City of Chandler, Arizona
System Development Fee Update:

2022-2032 Land Use Assumptions and Infrastructure Improvements Plan

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EXECUTIVE SUMMARY

Impact fees are charges assessed on new development to cover the costs of capital improvements needed to accommodate growth. The City of Chandler calls its impact fees "system development fees," or SDFs. Duncan Associates has been retained by the City of Chandler to update the City's system development fees in compliance with the five-year update requirement of the Arizona development impact fee enabling act. This report provides all the analysis required prior to the adoption of updated impact fees, including land use assumptions, infrastructure improvements plans and fee calculations.

History of System Development Fees

In 2011, the legislature passed SB 1525, which was signed by the governor on April 26, 2011. SB 1525 constituted a major overhaul of Arizona's impact fee enabling act for municipalities. The City updated its system development fees in compliance with the statute based on studies completed in 2014 and 2018.[1]

Major changes were made in the 2014 study to comply with the new State enabling act and to make the fees as defensible as possible. The 2014 study added a ten-year cost analysis, and the fees were based on the lowest of the existing, ten-year or buildout cost per service unit. The addition of the ten-year analysis was intended to ensure compliance with SB 1525's requirement that the infrastructure improvements plan may not cover a period longer than ten years. The arterial street methodology was modified to take into account pass-by trips and average trip lengths. For the utility fees, an existing cost per service unit calculation was also added, as required by SB 1525. Finally, the 2014 update merged the separate water resources fee with the water fee, and the separate wastewater treatment and trunkline fees were combined.

The City has pledged library and public building system development fees for the repayment of bonds and interfund loans. The City has no plans to build another library, and public building fees are no longer authorized except to repay pledged debt. Consequently, updated infrastructure improvements plans are not prepared for libraries and public buildings. The City can retain its current library and public building system development fees and use them to repay pledged debt until the remaining obligations have been retired.

The 2018 update made two changes to the arterial street fee. The updated arterial street fees no longer included a pass-through adjustment, which was determined not to be necessary. In addition, a portion of the downtown area was removed from the arterial street service area. This change to the service area recognized that this area has paid for arterial street improvements through public improvement districts, and was also intended to encourage development in the affected area.

[1] Duncan Associates, *City of Chandler System Development Fee Update*, January 2014 and August 2018.

Summary of Findings

The updated non-utility system development fees are summarized in Table 1 below, along with a comparison to current fees. It is not possible to show a single total updated non-utility fee for residential uses, because the park fees differ between three service areas. Also note that the arterial street fees apply only in the arterial street service area (see Figure 3) – total current and updated fees would be lower outside this area. Total updated non-utility fees are lower for most land use types in most areas of the city. The City will cease collecting park fees in the Northwest park service area, which has almost no remaining residential development potential.

Table 1. Updated and Current Non-Utility Fees

		Arterial	Parks by Serv. Area			Lib-			Public	Total Fees by Park Area		
Land Use	Unit	Streets*	NW	NE	SE	rary	Fire	Police	Bldgs.	NW	NE	SE
Updated Fees												
Single-Family**	Dwelling	$3,792	$0	$129	$5,242	$61	$308	$74	$110	$4,345	$4,474	$9,587
Multi-Family**	Dwelling	$2,059	$0	$109	$4,424	$44	$259	$62	$79	$2,503	$2,612	$6,927
Retail/Comm.	sq. ft.	$3.894					$0.323	$0.078	$0.120	$4.415	$4.415	$4.415
Office	sq. ft.	$5.347					$0.169	$0.041	$0.080	$5.637	$5.637	$5.637
Industrial/Whse.	sq. ft.	$1.050					$0.077	$0.018	$0.020	$1.165	$1.165	$1.165
Public/Institutional.	sq. ft.	$1.976					$0.161	$0.039	$0.030	$2.206	$2.206	$2.206
Current Fees												
Single-Family**	Dwelling	$3,869	$983	$237	$2,338	$61	$218	$127	$110	$5,368	$4,622	$6,723
Multi-Family**	Dwelling	$2,190	$729	$176	$1,735	$44	$161	$94	$79	$3,297	$2,744	$4,303
Retail/Comm.	sq. ft.	$5.040					$0.220	$0.130	$0.120	$5.510	$5.510	$5.510
Office	sq. ft.	$4.040					$0.200	$0.110	$0.080	$4.430	$4.430	$4.430
Industrial/Whse.	sq. ft.	$1.170					$0.040	$0.020	$0.020	$1.250	$1.250	$1.250
Public/Institutional.	sq. ft.	$0.970					$0.060	$0.030	$0.030	$1.090	$1.090	$1.090
Percent Change												
Single-Family	Dwelling	-2%	-100%	-46%	124%	0%	41%	-42%	0%	-19%	-3%	43%
Multi-Family	Dwelling	-6%	-100%	-38%	155%	0%	61%	-34%	0%	-24%	-5%	61%
Retail/Comm.	sq. ft.	-23%					47%	-40%	0%	-20%	-20%	-20%
Office	sq. ft.	32%					-16%	-63%	0%	27%	27%	27%
Industrial/Whse.	sq. ft.	-10%					93%	-10%	0%	-7%	-7%	-7%
Public/Institutional.	sq. ft.	104%					168%	30%	0%	102%	102%	102%

* arterial streets fee applies only in arterial street service area (see Figure 3), and totals only apply to the arterial streets service area

** single-family defined as a dwelling unit with an individual water meter, multi-family as sharing a meter with other units

Source: Updated fees from Table 23 (streets), Table 40 (parks), Table 54 (fire), and Table 63 (police); updated library and public building fees are unchanged from current fees; current fees from City of Chandler, System Development Fee Schedule.

The updated utility system development fees are summarized in Table 2 below, along with a comparison to current fees. The combined updated utility fees are 16% higher than current fees for most customer types.

Table 2. Updated and Current Utility Fees

Housing or Meter Type		Water	Waste-Water	Reclaimed Water	Total
Updated Fees					
Single-Family Unit		$2,460	$5,989	$1,094	$9,543
Multi-Family Unit		$822	$2,539	$464	$3,825
3/4"	Disc	$3,690	$8,984	$1,641	$14,315
1"	Disc	$6,150	$14,973	$2,735	$23,858
1 1/2"	Disc	$12,300	$29,945	$5,470	$47,715
2"	Disc/Turbine	$19,680	$47,912	$8,752	$76,344
3"	Compound	$55,350	$134,753	$24,615	$214,718
4"	Compound	$61,500	$149,725	$27,350	$238,575
6"	Compound	$123,000	$299,450	$54,700	$477,150
8"	Compound	$196,800	$479,120	$87,520	$763,440
3"	Turbine	$43,050	$104,808	$19,145	$167,003
4"	Turbine	$73,800	$179,670	$32,820	$286,290
6"	Turbine	$153,750	$374,313	$68,375	$596,438
8"	Turbine	$221,400	$539,010	$98,460	$858,870
Current Fees					
Single-Family Unit		$3,397	$4,024	$837	$8,258
Multi-Family Unit		$1,281	$1,940	$403	$3,624
3/4"	Disc	$5,096	$6,036	$1,256	$12,388
1"	Disc	$8,493	$10,060	$2,093	$20,646
1 1/2"	Disc	$16,985	$20,120	$4,185	$41,290
2"	Disc/Turbine	$27,176	$32,192	$6,696	$66,064
3"	Compound	$54,352	$64,384	$13,392	$132,128
4"	Compound	$84,925	$100,600	$20,925	$206,450
6"	Compound	$169,850	$201,200	$41,850	$412,900
8"	Compound	$271,760	$321,920	$66,960	$660,640
3"	Turbine	$59,448	$70,420	$14,648	$144,516
4"	Turbine	$101,910	$120,720	$25,110	$247,740
6"	Turbine	$212,313	$251,500	$52,313	$516,126
8"	Turbine	$305,730	$362,160	$75,330	$743,220
Percent Change					
Single-Family Unit		-28%	49%	31%	16%
Multi-Family Unit		-36%	31%	15%	6%
3/4"	Disc	-28%	49%	31%	16%
1"	Disc	-28%	49%	31%	16%
1 1/2"	Disc	-28%	49%	31%	16%
2"	Disc/Turbine	-28%	49%	31%	16%
3"	Compound	2%	109%	84%	63%
4"	Compound	-28%	49%	31%	16%
6"	Compound	-28%	49%	31%	16%
8"	Compound	-28%	49%	31%	16%
3"	Turbine	-28%	49%	31%	16%
4"	Turbine	-28%	49%	31%	16%
6"	Turbine	-28%	49%	31%	16%
8"	Turbine	-28%	49%	31%	16%

Note: For meters larger than 8", the fee is calculated by multiplying the safe maximum operating capacity of the meter in gallons per minute (gpm) by the fee for a 1" meter, and dividing the result by 20 gpm.
Source: Updated fees from Table 86 (water), Table 101 (wastewater) and Table 112 (reclaimed water); current fees from *System Development Fee Schedule* on City's website, December 15 2021.

Total (utility plus non-utility) system development fees can only be shown for residential uses, because nonresidential utility fees are assessed based on meter size. Updated system development fees per single-family unit are compared to current fees in Table 3. Changes in total fees per single-family unit range from increases of 2% to 15%, depending on the area.

Table 3. Updated and Current Single-Family Fees

	Updated Fees		Current Fees		Percent Change	
Fee Type	Art. Streets Serv. Area	Rest of City	Art. Streets Serv. Area	Rest of City	Art. Streets Serv. Area	Rest of City
Arterial Streets	$3,792	$0	$3,869	$0	-2%	n/a
Parks, NW Service Area	$0	$0	$983	$983	-100%	-100%
Parks, NE Service Area	$129	$129	$237	$237	-46%	-46%
Parks, SE Service Area	$5,242	n/a	$2,338	n/a	124%	n/a
Library	$61	$61	$61	$61	0%	0%
Fire	$308	$308	$218	$218	41%	41%
Police	$74	$74	$127	$127	-42%	-42%
Public Building	$110	$110	$110	$110	0%	0%
Water	$2,460	$2,460	$3,397	$3,397	-28%	-28%
Wastewater	$5,989	$5,989	$4,024	$4,024	49%	49%
Reclaimed Water	$1,094	$1,094	$837	$837	31%	31%
Total, Parks NW Area	$13,888	$10,096	$13,626	$9,757	2%	3%
Total, Parks NE Area	$14,017	$10,225	$12,880	$9,011	9%	13%
Total, Parks SE Area	$19,130	$10,096	$14,981	$8,774	28%	15%

Source: Table 1 and Table 2 ("na" indicates not applicable – all of the southeast parks service area is within the arterial streets service area).

While fee changes differ by facility type, land use and area, the overall system development fee revenue over the next ten years, based on the land use assumptions, will be slightly higher than under current fees, as shown in Table 4 below.

Table 4. Updated and Current Fee Revenue, 2022-2032

Fee Type	Current Fees	Updated Fees	Percent Change
Non-Utility Fees			
Parks, NW Service Area	$30,473	$0	-100%
Parks, NE Service Area	$1,227,186	$667,962	-46%
Parks, SE Service Area	$2,943,542	$6,599,678	124%
Parks Subtotal	$4,201,201	$7,267,640	73%
Arterial Streets	$25,721,112	$25,209,216	-2%
Library	$7,933	$7,933	0%
Fire	$2,399,526	$3,390,156	41%
Police	$1,397,889	$814,518	-42%
Public Building	$1,210,770	$1,210,770	0%
Subtotal, Non-Utility Fees	$34,938,431	$37,900,233	8%
Utility Fees			
Water	$80,084,275	$57,994,500	-28%
Wastewater	$46,605,968	$69,364,598	49%
Reclaimed Water	$9,694,134	$12,670,708	31%
Subtotal, Utility Fees	$136,384,377	$140,029,806	3%
Grand Total	$171,322,808	$177,930,039	4%

Source: Fee revenue is current and updated single-family fee from Table 1 and Table 2 times new 2022-2032 EDUs from Table 13 (streets), Table 29 (parks), Table 47 (fire and police), Table 72 (water) and Table 92 (wastewater and reclaimed water); library revenue from Table 44; public building revenue from Table 68.

None of the updated fees are based on the existing level of service, because those fees would generate more revenue than the lowest plan-based fee. Consequently, the fees are based on the lower fees calculated using the plan-based methodology (total capital cost over the next ten years or to buildout, whichever is lowest, divided by new service units projected over the same time period). Types of capital costs to be recovered include new improvements, encumbered costs for ongoing projects, pledged debt or interfund loans, the cost of required SDF study updates, and the cost of biennial impact fee audits. Available revenue is the sum of current fund balance and projected revenue based on the updated fee and the growth projections in the Land Use Assumptions. The results are summarized on Table 5.

Arterial street and fire impact fees are based on the ten-year needs, because additional projects beyond ten years would result in a higher buildout cost per service unit. The library fee covers pledged debt, which should be fully retired within a few years. The grandfathered public building fees should cover most of its pledged debt within the next ten years.

The park fees for the northwest service areas are no longer needed, as the fund balance is sufficient to repay all capital obligations. The updated park fees for the other two park service area, as well as the police and utility fees, are based on buildout capital needs, because the buildout cost per service unit is less than both the existing level of service and the ten-year cost per service unit. The updated fees for these facilities will generate less revenue in the next ten years than ten-year capital needs, but enough revenue to fully fund buildout capital needs.

Table 5. Capital Needs and Fee Revenue, 10-Year and Buildout

Fee Type	10-Year Needs*	10-Year Revenue	% of Needs	Buildout Needs*	Buildout Revenue	% of Needs
Non-Utility Fees						
Parks, NW Service Area	$0	$0	0%	$0	$0	0%
Parks, NE Service Area	$1,528,805	$667,962	44%	$1,549,280	$1,553,289	100%
Parks, SE Service Area	$8,844,323	$6,599,678	75%	$8,864,798	$8,864,222	100%
Parks Subtotal	$10,373,128	$7,267,640	70%	$10,414,078	$10,417,511	100%
Arterial Streets	$25,211,186	$25,209,216	100%	$143,204,359	$57,543,600	40%
Library	$7,933	$7,933	100%	$7,933	$7,933	100%
Fire	$3,630,957	$3,629,541	100%	$20,495,407	$7,832,509	38%
Police	$2,051,375	$1,071,971	52%	$2,092,325	$2,081,775	99%
Public Building	$1,611,424	$1,210,770	75%	$1,611,424	$1,611,424	100%
Subtotal, Non-Utility Fees	$42,886,003	$38,397,071	90%	$177,825,526	$79,494,752	45%
Utility Fees						
Water	$116,442,198	$70,083,018	60%	$116,483,148	$116,495,838	100%
Wastewater	$140,967,559	$87,789,200	62%	$143,908,509	$143,906,130	100%
Reclaimed Water	$25,489,352	$15,285,434	60%	$25,530,302	$25,536,214	100%
Subtotal Utility Fees	$282,899,109	$173,157,652	61%	$285,921,959	$285,938,182	100%
All Impact Fee Types						
Grand Total	$325,785,112	$211,554,723	65%	$463,747,485	$365,432,934	79%

* "needs" is needed revenue (the cost of planned projects and obligations, less current fund balance)

Source: Table 26 (arterial streets), Table 43 (parks), Table 44 (library), Table 57 (fire), Table 66 (police), Table 67 and Table 68 (public building), Table 89 (water), Table 104 (wastewater), and Table 115 (reclaimed water).

LEGAL FRAMEWORK

Impact fees are a way for local governments to require new developments to pay a proportionate share of the infrastructure costs they impose on the community. In contrast to traditional "negotiated" developer exactions, impact fees are charges that are assessed on new development using a standard formula based on objective characteristics, such as the number and type of dwelling units constructed. The fees are one-time, up-front charges, with the payment made at the time of building permit issuance. Impact fees require each new development project to pay its pro-rata share of the cost of new capital facilities required to serve that development.

Arizona's enabling act for municipalities is codified in A.R.S. Sec. 9-463.05. In 2011, the legislature passed SB 1525, which was signed by the governor on April 26, 2011. SB 1525 constituted a major overhaul of Arizona's enabling act for municipalities. This section summarizes some of the major provisions of the current state act.

Eligible Facilities

Prior to SB 1525, municipalities could assess impact fees for any "necessary public services" (which was not defined) that constituted "costs to the municipality." SB 1525 amended the statute to limit the types of facilities for which impact fees can be assessed. Authorized facilities for which impact fees can be assessed, after January 1, 2012, are limited to the following defined "necessary public services:"

> *"Necessary public service" means any of the following facilities that have a life expectancy of three or more years and that are owned and operated by or on behalf of the municipality:*
>
> *(a) Water facilities, including the supply, transportation, treatment, purification and distribution of water, and any appurtenances for those facilities.*
>
> *(b) Wastewater facilities, including collection, interception, transportation, treatment and disposal of wastewater, and any appurtenances for those facilities.*
>
> *(c) Storm water, drainage and flood control facilities, including any appurtenances for those facilities.*
>
> *(d) Library facilities of up to ten thousand square feet that provide a direct benefit to development, not including equipment, vehicles or appurtenances.*
>
> *(e) 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.*
>
> *(f) 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.*

> *(g) 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.*
>
> *(h) Any facility that was financed and that meets all of the requirements prescribed in subsection R of this section.* (A.R.S. Sec. 9-463.05.T.7)

No longer authorized are fees for public building facilities, sanitation facilities, library buildings larger than 10,000 square feet and library books or equipment, fire and police administrative and training facilities and aircraft, parks larger than 30 acres and community centers larger than 3,000 square feet. No changes were made to authorized improvements for road, stormwater drainage, water or wastewater facilities, other than the new requirement that eligible facilities must have a life expectancy of at least three years.

Pledged Debt

Municipalities are authorized to continue to charge impact fees that were enacted prior to the January 1, 2012 effective date of SB 1525 without updating them according to the new enabling act if they were pledged to retire debt, pursuant to A.R.S. Sec. 9-463.05.R:

> *R. A municipality may continue to assess a development fee adopted before January 1, 2012 for any facility that was financed before June 1, 2011 if:*
>
> *1. Development fees were pledged to repay debt service obligations related to the construction of the facility.*
>
> *2. After August 1, 2014, any development fees collected under this subsection are used solely for the payment of principal and interest on the portion of the bonds, notes or other debt service obligations issued before June 1, 2011 to finance construction of the facility.*

The Arizona League of Cities and Towns has construed the word "pledged" to include the expressed intent to use impact fees to repay interfund loans or more formal debt instruments, such as general obligation or revenue bonds. The City has pledged fee revenue in this sense for all its system development fees. However, whether debt is pledged pursuant to SB 1525 is of real significance only for improvements that are no longer authorized after January 1, 2012. Consequently, pledged debt is of significance only for parks (Chandler has pledged the use of park fees to retire outstanding debt used for improvements to three parks larger than 30 acres), library (the City has pledged debt on the Sunset Branch library, which is larger than 10,000 square feet) and public buildings (public building fees are no longer authorized, but the City has interfund loans for the construction of City Hall).

Compliance Deadlines

SB 1525 added numerous new requirements related to how impact fees are calculated. Land use assumptions (growth projections) must be prepared for each service area, covering at least a ten-year period. Many new requirements were added for the infrastructure improvements plan (IIP) and the impact fee analysis. Compliance with these was required by August 1, 2014, and the City of Chandler met that deadline.

> *A development fee that was adopted before January 1, 2012 may continue to be assessed only to the extent that it will be used to provide a necessary public service for which development fees can be assessed pursuant to this section and shall be replaced by a development fee imposed under this section on or before August 1, 2014. (A.R.S. Sec. 9-463.05K)*

Significant changes were made to the requirements for adopting updated infrastructure improvements plans and fee schedules. These requirements were effective as of January 1, 2012, but only applied to the updated IIP and impact fee schedules that had to be in place by August 1, 2014.

Provisions were also added relating to refunds. However, these provisions only apply to fees collected after August 1, 2014. Other changes, however, were effective as of January 1, 2012. These include new provisions or amendments related to developer credits, the locking-in of fee schedules for 24 months following development approval, and annual reporting requirements. In addition, the expenditure of impact fees enacted or updated after January 1, 2012 is restricted to facilities authorized by SB 1525 (including repayment of pledged debt for unauthorized facilities).

Service Areas

Service areas are a key requirement for impact fees under SB 1525. A service area is defined as "any specified area within the boundaries of a municipality in which development will be served by necessary public services or facility expansions and within which a substantial nexus exists between the necessary public services or facility expansions and the development being served as prescribed in the infrastructure improvements plan." Land use assumptions (growth projections) and an infrastructure improvements plan (list of capital improvements and impact fee analysis) must be prepared for each service area.

It should be noted that multiple service areas are not mandated by SB 1525. As long it can be shown that developments located anywhere within the service area will be served by or benefit from improvements in the service area – which is another way of saying that a "substantial nexus" can be demonstrated – a single service area may be permitted. Service areas for this update are described in the Service Areas section (see page 13).

Service Units

In impact fee analysis, demand for facilities must be expressed in terms of a common unit of measurement, called a "service unit." SB 1525 defines a service unit as "a standardized measure of

consumption, use, generation or discharge attributable to an individual unit of development calculated pursuant to generally accepted engineering or planning standards for a particular category of necessary public services or facility expansions." The service unit used by the City for all its system development fees is the Equivalent Dwelling Unit, or EDU. One EDU represents the average demand for services generated by a single-family dwelling unit.

Level of Service (LOS) Standards

SB 1525 does not define the term "level of service" (LOS), nor does it require the formal adoption of LOS standards. It does require, however, that impact fees be based on the same LOS provided to existing development in the service area. This does not mean that impact fees cannot be based on a higher standard than is currently provided to existing development in a service area. If the fees are based on a higher-than-existing LOS, there must be a plan to use non-impact fee funds to remedy the existing deficiency.

Methodology

SB 1525 is sometimes misunderstood to dictate a particular methodology for calculating impact fees. Because cities must forecast anticipated growth over a fixed time period and identify improvements over the same time period, some are led to think that a "plan-based" methodology is required, where the cost per service unit is calculated by dividing planned costs by anticipated new service units. In fact, however, SB 1525 does not dictate this methodology, and most impact fees in the state have not been calculated in this way. The reason is that, to support a plan-based methodology, the list of planned improvements must be developed using a rigorous analysis, such as the modeling used to develop a transportation master plan, to establish the required nexus between the anticipated growth and the specific list of improvements required to serve that growth. In many cases, such a master plan is not available.

The principal alternative to the plan-based methodology is "standards-based." The key difference is that the plan-based approach is based on a complex level of service (LOS) standard, such as "every road shall function at LOS D or better," or "the average fire response time shall not exceed three minutes," that requires projecting growth by small areas and using sophisticated modeling or analysis to determine the specific improvements needed to maintain the desired LOS. In contrast, a standards-based approach uses a generalized LOS standard, such as the ratio of park acres to population, which does not require an extensive master planning effort to determine the improvements and costs that are attributable to a specific quantity of growth.

There are advantages and disadvantages to the two methodologies. The major advantage of a standards-based methodology is that it is more flexible, since the fees are not dependent on the specific projects included in the list of improvements, only on the average cost to construct a unit of capacity. Changing the list of planned projects typically does not require recalculation of standards-based impact fees, since a single project is likely to have an insignificant impact on the average cost of capacity added by all the improvements. This allows the capital plan to change in response to unforeseen development without triggering the need for an impact fee update. The major disadvantage of the standards-based approach is that it may not be appropriate for cities such as Chandler that are landlocked and approaching buildout. In the case of cities that are near buildout, the standards-based

approach could end up collecting more revenue than is needed to pay for remaining improvement costs and remaining costs to pay for existing facilities with excess capacity.

