifamily	2.34	\$1,485	\$557	\$928
Single Family	3.29	\$2,089	\$832	\$1,257

Nonresidential Impact Fees (per square foot of floor area) for Police

Type	Avg Wkdy Veh Trip Ends per KSF	Trip Adjustment Factors	Maximum Supportable Police Impact Fees	Current Fees	Increase or Decrease
Industrial	1.71	50%	\$0.04	\$0.06	(\$0.02)
Commercial	37.01	33%	\$0.62	\$0.83	(\$0.21)
Office/Services	10.84	50%	\$0.27	\$0.32	(\$0.05)

Projected Revenue from Police Fees

The revenue projection shown below assumes implementation of the maximum supportable police fees and that development in the service area over the next ten years is consistent with the land use assumptions. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue. The police fee revenue projection in Figure P2 (\$9.4 million over ten years) approximates the growth cost of planned system improvements to be funded with development fees.

Figure P2 – Police Fee Revenue Projection

Ten-Year Need for Growth-Related Police Facilities => **\$9,405,448**

Police Impact Fee Revenue

		<i>Average Residential</i> \$1,949 per housing unit	<i>Industrial</i> \$40 per 1000 Sq Ft	<i>Commercial</i> \$620 per 1000 Sq Ft	<i>Office/ Services</i> \$270 per 1000 Sq Ft
		<i>Housing Units</i>	<i>KSF</i>	<i>KSF</i>	<i>KSF</i>
Base	2022	29,911	2,900	7,800	4,600
Year 1	2023	30,318	3,000	8,000	4,800
Year 2	2024	30,724	3,000	8,300	4,900
Year 3	2025	31,130	3,100	8,500	5,000
Year 4	2026	31,536	3,200	8,700	5,200
Year 5	2027	31,942	3,300	8,900	5,300
Year 6	2028	32,349	3,400	9,200	5,400
Year 7	2029	32,755	3,500	9,400	5,600
Year 8	2030	33,160	3,500	9,600	5,700
Year 9	2031	33,489	3,600	9,800	5,800
Year 10	2032	33,818	3,700	10,000	5,900
<i>Ten-Yr Increase</i>		3,907	800	2,200	1,300
Projected Revenue =>		\$7,615,000	\$32,000	\$1,364,000	\$351,000
		Total Projected Revenues (rounded) => \$9,362,000			

Street Facilities

ARS § 9-463.05(T)(7)(e) defines the facilities and assets which can be included in the Street Facilities IIP.

“Street facilities located in the service area, including arterial or collector streets or roads that have been designated on an officially adopted plan of the municipality, traffic signals and rights-of-way and improvements thereon.”

Development Fees for Streets

Figure S1 indicates key input variables at the top, which are documented in Avondale’s LUA and IIP report. Proposed fees are equal to the Vehicle Miles of Travel (VMT) by development category multiplied by the cost factor of \$1,011 per VMT. For example, the DIF for an average single family residential unit is derived from the formula below.

$$9.43 \times 0.61 \times 1.14 \times 0.27 \times \$1011 = \$1,790 \text{ (truncated)}$$

Figure S1 – Streets Development Fee Schedule for Avondale

<i>Input Variables</i>	<i>Arterial Lane Miles</i>	<i>Cost per Lane Mile</i>	<i>IIP Costs</i>
Growth Cost of Capacity Expansion	3.0	\$2,500,000	\$7,500,000
	<i>Improved Intersections</i>	<i>Avg Cost per Intersection</i>	
	3	\$2,295,000	\$6,885,000
	Professional services for LUA, IIP, and DIF		\$22,414
	Total IIP Cost Over Ten Years		\$14,407,414
VMT Increase Over 10 Years	14,237		
Average Miles per Trip	0.27		
Growth Cost per VMT	\$1,011		