SB 1525 made three major changes that were addressed in the 2014 study methodology. First, it required that fees not be based on a higher standard than is currently provided to existing development in a service area. Second, it limited the infrastructure improvements plan (IIP) to a maximum of ten years. Third and finally, SB 1525 mandates that fees must be spent within ten years from when they are collected (15 years in the case of water, wastewater, and reclaimed water fees). To ensure compliance with SB 1525, three costs per service unit are calculated in the 2014 study and subsequent updates. The fees are based on the lowest of the three: existing level of service, buildout cost per service unit, and 10-year cost per service unit. This modified methodology complies with all the relevant requirements of SB 1525.

In sum, the existing level of service is calculated using the standards-based methodology, while the ten-year and buildout costs per service unit are calculated using the plan-based methodology (planned costs divided by new service units). The existing level of service is not used as the basis of the updated fees for any of the facility types, because in every case it would generate more revenue than needed over the next ten years or to buildout.

Land Use Assumptions

An impact fee update must now include the development of land use assumptions (growth projections) for each service area. SB 1525 defines land use assumptions as "projections of changes in land uses, densities, intensities and population for a specified service area over a period of at least ten years and pursuant to the general plan of the municipality." Since the infrastructure improvements plan (IIP) that must be prepared for each service area must identify improvement needs for a period not to exceed 10 years, a 10-year time-frame is provided. However, because Chandler is so close to buildout, a buildout time frame is also provided. Land use assumptions are provided in the Land Use Assumptions section of this report (see page 19).

Infrastructure Improvements Plan

SB 1525 requires that an infrastructure improvements plan (IIP) be prepared for each facility type and service area. Impact fees may only be collected to pay for improvements identified in the IIP. By implication, impact fees can only be spent on improvements listed in the IIP. The IIP must identify planned projects over a period of not more than ten years. The updated IIP will cover the ten-year period from 2022-2032.

The IIP is often confused with a list of planned capital improvements. While the IIP must include such a list, it must also contain much more analysis. The IIP is basically the impact fee study. To avoid confusion, this study refers to the list of improvements that must be included in the IIP as the "capital plan." This study provides a single, consolidated document that includes land use assumptions, infrastructure improvements plans and impact fee analyses for all of the City's system development fees.

The IIP must include only new improvements that add capacity to accommodate future growth, or costs attributable to existing improvements that have excess capacity to accommodate future growth. Replacing an existing fire truck or an existing fire station, or remodeling or repairing an existing building, are examples of improvements that do not add capacity. Some projects may be partially eligible. For example, replacing an existing two-bay fire station with a larger three-bay fire station would be partially eligible for impact fee funding.

Refunds

A common and understandable misinterpretation of SB 1525 is that a municipality may be required to refund fees collected if any improvement listed in the IIP is not completed within the timeframe of the IIP. A.R.S. Sec. 9-463.05.B.7 provides that collection of impact fees is allowed only to pay for a project that is identified in the IIP, "and the municipality plans to complete construction and have the service available within the time period established in the infrastructure improvements plan, but in no event longer than the time period provided in subsection H, paragraph 3 of this section" (i.e., 15 years for water, wastewater and reclaimed water, and 10 years for other facilities). The key terms in this section are "plans to complete" and "have the service available." No community has a crystal ball that allows it to know with certainty how much development is going to occur over a 10-15 year period in the future. While the City may plan to complete an improvement in this time period in order to serve anticipated growth, if the anticipated growth does not materialize the improvement may not be needed to serve the growth that does occur.

The refund provisions in the referenced refund subsection (H) reinforce this interpretation. The first two subparagraphs refer to the collection of fees when "service is not provided" (H.1) or when "service is not available" and the municipality has failed to complete construction within the time period identified in the IIP (H.2), a clear echo of the "have the service available" phrase in subsection B.7. In general, impact fees are not collected when services are not available. A clear case would be collecting water, wastewater and reclaimed water fees from a development that is not able to connect to the water and wastewater system. However, the City of Chandler does not do this. For other facilities, service is provided immediately upon development, even if a planned facility could provide service from a closer location. A.R.S. Sec. 9-463.05.B.7 directly references only the final paragraph of subsection H (H.3), which simply requires that the impact fees be spent within a certain time period (15 years for water, wastewater and reclaimed water, and 10 years for other facilities) from the date they were collected. It is reasonable to conclude that this is the only refund provision that will likely be applicable, as long as the City does not collect impact fees and deny access to services. However, there is the possibility that refunds could be required if a construction project comes in significantly lower than its estimated cost, per A.R.S. Sec. 9-463.05.I.

Offsets

New development should not be required to pay twice for the cost of new facilities – once through impact fees and again through other taxes or fees that are used to fund the same facilities. To avoid such potential double-payment, impact fees may be reduced, and such a reduction is referred to as an "offset." Offsets are incorporated into the impact fee calculation. While this has long been a part of impact fee practice in Arizona, the current statute contains the following provision:

> *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.* (A.R.S. Sec. 9-463.05.B.12)

The language inserted in the state enabling act by SB 1525, cited above, requires municipalities to provide offsets for the excess portion of any construction contracting excise tax. Since the City of Chandler does not charge a construction excise tax higher than for other types of business activities, no such offset is required.

The revenue forecast required by A.R.S. Sec. 9-463.05.B.12 is provided in Appendix D. In general, offsets are only required for funding that is dedicated for capacity-expanding improvements of the type addressed by the impact fee. A municipality is not required to use general fund revenue to pay for growth-related improvements. If, for example, a municipality decides that the existing level of service on which impact fees are based is insufficient and opts to use general revenue to raise the level of service for both existing and new development, no offset would be required.

The clearest situation that requires an offset is when there is outstanding debt on the facilities that are providing existing development with the level of service that new development will be expected to pay for through impact fees. In this case, new development will be paying for the facilities that will serve them, while also paying for a portion of the cost of facilities serving existing development through property or other taxes. Consequently, the impact fees should be reduced to avoid this potential double-payment.

Another clear case requiring offsets is when the impact fees for a particular service area have been adopted based on a level of service that is higher than what is currently provided to existing development in the service area. In such a case, the cost of remedying the existing deficiency will almost always be funded by future revenue sources to which new development in the service area will contribute. To the extent that this is the case, an offset is required. Because the updated fees do not exceed the cost of the existing level of service, such an offset is not applicable to this study.

As noted above, an offset will generally be warranted when new development will be contributing toward a funding source that is dedicated to fund the same growth-related improvements addressed by the impact fee. Offsets are also often provided for anticipated grant funding that may be available to help fund growth-related improvements, although the uncertainty of such funding and the fact that it is not generated specifically by new development generally make this type of offset discretionary.

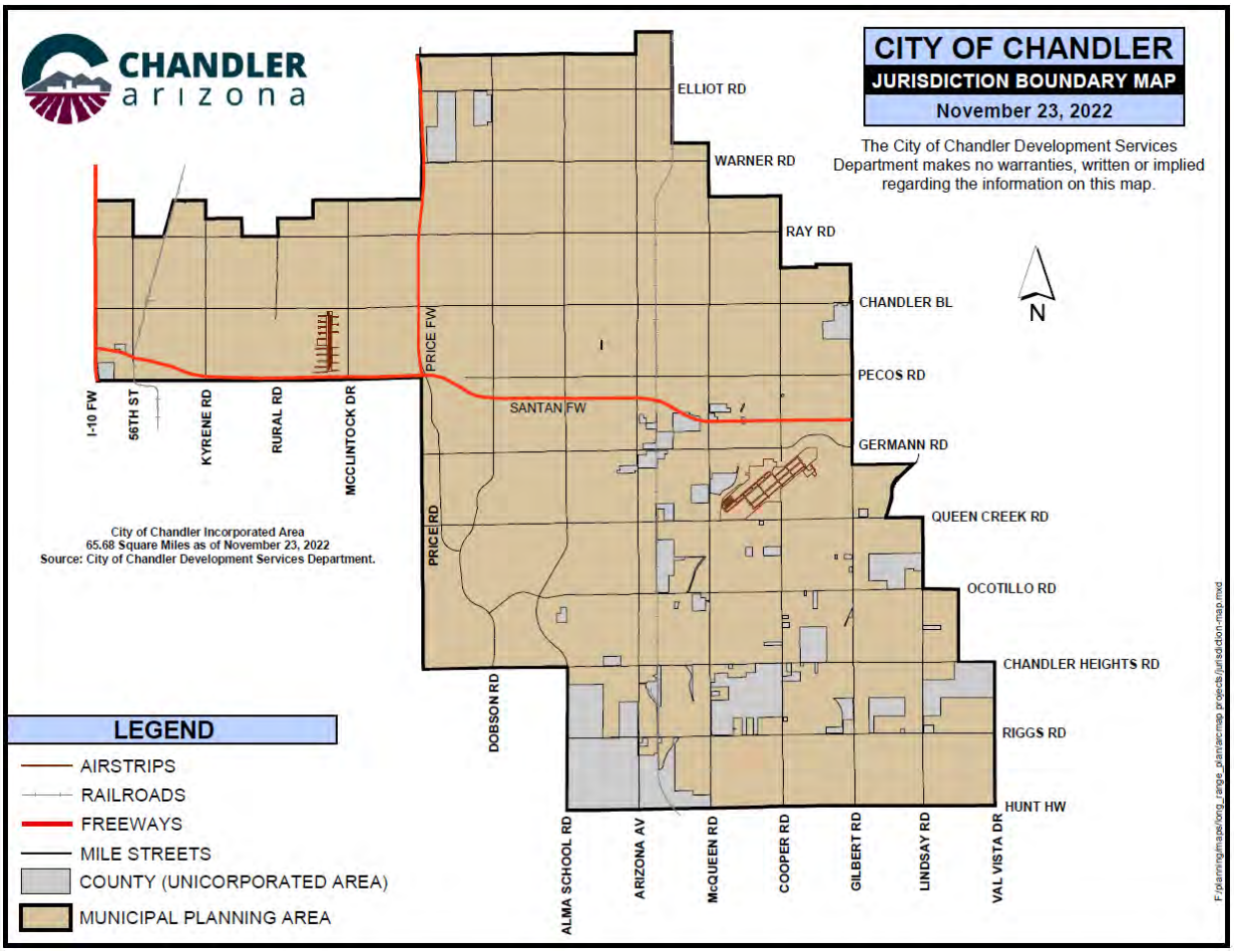
SERVICE AREAS

As noted in the Legal Framework section, service areas are a key requirement for impact fees under SB 1525. Land use assumptions (growth projections) and an infrastructure improvements plan (list of capital improvements and impact fee analysis) must be prepared for each service area. Multiple service areas are not mandated by SB 1525, as long as it can be shown that developments located anywhere within the service area will be served by or benefit from improvements anywhere in the service area – which is another way of saying that a "substantial nexus" can be demonstrated.

Chandler currently charges system development fees for arterial streets, water (including water resources), wastewater, reclaimed water, parks, libraries, fire, police and public building facilities. Except for arterial streets and parks, the current service areas are city-wide.

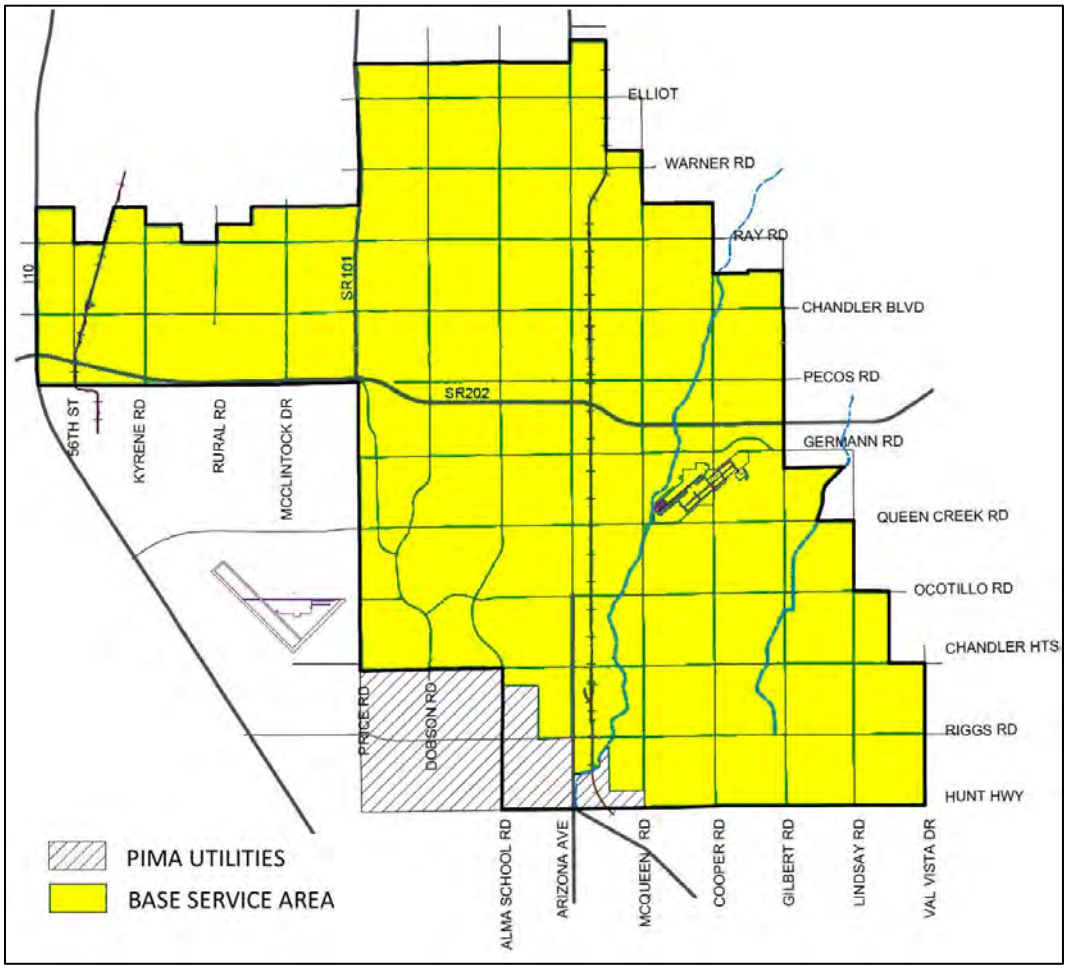
The service areas include most unincorporated areas within the City's municipal planning area. Non-utility system development fees are not assessed in the unincorporated areas, unless they annex into the City. Utility system development fees may be assessed on new City utility customers located in unincorporated areas. The municipal planning area and the areas that are currently unincorporated are shown in Figure 1.

Figure 1. City Limits and Municipal Planning Area



The city-wide service area excludes the unincorporated area in the southwest corner of the planning area that is served by Pima Utilities, because the City does not anticipate ever annexing or providing services to this area. As discussed below, the city-wide service area continues to be appropriate for the water, wastewater, reclaimed water, fire, and police system development fees.

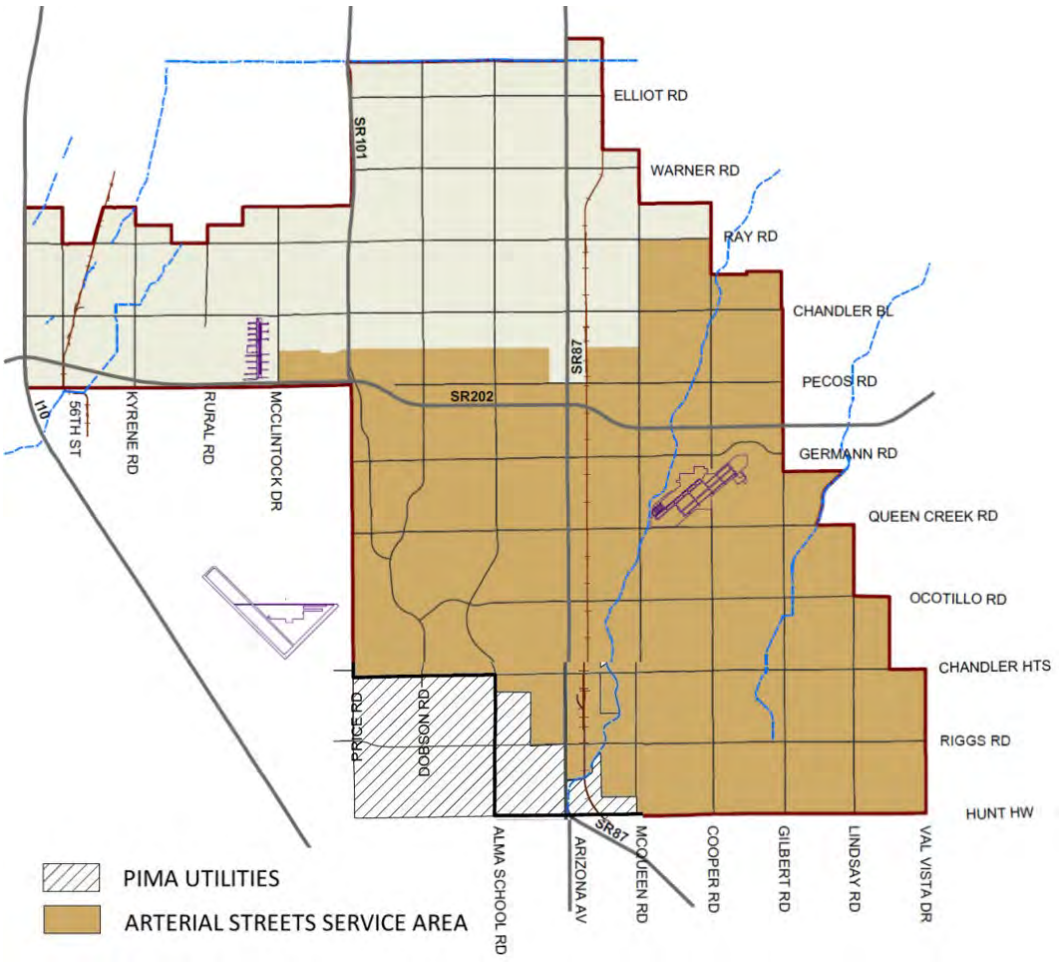
Figure 2. City-Wide Service Area



Arterial Streets

Transportation planners classify roadways according to function. The primary function of arterial streets is to move traffic long distances within a community. Since arterial streets are designed to move traffic throughout the community, a single service area continues to be appropriate. The City's current arterial streets service area excludes an area in the northwest part of the city where arterial streets have been funded with improvement districts. It also excludes the largely developed downtown area, where the arterial street system is in place and the City desires to encourage redevelopment, as shown in Figure 3.

Figure 3. Arterial Streets Service Area



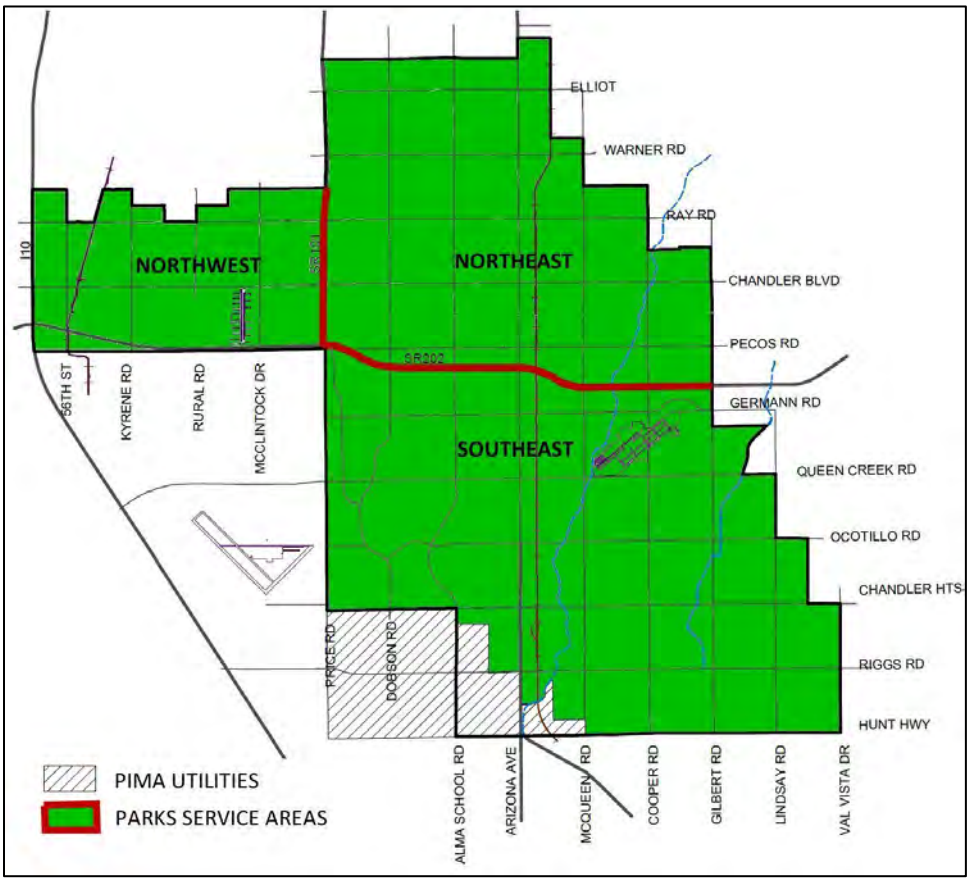
Parks

SB 1525 authorizes fees for "neighborhood parks," although the term is undefined except for certain restrictions. The most important restriction is that neighborhood parks cannot not exceed 30 acres (unless a "direct benefit" - another undefined term - can be demonstrated).

The City's 2021 *Parks Strategic Master Plan* contains planning standards for neighborhood and community parks. A neighborhood park is typically 1-10 acres and serves an area of about a one-half mile radius, while a community park has a typical size of 10-75 acres and serves an area of about a two- to three-mile radius. The 30-acre park size authorized for impact fees falls in the middle of Chandler's community park planning standards.

Park impact fee service areas can reasonably be larger than the area served by a single park. Residents do not always use the park closest to them. A park impact fee system where each existing or potential park has its own service area would be unworkable. The City's three park service areas are shown in Figure 4. Each is roughly the size of one or two community park areas.

Figure 4. Park Service Areas



Libraries and Public Buildings

The City continues to assess library and public building fees to retire pledged debt incurred prior to 2011. These fees are not required to be updated in conformance with the current state impact fee enabling act. The fees are collected on new development city-wide.

Fire and Police

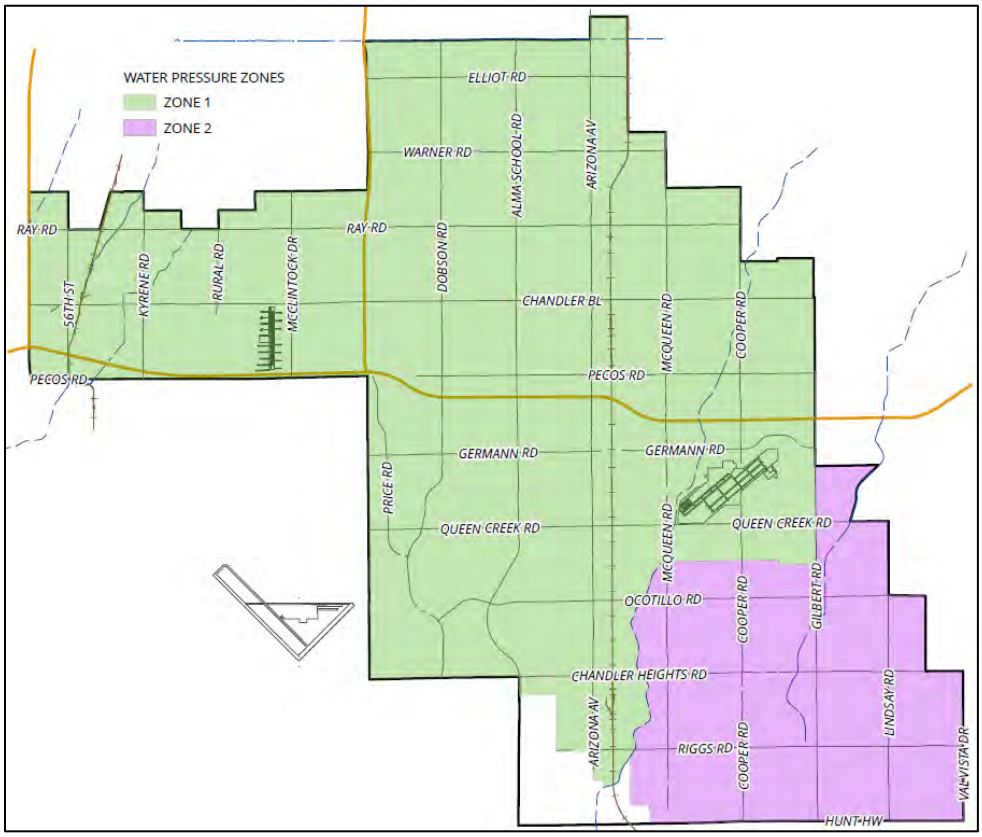
The current service areas for fire and police system development fees are city-wide. Police services are deployed from the Police Main Station, Desert Breeze Substation and Chandler Heights Substation, and are supported by a Property and Evidence Facility. Police protection are provided by patrol officers assigned to a specific geographic area but available to respond to any incident, as needed. Fire and emergency response is provided by units located in 11 stations, supported by administrative facilities. While units are typically dispatched to an incident from the nearest station, units from other stations may respond if the unit from the closest station is responding to another incident. In addition, units from multiple stations may be dispatched to a major incident. Fire and police facilities thus form an integrated system, and the city-wide service area is appropriate.

Water, Wastewater and Reclaimed Water

A single city-wide service area continues to be appropriate for water, wastewater and reclaimed water, because of the interconnected nature of the City's water and wastewater systems.

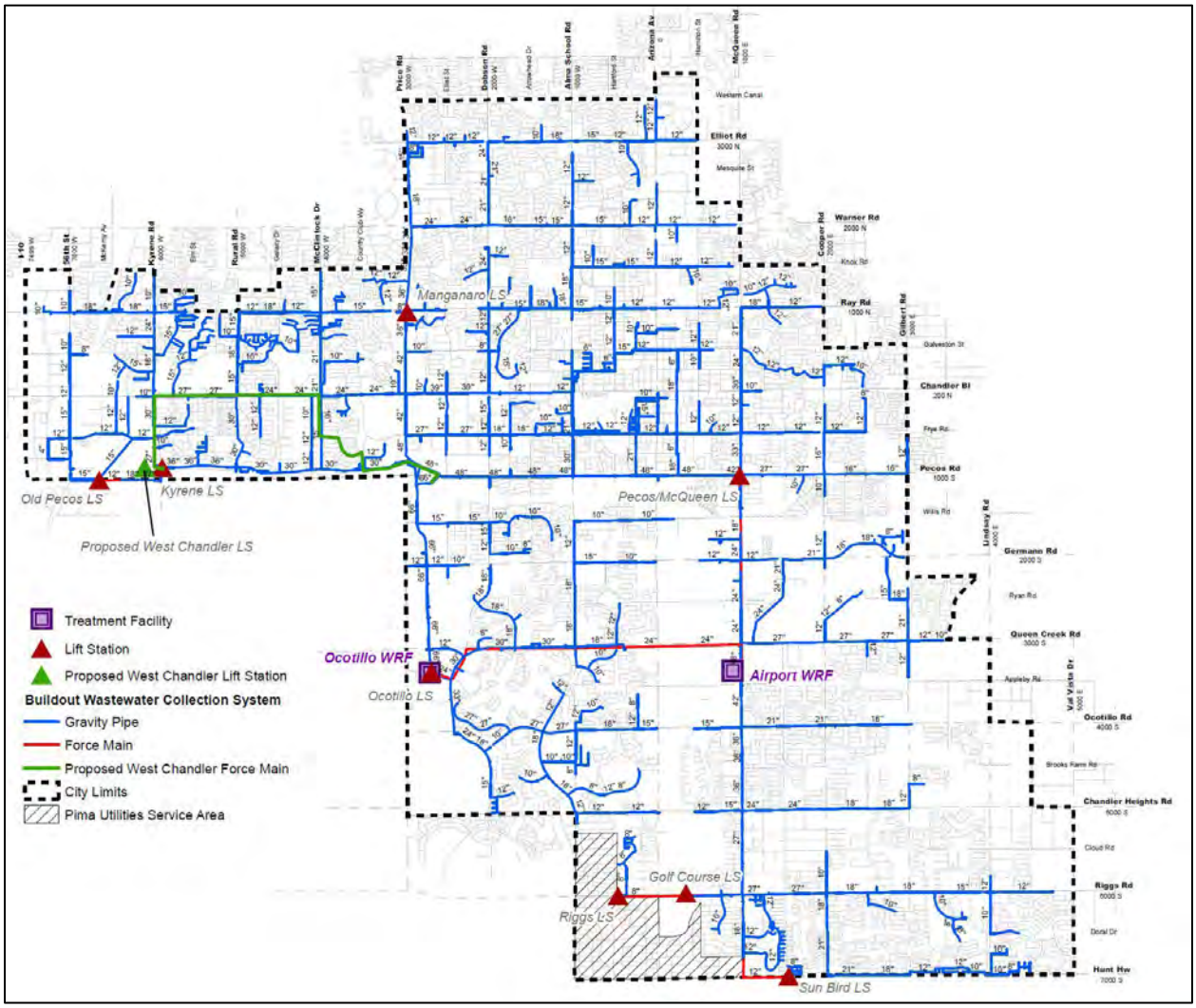
The City's surface water supplies include Salt River Project (SRP) water, Roosevelt Water Conservation District (RWCD) water, New Conservation Storage (NCS) water (which was developed by increasing the capacity of Roosevelt Dam), and Colorado River water delivered through the Central Arizona Project (CAP). Groundwater is pumped from wells throughout the City to supplement surface water supplies and to provide additional supply during times of surface water shortage. Surface water treatment facilities include the Surface Water Treatment Plant and the City's share of the San Tan Vista Water Treatment Plant jointly owned with the Town of Gilbert. There are currently two pressure zones, although the configuration of these zones may change in the future. Pressure reducing valves (PRVs) provide interconnections between the two pressure zones to provide backup water supply (see Figure 5). No area of the City is served by a separate set of facilities. The City's water system is a pressurized, integrated system suitable for a single service area.

Figure 5. Water Pressure Zones



Chandler's wastewater is currently treated at three facilities: the Ocotillo Water Reclamation Facility, the Airport Water Reclamation Facility and the Lone Butte Wastewater Treatment Plant. The Lone Butte plant will eventually be decommissioned. At buildout, the city will be served by two treatment plants, which are already interconnected with two force mains from the Ocotillo to Airport plant. Chandler's buildout wastewater system as recommended by the master plan is illustrated in Figure 6. The wastewater system is an integrated system appropriate for a single service area.

Figure 6. Planned Wastewater System



The City charges a separate reclaimed water system development fee. The reclaimed water system is part of both the water and wastewater systems. Reclaimed water provides both an efficient method of disposing of wastewater and a supplemental water supply source. Consequently, the water/wastewater service area is also the appropriate service area for the reclaimed water system development fee.

LAND USE ASSUMPTIONS

In an attempt to make the fee calculations in this report easier to follow, numbers in one table that are inputs into another table are highlighted in red.

This section presents land use assumptions covering a ten-year period (2022-2032) to serve as the basis for the infrastructure improvements plan and impact fee calculations for the City of Chandler's update of arterial streets, parks, fire, police, water, wastewater, and reclaimed water system development fees. State law requires that land use assumptions be developed for each service area. It defines land use assumptions as "projections of changes in land uses, densities, intensities and population for a specified service area over a period of at least ten years and pursuant to the general plan of the municipality." Due to Chandler's proximity to buildout, buildout projections are also provided.

Chandler's Development Services Department maintains a database on existing and buildout development that is broken down by small areas and contains information on residential population, dwelling units by housing type and nonresidential building square footage by land use type. The Land Use Assumptions are based on the City's existing land use data and buildout projections.

The City's land use data includes all the land within the City's municipal planning area, with the exception that they exclude the area served by Pima Utilities and unincorporated county islands that are unlikely to be annexed. Estimates of existing nonresidential square footage are based on Maricopa County Assessor records. Nonresidential square footage and residential units for future projects that have received zoning approval or are currently under review are included in the buildout estimates. Undeveloped parcels that have not yet received zoning entitlements are assigned a land use that is consistent with the General Plan and any specific area plans that may have been adopted for the area. Building permit data are utilized to update newly constructed homes and nonresidential buildings in a GIS database on a quarterly basis. Density assumptions applied to undeveloped/un-entitled parcels are average densities derived from existing developments in Chandler. Residential population estimates are based on population per housing unit ratios. The City's Development Services Department can provide a more detailed description of assumptions upon request.

While the City has exceptionally good data on existing (2022) and buildout development, it does not have intermediate projections required for the 10-year Land Use Assumptions. An estimate of the percent of new development to buildout that will occur over the next ten years is derived from the Maricopa Association of Governments' (MAG) socioeconomic projections of population and employment by land use type for small areas, prepared in 2019. MAG projections are available for 2020, 2030, 2040, and 2055.

Population and Housing

Based on MAG projections of residential population growth, the percentages of buildout (assumed 2055 MAG projection) residential growth anticipated to occur over the next ten years by service area is shown in Table 6 on the following page.

Table 6. Ten-Year Percent of Buildout New Population

RAZ	Service Area Parks	Strts	Residential Population 2020	2022	2030	2032	2040	2055	New Pop. 22-32	22-55	New 22-32 % of 22-55
310	NE		51,165	52,340	57,041	57,977	61,722	67,997	5,637	15,657	n/a
315	NW		40,137	40,681	42,858	42,891	43,024	43,284	2,210	2,603	n/a
316	NE		35,809	36,769	40,607	40,920	42,174	42,901	4,151	6,132	n/a
317	NE	Yes	34,271	34,845	37,141	37,616	39,516	42,264	2,771	7,419	n/a
325	SE	Yes	46,190	46,782	49,149	49,315	49,980	50,253	2,533	3,471	n/a
327	SE	Yes	25,353	26,275	29,965	30,134	30,810	31,013	3,859	4,738	n/a
328	SE	Yes	46,586	47,727	52,291	52,606	53,865	54,646	4,879	6,919	n/a
Subtotal, Parks NW			40,137	40,681	42,858	42,891	43,024	43,284	2,210	2,603	84.9%
Subtotal, Parks NE			121,245	123,954	134,789	136,513	143,412	153,162	12,559	29,208	43.0%
Subtotal, Parks SE			118,129	120,784	131,405	132,055	134,655	135,912	11,271	15,128	74.5%
City-Wide Population			279,511	285,419	309,052	311,459	321,091	332,358	26,040	46,939	55.5%
Arterial Streets Area			152,400	155,629	168,546	169,671	174,171	178,176	14,042	22,547	62.3%

* 2022 and 2032 are straight-line interpolations between 2000-2030 and 2030-2040 respectively

Source: Maricopa Association of Governments (MAG), *Socioeconomic Projections*, June 2019.

Projections of ten-year (2022-2032) population and housing units are derived from the City's current estimates and buildout projections, assuming the above percentages of remaining residential development that will occur over the next ten years. Existing, ten-year, and buildout projections of population and housing units by service area are summarized in Table 7.

Table 7. Housing Units and Population by Service Area, 2022-Buildout

Service Area	Single-Family	Multi-Family	Total Units	Population
Parks Northwest, 2022	11,856	5,366	17,222	43,916
Parks Northeast, 2022	33,471	18,697	52,168	133,028
Parks Southeast, 2022	35,611	8,629	44,240	112,812
City-Wide, 2022	80,938	32,692	113,630	289,756
Streets, 2022	52,349	16,384	68,733	175,269
Parks Northwest, 2032	11,877	5,378	17,255	44,000
Parks Northeast, 2032	34,266	23,890	58,156	148,298
Parks Southeast, 2032	36,583	8,969	45,552	116,158
City-Wide, 2032	82,726	38,237	120,963	308,456
Streets, 2032	53,523	18,437	71,960	183,498
Parks Northwest, Buildout	11,881	5,380	17,261	44,016
Parks Northeast, Buildout	35,319	30,774	66,093	168,537
Parks Southeast, Buildout	36,916	9,086	46,002	117,305
City-Wide, Buildout	84,116	45,390	129,506	329,858
Streets, Buildout	54,233	19,680	73,913	188,478

Note: Single-family defined as detached, single-family attached (townhome), and mobile home units

Source: 2022 and buildout housing unit estimates from City of Chandler Planning Division, December 23, 2022; 2032 projections based on ten-year percentages of buildout new development from Table 6; population estimates based on 2.55 persons per unit from 2020 census.

The impact of a dwelling unit on the need for capital facilities is often proportional to the number of persons residing in the dwelling unit. Population density can be measured for different housing types in terms of either average household size (average number of persons per occupied dwelling unit) or persons per unit (average number of persons per dwelling unit, including vacant as well as occupied units). In this analysis, average household size is used. Current information on average household size by housing type in Chandler is available from the U.S. Census Bureau's American Community Survey, as shown in Table 8. These population densities are used to determine residential demand per unit by housing type for parks, fire and police system development fees.

Table 8. Average Household Size by Housing Type

Housing Type	Household Population	Occupied Units	Avg. HH Size
Single-Family*	220,451	78,244	2.82
Multi-Family	51,084	21,502	2.38
Total	271,535	99,746	2.72

* includes single-family detached, attached, and mobile home units
Source: U.S. Census Bureau, American Community Survey 5% weighted sample data based on 1% annual samples in 2017 through 2021 in the City of Chandler.

Nonresidential Development

Using the same procedure described above for residential, the MAG data on employment are used to develop the percentages of buildout nonresidential growth for the Chandler municipal planning area anticipated to occur over the next ten years. These are shown by service area in Table 9.

Table 9. Ten-Year Percent of Buildout New Employment

	Service Area								New Jobs		New 22-32
RAZ	Parks	Strts	2020	2022	2030	2032	2040	2055	22-32	22-55	% of 22-55
310	NE		21,428	22,678	27,678	28,319	30,882	34,225	5,641	11,547	n/a
315	NW		43,778	44,461	47,194	47,756	50,004	51,578	3,295	7,117	n/a
316	NE		27,585	28,356	31,442	31,918	33,820	35,676	3,562	7,320	n/a
317	NE	Yes	8,782	9,156	10,653	10,963	12,201	14,118	1,807	4,962	n/a
325	SE	Yes	33,031	34,409	39,919	40,839	44,517	50,351	6,430	15,942	n/a
327	SE	Yes	11,166	12,010	15,384	16,252	19,723	24,209	4,242	12,199	n/a
328	SE	Yes	8,893	9,127	10,065	10,237	10,923	11,848	1,110	2,721	n/a
City-Wide			154,663	160,197	182,335	186,284	202,070	222,005	26,087	61,808	42.2%
Arterial Streets Area			61,872	64,702	76,021	78,291	87,364	100,526	13,589	35,824	37.9%

* 2022 and 2032 are straight-line interpolations between 2020-2030 and 2030-2040, respectively
Source: Maricopa Association of Governments (MAG), *Socioeconomic Projections*, June 2019.

Projections of ten-year (2022-2032) and buildout nonresidential building square footage by land use type are derived from the City's buildout projections, utilizing the percentages of remaining growth that will occur over the next ten years from Table 9 above. Because park fees are not assessed on nonresidential development, it is not necessary to prepare nonresidential projections for the park service areas. The resulting nonresidential projections city-wide and for the arterial street service area are shown in Table 10.

Table 10. Nonresidential Square Feet by Service Area, 2022-Buildout

Service Area	Commercial	Office	Industrial	Public	Total
City-Wide, 2022	18,758,424	8,088,348	45,475,860	12,407,444	84,730,076
Streets, 2022	8,285,349	3,902,248	24,851,325	7,404,121	44,443,043
City-Wide, 2032	19,859,121	10,027,413	53,756,525	12,929,082	96,572,141
Streets, 2032	9,190,558	5,065,809	30,389,226	7,892,937	52,538,530
City-Wide, Buildout	21,366,710	12,683,289	65,098,288	13,643,554	112,791,841
Streets, Buildout	10,673,762	6,972,329	39,463,200	8,693,874	65,803,165

Source: 2022 and buildout estimates from City of Chandler Planning Division, December 23, 2022; 2032 projections based on ten-year percentages of buildout new jobs from Table 9.

Employee densities are derived from the estimates currently used by the Maricopa Association of Governments, as shown in Table 11. MAG conducted an analysis of employment density by land use type. Building square footage was divided by jobs for each land use type to determine average square feet per employee. These have been converted to employees per 1,000 square feet for use in the functional population estimates (see Appendix B) used to develop the fire and police service unit multipliers.

Table 11. Nonresidential Employment Densities

Land Use Type	Sq. Feet/ Employee	Employees/ 1,000 sq. ft.
Retail Commercial	561	1.78
Office	459	2.18
Industrial/Warehouse	727	1.38
Public	459	2.18

Source: Maricopa Association of Governments, *Data, Models, Methods, and Assumptions in the MAG Socioeconomic Projections*, 2019.

ARTERIAL STREETS

This section updates the City's arterial street system development fees in compliance with the Arizona impact fee enabling act for municipalities (SB 1525). The fee applies only to new development in the subarea of the city designated as the arterial street service area. The system development fee ordinance defines the arterial street system to exclude local streets, collector streets, and freeways. An inventory of the existing arterial street system in the service area was compiled for this update and is presented in Table 116 in Appendix A.

Service Units

As described in the Service Unit subsection of the Legal Framework section, the service unit for all the City's system development fees is the Equivalent Dwelling Unit, or EDU, which represents the demand for facilities generated by a typical single-family dwelling unit. For the arterial street system development fees, the demand for facilities is based on afternoon peak hour trip generation. Trip generation rates are based on information published in the most recent edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*.

Trip generation rates need to be adjusted to exclude pass by and diverted-linked trips. Pass by trips are those trips that are already on a particular route for a different purpose and simply stop at a development on that route. For example, a stop at a convenience store on the way home from the office is a pass by trip for the convenience store. A pass by trip does not create an additional burden on the street system and therefore should not be counted in the assessment of system development fees. Diverted-linked trips are similar to pass by trips in that an intermediate stop is made on the way to the primary destination, but a short diversion is made from the most direct path to the primary destination. The adjustment is made in this update to include only primary trips generated by the development.

It is also necessary to adjust trip generation rates for differences in the average length of trips. A shorter trip imposes a smaller burden on the arterial street system than a longer trip. While published information is available for average trip lengths by trip purpose, the average trip length for peak hour trips of residential, office, industrial/warehouse and public/institutional land uses are dominated by the home-to-work trip and tend to be relatively similar. The exception is retail/commercial uses, which tend to have shorter trip lengths than the home-to-work commute. An adjustment is made to the retail/commercial trip rate to account for the shorter-than-average shopping trip.

The result of combining trip generation rates, primary trip factors and the retail trip length adjustment is a schedule that establishes the number of arterial street service units generated by various land use types per unit of development for Chandler. The recommended service unit multipliers are presented in Table 12.

Table 12. Arterial Street Service Unit Multipliers

Land Use	ITE Code	Unit	Pk Hr Trip Rate	New Trips Factor	Trip Length Factor	Adjusted Trip Rate	EDUs/ Unit
Single-Family	210	Dwelling	0.94	100%	100%	0.940	1.000
Multi-Family	220	Dwelling	0.51	100%	100%	0.510	0.543
Retail/Commercial	820	1000 sq. ft.	3.40	43%	66%	0.965	1.027
Office	710	1000 sq. ft.	1.44	92%	100%	1.325	1.410
Industrial/Warehouse	130/150	1000 sq. ft.	0.26	100%	100%	0.260	0.277
Public/Institutional	560	1000 sq. ft.	0.49	100%	100%	0.490	0.521

Source: Trip rates during the p.m. peak hour of adjacent street traffic on a weekday from the Institute of Transportation Engineers (ITE), *Trip Generation*, 11th ed., 2021 (retail/commercial based on shopping center, office based on general office, industrial/warehouse based on average for industrial park and warehousing; public/institutional based on church); new trips factor for retail/commercial from ITE, *Trip Generation Handbook*, 2017 for shopping center; new trip factor for office from national data base of origin and destination studies provided in Tindale-Oliver, *Orange County Transportation Impact Fee Study*, September, 2020, p. A-14; trip length factor for retail/commercial based on ratio of average shopping trip length to average trip length for all trips from U.S. Department of Transportation, *National Household Travel Survey*, 2017; adjusted trip rate is product of trip rate, new trip factor and trip length factor; EDUs per unit is ratio of adjusted trip rate to single-family adjusted trip rate.

The estimates of existing, ten-year and buildout arterial street service units are based on the service unit multipliers above and the Land Use Assumptions. The results are shown in Table 13.

Table 13. Arterial Street Service Units, 2022-Buildout

Land Use	Unit	Units	EDUs/Unit	EDUs
Single Family, 2022	Dwelling	52,349	1.000	52,349
Multi-Family, 2022	Dwelling	16,384	0.543	8,897
Retail/Commercial, 2022	1000 sq. ft.	8,285	1.027	8,509
Office, 2022	1000 sq. ft.	3,902	1.410	5,502
Industrial/Warehouse, 2022	1000 sq. ft.	24,851	0.277	6,884
Public/Institutional, 2022	1000 sq. ft.	7,404	0.521	3,857
Total 2022 EDUs				85,998
Single Family, 2032	Dwelling	53,523	1.000	53,523
Multi-Family, 2032	Dwelling	18,437	0.543	10,011
Retail/Commercial, 2032	1000 sq. ft.	9,191	1.027	9,439
Office, 2032	1000 sq. ft.	5,066	1.410	7,143
Industrial/Warehouse, 2032	1000 sq. ft.	30,389	0.277	8,418
Public/Institutional, 2032	1000 sq. ft.	7,893	0.521	4,112
Total 2032 EDUs				92,646
Single Family, Buildout	Dwelling	54,233	1.000	54,233
Multi-Family, Buildout	Dwelling	19,680	0.543	10,686
Retail/Commercial, Buildout	1000 sq. ft.	10,674	1.027	10,962
Office, Buildout	1000 sq. ft.	6,972	1.410	9,831
Industrial/Warehouse, Buildout	1000 sq. ft.	39,463	0.277	10,931
Public/Institutional, Buildout	1000 sq. ft.	8,694	0.521	4,530
Total Buildout EDUs				101,173
New EDUs, 2022-2032				6,648
New EDUs, 2022-Build-out				15,175

Source: 2022, 2032 and buildout units for arterial street service area from Table 7 (residential) and Table 10 (nonresidential); EDUs per unit from Table 12; EDUs is product of units and EDUs per unit.