Residential (per dwelling unit) for Streets

<i>ITE Code</i>	<i>Type</i>	<i>Avg Wkdy Veh Trip Ends per Dwelling</i>	<i>Trip Rate Adjustment</i>	<i>Trip Length Adjustment</i>	<i>Maximum Supportable Streets Impact Fees</i>	<i>Current Fees</i>	<i>Increase or Decrease</i>
220	Multifamily	6.74	61%	114%	\$1,279	\$1,649	(\$370)
210	Single Family	9.43	61%	114%	\$1,790	\$3,171	(\$1,381)

Nonresidential (per square foot of floor area) for Streets

<i>ITE Code</i>	<i>Type</i>	<i>Avg Wkdy Veh Trip Ends per 1,000 Sq Ft</i>	<i>Trip Rate Adjustment</i>	<i>Trip Length Adjustment</i>	<i>Maximum Supportable Streets Impact Fees</i>	<i>Current Fees</i>	<i>Increase or Decrease</i>
150	Industrial	1.71	50%	90%	\$0.21	\$0.25	(\$0.04)
820	Commercial	37.01	33%	75%	\$2.50	\$3.31	(\$0.81)
710	Office/Services	10.84	50%	90%	\$1.33	\$1.43	(\$0.10)

Projected Revenue from Street Fees

The revenue projection shown below assumes implementation of the maximum supportable street fees and that development in the service area over the next ten years is consistent with the land use assumptions. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue. The street fee revenue projection in Figure S2 of almost \$14 million over ten years, approximates the growth cost of planned system improvements to be funded with development fees.

Figure S2 – Projected Street Fee Revenue

Ten-Year Cost of Street Facilities

Growth Cost => \$14,407,414

Streets Impact Fee Revenue

		<i>Average-Size Residential</i>	<i>Industrial</i>	<i>Commercial</i>	<i>Office/Services</i>
		\$1,680 per housing unit	\$210 per 1000 Sq Ft	\$2,500 per 1000 Sq Ft	\$1,330 per 1000 Sq Ft
<i>Year</i>		<i>Hsg Units</i>	<i>KSF</i>	<i>KSF</i>	<i>KSF</i>
Base	2020	29,911	2,900	7,800	4,600
Year 1	2021	30,318	3,000	8,000	4,800
Year 2	2022	30,724	3,000	8,300	4,900
Year 3	2023	31,130	3,100	8,500	5,000
Year 4	2024	31,536	3,200	8,700	5,200
Year 5	2025	31,942	3,300	8,900	5,300
Year 6	2026	32,349	3,400	9,200	5,400
Year 7	2027	32,755	3,500	9,400	5,600
Year 8	2028	33,160	3,500	9,600	5,700
Year 9	2029	33,489	3,600	9,800	5,800
Year 10	2030	33,818	3,700	10,000	5,900
<i>10-Yr Increase</i>		3,907	800	2,200	1,300
Projected Revenue =>		\$6,564,000	\$168,000	\$5,500,000	\$1,729,000
			Total Revenue (rounded) =>		\$13,961,000

Water Facilities

ARS §9-463.05.T.7(a) defines the facilities and assets which can be included in the Water Facilities IIP:

“Water facilities, including the supply, transportation, treatment, purification and distribution of water, and any appurtenances for those facilities”

The City provides potable water with water supply consisting of a combination of ground water sources. The entire water system infrastructure includes water resources, wells, transmission, distribution, storage, administrative facilities, vehicles, and equipment including meters. The City’s water system serves the land areas north of the Estella Mountains, excluding a small area in the northwest corner of the City limits. This area is served by a private water utility. The following provides an analysis of the resource and facility costs included in the IIP and DIF calculations.

The calculation of the water facilities DIF was based on information provided by staff in addition to the City’s 2018 Integrated Utility Master Plan Report (IUMP).

Projected Service Units

ARS §9-463.05 (E)(5) requires:

“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”

ARS §9-463.05 (E)(6) requires:

“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”

It is projected that there will be an additional 3,907 dwelling units added within the City by 2032. Using the maximum day water demand per DU of 743 gpd, the projected residential peak demand will increase 2.9 mgd ($743 \times 3,907 = 2,902,901$ gpd). It is estimated that the 6.92 mgd added capacity will serve approximately 9,314 DU ($6,900,000$ gpd / 743 gpd per DU = 9,314 DU).