Cost per Service Unit

As described in the Methodology subsection of the Legal Framework section, the updated system development fees are based on the lowest of three costs per service unit: existing level of service, ten-year cost and buildout cost. The 2014 update reduced the fees to account for pass-through traffic. However, the 2014 study noted that such an adjustment is not required because of the counter-balancing nature of spill-over effects between jurisdictions. The 2018 and this update do not include an adjustment for pass-through traffic.

Existing Level of Service

One measure of level of service used in road impact fee analysis is the system-wide ratio of demand to capacity. This is similar to the volume/capacity (V/C) ratio used to measure levels of service on individual roadway segments, but it applies to the entire roadway system. The system-wide measure is the ratio of vehicle-miles of travel (VMT) to vehicle-miles of capacity (VMC).

An analysis of the existing level of service was conducted by preparing a detailed inventory of the existing arterial street network (see Appendix A). For each roadway segment, information was gathered on segment length in miles, number of through lanes, and recent traffic counts. Vehicle-miles of capacity are based on generalized maximum volumes at LOS D from the City's 2019 *Transportation Master Plan Update*, shown in Table 14 below.

Table 14. Arterial Street Capacities at Level of Service D

	2-Lane	4-Lane	6-Lane
Average Daily Capacity at LOS D	15,300	32,200	48,500
x Peak Hour Factor	0.085	0.085	0.085
Peak Hour Capacity at LOS D	1,300	2,700	4,100

Source: Average daily capacities at LOS D from Kimley-Horn, *Chandler Transportation Master Plan 2019 Update*, Final Report, January 2020; peak hour factor from City of Chandler Public Works & Utilities Department.

The inventory data demonstrates that average congestion on the arterial street system will remain constant from now to buildout, as summarized in Table 15.

Table 15. Arterial Street VMT/VMC Ratios, Existing and Buildout

	Existing	Buildout
Total Vehicle-Miles of Travel (VMT)	153,148	175,006
÷ Total Vehicle-Miles of Capacity (VMC)	255,472	289,926
VMT/VMC Ratio	0.60	0.60

Source: Existing VMC and VMT from Table 116 in Appendix A; buildout VMC and VMT from Table 117 in Appendix A.

The existing level of service can also be quantified in terms of the cost per service unit. The first step is to determine the average cost to construct a new vehicle-mile of capacity. The average cost of capacity added by the ten-year planned improvements is $7,160 per new VMC, as shown in Table 16.

Table 16. Average Cost per Vehicle-Mile of Capacity, 2022-2032

Arterial Street	From	To	Miles	Lanes Exist	Lanes Fut.	Total Project Cost	Capacity Exist	Capacity Future	New VMC	Cost/ VMC
Alma School Rd	Germann Rd	Queen Creek	0.98	4	6	$8,177,000	2,700	4,100	1,372	$5,960
Alma School Rd*	Frye Rd	Pecos Rd	0.50	4	6	$4,703,500	2,700	4,100	700	$6,719
Chandler Hts Rd	McQueen Rd	Val Vista Dr	3.96	2	4	$41,063,079	1,300	2,700	5,544	$7,407
Lindsay Rd	Ocotillo Rd	Hunt Hwy	3.00	2	4	$30,661,503	1,300	2,700	4,200	$7,300
Total			8.44			$84,605,082			11,816	$7,160

* excludes half of segment length and cost that are outside the arterial street service area.

Source: Improvements and costs (total costs including costs incurred over last 10 years) from City of Chandler, *2023-2032 Capital Improvements Plan*; capacity based on existing and future lanes and generalized capacities from Table 14; new VMC is the product of miles and increase in capacity; cost per VMC is project cost divided by new VMC.

The calculation of the existing arterial street level of service in terms of the cost per service unit is presented in Table 17. The first step is to compute the existing capacity utilized by existing traffic. This is done by dividing existing VMT by the buildout VMT/VMC ratio. The VMC utilized by existing traffic is multiplied by the average cost per VMC to determine the cost of existing facilities serving existing traffic. Deducting the amount of outstanding debt/interfund loans related to existing facilities yields the cost of existing facilities serving existing development that has been fully paid for. The final step is to divide the net cost of facilities serving existing development by the number of existing service units. This results in the existing cost per service unit of $20,850 per EDU.

Table 17. Arterial Street Existing Cost per Service Unit

Existing Vehicle-Miles of Travel (VMT)	153,148
÷ Buildout VMT/VMC Ratio	0.60
Vehicle-Miles of Capacity (VMC) Utilized by Existing Traffic	255,247
x Cost per Vehicle-Mile of Capacity (VMC)	$7,160
Replacement Cost of Facilities Serving Existing Traffic	$1,827,568,520
– Outstanding Debt/Interfund Loans	-$34,530,036
Net Cost of Facilities Serving Existing Traffic	$1,793,038,484
÷ 2022 Service Units (EDUs)	85,998
Existing Cost per Service Unit	$20,850

Source: Existing VMT and buildout VMT/VMC ratio from Table 15; cost per VMC from Table 16; 2022 arterial street EDUs from Table 13; outstanding debt from Table 123.

Ten-Year Cost

Some of the City's planned ten-year improvement costs will be paid for by regional transportation funds administered through the Maricopa Association of Governments (MAG). MAG funding sources include Federal and State transportation funds and Regional Arterial Road Funding (RARF), which comes from dedicated county-wide transportation sales tax revenue. Regional funding from the voter-approved authorization runs out in FY 2026, and the remaining RARF funding for arterial street improvements in Chandler will occur in the next year or two. The anticipated outside funding over the next ten years is summarized in Table 18.

Table 18. Outside Funding for Arterial Street Improvements

Improvement	Phase	Fiscal Years	Fed./State Funding	RARF Funding	Total Non-City Funding
Alma School, Pecos-Germann	ROW/Des./Constr.	2023	$0	$3,000,000	$3,000,000
Chandler Hts, Gilbert-Val Vista	Construction	2023	$7,495,063	$0	$7,495,063
Lindsay Rd, Ocotillo-Hunt Hwy	ROW/Constr.	2023	$5,809,290	$0	$5,809,290
Ten-Year Total			$13,304,353	$3,000,000	$16,304,353

Source: Maricopa Association of Governments, *FY 2022 Arterial Life Cycle Program (ALCP)*, December 1, 2021 and City of Chandler, *2023-2032 Capital Improvements Plan* (excludes funding for intersection improvements, which are not funded with Chandler's system development fees).

The ten-year cost per service unit represents costs that will be incurred by the City over the next ten years to build new capacity to serve anticipated development, repay outstanding debt/interfund loans associated with existing capacity available to serve new development, pay for encumbrances on current projects, and pay for updated SDF studies and biennial audits. The results, shown in Table 19, indicate a ten-year cost per service unit of $3,792 per EDU.

Table 19. Arterial Street 10-Year Cost per Service Unit

Alma School Rd, Germann-Queen Creek, widen 4-6 lanes, 0.98 miles	$4,558,000
Alma School Rd, Frye-Pecos, widen 4-6 lanes, 0.50 miles	$4,140,000
Chandler Hts Rd, Gilbert-Val Vista, widen 2-4 lanes, 2.00 miles	$2,524,314
Lindsay Rd, Ocotillo-Hunt Hwy, widen 2-4 lanes, 3.00 miles	$17,691,575
City Eligible Cost of Planned Improvements, 2022-2032	$28,913,889
Debt/Interfund Loans for Past Capacity Improvements	$34,530,036
Encumbrances on Current Projects	$23,417,040
Required Fee Studies and Biennial Audits	$75,900
Total Planned Expenditures	$86,936,865
– Current Fund Balance	-$61,725,679
Needed Revenue, 2022-2032	$25,211,186
÷ New Service Units (EDUs), 2022-2032	6,648
Ten-Year Cost per Service Unit	$3,792

Source: City eligible cost of planned improvement costs from Table 25 (excludes Federal/State and regional funding, as well as bond funding for intersection costs); outstanding debt/interfund loans, encumbrances and current fund balance from Table 122; cost of required studies and audit from Table 125 and Table 126; new service units from Table 13.

Buildout Cost

The RARF authorization expires in FY 2026, so no RARF funds are anticipated after 2032. Some of the buildout project costs will be paid with Federal/State highway funds. The amount of such funding that will be available for capacity improvements beyond ten years will tend to decrease with the buildout of the City's arterial street system. A reasonable assumption is that Federal/State funding will pay for the same percentage of capacity project costs beyond 2032 that it will over the next ten years. Based on these assumptions, the City could expect to receive about $75.8 million from 2032 to buildout in Federal/State funding for the completion of the arterial street system, as shown in Table 20.

Table 20. Federal/State Funding, 2022-Buildout

	2022-2032	2032-Buildout	2022-Buildout
Federal/State Funding	$13,304,353	$75,826,647	$89,131,000
÷ Planned Improvement Cost	$28,913,889	$164,850,031	$193,763,920
Federal/State Funding Percent	46.0%	46.0%	46.0%

Source: 2022-2032 Federal/State funding from Table 18; planned improvement costs from Table 19 (2022-2032) and Table 21 (2022-buildout); Federal/State funding for 2022-buildout based on percentage for 2022-2032.

The buildout cost per service unit represents costs that will be incurred by the City to buildout to construct new capacity to serve anticipated development in the city, repay outstanding debt/interfund loans associated with existing capacity to serve new development, pay for encumbrances that represent remaining costs associated with projects currently under construction, and pay for future study updates and audits. The planned expenditures shown in Table 21 result in a buildout cost per service unit of $9,437 per EDU.

Table 21. Arterial Street Buildout Cost per Service Unit

Alma School Rd, Germann-Queen Creek, widen 4-6 lanes, 0.98 miles	$4,558,000
Alma School Rd, Frye-Pecos, widen 4-6 lanes, 0.50 miles	$4,140,000
Chandler Hts Rd, Gilbert-Val Vista, widen 2-4 lanes, 2.00 miles	$2,524,314
Lindsay Rd, Ocotillo-Hunt Hwy, widen 2-4 lanes, 3.00 miles	$17,691,575
Subtotal, City Cost of Eligible Planned Improvements, 2022-2032	$28,913,889
Alma School Rd, Willis-Germann, widen 4-6 lanes, 0.50 miles	$5,012,000
Alma School Rd, Queen Creek-Ocotillo, widen 4-6 lanes, 1.12 miles	$11,226,880
McQueen, Ray-Chandler, widen 4-6 lanes, 1.00 mile	$10,024,000
McQueen, Chandler-Pecos, widen 4-6 lanes, 1.00 mile	$10,024,000
Cooper, Queen Creek-Riggs, widen 2-4 lanes, 3.00 miles	$30,072,000
Ray, McQueeen-Cooper, widen 4-6 lanes, 1.00 mile	$10,024,000
Germann, City Limits-Price, widen 2-4 lanes, 0.25 miles	$2,506,000
Germann, Arizona-Cooper, widen 4-6 lanes, 2.00 miles	$20,048,000
Queen Creeek, McQueen-Gilbert, widen 2-6 lanes, 2.00 miles	$40,096,000
Ocotillo, Gilbert-148th Street, widen 2-4, 1.50 mile	$15,036,000
Chandler Heights, Arizona-Gilbert, widen 2-4, 2.96 miles	$29,671,040
Chandler Heights, Lindsay-Val Vista, widen 2-4, 1.00 mile	$10,024,000
Cost of Planned Improvements, 2032-Buildout	$193,763,920
– Anticipated Regional Funding, 2032-Buildout	$0
– Anticipated Federal/State Funding, 2032-Buildout	-$75,826,647
Subtotal, City Cost of Eligible Planned improvements, 2032-Buildout	$117,937,273
Total, City Cost of Eligible Planned improvements, 2022-Buildout	$146,851,162
Debt/Interfund Loans for Past Capacity Improvements	$34,530,036
Encumbrances on Current Projects	$23,417,040
Required System Development Fee Studies	$131,800
– Current Fund Balance	-$61,725,679
Needed Revenue, 2022-Buildout	$143,204,359
÷ New Service Units (EDUs), 2022-Buildout	15,175
Buildout Cost per Service Unit	$9,437

Source: Planned improvement costs for 10-year projects from Table 25 (first four projects); remaining projects are those needed to complete the buildout inventory in Table 117; costs for remaining projects based on VMC added derived from miles and lanes indicated in Table 117, capacities from Table 14, and average cost per VMC from Table 16; anticipated regional funding from Table 18; anticipated Federal/State funding to buildout from Table 20; outstanding debt/interfund loans, encumbrances and current fund balance from Table 122; cost of required studies and audits from Table 125 and Table 126; new service units from Table 13.

Cost per Service Unit Summary

The three costs per service unit calculated above are summarized in Table 22. The updated system development fees are based on the 10-year cost per service unit, which is the lowest of the three.

Table 22. Arterial Street Cost per Service Unit

Existing Cost per Service Unit	$20,850
Ten-Year Cost per Service Unit	$3,792
Buildout Cost per Service Unit	$9,437
Lowest Cost per Service Unit	$3,792

Source: Table 17, Table 19 and Table 21.

Net Cost per Service Unit

As noted in the Legal Framework section of this report, system development fees should be reduced (or "offset") in order to account for other types of revenues that will be generated by new development and used to fund capacity-expanding improvements of the same type as those to be funded by the fees. Cases in which such an offset is warranted include funding of existing deficiencies, outstanding debt payments on existing facilities, and dedicated revenue sources to fund growth-related improvements.

The arterial street system development fees calculated in this report are based on a system-wide buildout cost per service unit that is lower than the existing level of service. Consequently, there are no existing deficiencies from an impact fee perspective.

The outstanding arterial street debt/interfund loans have been excluded from the existing level of service calculation, and can reasonably be attributed to existing excess capacity available for future development. Consequently, the debt/loan amount has been included in the calculation of ten-year and buildout costs per service unit.

The City has funded arterial street capacity improvements with system development fees and general obligation bonds, supplemented with Federal, State, and regional transportation funding. Such outside funding has been taken into account in the calculation of the ten-year and buildout costs per service unit. In sum, no additional offsets are warranted and the net cost per service unit is the same as the cost per service unit calculated above.

Updated System Development Fees

The updated arterial street system development fees that may be adopted by the City based on this study are the products of the number of service units (EDUs) generated by a unit of development and the net cost per service unit calculated above. The updated fee schedule is presented in Table 23.

Table 23. Arterial Street Net Cost Schedule

Land Use Type	Unit	EDUs/ Unit	Net Cost/ EDU	Net Cost/ Unit
Single-Family	Dwelling	1.000	$3,792	$3,792
Multi-Family	Dwelling	0.543	$3,792	$2,059
Retail/Commercial	Sq. Foot	0.001027	$3,792	$3.894
Office	Sq. Foot	0.001410	$3,792	$5.347
Industrial/Warehouse	Sq. Foot	0.000277	$3,792	$1.050
Public/Institutional	Sq. Foot	0.000521	$3,792	$1.976

Source: EDUs per unit from Table 12 (nonresidential divided by 1,000 to convert from per 1,000 sq. ft. to per square foot); net cost per EDU is lowest cost per EDU from Table 22.

The updated arterial street system development fees are compared to the City's current fees in Table 24. The updated fees are significantly lower than current fees for all land uses except office and public/institutional.

Table 24. Current and Updated Arterial Street Fees

Land Use Type	Unit	Current Fee	Updated Fee	Percent Change
Single-Family	Dwelling	$3,869	$3,792	-2%
Multi-Family	Dwelling	$2,190	$2,059	-6%
Retail/Commercial	Sq. Foot	$5.040	$3.894	-23%
Office	Sq. Foot	$4.040	$5.347	32%
Industrial/Warehouse	Sq. Foot	$1.170	$1.050	-10%
Public/Institutional	Sq. Foot	$0.970	$1.976	104%

Source: Current fees from City of Chandler City Code, Section 38; updated fees from Table 23.

Capital Plan

Assuming that growth occurs as projected in the land use assumptions, the City plans to fund approximately $86.9 million in growth-related expenditures related to the major road system over the next ten years, as summarized in Table 25. Some of the improvements may be constructed by developers in return for credits against their arterial street system development fees.

Table 25. Arterial Street Capital Plan, 2022-2032

Improvement	10-Year Eligible Cost
Alma School Rd, Germann Rd to Queen Creek	$4,558,000
Alma School Rd, Frye to Pecos	$4,140,000
Chandler Hts Rd, Gilbert Rd-Val Vista	$2,524,314
Lindsay Rd, Ocotillo Rd to Hunt Hwy	$17,691,575
Subtotal, Planned Improvements, 2022-2032	$28,913,889
Outstanding Pledged Debt/Interfund Loans	$34,530,036
Encumbrances/Carry-Forwards	$23,417,040
Required SDF Studies, 2022-2032	$65,900
Required Biennial Audits, 2022-2032	$10,000
Total	$86,936,865

Source: 10-year CIP cost is programmed arterial street system development fee expenditures from City of Chandler, *2023-2032 Capital Improvements Plan*; financial data from Table 122; study update cost from Table 125; biennial audit cost from Table 126.

The new development anticipated by the land use assumptions would generate the revenues shown in Table 26. Anticipated arterial street system development fee revenues plus the current fund balance would cover all costs anticipated over the next ten years, but not all costs needed by buildout. The City will need to increase the fee during the next update or at least within the next ten years.

Table 26. Arterial Street Fee Revenue Projections, 2022-Buildout

	2022-2032	2022-Buildout
New Arterial Street EDUs	6,648	15,175
x Net Cost per EDU	$3,792	$3,792
Projected Revenue	$25,209,216	$57,543,600
÷ Needed Revenue	$25,211,186	$143,204,359
Percent of Needed Revenue Generated	100%	40%

Source: New EDUs from Table 13; net cost per EDU is lowest cost per EDU from Table 22; needed revenue from Table 19 (2022-2032) and Table 21 (2022-buildout).

PARKS

The City of Chandler adopted a community park system development fee in 1997 and a neighborhood park system development fee in 2005. In 2008, the neighborhood and community park fees were combined into a single park fee. The park fees were updated to be compliant with SB 1525 in 2014. They were updated in 2018, and this section updates them again in compliance with the current Arizona impact fee enabling act for municipalities.

The locations of existing and planned parks are illustrated in Figure 7. An inventory of existing parks, including name, park classification, service area and developed and undeveloped acreage, is presented in Table 27 on the following pages.

Figure 7. Existing and Planned Parks

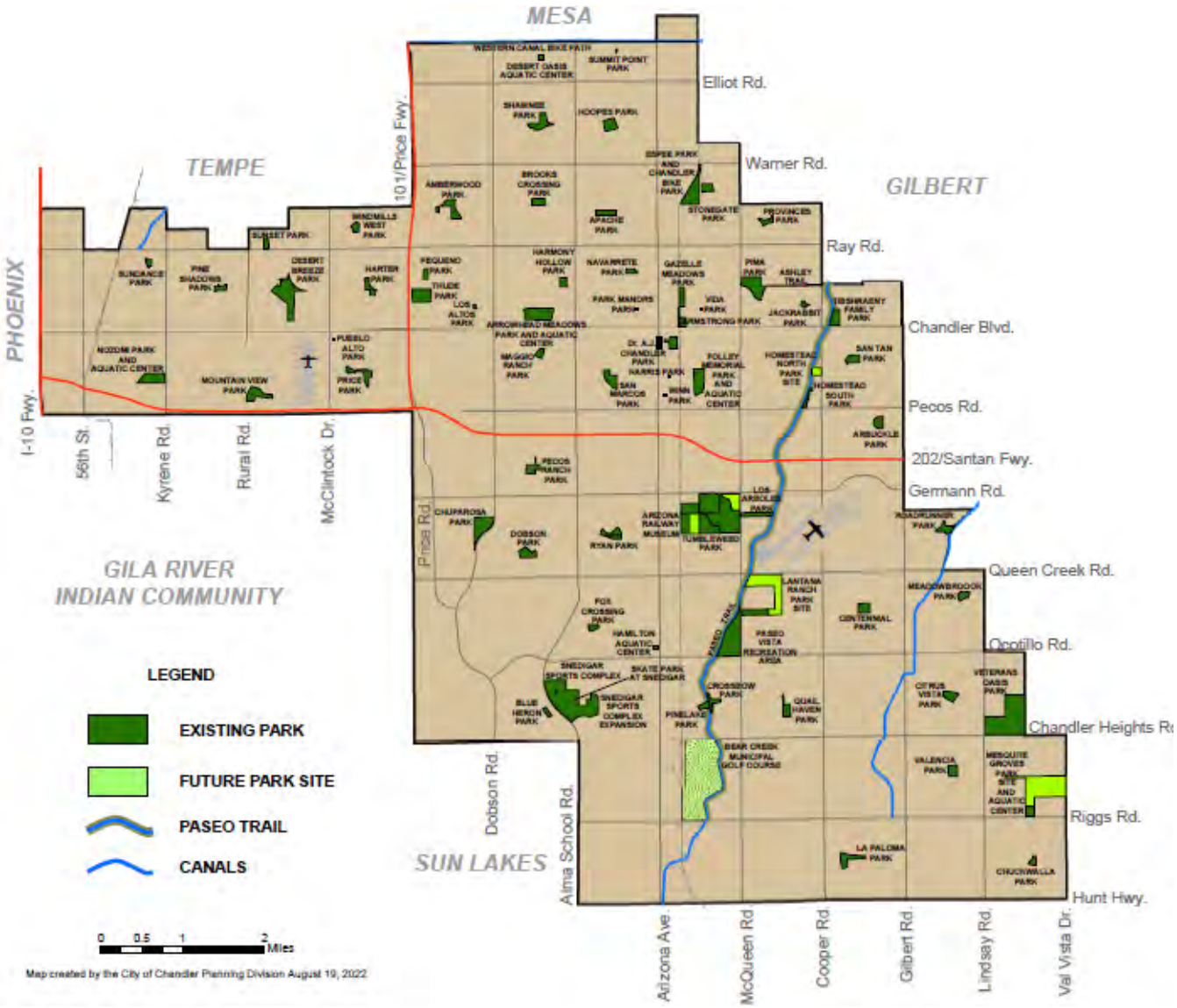


Table 27. Existing Park Inventory

Park Name	Type	Service Area	Total Acres Dev'd	Total Acres Undev.	Eligible Acres Nhood	Eligible Acres Comm	Eligible Dev'd Ac. Nhood	Eligible Dev'd Ac. Comm
Northwest Service Area								
Desert Breeze	Comm	NW	47.34	2.50	0.00	30.00	0.00	30.00
Harter	Nhood	NW	8.60	0.00	8.60	0.00	8.60	0.00
Mountain View	Nhood	NW	19.00	0.00	19.00	0.00	19.00	0.00
Nozomi Park	Comm	NW	20.00	0.00	0.00	20.00	0.00	20.00
Pine Shadows	Nhood	NW	5.42	0.00	5.42	0.00	5.42	0.00
Price	Nhood	NW	12.10	0.00	12.10	0.00	12.10	0.00
Pueblo Alto	Nhood	NW	0.25	0.00	0.25	0.00	0.25	0.00
Sundance	Nhood	NW	3.51	0.00	3.51	0.00	3.51	0.00
Sunset	Nhood	NW	5.06	0.00	5.06	0.00	5.06	0.00
Windmills West	Nhood	NW	6.50	0.00	6.50	0.00	6.50	0.00
Subtotal, Northwest			127.78	2.50	60.44	50.00	60.44	50.00
Northeast Service Area								
Amberwood	Nhood	NE	18.60	0.00	18.60	0.00	18.60	0.00
Apache	Nhood	NE	9.47	0.00	9.47	0.00	9.47	0.00
Arbuckle	Nhood	NE	9.51	0.00	9.51	0.00	9.51	0.00
Armstrong	Nhood	NE	3.21	0.00	3.21	0.00	3.21	0.00
Arrowhead Meadows	Comm	NE	30.81	0.00	0.00	30.00	0.00	30.00
Boys & Girls Club	Nhood	NE	2.18	0.00	2.18	0.00	2.18	0.00
Brooks Crossing	Nhood	NE	8.10	0.00	8.10	0.00	8.10	0.00
Desert Oasis Aquatic	Nhood	NE	0.72	0.00	0.72	0.00	0.72	0.00
Espee	Comm	NE	33.00	0.00	0.00	30.00	0.00	30.00
Folley	Comm	NE	23.92	0.00	0.00	23.92	0.00	23.92
Gazelle Meadows	Nhood	NE	8.99	0.00	8.99	0.00	8.99	0.00
Harmony Hollow	Nhood	NE	6.92	0.00	6.92	0.00	6.92	0.00
Harris	Nhood	NE	0.81	0.00	0.81	0.00	0.81	0.00
Homestead North	Nhood	NE	7.60	0.00	7.60	0.00	7.60	0.00
Homestead South	Nhood	NE	4.96	0.00	4.96	0.00	4.96	0.00
Hoopes	Nhood	NE	12.80	0.00	12.80	0.00	12.80	0.00
Jackrabbit	Nhood	NE	4.57	0.00	4.57	0.00	4.57	0.00
Los Altos	Nhood	NE	0.75	0.00	0.75	0.00	0.75	0.00
Maggio Ranch	Nhood	NE	5.60	0.00	5.60	0.00	5.60	0.00
Navarrete	Nhood	NE	5.00	0.00	5.00	0.00	5.00	0.00
Park Manors	Nhood	NE	0.25	0.00	0.25	0.00	0.25	0.00
Pequeno	Nhood	NE	4.73	0.00	4.73	0.00	4.73	0.00
Pima	Comm	NE	31.75	0.00	0.00	30.00	0.00	30.00
Provinces	Nhood	NE	6.25	0.00	6.25	0.00	6.25	0.00
San Marcos	Nhood	NE	14.74	0.00	14.74	0.00	14.74	0.00
San Tan	Nhood	NE	14.31	0.00	14.31	0.00	14.31	0.00
Shawnee	Nhood	NE	17.51	0.00	17.51	0.00	17.51	0.00
Stonegate	Nhood	NE	8.37	0.00	8.37	0.00	8.37	0.00
Summit Point	Nhood	NE	0.29	0.00	0.29	0.00	0.29	0.00
Tibshraeny Family	Nhood	NE	13.00	0.00	13.00	0.00	13.00	0.00
Vida	Nhood	NE	0.25	0.00	0.25	0.00	0.25	0.00
Winn	Nhood	NE	1.00	0.00	1.00	0.00	1.00	0.00
Subtotal, Northeast			309.97	0.00	190.49	113.92	190.49	113.92

continued on next page

Table 27. Existing Park Inventory (continued)