Figure W1 shows the development of the current demand projection, projected demands and the total DU added during the study period. It also shows the DU that will be served by existing available capacity and the capacity added by the IIP. The current system operates above the firm capacity of 17.7 mgd so there is no existing available capacity to serve growth.

Figure W1 – Projected Added Dwelling Units and Water Demand Forecast

Line No	Description	Units
Current Dwelling Units and Demand		
1	Current 2022 DU	29,911
2	Demand per EDU, gpd	450
3	Current Ave Day Demand, gpd	13,459,950
4	Maximum Day Peak Factor	1.41
5	Avg Day of Maximum Month, gpd (Line 3 x Line 4)	18,960,633
6	Current Firm Capacity, gpd	17,700,000
7	Existing Capacity Available for Growth, gpd (Line 6 - Line 5)	0
Added Capacity		
8	Added DU, 2022 - 2032	3,907
9	Average Day Demand	450
10	Planning Maximum Day Factor	1.65
11	Maximum Day Demand per DU, gpd	743
12	Added System Maximum Day Demand, gpd (Line 8 x Line 11)	2,902,901
13	Additional Capacity Needed for Growth (Line 12 - Line 7)	2,902,901
14	DU Served by Existing Available Capacity (Line 7 / Line 11)	0
15	DU Served by 10-Year IIP (Line 13 / Line 11)	3,907
16	Total Added DU	3,907
<hr/>		
17	DU Served by Full 6.92 mgd Capacity Addition	9,314

Development Fees for Water Facilities

The proposed water development impact fee (DIF) consists of an infrastructure component and a resources component. The only difference between these two components is the measurement of capacity. Infrastructure projects are stated in peak day gallons per day while the resource projects are stated in terms of annual demand or acre-feet. The two fees are calculated separately but are combined into one fee. The equations below illustrate the differences.

$$\frac{\text{Infrastructure Projects}}{\text{Added Well Capacity (gpd)}} \times 3/4'' \text{ Equiv Peak Demand (gpd)} = \text{Infrastructure DIF}$$

$$\frac{\text{Water Resource Projects}}{\text{Added Supply (Acre - Feet)}} \times 3/4'' \text{ Equiv. Average Day Demand (AF)} = \text{Resources DIF}$$

$$\text{Infrastructure DIF} + \text{Resources DIF} = \text{Total Water DIF}$$

Total added well capacity was used as the basis for determining the unit cost of capacity. The ¾” equivalent demands are analyzed using the same unit measurements as the unit cost of capacity calculation. This is to maintain the rational nexus between the cost of facilities and the cost to serve a new customer. For example, if the unit cost of treatment facilities is measured using design peak day demand parameter in gallons per day (gpd), then the new customer demands should also be measured in peak day gpd to calculate the fee.

Infrastructure project costs total approximately \$27.0 million. Included in this total is the DIF-related costs associated North Avondale Water Supply Project (NAWS) of \$4,419,000. The \$4,419,000 is the sum of the total principal and interest costs of the project. This project has a capacity of 6 million gallons per day (mgd) with 1 mgd currently in use. Therefore, the principal and interest payments included in the fee are reduced to 5/6 of the total value. This represents the remaining value of capacity for growth. The infrastructure costs are decreased by the FY21 beginning balance of \$1.1 million. Net infrastructure costs total \$25.9 million. The City will be securing an additional 6,882 acre-feet of water resources to meet future demand. This includes additional storage/recharge capacity at the New River-Agua Fria River Underground Storage Project (NAUSP) operated by Salt River Project (SRP) from the City of Chandler. This provides Avondale additional recharge capability and will alleviate the need for a water surface treatment plant. The water resource projects total \$10.0 million. Figure W2 details the water DIF calculation.