Park Name	Park Type	Service Area	Total Acres Dev'd	Total Acres Undev.	Eligible Acres Nhood	Eligible Acres Comm	Eligible Dev'd Ac. Nhood	Eligible Dev'd Ac. Comm
Southeast Service Area								
Blue Heron	Nhood	SE	3.91	0.00	3.91	0.00	3.91	0.00
Centennial	Nhood	SE	10.88	0.00	10.88	0.00	10.88	0.00
Chuckwalla	Nhood	SE	4.45	0.00	4.45	0.00	4.45	0.00
Chuparosa	Comm	SE	28.00	0.00	0.00	28.00	0.00	28.00
Citrus Vista	Nhood	SE	10.02	0.00	10.02	0.00	10.02	0.00
Crossbow	Nhood	SE	7.94	0.00	7.94	0.00	7.94	0.00
Dobson	Nhood	SE	12.44	0.00	12.44	0.00	12.44	0.00
Fox Crossing	Nhood	SE	4.95	0.00	4.95	0.00	4.95	0.00
La Paloma	Nhood	SE	13.07	0.00	13.07	0.00	13.07	0.00
Lantana Ranch Park Site	Comm	SE	0.00	42.37	0.00	30.00	0.00	0.00
Lantana Ranch	Nhood	SE	8.40	0.00	8.40	0.00	8.40	0.00
Los Arboles	Nhood	SE	11.35	0.00	11.35	0.00	11.35	0.00
Meadowbrook	Nhood	SE	7.11	0.00	7.11	0.00	7.11	0.00
Mesquite Groves Park Site	Comm	SE	6.00	98.40	0.00	30.00	0.00	6.00
Pecos Ranch	Nhood	SE	10.23	0.00	10.23	0.00	10.23	0.00
Pinelake	Nhood	SE	5.21	0.00	5.21	0.00	5.21	0.00
Quail Haven	Nhood	SE	9.75	0.00	9.75	0.00	9.75	0.00
Roadrunner	Nhood	SE	10.97	0.00	10.97	0.00	10.97	0.00
Ryan	Nhood	SE	13.89	0.00	13.89	0.00	13.89	0.00
Snedigar Sportsplex	Comm	SE	90.83	0.00	0.00	30.00	0.00	30.00
Tumbleweed	Comm	SE	147.84	58.35	0.00	30.00	0.00	30.00
Valencia	Nhood	SE	9.34	0.00	9.34	0.00	9.34	0.00
Veterans Oasis	Comm	SE	113.00	0.00	0.00	30.00	0.00	30.00
Subtotal, Southeast			539.58	199.12	153.91	178.00	153.91	124.00
City-Wide								
Total, City-Wide			977.33	201.62	404.84	341.92	404.84	287.92

Source: City of Chandler Community Services Department, November 8, 2022.

Service Units

As described in the Service Unit subsection of the Legal Framework section, the service unit for all the City's fees is the Equivalent Dwelling Unit, or EDU, which represents the demand for facilities generated by a typical single-family dwelling unit.

SB 1525 provides that "… the fees shall be assessed against commercial, residential and industrial development, except that the municipality may distinguish between different categories of residential, commercial and industrial development in assessing the costs to the municipality of providing necessary public services to new development and in determining the amount of the development fee applicable to the category of development." (A.R.S. Sec. 9-463.05.B.13)

Park impact fees are traditionally only assessed on residential development, because there is a much clearer nexus between the number of residents and the demand for park facilities than is the case for nonresidential development. Company-sponsored events in parks are paid for with facility reservation fees. Any additional demand on park facilities attributable to nonresidential development would come from nonresidents who work in the city using parks during their lunch breaks – any such impact would be difficult to measure and relatively insignificant. Consequently, the park fees will continue to be assessed only on residential development.

A single-family unit is, by definition, one park service unit (equivalent dwelling unit or EDU). The number of service units associated with other housing types is determined by dividing the average household size by the average household size of a single-family unit. Average household size (the ratio of household population to occupied units) is preferable as the basis of the service unit to persons per unit (the ratio of household population to total units), because it eliminates the volatile factor of occupancy rates. The resulting service unit multipliers are presented in Table 28.

Table 28. Park Service Unit Multipliers

Housing Type	Avg. HH Size	EDUs/ Unit
Single-Family	2.82	1.000
Multi-Family	2.38	0.844

Source: Average household size from Table 8; EDUs per unit is ratio of AHHS to single-family average household size.

The number of service units in each of the three park service areas can be determined by multiplying the number of housing units by the single-family and multi-family service unit multipliers and summing for the area. Existing and projected service units (EDUs) are calculated in Table 29.

Table 29. Park Service Units, 2022-Buildout

	Northwest			Northeast			Southeast			City-Wide
	Single-Family	Multi-Family	Total	Single-Family	Multi-Family	Total	Single-Family	Multi-Family	Total	Total
EDUs/Unit	1.000	0.844	na	1.000	0.844	na	1.000	0.844	na	n/a
2022 Units	11,856	5,366	17,222	33,471	18,697	52,168	35,611	8,629	44,240	113,630
2022 EDUs	11,856	4,529	16,385	33,471	15,780	49,251	35,611	7,283	42,894	108,530
2032 Units	11,877	5,378	17,255	34,266	23,890	58,156	36,583	8,969	45,552	120,963
2032 EDUs	11,877	4,539	16,416	34,266	20,163	54,429	36,583	7,570	44,153	114,998
Buildout Units	11,881	5,380	17,261	35,319	30,774	66,093	36,916	9,086	46,002	129,356
Buildout EDUs	11,881	4,541	16,422	35,319	25,973	61,292	36,916	7,669	44,585	122,299
New EDUs, 2022-2032			31			5,178			1,259	6,468
New EDUs, 2022-Buildout			37			12,041			1,691	13,769

Source: EDUs per unit from Table 28; housing units from Table 7; EDUs are product of units and EDUs/unit.

Cost per Service Unit

As described in the Methodology subsection of the Legal Framework section, the updated system development fees are based on the lowest of three costs per service unit: existing level of service, ten-year cost and buildout cost.

Existing Level of Service

SB 1525 limits park impact fees to "neighborhood parks," an undefined term that excludes parks larger than 30 acres in size, unless a larger park can be shown to provide a "direct benefit" to development. SB 1525 also excludes a number of park improvements from being funded with park impact fees, including:

> *… 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.*

According to SB 1525, impact fees cannot be based on a level of service that exceeds the level of service currently being provided to existing development. For park facilities, the existing level of service will be quantified in terms of the replacement value of existing eligible park facilities per service unit.

A key component of the park level of service is the cost of land. Recent park land acquisitions are all located in the Southeast service area, where land is the least expensive of the three service areas. The City's most recent park land purchase in this area, completed in May 2013. This 10-year old cost has been adjusted to 2023 dollars using the consumer price index. The current land cost per acre is estimated to be $153,514, as shown in Table 30.

Table 30. Park Land Cost per Acre

Centennial Park Site	$353,433
÷ Acres	3.0068
2013 Cost per Acre	$117,545
x 2013-2023 Inflation Factor	1.306
2023 Cost per Acre	$153,514

Source: Purchase price from City of Chandler, July 15, 2013; inflation factor is ratio of U.S. Census, Consumer Price Index for All Urban Customers (CP{-U, May 2013 to May 2023..

Another major cost is the development of land with standard park improvements, including site work, landscaping, driveways, parking, walking paths, and standard amenities such as pavilions, ballfields, etc. The average development costs per acre for neighborhood and community parks are based on recent or planned costs (in current dollars), as shown in Table 31.

Table 31. Park Development Cost per Acre

	Neighborhood Parks	Community Parks
Mesquite Groves (FY 2026)		$615,206
Homestead North (FY 2022)	$506,800	
Lantana Ranch (FY 2021)	$430,449	
Average Cost per Acre	$468,625	$615,206

Source: City of Chandler, November 8, 2022.

Pursuant to SB 1525, only the first 3,000 square feet of recreation centers are eligible to be funded with impact fees. The City has two recreation centers, both located in the Southeast service area. The total costs of these facilities and the eligible costs are shown in Table 32.

Table 32. Eligible Recreation Center Costs

Recreation Center	Service Area	Sq. Feet	Total Cost	Eligible Cost
Snedigar Park Recreation Center	SE	8,266	$2,185,086	$793,039
Tumbleweed Recreation Center	SE	59,905	$18,393,336	$921,125
Total		68,171	$20,578,422	$1,714,164

Source: Square feet and costs from City of Chandler, FY 2022/23 Statement of Values; eligible cost is pro rata share for 3,000 sq. ft.

SB 1525 prohibits aquatic centers but allows swimming pools. This poses some problems of interpretation, since aquatic centers include swimming pools. The Arizona League of Cities and Towns proposes the following definition of an excluded aquatic center:

> *A facility primarily designed to host non-recreational competitive functions generally occurring within water, including, but not limited to, water polo games, swimming meets, and diving events. Such facility may be indoors, outdoors, or any combination thereof, and includes all necessary supporting amenities, including but not limited to, locker rooms, offices, snack bars, bleacher seating, and shade structures.*

While some of the City's swimming facilities are called "aquatic centers," they do not meet the League of Cities and Town's definition of an aquatic center, because they are not designed primarily for non-recreational competitive functions. Nevertheless, the approach that will be used is to charge only for the pool itself, without the cost of associated amenities. The replacement cost of existing pools is estimated based on the cost per square foot of water surface area for the City's most recently-constructed pool in the Mesquite Groves Aquatic Center. The cost of a pool itself is estimated to be $322 per square foot of water surface area, as shown in Table 33 below. This is the same cost per square foot used in the 2014 and 2018 studies.

Table 33. Mesquite Groves Pool Cost per Square Foot

Pool Cost (including pumphouse)	$3,439,477
Other Water Features Cost	$778,663
Building Cost (excluding pumphouse)	$1,352,377
Total Building/Pool Costs	$5,570,517
Site Work/Contingency/Indirect Costs	$3,296,901
x Pool Share of Building/Pool Costs	61.7%
Pool-Related Other Cost	$2,034,188
Total Pool Cost	$5,473,665
÷ Water Surface Area (sq. feet)	17,002
Pool Cost per Square Foot of Water Area	$322

Source: City of Chandler, Mesquite Groves' aquatic center cost sheet, June 2, 2008; pumphouse share of total building costs based on 3,625 out of 9,759 total sq. ft., per Chandler Parks and Recreation, October 7, 2011; total pool cost is pool cost plus pool-related other cost; square feet from City of Chandler Park Development and Operations Division, July 22, 2013.

Multiplying the water area of each pool by the cost per square foot calculated above yields the replacement costs for the City's existing swimming pools for each service area. These are shown in Table 34.

Table 34. Swimming Pool Replacement Costs

Swimming Facility	Service Area	Water Sq. Feet	Cost per Sq. Foot	Pool Cost
Northwest Service Area				
Nozomi Aquatic Center	NW	12,468	$322	$4,014,696
Northeast Service Area				
Arrowhead Pool	NE	21,064	$322	$6,782,608
Desert Oasis Aquatic Center	NE	8,880	$322	$2,859,360
Folley Pool	NE	5,703	$322	$1,836,366
Total, Northeast Service Area				$11,478,334
Southeast Service Area				
Hamilton Aquatic Center	SE	12,040	$322	$3,876,880
Mesquite Groves Aquatic Center	SE	17,002	$322	$5,474,644
Total, Southeast Service Area				$9,351,524

Source: Sq. ft. of water surface area from City of Chandler, September 2017; cost per sq. ft. from Table 33.

The replacement cost of existing facilities in each of the three park service areas can be determined based on the existing park inventory, the unit costs for land acquisition and swimming pools, eligible recreation center costs and the average cost per acre to develop neighborhood and community parks. The total replacement values of existing land and facilities serving the three park service areas are shown in Table 35 on the following page.

Table 35. Existing Park Facility Replacement Costs

	Neighborhood Park	Community Park	Total
Northwest Service Area			
NW Total Eligible Acres	60.44	50.00	110.44
x Land Cost/Acre			$153,514
NW Eligible Land Value			$0
NW Developed Eligible Acres	60.44	50.00	110.44
x Development Cost/Acre	$468,625	$615,206	n/a
NW Eligible Development Cost	$28,323,695	$30,760,300	$59,083,995
NW Eligible Rec. Center/Pool Cost			$4,014,696
NW Total Eligible Replacement Cost			$63,098,691
Northeast Service Area			
NE Total Eligible Acres	190.49	113.92	304.41
x Land Cost/Acre			$153,514
NE Eligible Land Value			$46,731,197
NE Developed Eligible Acres	190.49	113.92	304.41
x Development Cost/Acre	$468,625	$615,206	n/a
NE Eligible Development Cost	$89,268,376	$70,084,268	$159,352,644
NE Eligible Rec. Center/Pool Cost			$11,478,334
NE Total Eligible Replacement Cost			$217,562,175
Southeast Service Area			
SE Total Eligible Acres	153.91	178.00	331.91
x Land Cost/Acre			$153,514
SE Eligible Land Value			$50,952,832
SE Developed Eligible Acres	153.91	124.00	277.91
x Development Cost/Acre	$468,625	$615,206	n/a
SE Eligible Development Cost	$72,126,074	$76,285,544	$148,411,618
SE Eligible Rec. Center/Pool Cost			$11,065,688
SE Total Eligible Replacement Cost			$210,430,138

Source: Total and developed eligible acres from Table 27; land cost per acre from Table 30; development costs per acre from Table 31; recreation center and pool costs from Table 32 and Table 34.

The existing levels of service in the park service areas can be expressed in terms of the current cost per service unit, as shown in Table 36. The capital investment represented by existing facilities and current fund balances is reduced to account for outstanding debt that will be paid by future system development fees.

Table 36. Existing Park Levels of Service

	Northwest	Northeast	Southeast
Existing Eligible Cost	$63,098,691	$217,562,175	$210,430,138
Current Fund Balance	$2,825,224	$6,424,043	$21,984,807
– Outstanding Pledged Debt/Loans	-$2,825,224	-$5,853,189	$0
Net Eligible Cost	$63,098,691	$218,133,029	$232,414,945
÷ Existing EDUs	16,385	49,251	42,894
Existing LOS (Cost/EDU)	$3,851	$4,429	$5,418

Source: Eligible park costs from Table 35; eligible debt/interfund loans and fund balance from Table 122 in Appendix C; existing EDUs from Table 29.

Ten-Year Cost per Service Unit

The ten-year cost per service unit represents costs that will be incurred by the City over the next ten years to build new capacity to serve anticipated development in the city, to repay outstanding debt/interfund loans associated with existing capacity available to serve new development, to pay encumbrances for projects under construction, and to pay for updated studies and biennial audits. The results are shown in Table 37.

Table 37. Park Ten-Year Cost per Service Unit

	Northwest	Northeast	Southeast
Mesquite Groves Comm. Park Dev't, Ph. I (30-acre part)	$0	$0	$20,519,574
Lantana Ranch Comm. Park Design/Dev't (21.6-ac. part)	$0	$0	$9,572,156
Subtotal, Planned Improvements	$0	$0	$30,091,730
Debt/Interfund Loan Obligations	$2,825,224	$5,853,189	$0
Encumbrances for Projects Under Construction	$0	$2,078,184	$715,925
Required Fee Studies and Audits	$0	$21,475	$21,475
Total Planned Expenditures	$2,825,224	$7,952,848	$30,829,130
– Fund Balance	-$2,825,224	-$6,424,043	-$21,984,807
Total Revenue Needs	$0	$1,528,805	$8,844,323
÷ New Service Units (EDUs), 2022-2032	31	5,178	1,259
Ten-Year Cost per Service Unit (EDU)	$0	$295	$7,025

Source: Planned improvements and costs from City of Chandler, 2022-2031 *Capital Improvement Program*; debt/interfund loans, encumbrances, and fund balances from Table 122 in Appendix C, study cost from Table 125 and audit cost from Table 126, allocated equally between the northeast and southeast service areas; new service units from Table 29.

Buildout Cost per Service Unit

The Northwest park service area has no remaining revenue needs. The buildout costs per service unit for the Northeast and Southeast service areas represent costs that will be incurred by buildout to construct capacity to serve anticipated development, repay outstanding debt/interfund loans associated with existing capacity to serve new development, pay encumbrances for projects under construction, and pay for updated studies and audits. The results are shown in Table 38.

Table 38. Park Buildout Cost per Service Unit

	Northwest	Northeast	Southeast
Mesquite Groves Comm. Park Dev't, Ph. I (30-acre part)	$0	$0	$20,519,574
Lantana Ranch Comm. Park Design/Dev't (eligible part)	$0	$0	$9,572,156
Subtotal, Planned Improvements	$0	$0	$30,091,730
Debt/Interfund Loan Obligations	$2,825,224	$5,853,189	$0
Encumbrances for Projects Under Construction	$0	$2,078,184	$715,925
Required Fee Studies and Audits	$0	$41,950	$41,950
Total Planned Expenditures	$2,825,224	$7,973,323	$30,849,605
– Fund Balance	-$2,825,224	-$6,424,043	-$21,984,807
Total Revenue Needs	$0	$1,549,280	$8,864,798
÷ New Service Units (EDUs), 2022-Buildout	37	12,041	1,691
Buildout Cost per Service Unit (EDU)	$0	$129	$5,242

Source: Study/audit cost from Table 125 (allocated equally between the northeast and southeast service areas); new EDUs from Table 29; all other data from Table 37.

Cost per Service Unit Summary

The three costs per service unit calculated above are summarized in Table 39. The updated system development fees for the Northeast and Southeast are based on the lowest of the three costs per service unit for those areas.

Table 39. Park Cost per Service Unit

	Northwest	Northeast	Southeast
Existing Cost per Service Unit	$3,851	$4,429	$5,418
Ten-Year Cost per Service Unit	$0	$295	$7,025
Buildout Cost per Service Unit	$0	$129	$5,242
Lowest Cost per Service Unit	n/a	$129	$5,242

Source: Existing from Table 36; ten-year from Table 37; buildout from Table 38.

Net Cost per Service Unit

As noted in the Legal Framework section of this report, impact fees should be reduced (or "offset") to account for other types of revenues that will be generated by new development and used to fund capacity-expanding improvements of the same type as those to be funded by the impact fees. Cases in which such an offset is warranted include funding of existing deficiencies, outstanding debt payments on existing facilities, and dedicated revenue sources to fund growth-related improvements.

The parks system development fees calculated in this report are based on the existing level of service (unless the ten-year or buildout cost per service unit is lower), so there are no existing deficiencies. Other than system development fees, the City has no dedicated source of revenue to fund growth-related parks improvements. The City has not received any grant funding for park improvements in recent years, and does not anticipate any grants over the next ten years.

The City has funded park improvements with system development fees or general fund monies or general obligation bond proceeds in return for a pledge against future SDF revenues. Since outstanding pledged debt/interfund loans have been excluded from the calculation of the existing level of service, future system development fees can be used to repay those obligations without raising double-payment issues. Consequently, no additional offsets are warranted, and the cost per service unit calculated above is the same as the net cost per service unit.

Updated System Development Fees

The updated parks system development fees that may be adopted by the City based on this study are the products of the numbers of service units generated by a unit of development and the net cost per service unit calculated above. The resulting fee schedule is presented in Table 40 below.

Table 40. Park Net Cost Schedule

	Northwest	Northeast	Southeast
Single-Family EDUs per Dwelling Unit	1.000	1.000	1.000
Multi-Family EDUs per Dwelling Unit	0.844	0.844	0.844
x Net Cost per Service Unit	n/a	$129	$5,242
Single-Family Fee per Dwelling Unit	n/a	$129	$5,242
Multi-Family Fee per Dwelling Unit	n/a	$109	$4,424

Source: EDUs per unit from Table 28; net cost per EDU is cost per EDU from Table 39.

The updated park fees are compared to current fees in Table 41. The park fees will cease to be collected in the Northwest service area.

Table 41. Current and Updated Park Fees

	Northwest	Northeast	Southeast
Updated Single-Family Fee per Dwelling Unit	$0	$129	$5,242
Current Single-Family Fee per Dwelling Unit	$983	$237	$2,338
Percent Change	-100%	-46%	124%
Updated Multi-Family Fee per Dwelling Unit	$0	$109	$4,424
Current Multi-Family Fee per Dwelling Unit	$729	$176	$1,735
Percent Change	-100%	-38%	155%

Source: Current fees from City of Chandler, *System Development Fee Schedule, Effective July 28, 2014*; updated fees from Table 40.

Capital Plan

Assuming that growth occurs as projected in the land use assumptions, the City plans to complete the park improvements listed in Table 42 over the next ten years, as well as repay outstanding debt/interfund loans on existing improvements with excess capacity, pay encumbrances on projects currently underway, and pay for required study updates and audits required by SB 1525.