Figure W2 – Calculation of Water Development Impact Fee

Description	Total Cost	Capacity Added (mgd)	Percent Growth-Related	Growth-Related Costs
Growth-Related Infrastructure Projects				
Well #33 The BLVD Well & Transmission	\$2,880,000	1.73	100.0%	\$2,880,000
Well at 107th & Encanto - SRP Shared Well Cost in Design	455,000	1.73	100.0%	455,000
McDowell Rd 16-inch Waterline - Avondale to 99th Ave	2,650,000		25%	662,500
99th Ave Waterline - Thomas to Encanto	956,000		100%	956,000
Garden Lakes Site - 2nd Reservoir & Booster Improvements	8,358,000		100.0%	8,358,000
Future Well	2,700,000	1.73	100.0%	2,700,000
Nitrate Removal System for Coldwater Booster Station	5,545,000		100.0%	5,545,000
16-inch WL Dysart Road – Illini to Roeser	1,000,000		52.0%	520,000
16-inch WL El Mirage, Elwood to Lower Buckeye	900,000		25.0%	225,000
16-inch WL 107th – Jones to Superior	500,000		25.0%	125,000
16-inch WL 107th Ave, Superior to Lower Buckeye	700,000		25.0%	175,000
Dysart Rd. Waterline - Roeser Alignment to Southern	1,000,000		63.0%	630,000
Northside Booster Well Site - Land Purchase & DCR	75,000	1.73	100.0%	75,000
NAWS Project (Impact Fee Portion, P&I) [1]	3,682,500		100.0%	3,682,500
Total Growth-Related Projects/Expansion Capacity Share	\$31,401,500			\$26,989,000
Less: FY21 Ending Fund Balance	(\$1,134,326)			(\$1,134,326)
Net Growth-Related Projects/Expansion Capacity Share	\$30,267,174			\$25,854,674
10-Year Capacity Added, mgd		6.92		
Unit Cost of Capacity, \$ per gpd				\$3.74
Average Day Water Demand 3/4" Meter, gpd [2]		450.00		
Maximum Day Peaking Factor [3]		1.65		
Peak Demand, gpd		743		
Water Infrastructure Development Fee				\$2,776
Growth-Related Resource Projects				
		Acre-Feet		
New River-Agua Fria River Underground Storage Project (NAUSP)	\$7,200,000	6,000	100.0%	7,200,000
White Mountain Apache Tribe Water Settlement	2,800,000	882	100.0%	2,800,000
Total Growth-Related Projects/Expansion Capacity Share	\$10,000,000			\$10,000,000
10-Year Capacity Added, Acre-Feet		6,882		
10-Year Capacity Added, thousand gallons		2,242,507		
Unit Cost of Capacity, \$ per 1,000 gallons				\$4.46
Annual Water Demand, 1,000 gallons		164.3		
Water Resources Development Fee				\$732
Plus: Cost of Professional Services, \$ per 3/4" Equivalent				\$11
Water Development Fee, \$ per 3/4" Equivalent				\$3,519
Existing Fee				\$3,822
Difference - %				(\$303)

[1] Total P&I of project reimbursed from impact fees portion of \$4,419,000 multiplied by remaining 5 mgd of the 6 mgd capacity

[2] From 2018 Utility Master Plan, page 2-10. Represents metered demand from all 3/4" meters regardless of customer class.

[3] From 2018 Utility Master Plan, page 2-13.

Water DIFs are assessed by meter size and increase based on the AWWA 3/4-inch meter capacity relationships. One DU is equated to a 3/4-inch meter, which is the smallest and most common meter size available. Figure W3 shows the calculated fees by meter size using AWWA equivalent ratios and are the same as the City’s existing equivalent ratios.

Table W3 – Comparison of Current and Maximum Supportable Water DIFs

Meter Size	Meter Capacity Ratio [1]	Current Fees	Maximum Supportable	Change - \$
<i>inches</i>				
0.75	1.00	\$3,822	\$3,519	(\$303)
1.00	1.67	6,383	5,865	(518)
1.50	3.33	12,728	11,730	(998)
2.00	5.33	20,372	18,768	(1,604)
3.00	10.67	40,782	37,536	(3,246)
4.00	16.67	63,715	58,650	(5,065)
6.00	33.33	127,392	117,300	(10,092)

[1] American Water Works Association M1 Manual, Principles of Water Rates, Fees, and Charges. 7th Ed. Based on the meter’s maximum allowable safe operating capacity to that of a 3/4" meter.

Projected Revenue from Water Facilities Fees

The revenue projection shown below assumes implementation of the maximum supportable water facility fees and that development in the service area over the next ten years is consistent with the land use assumptions. Figure W4 shows the maximum daily demand based on the increase in DU per year for the 10-year planning period. The water facility fee revenue projection in Figure W4 (\$13.7 million) approximates the growth cost of planned system improvements to be funded with development fees. Because the capacity added will serve development beyond the 10-year time frame, fee revenue will continue to be collected commensurate with the additional growth.

Table W4 - Projected Water Facilities Fees Revenue

10-Year Cost of Water Utility Facilities

Growth Cost =>

Water Utility Impact Fee Revenue

		Added Annual Demand	Added Maximum Day Demand	3/4" Eq. Meters \$3,519 Dwelling Units
	Year	1,000 gal	gpd	
Base	2022	4,912,882	18,960,633	29,911
Year 1	2023	4,979,732	19,263,034	30,318
Year 2	2024	5,046,417	19,564,692	30,724
Year 3	2025	5,113,103	19,866,350	31,130
Year 4	2026	5,179,788	20,168,008	31,536
Year 5	2027	5,246,474	20,469,666	31,942
Year 6	2028	5,313,323	20,772,067	32,349
Year 7	2029	5,380,009	21,073,725	32,755
Year 8	2030	5,446,530	21,374,640	33,160
Year 9	2031	5,500,568	21,619,087	33,489
Year 10	2032	5,554,607	21,863,534	33,818
10-Yr Increase		641,725	2,902,901	3,907
Projected Revenue (Rounded)=>				\$13,748,733

[1] 641,725 kgal x \$4.46 + 2,902,901 gpd x \$3.74 + \$11 x 3,907 = \$13,749,370
 Variance due to rounding.

Wastewater Utility Fees

ARS §9-463.05.T.7(b) defines the facilities and assets which can be included in the Wastewater Facilities IIP:

“Wastewater facilities, including collection, interception, transportation, treatment and disposal of wastewater, and any appurtenances for those facilities”

The City provides central wastewater collection, treatment, and disposal service throughout the service area limits. The wastewater service area includes the northern municipal planning area down to the Estrella Mountains. The service area includes sections that are served by septic systems.

The calculation of the wastewater facilities DIF was based on information provided by staff in addition to the City’s 2018 Integrated Utility Master Plan Report (IUMP).

The current fee includes two components; a collection system fee and a wastewater treatment fee. Raftelis recommends eliminating the existing collection system DIF. The City’s collection system currently has capacity to serve new development and there is no outstanding costs recoverable from DIFs associated with those facilities.

Projected Service Units

ARS §9-463.05 (E)(5) requires:

“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”

ARS §9-463.05 (E)(6) requires:

“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”

It is projected that there will be an additional 3,907 residential dwelling units built within the City by 2037. Using the MMADF per dwelling unit of 207 gpd, it is estimated that there will be an increase in projected contributed peak wastewater flow of 0.85 mgd ($218 \times 3,907 = 1,210,000$ gpd).

Figure WW1 shows the development of the current annual average daily flow projections, projected average daily and MMADF flow, and the total DU added during the study period. It also shows the DU that will be served by existing available capacity and the capacity added by the IIP.

Figure WW1 – Projected Added Dwelling Units and Wastewater Flows Forecast

Line No	Description	Units
Current Dwelling Units and Demand		
1	Current 2022 DU	29,911
2	Demand per DU, gpd	218.00
3	Current Ave Day Demand, gpd	6,520,598
4	MMADF Peak Factor	1.04
5	Avg Day of Maximum Month, gpd (Rounded) (Line 4 x Line 3)	6,751,000
6	Current Firm Capacity, gpd	7,200,000
7	Existing Capacity Available for Growth, gpd (Line 6 - Line 5)	449,000
Added Demand [1]		
8	Added DU, 2023 - 2032	3,907
9	Average Day Demand	207
10	Planning MMADF factor	1.05
11	MMADF per DU, gpd (Line 9 x Line 10)	218
12	Added MMADF, gpd	851,726
13	Additional Capacity Needed for Growth, gpd (Line 12 - Line 7)	402,726
14	DU Served by Existing Available Capacity (Line 7 / Line 11)	2,060
15	DU Served by 10-Year IIP (Line 13 / Line 11)	1,847
16	Total Added DU	3,907
<hr/>		
17	DU Served by Full 2.4 mgd Capacity Addition	11,009

[1] The new WWTP adds a total of 2.4 mgd of capacity.