Table 42. Park Capital Plan, 2022-2032

Improvement/Expenditure	Northwest	Northeast	Southeast
Mesquite Groves Comm. Park Dev't, Ph. I (30-acre part)	$0	$0	$20,519,574
Lantana Ranch Nhood Park Design/Dev't (21.6 acres)	$0	$0	$9,572,156
Subtotal, Planned Improvements	$0	$0	$30,091,730
Outstanding Debt/Interfund Loans	$2,825,224	$5,853,189	$0
Encumbrances/Carry-Forwards	$0	$2,078,184	$715,925
Required System Development Fee Studies	$0	$16,475	$16,475
Required Biennial Audits	$0	$5,000	$5,000
Total Planned Eligible Expenditures	$2,825,224	$7,952,848	$30,829,130

Source: Planned improvements and costs from City of Chandler, 2023-2032 *Capital Improvement Program*; debt/interfund loans and encumbrances from Table 122, study cost from Table 125 and audit cost from Table 126 allocated equally between the northeast and southeast service areas.

For the Northeast and Southeast service areas, the updated park fees would provide all the needed revenue by buildout, but less than the revenue needed over the next ten years, as shown in Table 43 below. The City will need to defer repayment of some debt/interfund loans beyond ten years.

Table 43. Park Fee Revenue Projections, 2022-Buildout

	2022-2032	2022-Buildout
Northeast Service Area		
New Park EDUs, Northeast Service Area	5,178	12,041
x Net Cost per EDU	$129	$129
Projected Revenue	$667,962	$1,553,289
÷ Needed Revenue	$1,528,805	$1,549,280
% of Needed Revenue, Northeast	44%	100%
Southeast Service Area		
New Park EDUs, Southeast Service Area	1,259	1,691
x Net Cost per EDU	$5,242	$5,242
Projected Revenue	$6,599,678	$8,864,222
÷ Needed Revenue	$8,844,323	$8,864,798
% of Needed Revenue, Southeast	75%	100%

Source: New service units from Table 29; net cost per EDU is the lowest cost per EDU from Table 39; needed revenue from Table 37 (2022-2032) and Table 38 (2022-buildout).

LIBRARY

The City has no plans to build another library. The City's library system development fees were updated on January 1, 2012 to cover only the cost of retiring the pledged debt for the acquisition of the Sunset Branch Library. Fees that are used solely to retire debt issued prior to June 1, 2011 and pledged to be paid with future fee revenues are exempt under the terms of SB 1525 from the requirements to prepare infrastructure improvements plans, and may continue to be charged until the debt pledge is satisfied.

The City pledged future library system development fees to retire $1.29 million, which is the portion of the 2011A general obligations bonds used to acquire the Sunset branch. In the revisions to the fees that were adopted effective January 1, 2012, the City reduced its library fees to cover only the cost of this pledged debt. Some adjustments were made in the 2014 study that reduced the fees even more. The City is not obligated to revisit grandfathered fees used to repay pledged debt every five years. No changes are proposed as part of this update. The City may continue to collect the current library fee until the outstanding debt/interfund loan obligations have been retired. The remaining obligations are shown in Table 44.

Table 44. Remaining Library Pledged Debt

Outstanding Pledged Debt/Interfund Loan	$13,000
– Current Fund Balance	-$5,067
Future Revenue Needed	$7,933

Source: Outstanding pledged debt and fund balance from Table 122.

Based on the land use assumptions, new development can be expected to generate all the revenue needed over the next ten years to fully repay the outstanding pledged debt obligation, as shown in Table 45. The library fee will cease to be collected once the debt is repaid.

Table 45. Library Revenue Projections, 10-Year and to Buildout

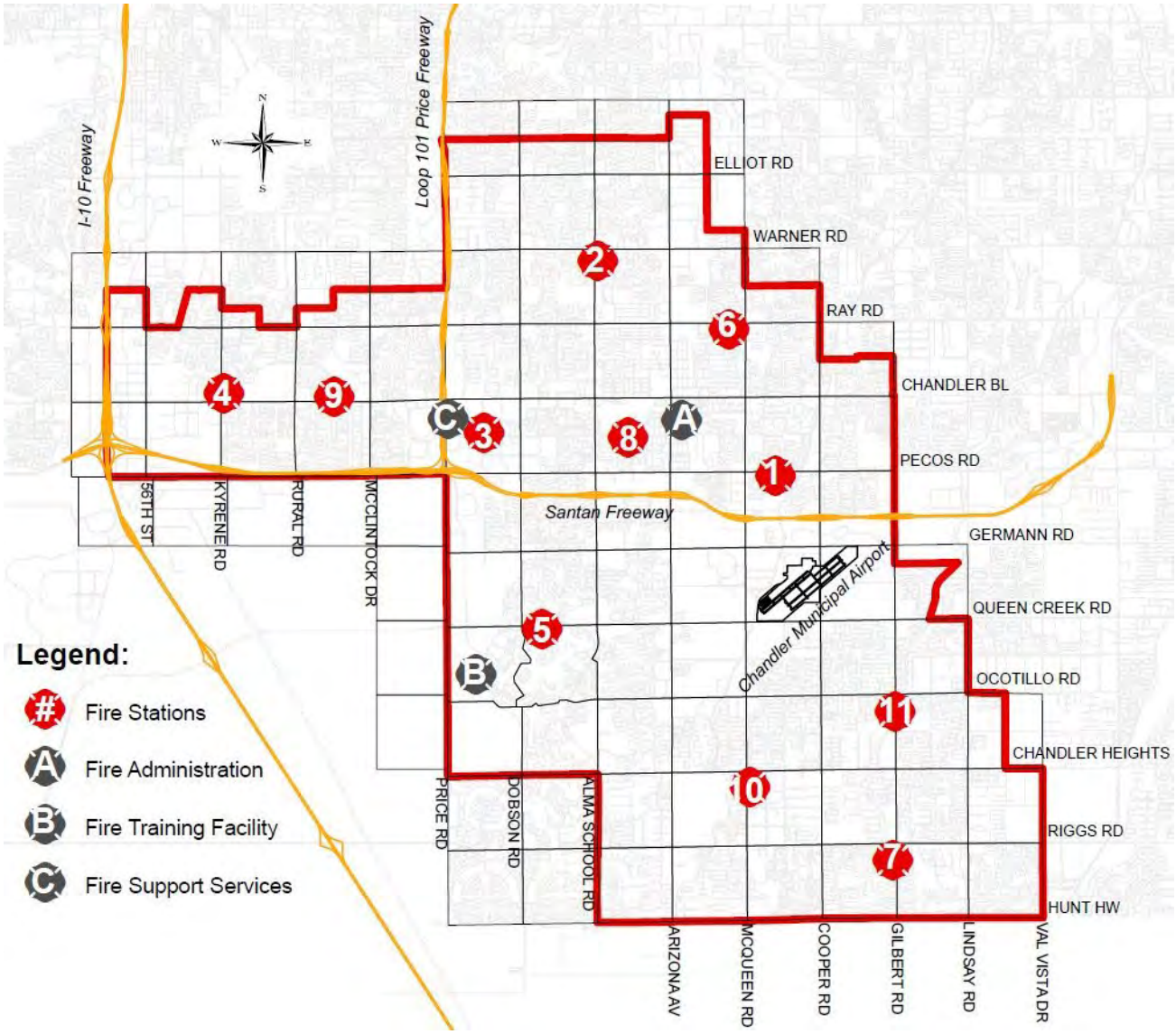
	10-Year	Buildout
New EDUs	6,468	13,769
x Current Fee for a Single-Family Unit	$61	$61
Projected Revenue	$394,548	$839,909

Source: New city-wide EDUs from Table 29 in Parks section; current single-family fee from Table 1; projected revenue is new EDUs times current fee per single-family unit.

FIRE

This section updates the City's fire system development fees in compliance with the Arizona impact fee enabling act for municipalities. The Chandler Fire Department operates out of eleven fire stations, a fire administration building and a support services facility. The locations of existing fire facilities are shown in Figure 8.

Figure 8. Existing Fire Facilities



Service Units

Disparate types of development must be translated into a common unit of measurement that reflects the impact of new development on the demand for fire facilities. This unit of measurement is called a "service unit."

The two most common methodologies used in calculating public safety service units and impact fees are the "calls-for-service" approach and the "functional population" approach. A major problem with relying on call data is that it tends to be unstable over time. This means that fees often go up or down significantly for individual land uses each time the fees are updated. This update continues to use the "functional population" approach to calculate and assess the fire system development fees. This approach is a generally-accepted methodology for these impact fee types and is based on the observation that demand for public safety facilities tends to be proportional to the presence of people.

Similar to the concept of full-time equivalent employees, functional population represents the number of "full-time equivalent" people present at the site of a land use. Functional population represents the average number of equivalent persons present at the site of a land use for an entire 24-hour day. For residential development, functional population is simply average household size times the percentage of time people spend at home. For nonresidential development, functional population is based on a formula that includes square feet per employee ratios, trip generation rates, average vehicle occupancy and average number of hours spent by employees and visitors at a land use. These all tend to be relatively stable characteristics that do not change significantly over short periods of time. Functional population multipliers by land use are calculated in Appendix B. The functional population multipliers are converted into service units (Equivalent Dwelling Units or EDUs), by dividing the functional population per unit for each land use type by the functional population for a single-family unit, as shown in Table 46.

Table 46. Fire Service Unit Multipliers

Land Use	Unit	Func. Pop./ Unit	EDUs/ Unit
Single-Family	Dwelling	1.89	1.000
Multi-Family	Dwelling	1.59	0.841
Retail/Commercial	1,000 sq. ft.	1.98	1.048
Office	1,000 sq. ft.	1.04	0.550
Industrial/Warehouse	1,000 sq. ft.	0.47	0.249
Public/Institutional	1,000 sq. ft.	0.99	0.524

Source: Functional population per unit from Table 119 (residential) and Table 120 (nonresidential) in Appendix B; EDUs per unit is functional population per unit divided by functional population per single-family unit.

The number of service units in the fire service area can be determined by multiplying the amount of development by the service unit multipliers for each land use type and summing for the area. Existing and projected service units (EDUs) are calculated in Table 47 below for the 2022-2032 planning horizon and for buildout.

Table 47. Fire Service Units, 2022-Buildout

Land Use	Unit	Units	EDUs per Unit	EDUs
Single-Family	Dwelling	80,938	1.000	80,938
Multi-Family	Dwelling	32,692	0.841	27,494
Retail/Commercial	1,000 sq. ft.	18,758	1.048	19,658
Office	1,000 sq. ft.	8,088	0.550	4,448
Industrial/Warehouse	1,000 sq. ft.	45,476	0.249	11,324
Public/Instititional	1,000 sq. ft.	12,407	0.524	6,501
Total 2022 Service Units (EDUs)				150,363
Single-Family	Dwelling	82,726	1.000	82,726
Multi-Family	Dwelling	38,237	0.841	32,157
Retail/Commercial	1,000 sq. ft.	19,859	1.048	20,812
Office	1,000 sq. ft.	10,027	0.550	5,515
Industrial/Warehouse	1,000 sq. ft.	53,757	0.249	13,385
Public/Instititional	1,000 sq. ft.	12,929	0.524	6,775
Total 2032 Service Units (EDUs)				161,370
Single-Family	Dwelling	84,116	1.000	84,116
Multi-Family	Dwelling	45,390	0.841	38,173
Retail/Commercial	1,000 sq. ft.	21,367	1.048	22,393
Office	1,000 sq. ft.	12,683	0.550	6,976
Industrial/Warehouse	1,000 sq. ft.	65,098	0.249	16,209
Public/Instititional	1,000 sq. ft.	13,644	0.524	7,149
Total Buildout Service Units (EDUs)				175,016
New EDUs, 2022-2032				11,007
New EDUs, 2022-Buildout				24,653

Source: Units from Table 7 (residential) and Table 10 (nonresidential) in the Land Use Assumptions section; EDUs per unit from Table 46.

Cost per Service Unit

As described in the Methodology subsection of the Legal Framework section, the updated system development fees are based on the lowest of three costs per service unit: existing level of service, ten-year cost and buildout cost.

Existing Level of Service

The cost per service unit to provide fire protection to new development is based on the existing level of service provided to existing development. The level of service is quantified as the ratio of the replacement cost of existing fire capital facilities to existing fire service units. The inventory of the City's existing fire facilities is provided in Table 48. The City's fire training facility has been excluded, as it is not eligible for fire impact fees under SB 1525. Replacement costs of existing facilities are estimated based on the construction cost per square foot for the most recent fire station and the land cost per acre of the City's most recent park land purchase.

Table 48. Existing Fire Facilities

Facility	Year Built	Bldg. (s.f.)	Land (ac.)
Fire Station #1	2015	13,500	2.00
Fire Station #2	1985	8,000	2.91
Fire Station #3	1999	11,974	1.72
Fire Station #4	1985	7,328	1.85
Fire Station #5	1998	8,200	0.79
Fire Station #6	2002	8,000	1.54
Fire Station #7	2003	8,000	1.66
Fire Station #8	2004	9,434	1.84
Fire Station #9	2006	10,200	1.84
Fire Station #10	2008	10,264	2.81
Fire Station #11	2018	11,600	2.50
Fire Administration Building	2009	18,700	1.35
Fire Maintenance Facility	1985	15,010	1.29
Total		140,210	24.10
x Cost per Sq. Foot or Acre		$308	$153,514
Total Replacement Value		$43,184,680	$3,699,687

Source: City of Chandler Fire Department, November 24, 2021, cost per building square foot from cost for Station #11, February 2, 2018; cost per acre is park land cost from Table 30.

In addition to land and buildings, fire services require firefighting apparatus. The City's current fire vehicles have a total replacement cost, based on current unit costs, of almost $18 million, as summarized in Table 49.

Table 49. Fire Apparatus

Fire Appartus	Quantity	Unit Cost	Replacment Value
Engine	16	$650,000	$10,400,000
Ladder Truck, 95'	3	$1,300,000	$3,900,000
Ladder Truck, Reserve	2	$1,100,000	$2,200,000
Heavy Rescue	1	$700,000	$700,000
Tanker	1	$300,000	$300,000
Utility	1	$450,000	$450,000
Total Replacement Value			$17,950,000

Source: City of Chandler, November 23, 2021.

The existing level of service can be expressed in terms of current cost per service unit. However, in addition to the costs of existing facilities, current fund balances and outstanding debt/interfund loans for existing facilities must also be taken into consideration. The existing level of service is $409 per EDU, as shown in Table 50.

Table 50. Fire Existing Level of Service

Building Cost	$43,184,680
Land Cost	$3,699,687
Apparatus Cost	$17,950,000
Total Replacement Cost	$64,834,367
– Interfund Loan Obligations	-$3,588,007
Fund Balance	$239,385
Net Replacement Cost	$61,485,745
÷ Existing Service Units (EDUs)	150,363
Existing Level of Service (Cost per EDU)	$409

Source: Building and land cost from Table 48; apparatus cost from Table 49; outstanding debt/interfund loans and fund balance from Table 122; existing (2022) EDUs from Table 47.

Ten-Year Cost per Service Unit

The City does not plan any capacity improvements over the next ten years. The ten-year cost per service unit represents costs that will be incurred by the City over the next ten years to repay outstanding interfund loans associated with existing capacity available to serve new development, pay encumbrances for projects currently underway, and pay for updated studies. The results are shown in Table 51 and indicate a ten-year cost per service unit of $308 per EDU.

Table 51. Fire Ten-Year Cost per Service Unit

Interfund Loan Obligations	$3,588,007
Encumbrances for Projects Under Construction	$0
Required Fee Study Updates and Biennial Audits	$42,950
Total Planned Expenditures	$3,630,957
– Fund Balance	-$239,385
Total Revenue Needs	$3,391,572
÷ New Service Units (EDUs), 2022-2032	11,007
Ten-Year Cost per Service Unit (EDU)	$308

Source: Outstanding interfund loans, encumbrances, and fund balance from Table 122; study and audit costs from Table 125 and Table 126; new service units from Table 47.

Buildout Cost per Service Unit

The City plans to construct a new fire station in the southeast part of the city sometime after the next ten years. The buildout cost also includes current outstanding obligations and the cost of additional update studies and audits. The results are shown in Table 52 and indicate a buildout cost per service unit of $822 per EDU.

Table 52. Fire Buildout Cost per Service Unit

New Southeast Fire Station #12	$16,823,500
Interfund Loan Obligations	$3,588,007
Encumbrances for Projects Under Construction	$0
Required Fee Study Updates and Biennial Audits	$83,900
Total Planned Expenditures	$20,495,407
– Fund Balance	-$239,385
Total Revenue Needs	$20,256,022
÷ New Service Units (EDUs), 2022-Buildout	24,653
Buildout Cost per Service Unit (EDU)	$822

Source: Estimated cost of planned new station (in FY 2033 dollars) from City of Chandler, January 16, 2023; outstanding debt/interfund loans, encumbrances, and fund balance from Table 122; study and audit costs from Table 125 and Table 126; new service units from Table 47.

Cost per Service Unit Summary

The three costs per service unit calculated above are summarized in Table 53. The updated system development fees are based on the ten-year cost per service unit, which is the lowest of the three.

Table 53. Fire Cost per Service Unit

Existing Cost per Service Unit	$409
Ten-Year Cost per Service Unit	$308
Buildout Cost per Service Unit	$822
Lowest Cost per Service Unit	$308

Source: Existing from Table 50; ten-year from Table 51; buildout from Table 52.

Net Cost per Service Unit

As noted in the Legal Framework section of this report, impact fees should be reduced (or "offset") to account for other types of revenues that will be generated by new development and used to fund capacity-expanding improvements of the same type as those to be funded by the impact fees. Cases in which such an offset is warranted include funding of existing deficiencies, outstanding debt payments on existing facilities, and dedicated revenue sources to fund growth-related improvements.

The fire system development fees calculated in this report are based on a lower cost per service unit than the existing level of service, so there are no existing deficiencies. Other than system development fees, the City has no dedicated source of revenue to fund growth-related fire improvements. The City has not received any grant funding for fire improvements in recent years, and does not anticipate any grants over the next ten years.

The City has funded fire improvements with system development fees or using loans from the general fund to advance-fund certain improvements. The updated fees are lower than they would be based on the existing level of service, which was reduced to account for outstanding interfund loans used to build existing capacity that will serve future development.

Future system development fees can be used to repay outstanding interfund loans without raising double-payment issues. The City does have some additional non-eligible debt on the fire training facility, but this can legitimately be retired with future general funds raised from both existing and future development, because the training facility has not been included in determining the existing level of service. Consequently, no additional offsets are warranted, and the cost per service unit calculated above is the same as the net cost per service unit.

Updated System Development Fees

The updated fire system development fees that may be adopted by the City based on this study are the products of the numbers of service units generated by a unit of development and the net cost per service unit calculated above. The resulting fee schedule is presented in Table 54.

Table 54. Fire Net Cost Schedule

Land Use	Unit	EDUs/ Unit	Net Cost/ EDU	Net Cost/ Unit
Single-Family	Dwelling	1.000000	$308	$308
Multi-Family	Dwelling	0.841000	$308	$259
Retail/Commercial	Sq. Ft.	0.001048	$308	$0.323
Office	Sq. Ft.	0.000550	$308	$0.169
Industrial/Warehouse	Sq. Ft.	0.000249	$308	$0.077
Public/Institutional	Sq. Ft.	0.000524	$308	$0.161

Source: EDUs per unit from Table 46 (nonresidential divided by 1,000 to convert from per 1,000 sq. ft. to per square foot); net cost per EDU is the lowest cost per EDU from Table 53.

The updated fire fees are compared to current fees in Table 55. The updated fees are higher than current fees for all land use categories except office.

Table 55. Current and Updated Fire Fees

Land Use	Unit	Current Fees	Updated Fees	Percent Change
Single-Family	Dwelling	$218	$308	41%
Multi-Family	Dwelling	$161	$259	61%
Retail/Commercial	Sq. Ft.	$0.22	$0.32	47%
Office	Sq. Ft.	$0.20	$0.17	-16%
Industrial/Warehouse	Sq. Ft.	$0.04	$0.08	93%
Public/Institutional	Sq. Ft.	$0.06	$0.16	168%

Source: Current fees from Table 1; updated fees from Table 54.

Capital Plan

Assuming that growth occurs as projected in the land use assumptions, the City plans to fund approximately $3.6 million in growth-related fire expenditures over the next ten years, as summarized in Table 56.

Table 56. Fire Capital Plan, 2022-2032

Improvement	10-Year Cost
Outstanding Debt/Interfund Loans	$3,588,007
Required System Development Fee Studies	$32,950
Required Biennial Audits	$10,000
Total	$3,630,957

Source: Interfund loan balance from Table 122; study cost from Table 125 audit cost from Table 126.

Projected fire system development fee revenue over the next ten years, based on new development anticipated by the land use assumptions, would be sufficient to cover 100% of ten-year costs but only 38% of buildout costs, which include a new fire station. The City will need to increase fees once the new fire station is within the 10-year horizon.

Table 57. Projected Fire Fee Revenue, 2022-Buildout

	2022-2032	2022-Buildout
New Service Units (EDUs)	11,007	24,653
x Net Cost per Service Unit (EDU)	$308	$308
Projected Revenue	$3,390,156	$7,593,124
Current Fund Balance	$239,385	$239,385
Total System Development Fee Funds Available	$3,629,541	$7,832,509
÷ Planned Expenditures	$3,630,957	$20,495,407
Percent of Costs Covered by Fire Fees	100%	38%

Source: New service units from Table 47; net cost per service unit is the lowest cost per EDU from Table 53; current fund balance from Table 122; 2022-2032 planned expenditures from Table 56; 2022-buildout expenditures from Table 52.

POLICE

This section updates the City's police system development fees in compliance with the Arizona impact fee enabling act for municipalities.

Service Units

Disparate types of development must be translated into a common unit of measurement that reflects the impact of new development on the demand for police facilities. This unit of measurement is called a "service unit." This update continues to use the "functional population" approach to calculate and assess the police system development fees. This approach is a generally-accepted methodology for these impact fee types and is based on the observation that demand for public safety facilities tends to be proportional to the presence of people at a particular site. It is more fully described in the Fire section and in Appendix B.

As with the City's fire system development fees, the police service area is also city-wide. Since the number of fire service units is also calculated using functional population, the existing and projected police service units (Equivalent Dwelling Units or EDUs) for the 2022-2032 ten-year planning horizon and to buildout are the same as those calculated earlier for the fire system development fees (see Table 47 in the Fire section).

Cost per Service Unit

As described in the Methodology subsection of the Legal Framework section, the updated system development fees are based on the lowest of three costs per service unit: existing level of service, ten-year cost and buildout cost.

Existing Level of Service

The cost per service unit to provide police protection to new development should not exceed the existing level of service provided to existing development. The existing level of service is quantified as the ratio of the replacement cost of existing police capital facilities to existing police service units. The inventory of the City's existing police facilities is provided in Table 58. Replacement costs of existing facilities are estimated based on the estimated construction cost per square foot for the planned Public Safety Training Center and the land cost per acre based on the City's most recent land purchases for parks.

Table 58. Existing Police Facilities

Facility	Year Built	Bldg. (s.f.)	Land (ac.)
Police Headquarters	1998	67,529	5.85
Police Dispatch/Family Advocacy Center	1990	11,243	0.46
Property & Evidence	1976/2003	30,430	1.83
Chandler Heights Substation	2008	21,841	4.50
Desert Breeze Substation	2006	21,253	5.00
Hamilton Facility	1990	13,816	1.74
Total Building Square Feet/Acres		166,112	19.38
x Unit Cost		$346	$153,514
Total Replacement Value		$57,474,752	$2,975,101

Source: Year built, square feet, and land area from City of Chandler Police Department, December 23, 2021, cost per building square foot is estimated construction cost per square foot for phase 1 of Public Safety Training Center per City of Chandler Police Department, September 6, 2017; land cost per acre is park cost per acre from Table 30.

The existing level of service can be expressed in terms of the current cost per service unit. In addition to the costs of existing facilities, the current fund balance and interfund loans must also be taken into consideration. The existing level of service is $390 per EDU, as shown in Table 59.

Table 59. Police Existing Level of Service

Police Buildings	$57,474,752
Land Value	$2,975,101
Total Replacement Cost	$60,449,853
Fund Balance	$257,453
– Interfund Loan Obligations	-$2,008,425
Total Existing Facility Value	$58,698,881
÷ Existing Service Units (EDUs)	150,363
Existing LOS (Replacement Value per EDU)	$390

Source: Building and land cost from Table 58; outstanding debt/interfund loans and fund balance from Table 122; existing (2022) EDUs from Table 47.

Ten-Year Cost per Service Unit

The City does not plan to construct any new impact fee-eligible police capital improvements over the next ten years. The City has already constructed all the improvements it will need to serve buildout development. However, not all the improvements have been fully paid for. The City will need to repay interfund loans from the general fund and to pay for required study updates and audits over the next ten years. The results are shown in Table 60 and indicate a ten-year cost per service unit of $163 per EDU.

Table 60. Police Ten-Year Cost per Service Unit

Interfund Loans for Past Projects	$2,008,425
Required Fee Study Updates and Biennial Audits	$42,950
Total Planned Expenditures	$2,051,375
– Fund Balance	-$257,453
Total Revenue Needs	$1,793,922
÷ New Service Units (EDUs), 2022-2032	11,007
Ten-Year Cost per Service Unit (EDU)	$163

Source: Outstanding interfund loans and fund balance from Table 122; study cost from Table 125; new service units from Table 47.

Buildout Cost per Service Unit

The buildout cost per service unit includes the outstanding pledged debt and the cost of required SDF study updates and audits. Since most of these costs will be incurred over the next ten years, the City's buildout revenue needs are the same as its ten-year needs, with the exception that additional fee study update and audits will be required. The results are shown in Table 61 and indicate a buildout cost per service unit of $74 per EDU.

Table 61. Police Buildout Cost per Service Unit

Interfund Loans for Past Projects	$2,008,425
Required Fee Study Updates and Biennial Audits	$83,900
Total Planned Expenditures	$2,092,325
– Fund Balance	-$257,453
Total Revenue Needs	$1,834,872
÷ New Service Units (EDUs), 2022-Buildout	24,653
Buildout Cost per Service Unit (EDU)	$74

Source: Interfund loans and fund balance from Table 122; study and audit cost from Table 125 and Table 126; new service units from Table 47.

Cost per Service Unit Summary

The three costs per service unit calculated above are summarized in Table 62. The updated system development fees are based on the buildout cost per service unit, which is the lowest of the three.

Table 62. Police Cost per Service Unit

Existing Cost per Service Unit	$390
Ten-Year Cost per Service Unit	$163
Buildout Cost per Service Unit	$74
Lowest Cost per Service Unit	$74

Source: Existing from Table 59; ten-year from Table 60; buildout from Table 61.

Net Cost per Service Unit

As noted in the Legal Framework section of this report, impact fees should be reduced (or "offset") in order to account for other types of revenues that will be generated by new development and used to fund capacity-expanding improvements of the same type as those to be funded by the impact fees. Cases in which such an offset is warranted include funding of existing deficiencies, outstanding debt payments on existing facilities, and dedicated revenue sources to fund growth-related improvements.

The police system development fees calculated in this report are based on the buildout level of service, which is lower than the existing level of service, so there are no existing deficiencies. Other than system development fees, the City has no dedicated source of revenue to fund growth-related police improvements. The City has not received any grant funding for police improvements in recent years, and does not anticipate any grants over the next ten years.

The City has funded police improvements with system development fees or using general fund revenues, either on a pay-go basis or to retire debt. The updated fees are lower than the existing level of service, which has been reduced to account for outstanding interfund loans used to build some existing capacity that will serve future development. Future system development fees can be used to repay that obligation without raising double-payment issues. Consequently, no additional offsets are warranted, and the net cost per service unit is the same as the cost per service unit calculated above.

Updated System Development Fees

The updated police system development fees that may be adopted by the City based on this study are the products of the number of service units generated by a unit of development for each land use and the net cost per service unit calculated above. The resulting updated fee schedule is presented in Table 63.

Table 63. Police Net Cost Schedule

Land Use	Unit	EDUs/ Unit	Net Cost/ EDU	Net Cost/ Unit
Single-Family	Dwelling	1.000000	$74	$74
Multi-Family	Dwelling	0.841000	$74	$62
Retail/Commercial	Sq. Ft.	0.001048	$74	$0.078
Office	Sq. Ft.	0.000550	$74	$0.041
Industrial/Warehouse	Sq. Ft.	0.000249	$74	$0.018
Public/Institutional	Sq. Ft.	0.000524	$74	$0.039

Source: EDUs per unit same as for fire from Table 46; net cost per EDU is the lowest cost per EDU from Table 62.

The updated police fees are compared to current fees in Table 64. The updated fees are lower than current fees for all land uses except public/institutional.

Table 64. Current and Updated Police Fees

Land Use	Unit	Current Fees	Updated Fees	Percent Change
Single-Family	Dwelling	$127	$74	-42%
Multi-Family	Dwelling	$94	$62	-34%
Commercial	Sq. Ft.	$0.130	$0.078	-40%
Office	Sq. Ft.	$0.110	$0.041	-63%
Industrial/Warehouse	Sq. Ft.	$0.020	$0.018	-10%
Public/Institutional	Sq. Ft.	$0.030	$0.039	30%

Source: Current fees from Table 1; updated fees from Table 63.

Capital Plan

The City has approximately $2 million in growth-related police capital costs to be paid over the next ten years, as summarized in Table 65.

Table 65. Police Capital Plan, 2022-2032

Improvement/Expenditure	10-Year Cost
FY 2006/2007 Interfund Loan for South Substation	$2,008,425
Required System Development Fee Studies	$32,950
Required Biennial Audits	$10,000
Total	$2,051,375

Source: Interfund loan amount from Table 122; study cost from Table 125; audit cost from Table 126.

Projected police system development fee revenue over the next ten years, based on new development anticipated by the land use assumptions, is $0.81 million. With the inclusion of the current fund balance, the City would have $1.07 million in system development fee funds available to spend over the next ten years, as shown in Table 66. The City will need to defer some of the interfund loan repayment beyond ten years, but should recover the full cost by buildout.

Table 66. Projected Police Fee Revenue, 2022-Buildout

	2022-2032	2022-Buildout
New Service Units (EDUs)	11,007	24,653
x Net Cost per Service Unit (EDU)	$74	$74
Projected Revenue	$814,518	$1,824,322
Current Fund Balance	$257,453	$257,453
Total System Development Fee Funds Available	$1,071,971	$2,081,775
÷ Planned Expenditures	$2,051,375	$2,092,325
Percent of Costs Covered by Police Fees	52%	99%

Source: New service units from Table 47; net cost per service unit is the lowest cost per EDU from Table 62; current fund balance from Table 122 in Appendix C; 2022-2032 planned expenditures from Table 65; 2022-buildout planned expenditures from Table 61.

PUBLIC BUILDINGS

The City's public building system development fee funds administrative buildings, fleet maintenance facilities and other general government facilities not covered by the City's arterial street, park, fire, police, library, water and wastewater system development fees. Public building fees are no longer authorized by SB 1525 as of January 1, 2012. However, SB 1525 allows cities to continue to collect public building fees to repay debt service obligations for improvement financed before June 1, 2011 that impact fees were pledged to repay.

Attorneys working with the Arizona League of Cities and Towns have interpreted the language of SB 1525 to allow pledges of impact fees to include repayment of interfund loans as well as formal debt instruments. The League's model development impact fee ordinance defines the term "financing or debt" as follows:

> *Any debt, bond, note, loan, interfund loan, fund transfer, or other debt service obligation used to finance the development or expansion of a Capital Facility.*

The City recorded two interfund loans from the general fund to the public building system development fee fund for a portion of the cost of construction of the City Hall complex, which was completed in 2010. The interfund loans were made in fiscal years 2010 and 2011, for a total of $4,369,352. The current interfund loan balance is $1,764,427. Public building system development fees were pledged to retire this loan by repaying the general fund.

Because public building fees are no longer authorized, SB 1525 update requirements, including preparation of infrastructure improvements plans, do not apply, and the City may continue to charge its current fees until the interfund loan is repaid. The current outstanding interfund loan amount, net of the current fund balance, is about $1.6 million, as shown in Table 67.

Table 67. Remaining Public Building Pledged Debt

Outstanding Interfund Loan	$1,764,427
– Current Fund Balance	-$153,003
Future Revenue Needed	$1,611,424

Source: Outstanding interfund loan and fund balance from Table 122.

Based on the land use assumptions, new development will generate approximately $1.2 million over the next ten years, as shown in Table 68 below. By buildout, new development could generate about $2.7 million, but the public building fees will cease to be collected when the pledged debt obligation is repaid.

Table 68. Public Building Revenue Projections, 10-Year and to Buildout

	10-Year	Buildout
New EDUs	11,007	24,653
x Current Fee for a Single-Family Unit	$110	$110
Projected Revenue	$1,210,770	$2,711,830

Source: New EDUs from Table 47 in Fire section; current single-family fee from Table 1; projected revenue is new EDUs times current fee per single-family unit.

WATER

This section updates the City's water system development fees in compliance with the Arizona impact fee enabling act for municipalities.

Service Units

To calculate water and wastewater impact fees, the demand associated with different types of customers must be expressed in a common unit of measurement, called a "service unit." The service unit for the City's water and wastewater system development fees is an "equivalent dwelling unit" (EDU). An EDU is a single-family dwelling unit or its equivalent in terms of water demand.

Residential development is charged per dwelling unit. A single-family unit is, by definition, one EDU. Multi-family development is assessed based on the average water demand of a multi-family unit compared to a single-family unit. Average demand during the summer months is used for this purpose, because water facilities must be sized to accommodate peak season usage. Based on average water demand per unit during the summer months for the last five years, a multi-family unit represents 0.334 water EDUs, as shown in Table 69.

Table 69. Water Demand per Multi-Family Unit

Average Daily Summer Water Consumption (gpd) per Multi-Family Unit	138
÷ Average Daily Summer Water Consumption (gpd) per Single-Family Unit	414
Multi-Family EDUs/Unit	0.334

Source: City of Chandler water billing data for the summer months (May through September), average of fiscal year 2017-2021 data provided by City on August 6, 2022.

The number of water service units associated with a nonresidential customer is determined by the capacity of the water meter relative to the capacity of the smallest meter size. Table 70 on the following page presents EDU multipliers for various meter sizes based on meter capacities.

Table 70. Meter Capacity Ratios

Meter Size	Type	Capacity (gpm)	EDU Multiplier
5/8" x 3/4"	Disc	10	1.0
3/4"	Disc	15	1.5
1"	Disc	25	2.5
1 1/2"	Disc	50	5.0
2"	Disc/Turbine	80	8.0
3"	Compound	225	22.5
4"	Compound	250	25.0
6"	Compound	500	50.0
8"	Compound	800	80.0
3"	Turbine	175	17.5
4"	Turbine	300	30.0
6"	Turbine	625	62.5
8"	Turbine	900	90.0
10"	Turbine	1,450	145.0
12"	Turbine	2,150	215.0
16"	Turbine	3,100	310.0

Source: Meter capacities in gallons per minute (gpm) represent the recommended maximum rates for continuing operations from Chandler Public Works & Utilities Department, January 4, 2023.

The number of existing water service units are estimated based on the number of current City water customers and the service unit multipliers described above. As shown in Table 71, the City's current water customer base amounts to 124,954 service units (EDUs).

Table 71. Existing Water Service Units

Meter Size	Type	Units or Meters	EDU Multiplier	EDUs
5/8"x3/4"	Disc	545	1.0	545
3/4"	Disc	274	1.5	411
1"	Disc	1,250	2.5	3,125
1 1/2"	Disc	1,226	5.0	6,130
2"	Disc/Turbine	1,791	8.0	14,328
3"	Compound	94	22.5	2,115
4"	Compound	57	25.0	1,425
6"	Turbine	27	62.5	1,688
8"	Turbine	13	90.0	1,170
10"	Turbine	7	145.0	1,015
12"	Turbine	1	215.0	215
16"	Turbine	3	310.0	930
Subtotal, Nonresidential		5,288	n/a	33,097
Single-Family Units		80,938	1.000	80,938
Multi-Family Units		32,692	0.334	10,919
Total Water EDUs				124,954

Source: Residential units and nonresidential meters (excluding hydrant and fire flow meters) from City of Chandler, Public Works & Utilities Department, August 6, 2022; multi-family EDU multiplier from Table 69; EDU multipliers by meter size from Table 70.

The number of service units should increase proportionately with the increase in water demand. As shown in Table 72, average daily water demand and service units are projected to increase by 23,575 over the next ten years, and by 42,442 from 2022 to buildout.

Table 72. Water Demand and Service Units, 2022-Buildout

	2020	2022	2032	Buildout
Water Avg. Daily Demand (gpd)	60,500,000	62,870,000	74,710,000	84,200,000
Water EDUs		124,954	148,529	167,396
New EDUs, 2022-2032			23,575	
New EDUs, 2022-Buildout				42,442

Source: 2020 and buildout average day water demand from City of Chandler, August 6, 2022 (2022 is straight-line interpolation between 2020 and an estimated 2040 buildout; 2032 is 55.5% of remaining 2022-buildout demand (percent of city-wide population from Table 6 and employment from Table 9 in the Land Use Assumptions section); 2022 water EDUs from Table 71; 2032 and buildout EDUs projected to increase proportionately to water demand.

Cost per Service Unit

As described earlier in the Methodology subsection of the Legal Framework section, the updated system development fees are based on the lowest of three costs per service unit: existing level of service, ten-year cost and buildout cost.

Existing Level of Service

The existing level of service for the water system development fees is quantified, in large part, by the capacity provided by existing water facilities and the current cost to construct that capacity. Water production facilities (surface water treatment plants and wells) must be sized for maximum day demand. System-wide maximum day water demand (in millions of gallons or mgd) and water production capacity are summarized in Table 73 for both existing and buildout conditions. Current water production capacity is sufficient to accommodate buildout demand.

Table 73. Water Demand and Capacity, 2022-Buildout

	2022	Buildout
Annual Average Day Demand (mgd)	62.87	84.20
x Peaking Factor	1.33	1.33
Maximum Day Demand (mgd)	83.62	111.99
Total Production Capacity (mgd)	149.30	149.30

Source: Average day demand projections and peaking factor from City of Chandler Public Works & Utilities Department, August 6, 2022; 2022 and buildout capacity from Table 74.

Chandler's water production capacity consists of the City-owned Surface Water Treatment Plant, the City-owned capacity in the San Tan Vista Water Treatment Plant co-owned with the Town of Gilbert, and the firm capacity of the City's groundwater wells (firm capacity is capacity with the largest well in each pressure zone out of service). Existing water production capacities available to meet maximum day demands are detailed in Table 74. The City has sufficient existing capacity to accommodate projected buildout demand.

Table 74. Existing Water Production Capacity

Water Production Facility	Capacity (mgd)
Surface Water Treatment Plant	60.0
San Tan Vista WTP, Phases I & II	24.0
Subtotal, Treatment Plants	84.0
Airport Well	2.3
Amberwood Well	1.5
Appleby Well	2.3
Arrowhead Well	2.9
Bright Angel Well	1.0
Brooks Crossing Well*	3.3
Bush Way Well	1.8
Colt Well	2.3
Desert Breeze Well	4.2
East Knox	0.7
Eastwood Well	2.2
Fire Station Well	2.4
Frye Well	2.4
Hahn Well (owned by SRP)	2.1
Hightown Well	2.7
Iris Well	1.6
Knox Well	2.2
Lindsay Well*	3.4
McDermott Well	2.2
McQueen Well	2.9
Monterey Well*	5.0
Normal Well	1.9
Ocotillo Well	1.1
Pennington Well	2.5
Pleasant Well	1.5
Price South Well No. 2	1.0
Riggs Well	2.0
Roosevelt Well	2.2
Rural Road Well	4.2
Shawnee Well	1.9
Warner Well (owned by SRP)	3.0
Subtotal, Wells	72.7
Subtotal, Well Firm Capacity*	65.3
Total Firm Capacity	149.3

* firm capacity excludes largest well in each pressure zone and Brooks Crossing, which is dedicated for industrial use

Source: City of Chandler Public Works & Utilities Department, August 6, 2022 (total firm capacity is sum of treatment plant capacity and firm well capacity).

A water system must have sufficient storage capacity to meet peak day as well as peak hour requirements. According to the City's most recent water master plan, Chandler currently has sufficient storage capacity to accommodate buildout needs. The existing storage capacity is summarized in Table 75.

Table 75. Existing Water Storage Capacity

	Gallons (millions)
Airport Tank	2.0
Alamosa Tank	2.0
Apache Tank	2.0
Arrowhead Tank	2.0
Basha Road Tank	2.0
Brooks Crossing Tank	1.0
Bush Way Tank	2.0
Colt Tank	2.0
Dobson South Tank	2.0
Frye Tank *	n/a
Gilbert Road Tank	2.0
Hahn Tank	2.0
Hunt Highway Tank	2.0
Lindsay Road Tank	2.0
McQueen Tank	1.0
Monterey Tank	2.0
Price South Tank *	n/a
Roosevelt Tank *	n/a
Rural Tank	2.0
SWTP Finished Water Reservoirs	12.0
Total	42.0

* will be removed from service by 2024
Source: City of Chandler Public Works & Utilities Department, August 6, 2022.

Another essential component of a water system is booster pumps, which are used to inject water from treatment plants, direct-pumping wells and storage tanks into the transmission/distribution system at the appropriate pressure. The City's existing booster pump station capacities are summarized in Table 76.

Table 76. Existing Booster Pump Station Capacity

Booster Pump Station	Existing Firm Capacity (mgd)
Airport	2.1
Alamosa	6.0
Apache	3.7
Arrowhead	4.4
Basha Road	6.1
Brooks Crossing	3.3
Bush Way	5.1
Colt	3.8
Dobson South	4.5
Frye	n/a
Gilbert Road	5.8
Hahn	3.9
Hunt Highway	3.8
Lindsay Road	5.7
McQueen	1.7
Monterey	3.1
Price South	n/a
Roosevelt	n/a
Rural	7.3
SWTP Pump Station No. 1	54.0
SWTP Pump Station No. 2	18.0
Direct-Pumping Wells	22.3
Total	164.6

Source: City of Chandler Public Works & Utilities Department, August 6, 2022.

A final component of a water system is the transmission and distribution lines that convey the potable water to the customer. Water impact fees typically charge only for transmission lines, since distribution lines are often constructed by developers without credit against their water impact fees. The City's water master plan does not clearly distinguish between transmission and distribution lines. For this study, transmission lines are defined as any waterline of 16 inches in diameter or greater. The current inventory of transmission lines is provided in Table 77.

Table 77. Existing Water Transmission Lines

Pipe Size (in.)	Linear Feet
16	561,191
20	8,010
24	127,745
30	41,513
36	54,287
42	11,576
48	14,438

Source: City of Chandler Public Works & Utilities Department, August 6, 2022.

Prior to the 2014 update, a separate water resources system development fee was assessed only on new water customers located on lands lacking water rights that can be provided to the City as a condition of water service. These are Salt River Project (SRP) Off-Project and Non-Member lands. In the 2014 update, the cost of water supplies was included in the water system development fee assessed to all new water customers. This change was based on analysis presented in the 2014 study demonstrating that SRP On-Project lands have no additional water rights to offset their additional water demands.

Current and buildout water supplies are summarized in Table 78. This analysis shows that the ratio of water supplies to water demand will fall from now to buildout, indicating that the City currently has sufficient water supply capacity to serve buildout development.

Table 78. Water Supplies, 2022-Buildout

Surface Water Supplies Available (acre-feet/year)	93,605
Groundwater Safe Yield Pumping (acre-feet/year)	4,400
Total Water Supply Available (acre-feet/year)	98,005
x Conversion Factor	0.0008927
Total Water Supply Available (mgd)	87.49
÷ Current Average Day Water Demand (mgd)	62.87
Current Ratio of Water Supply to Average Day Demand	1.39
New Water Supplies Planned to be Acquired (mgd), 2022-Buildout	4.10
÷ New Average Day Water Demand (mgd), 2022-Buildout	21.33
Ratio of New Water Supplies to New Average Day Demand	0.19
Buildout Water Supplies (mgd)	91.59
÷ Buildout Average Day Water Demand (mgd)	84.20
Buildout Ratio of Water Supplies to Average Day Demand	1.09

Source: Current and buildout water supplies from City of Chandler Public Works & Utilities Department, August 6, 2022; acre-feet to mgd conversion factor is 325,851 gallons per acre-foot divided by 365 days per year divided by 1 million; current and buildout average day water demand from Table 73.

The City has made two water supply acquisitions over the past several years. Based on these costs, the current marginal cost of additional water supplies is estimated to be $5.85 per gallon per day, as shown in Table 79. Note that the White Mountain settlement cost will increase with the Consumer Price Index until a dam is built and the settlement is finalized.

Table 79. Water Supplies Cost per Gallon per Day

	Cost	Gallons/Day	Cost/gpd
Gila River Indian Community CAP Purchase, FY 2018-2020	$42,860,000	5,500,000	$7.79
White Mountain Apache Tribe Water Settlement, FY 2020	$13,257,195	4,100,000	$3.23
Water Supplies Cost per Gallon per Day	$56,117,195	9,600,000	$5.85

Source: Planned water supply cost and capacity from City of Chandler, Public Works & Utilities Department, August 6, 2022.

As shown above, there is some excess capacity in current water supplies. The percentage of existing water supplies that are utilized by current customers, based on the projected buildout ratio of water supplies to average day water demand, is estimated at about 78% in Table 80 below.

Table 80. Percent of Water Supplies Currently Utilized

	62.87
Current Average Day Water Demand (mgd)	62.87
x Buildout Ratio of Water Supplies to Daily Demand	1.09
Current Water Supplies Utilized (mgd)	68.39
÷ Existing Water Supplies (mgd)	87.49
Percent of Existing Water Supplies Utilized at Buildout Ratio	78.17%

Source: Current demand, buildout ratio, and existing water supplies from Table 78.

The replacement cost of Chandler's existing water system is estimated based on current capacities and the current unit costs to construct water facilities and to acquire additional water supplies, as shown in Table 81.