Development Fees for Wastewater Facilities

ARS §9-463.05 (E)(3) requires:

A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to development in the service area based on the approved land use assumptions, including a forecast of the costs of infrastructure, improvements, real property, financing, engineering and architectural services, which shall be prepared by qualified professionals licensed in this state, as applicable.

The City’s existing treatment capacity is a maximum month average daily flow (MMADF) of 9.0 mgd. As shown on Figure WW1, the 2016 average annual daily flow to the WRF is 5.6 mgd. In 2021, the average annual daily flow increased from 5.6 mgd to 6.5 mgd. The MMADF in 2021 was 6.75 mgd.

Under existing Arizona law, only 80% of the total capacity can be used, or 7.2 MGD. The remaining capacity of 0.45 mgd of additional capacity available for growth. The City has plans for a 3.0 mgd expansion to the Avondale Water Reclaimed Facility (WRF). Also under existing Arizona law, only 80% of the total capacity can be used, giving an additional planned capacity of 2.40 MGD.

Including both the additional capacity available from the existing facility of 0.45 mgd and the planned expansion of 2.40 MGD, the City’s wastewater treatment has 2.85 mgd of available wastewater capacity

to serve growth. Of that 2.85 mgd capacity, 0.85 mgd will be required to serve growth over the 15-year period. The estimated cost of the additional capacity is approximately \$79.6 million.

Like water, unit cost of capacity in gallons per day based on the design capacity of the plant (Maximum Month Average Day Flow MMADF). The MMADF for a ¾" equivalent serves as a proxy for its potential capacity. This value is based on the average water demands multiplied by a return factor and the MMADF peak flow factor. The return factor represents the portion of water usage that returns to the WWTP. The equation below summarizes the calculation of the wastewater DIF. Figure WW2 details the wastewater DIF calculation.

$$\frac{\text{Infrastructure Projects}}{\text{Added Well Capacity (gpd)}} \times \text{¾" Equiv Peak Return Flow (gpd)} = \text{Infrastructure DIF}$$

Figure WW2 – Calculation of Wastewater Development Fee

Description		Cost of Capacity	
WWTP Phase 2		\$79,590,000	
Less: FY21 Ending Fund Balance		(6,438,870)	
Total Existing and Growth-Related WWTP Costs		\$73,151,130	
WWTP Capacity, MMADF, mgd [1,2]			
Phase 2 Capacity Addition	80.0%	3.00	2.40
Total WWTP Capacity, mgd			2.40
Unit Cost of Capacity, \$ per mgd			\$30.48
Average Day Water Demand, gpd [3]		450	
Return Factor [3]		46%	
MMADF Peaking Factor [3]		1.05	
MMADF Flow per DU, gpd [4]			218.00
Wastewater Development Fee, \$ per ¾" Equivalent			\$6,645
Plus: Cost of Professional Services, \$ per ¾" Equivalent			\$11
Wastewater Development Fee, \$ per ¾" Equivalent			\$6,656
Existing Fee			\$5,808
Difference - %			\$848

[1] MMADF: Maximum Month average day flow
 [2] mgd: million gallons per day
 [3] From Table 2-10 of Carollo 2018 Integrated Utility Master Plan
 [4] A dwelling unit is assumed to be demands through a ¾" equivalent meter

As stated above, the City’s wastewater treatment plant has existing capacity (0.45 mgd) to serve growth. This existing capacity has been funded through previous DIF revenues and other sources. As a result, future capacity should not be responsible for that portion of costs. Raftelis adjusted the fee in Figure WW2 to account for this difference which is shown in Figure WW3.

Figure WW3 – Calculation of Adjusted Wastewater DIF

<i>Line No</i>	<i>Description</i>	<i>Units</i>
1	Current Firm Capacity, gpd	7,200,000
2	Avg Day of Maximum Month, gpd	6,751,000
3	Capacity Available in Existing Facilities	449,000
4	Capacity Needed for 10-Year Growth (2023 - 2032), gpd	851,726
5	<i>Net New Capacity Needed for 10-Year Growth, gpd (Line 4 - Line 3)</i>	402,726
6	Unit Cost of Facilities, \$ per gpd	\$30.48
7	Total Value of Net New Capacity Required	\$12,274,942
8	Total Added DU, 2023 - 2032	3,907
9	Wastewater DIF, \$ DU (Line 7/Line 8)	\$3,142
10	Plus: Cost of Study per DU	\$11
11	Adjusted Wastewater DIF, \$ per DU	\$3,153
12	Calculated Development Fee, \$ per DU	\$6,656
13	Variance - \$	(\$3,503)

Wastewater DIFs are assessed by water meter size and increase based on the AWWA 3/4-inch meter capacity relationships. One DU is equated to a 3/4-inch meter, which is the smallest and most common meter size available. Figure WW4 shows the calculated fees by meter size using AWWA equivalent ratios and are the same as the City's existing equivalent ratios. Figure WW4 compares the current DIFs to the calculated maximum supportable DIFs

Figure WW4 – Comparison of Current and Maximum Supportable Wastewater DIFs

<i>Meter Size (inches)</i>	<i>Meter Capacity Ratio [1]</i>	<i>Current Fees</i>	<i>Maximum Supportable</i>	<i>Change - \$</i>
0.75	1.00	\$5,808	\$3,153	(\$2,655)
1.00	1.67	9,700	5,255	(4,445)
1.50	3.33	19,342	10,510	(8,832)
2.00	5.33	30,959	16,816	(14,143)
3.00	10.67	61,976	33,632	(28,344)
4.00	16.67	96,826	52,550	(44,276)
6.00	33.33	193,595	105,100	(88,495)

[1] American Water Works Association M1 Manual, Principles of Water Rates, Fees, and Charges. 7th Ed. Based on the meter's maximum allowable safe operating capacity to that of a 3/4" meter.

Projected Revenue from Wastewater Facilities Fees

The revenue projection shown below assumes implementation of the maximum supportable wastewater facility fees and that development in the service area over the next ten years is consistent with the land use assumptions. Figure WW4 shows the average daily flow based on the increase in DU per year for the 10-year planning period. The wastewater facility fee revenue projection in Figure WW5 (\$12.3 million) approximates the growth cost of planned system improvements to be funded with development fees. Because the capacity added will serve development beyond the 10-year time frame, fee revenue will continue to be collected commensurate with the additional growth.

Figure WW5 – Projected Wastewater Facilities Fees Revenue

10-Year Cost of Wastewater Utility Facilities

Total Growth Cost => \$73,151,130

Wastewater Utility Impact Fee Revenue

		Added MMADF Flow	3/4" Eq. Meters \$3,153 Dwelling Units
<i>Year</i>		<i>gpd</i>	
Base	2022	6,751,000	29,911
Year 1	2023	6,839,726	30,318
Year 2	2024	6,928,234	30,724
Year 3	2025	7,016,742	31,130
Year 4	2026	7,105,250	31,536
Year 5	2027	7,193,758	31,942
Year 6	2028	7,282,484	32,349
Year 7	2029	7,370,992	32,755
Year 8	2030	7,459,282	33,160
Year 9	2031	7,531,004	33,489
Year 10	2032	7,602,726	33,818
Less Available Capacity		(449,000)	
<i>10-Yr Increase [1]</i>		402,726	3,907
Projected Revenue (Rounded)=>			\$12,318,771

[1] 402,726 MMADF gpd x \$30.48 per gpd + \$11 * 3,907 DU = \$12,317,920

Variance due to rounding