Table 81. Replacement Cost of Existing Water Facilities

System Component	Unit	Existing Units	Unit Cost	Replacement Cost
Water Supplies	gallons/day	87,490,000	$5.85	$511,816,500
Treatment Plant Capacity	gallons/day	84,000,000	$3.63	$304,920,000
Well Capacity	gallons/day	65,300,000	$1.69	$110,357,000
Storage Capacity	gallons	42,000,000	$1.62	$68,040,000
Booster Pump Station Capacity	gallons/day	164,600,000	$0.68	$111,928,000
16" Transmission Lines	linear feet	561,191	$325	$182,364,627
20" Transmission Lines	linear feet	8,010	$406	$3,253,662
24" Transmission Lines	linear feet	127,745	$487	$62,268,023
30" Transmission Lines	linear feet	41,513	$609	$25,293,871
36" Transmission Lines	linear feet	54,287	$731	$39,692,483
42" Transmission Lines	linear feet	11,576	$853	$9,874,560
48" Transmission Lines	linear feet	14,438	$975	$14,075,317
Total Existing System Replacement Cost				$1,443,884,043

Source: Existing water supplies from Table 78; unit cost for water supplies from Table 79; existing treatment plant and well firm capacity from Table 74; storage capacity from Table 75; booster pump station capacity from Table 76; linear feet transmission lines from Table 77; unit costs other than water supplies from Public Works & Utilities Department, August 6, 2022.

The existing level of service for water facilities is calculated in Table 82 by dividing the replacement cost of existing facilities utilized by existing customers, less outstanding debt obligations, by the number of existing service units. The result is $7,341 per equivalent dwelling unit (EDU).

Table 82. Water Existing Level of Service

Water System Component	Replacement Cost	Percent Utilized	Cost Utilized	Existing EDUs	Cost/ EDU
Water Supplies	$511,816,500	78.17%	$400,086,958	n/a	n/a
Treatment Plant and Well Facilities	$415,277,000	56.01%	$232,596,648	n/a	n/a
Storage, Pumping, Transmission Facilities	$516,790,543	74.67%	$385,887,498	n/a	n/a
Total Cost	$1,443,884,043		$1,018,571,104	n/a	n/a
– Outstanding Debt/Interfund Loans			-$113,317,614	n/a	n/a
Fund Balance			$12,088,518	n/a	n/a
Net Cost			$917,342,008	124,954	$7,341

Source: Replacement costs from Table 81; percent of water supply from Table 80; percent of treatment plant and well facilities is ratio of existing demand to existing capacity from Table 73; percent of storage, pumping and transmission facilities is ratio of existing to buildout water demand from Table 72; outstanding debt/interfund loans from Table 122; existing (2022) service units from Table 72.

Ten-Year Cost per Service Unit

The City does not plan to make any capacity-expanding improvements to the water system over the next ten years. The City will need to repay outstanding debt and interfund loans on several past capacity projects with excess capacity, pay encumbrances on current projects, and pay for required study updates and biennial audits over the next ten years. The results are shown in Table 83 and indicate a ten-year cost per service unit of $4,426 per EDU.

Table 83. Water Ten-Year Cost per Service Unit

Debt/Interfund Loan Obligations	$113,317,614
Encumbrances on Current Projects	$3,081,634
Required Fee Studies and Biennial Audits	$42,950
Total Expenditures	$116,442,198
– Fund Balance	-$12,088,518
Total Revenue Needs	$104,353,680
÷ New Service Units (EDUs), 2022-2032	23,575
Ten-Year Cost per Service Unit (EDU)	$4,426

Source: Planned project and cost from City of Chandler, 2023-2032 *Capital Improvement Program*; debt/interfund loans, encumbrances, and account balance from Table 122; study and audit costs from Table 125 and Table 126, respectively; new service units from Table 72.

Buildout Cost per Service Unit

No additional improvements to the water system are planned prior to buildout. The buildout cost per service unit represents costs that will be incurred by the City to buildout to repay outstanding debt and interfund loans associated with existing capacity available to serve new development, pay encumbrances on current projects, and pay for study updates and biennial audits from now to buildout. Dividing buildout costs by new service units to buildout results in a buildout cost per service unit of $2,460 per EDU, as shown in Table 84.

Table 84. Water Buildout Cost per Service Unit

Debt/Interfund Loan Obligations	$113,317,614
Encumbrances on Current Projects	$3,081,634
Required Fee Studies and Biennial Audits	$83,900
Total Expenditures	$116,483,148
– Fund Balance	-$12,088,518
Total Revenue Needs	$104,394,630
÷ New Service Units (EDUs), 2022-Buildout	42,442
Buildout Cost per Service Unit (EDU)	$2,460

Source: Planned project and cost from City of Chandler, 2023-2032 *Capital Improvement Program*; debt/interfund loans, encumbrances, and account balance (sum of water and water resources) from Table 122; study and audit costs from Table 125 and Table 126, respectively; new service units from Table 72.

Cost per Service Unit Summary

The three costs per service unit calculated above are summarized in Table 85. The updated system development fees are based on the buildout cost per service unit, which is the lowest of the three.

Table 85. Water Cost per Service Unit

Existing Cost per Service Unit	$7,341
Ten-Year Cost per Service Unit	$4,426
Buildout Cost per Service Unit	$2,460
Lowest Cost per Service Unit	$2,460

Source: Existing from Table 82; ten-year from Table 83; buildout from Table 84.

Net Cost per Service Unit

As noted in the Legal Framework section, impact fees should be reduced (or "offset") to account for other types of revenues that will be generated by new development and used to fund capacity-expanding improvements of the same type as those to be funded by the impact fees. Cases in which such an offset is warranted include funding of existing deficiencies, outstanding debt/interfund loans on existing facilities, and dedicated revenue sources to fund growth-related improvements.

The water system development fees calculated in this report are based on the buildout cost per service unit, which is lower than the existing level of service, so there are no existing deficiencies. The outstanding debt/interfund loans for capacity improvements has been excluded from the existing level of service calculation, and can reasonably be attributed to capacity that is available for future customers. Other than system development fees and water utility rates, the City has no dedicated source of revenue to fund growth-related water improvements. The City has not received any grant funding for water improvements in recent years and does not anticipate any grants over the next ten years. Consequently, no additional offsets are warranted, and the net cost per service unit is the same as the cost per service unit calculated above.

Updated System Development Fees

The updated water system development fees that may be adopted by the City based on this study are determined by multiplying the number of service units generated by a dwelling unit or nonresidential meter by the net cost per service unit calculated above. The resulting updated fee schedule is presented in Table 86.

Table 86. Water Net Cost Schedule

Housing/Meter Type		EDUs per Unit/Meter	Net Cost/ EDU	Net Cost per Unit/Meter
Single-Family Unit		1.000	$2,460	$2,460
Multi-Family Unit		0.334	$2,460	$822
Nonresidential Meter:				
3/4"	Disc	1.5	$2,460	$3,690
1"	Disc	2.5	$2,460	$6,150
1 1/2"	Disc	5.0	$2,460	$12,300
2"	Disc/Turbine	8.0	$2,460	$19,680
3"	Compound	22.5	$2,460	$55,350
4"	Compound	25.0	$2,460	$61,500
6"	Compound	50.0	$2,460	$123,000
8"	Compound	80.0	$2,460	$196,800
3"	Turbine	17.5	$2,460	$43,050
4"	Turbine	30.0	$2,460	$73,800
6"	Turbine	62.5	$2,460	$153,750
8"	Turbine	90.0	$2,460	$221,400

Source: Single-family EDUs per unit is by definition 1.000; multi-family EDUs per unit from Table 69; nonresidential EDUs per meter from Table 70; net cost per EDU is the lowest cost per EDU from Table 85.

The updated water fees are compared to current fees in Table 87 below. The updated fees are 28% lower than current fees for most new customers. The fee for the 3" compound meter increases because the capacity of this meter size has been reevaluated and increased significantly (from 160 to 225 gallons per minute) as part of this update.

Table 87. Current and Updated Water Fees

Housing/Meter Type		Current Fee	Updated Fee	Percent Change
Single-Family Unit		$3,397	$2,460	-28%
Multi-Family Unit		$1,281	$822	-36%
Nonresidential Meter:				
3/4"	Disc	$5,096	$3,690	-28%
1"	Disc	$8,493	$6,150	-28%
1 1/2"	Disc	$16,985	$12,300	-28%
2"	Disc/Turbine	$27,176	$19,680	-28%
3"	Compound	$54,352	$55,350	2%
4"	Compound	$84,925	$61,500	-28%
6"	Compound	$169,850	$123,000	-28%
8"	Compound	$271,760	$196,800	-28%
3"	Turbine	$59,448	$43,050	-28%
4"	Turbine	$101,910	$73,800	-28%
6"	Turbine	$212,313	$153,750	-28%
8"	Turbine	$305,730	$221,400	-28%

Source: Current water fees from Table 2; updated fees from Table 86.

Capital Plan

The City has approximately $116 million in anticipated growth-related water costs over the next ten years, as summarized in Table 88.

Table 88. Water Capital Plan, 2022-2032

Outstanding Pledged Debt/Interfund Loans	$113,317,614
Encumbrances/Carry-Forwards	$3,081,634
Required System Development Fee Studies	$32,950
Required System Development Fee Biennial Audits	$10,000
Total Planned Expenditures	$116,442,198

Source: Planned projects and costs from City of Chandler, 2023-2032 *Capital Improvement Program*; encumbrances and; debt/interfund loans from Table 122; study cost from Table 125.

New water customers projected by the City's water demand forecasts would generate the revenues shown in Table 89 below. Anticipated water system development fee revenues plus the current fund balance would be sufficient to cover all of the future City costs to buildout, and would cover 60% of costs anticipated to be incurred the next ten years. The City will need to defer some debt/interfund loan repayments beyond ten years.

Table 89. Projected Water Fee Revenue, 2022-Buildout

	2022-2032	2022-Buildout
New Water Service Units (EDUs)	23,575	42,442
x Net Cost per Service Unit (EDU)	$2,460	$2,460
Projected Revenue	$57,994,500	$104,407,320
Current Fund Balance	$12,088,518	$12,088,518
Total System Development Fee Funds Available	$70,083,018	$116,495,838
÷ Total Planned Expenditures	$116,442,198	$116,483,148
Percent of Costs Covered by Water Fees	60%	100%

Source: New service units from Table 72; net cost per service unit is the lowest cost per EDU from Table 85; planned expenditures from Table 83 (2022-2032) and Table 84 (2022-buildout)); current fund balance from Table 122 in Appendix C.

WASTEWATER

This section updates the City's wastewater system development fees in compliance with the Arizona impact fee enabling act for municipalities.

Service Units

To calculate wastewater impact fees, the demand associated with different types of customers must be expressed in a common unit of measurement, called a "service unit." The service unit for the City's water and wastewater system development fees is an "equivalent dwelling unit" (EDU). An EDU is a single-family dwelling unit or its equivalent in terms of wastewater demand.

Residential development is charged per dwelling unit. A single-family unit is, by definition, one EDU. Multi-family development is assessed based on the average wastewater demand of a multi-family unit compared to a single-family unit. While wastewater flow is not metered directly, it can be estimated based on average water demand per unit during the winter months, when outdoor water use is limited and most water used is returned to the wastewater system. Based on billing data for the last five years, a multi-family unit represents 0.424 of a wastewater EDU, as shown in Table 90.

Table 90. Wastewater Demand per Multi-Family Unit

Average Daily Winter Water Consumption (gpd) per Multi-Family Unit	120
÷ Average Daily Winter Water Consumption (gpd) per Single-Family Unit	283
Multi-Family EDUs/Unit	0.424

Source: City of Chandler water billing data for the winter months, average of fiscal years 2016/17 through 2020/21, based on data provided by City on August 6, 2022.

The number of wastewater service units associated with a nonresidential customer is determined by the capacity of the water meter relative to the capacity of the smallest meter size. The water meter capacity ratios presented earlier in the Water section (see Table 70) will also be used to determine relative wastewater demand for nonresidential customers. The number of existing wastewater service units are estimated based on the number of current City wastewater customers and the service unit multipliers described above. As shown in Table 91, the City's current wastewater customer base amounts to 118,261 service units (EDUs).

Table 91. Existing Wastewater Service Units

Meter Size	Type	Units or Meters	EDU Multiplier	EDUs
5/8"x3/4"	Disc	359	1.00	359
3/4"	Disc	114	1.50	171
1"	Disc	582	2.50	1,455
1 1/2"	Disc	782	5.00	3,910
2"	Disc/Turbine	1,154	8.00	9,232
3"	Compound	88	22.50	1,980
4"	Compound	56	25.00	1,400
6"	Turbine	26	62.50	1,625
8"	Turbine	13	90.00	1,170
10"	Turbine	7	145.00	1,015
12"	Turbine	1	215.00	215
16"	Turbine	3	310.00	930
Subtotal, Nonresidential		3,185	n/a	23,462
Single-Family Units		80,938	1.000	80,938
Multi-Family Units		32,692	0.424	13,861
Total Wastewater EDUs				118,261

Source: Residential units and nonresidential meters (excluding landscape meters) from City of Chandler, Public Works & Utilities Department, August 6, 2022; multi-family EDU multiplier from Table 90; EDUs multipliers by meter size from Table 70.

The number of wastewater service units should increase proportionately with the increase in wastewater demand. As shown in Table 92, average daily wastewater demand and service units are projected to increase by 11,582 over the next ten years, and by a total of 20,952 new service units from 2022 to buildout.

Table 92. Wastewater Demand and Service Units, 2022-Buildout

	2020	2022	2032	Buildout
Wastewater Avg. Daily Demand (gpd)	29,420,000	30,010,000	32,980,000	35,360,000
Wastewater EDUs		118,261	129,843	139,213
New EDUs, 2022-2032			11,582	
New EDUs, 2022-Buildout				20,952

Source: 2020 and buildout average day wastewater demand from City of Chandler, Public Works & Utilities Department, August 6, 2022 (2022 is straight-line interpolation between 2020 and an estimated 2040 buildout; 2032 is 55.5% of remaining 2022-buildout demand (based on MAG population in Table 6 in the Land Use Assumptions section); 2022 wastewater EDUs from Table 91; 2032 and buildout EDUs projected to increase proportionately to water demand.

The updated projection of buildout demand of 35.4 mgd is 19% less than the 43.6 mgd projected for buildout in 2018. The lowered projection is due to Intel's recent completion of their private water reclamation plant, which will treat their wastewater and reduce demand on City wastewater treatment facilities.

Cost per Service Unit

As described earlier in the Methodology subsection of the Legal Framework section, the updated system development fees are based on the lowest of three costs per service unit: existing level of service, ten-year cost and buildout cost.

Existing Level of Service

The existing level of service for the wastewater system development fees is quantified, in large part, by the capacity provided by existing wastewater facilities and the current cost to construct that capacity.

Chandler's wastewater treatment facilities include the Ocotillo and Airport Water Reclamation Facilities and the Lone Butte Wastewater Treatment Plant. The capacity of existing and planned treatment facilities is summarized in Table 93. Because the Lone Butte plant will be decommissioned, it is not included in determining the existing level of service.

Table 93. Wastewater Treatment Capacity, 2022-Buildout

Wastewater Facility	Current	Buildout
Ocotillo Water Reclamation Facility Capacity (mgd)	18.6	18.6
Airport Water Reclamation Facility Capacity (mgd)	27.0	27.0
Lone Butte Wastewater Treatment Plant Capacity (mgd)	8.8	0.0
Total Treatment Capacity (mgd)	54.4	45.6
Total Capacity Excluding Lone Butte (mgd)	45.6	45.6

Source: Treatment plant capacity from City of Chandler Public Works & Utilities Department, August 6, 2022.

The wastewater collection system consists of lift stations, force mains and gravity lines. Existing lift station capacities are summarized in Table 94.

Table 94. Existing Lift Station Capacity

Lift Station	Firm Capacity (mgd)
Golf Course	1.6
Manganaro	10.0
Mission Estates	0.5
Ocotillo (to Airport WRF)	20.0
Old Pecos	2.7
Riggs	3.0
Robertson	5.8
Sunbird	0.7
Total	44.3

Source: City of Chandler Public Works & Utilities Department, August 22, 2022.

Another component of a wastewater system is the gravity mains and force mains that convey the wastewater to the treatment plants. Wastewater impact fees typically charge only for major system lines, since local lines are often constructed by developers without credit against their wastewater impact fees. The City's wastewater master plan does not clearly distinguish between system lines and local lines. For this study, system lines are defined as gravity mains of 18 inches in diameter or greater, and force mains of 12 inches or greater. These are summarized in Table 95.

Table 95. Existing Wastewater System Line Costs

Pipe Diameter (inches)	Linear Feet	Cost/ Foot	System Line Cost
18	130,034	$487	$63,383,773
21	36,129	$569	$20,545,840
24	66,748	$650	$43,380,860
27	55,228	$731	$40,380,504
30	66,191	$812	$53,773,568
33	7,326	$894	$6,546,807
36	16,030	$975	$15,627,326
39	5,274	$1,056	$5,569,977
42	13,475	$1,137	$15,325,926
48	20,061	$1,273	$25,537,653
60	220	$1,625	$357,456
66	13,635	$1,787	$24,369,563
Total, Gravity Mains	430,351		$314,799,253
12	6,245	$292	$1,826,288
16	12,192	$390	$4,753,905
18	10,913	$439	$4,787,097
20	35,899	$487	$17,497,173
24	22,532	$585	$13,178,516
42	23,902	$1,023	$24,451,746
Total, Force Mains	111,683		$66,494,724

Source: City of Chandler Public Works & Utilities Department, August 6, 2022.

The replacement cost of Chandler's existing wastewater system is estimated based on current capacities and the current unit costs to construct wastewater facilities, as shown in Table 96.

Table 96. Replacement Cost of Existing Wastewater Facilities

System Component	Unit	Existing Units	Unit Cost	Replacement Cost
Treatment Plants*	gallons/day	45,600,000	$24.37	$1,111,272,000
Lift Stations	gallons/day	44,300,000	$1.80	$79,740,000
Gravity Mains	linear feet	430,351	n/a	$314,799,253
Force Mains	linear feet	111,683	n/a	$66,494,724
Total Replacement Cost of Existing Wastewater Facilities				$1,572,305,977

* excludes Lone Butte plant, which is planned to be decommissioned

Source: Treatment plant capacity (excluding Lone Butte) from Table 93; lift station capacity from Table 94; linear feet and costs of gravity and force mains from Table 95; unit costs for treatment and lift station capacity from City of Chandler Public Works & Utilities Department, August 6, 2022.

The existing level of service for wastewater facilities is calculated in Table 97 below. The replacement cost of existing treatment plants, excluding Lone Butte, which will be decommissioned, and the cost of the existing collection system are reduced to account for the fact that there is excess capacity to serve future new customers. The total cost of currently utilized capacity is divided by the number of existing service units to determine the existing level of service, which results in an existing cost per service unit of $8,457 per EDU.

Table 97. Wastewater Existing Level of Service

Replacement Cost of Existing Treatment Plant Capacity	$1,111,272,000
x Percent of Capacity Currently Utilized	65.81%
Cost of Treatment Plant Capacity Utilized	$731,328,103
Replacement Cost of Collection System	$461,033,977
x Percent of Capacity Currently Utilized	84.87%
Cost of Collection System Utilized	$391,279,536
Total Replacement Costs Utilized by Existing Customers*	$1,122,607,639
Fund Balance	$18,424,602
Existing Capital Investment	$1,141,032,241
– Outstanding Debt/Interfund Loans	-$140,924,609
Net Capital Cost	$1,000,107,632
÷ Existing Service Units (EDUs)	118,261
Existing Cost per Service Unit (EDU)	$8,457

* sum of replacement costs of treatment plant and collection system utilized

Source: Treatment plant and collection system costs from Table 96; percent of treatment capacity utilized is ratio of 2022 average day demand from Table 92 to current capacity from Table 93; percent of collection system currently utilized is ratio of existing to buildout demand from Table 92; fund balance and accounts receivable from Table 122; existing (2022) service units from Table 92.

Ten-Year Cost per Service Unit

The City does not plan to construct any new wastewater capacity improvements over the next ten years. The City will need to repay debt and interfund loans on existing facilities with excess capacity, pay encumbrances on current projects, and pay for the study updates and biennial audits that will be required over the next ten years. The calculations are shown in Table 98 and result in a ten-year cost per service unit of $10,580 per EDU.

Table 98. Wastewater Ten-Year Cost per Service Unit

Debt/Interfund Loan Obligations	$140,924,609
Required Fee Studies and Biennial Audits	$42,950
Total Planned Expenditures	$140,967,559
– Fund Balance	-$18,424,602
Total Revenue Needs	$122,542,957
÷ New Service Units (EDUs), 2022-2032	11,582
Ten-Year Cost per Service Unit (EDU)	$10,580

Source: Planned projects and costs City of Chandler, 2023-2032 *Capital Improvement Program*; financial data from Table 122; study and audit costs from Table 125 and Table 126, respectively; new 2022-2032 service units from Table 92.

Buildout Cost per Service Unit

An additional sewer line expansion improvement is planned after 2032. The buildout cost also includes costs that will be incurred by the City to repay outstanding debt and interfund loans associated with existing capacity to serve new development and pay for updated studies and audits. Dividing the total buildout cost by new service units to buildout results in a buildout cost per service unit of $5,989 per EDU, as shown in Table 99 on the following page.

Table 99. Wastewater Buildout Cost per Service Unit

North Chandler Sewer Line Expansion (capacity portion)	$2,900,000
Debt/Interfund Loan Obligations	$140,924,609
Required Fee Studies and Biennial Audits	$83,900
Total Planned Expenditures	$143,908,509
– Fund Balance	-$18,424,602
Total Revenue Needs	$125,483,907
÷ New Service Units (EDUs), 2022-Buildout	20,952
Buildout Cost per Service Unit (EDU)	$5,989

Source: Planned project and cost from City of Chandler, January 12, 2023 (capacity portion, which is 20% of $14.5 million total cost); debt/interfund loan obligation and fund balance from Table 122; study and audit costs from Table 125 and Table 126, respectively; new 2022-buildout service units from Table 92.

Cost per Service Unit Summary

The three costs per service unit calculated above are summarized in Table 100. The updated system development fees are based on the buildout cost per service unit, which is the lowest of the three.

Table 100. Wastewater Cost per Service Unit

Existing Cost per Service Unit	$8,457
Ten-Year Cost per Service Unit	$10,580
Buildout Cost per Service Unit	$5,989
Lowest Cost per Service Unit	$5,989

Source: Existing from Table 97; ten-year from Table 98; buildout from Table 99.

Net Cost per Service Unit

As noted in the Legal Framework section of this report, impact fees should be reduced (or "offset") to account for other types of revenues that will be generated by new development and used to fund capacity-expanding improvements of the same type as those to be funded by the impact fees. Cases in which such an offset is warranted include funding of existing deficiencies, outstanding debt payments on existing facilities, and dedicated revenue sources to fund growth-related improvements.

Outstanding debt for past capacity improvements has been excluded from the existing level of service calculation, and can reasonably be attributed to capacity that is available for future customers. Other than system development fees, the City has no dedicated source of revenue to fund growth-related wastewater improvements. The City has not received any grant funding for wastewater improvements in recent years and does not anticipate any grants over the next ten years. Consequently, no additional offsets are warranted, and the net cost per service unit is the same as the cost per service unit calculated above.

Updated System Development Fees

The updated wastewater system development fees that may be adopted by the City based on this study are the products of the numbers of service units generated by a unit of development and the net cost per service unit calculated above. The resulting updated fee schedule is presented in Table 101.

Table 101. Wastewater Net Cost Schedule

Housing/Meter Type		EDUs per Unit/Meter	Net Cost/ EDU	Net Cost per Unit/Meter
Single-Family Unit		1.000	$5,989	$5,989
Multi-Family Unit		0.424	$5,989	$2,539
Nonresidential Meter:				
3/4"	Disc	1.5	$5,989	$8,984
1"	Disc	2.5	$5,989	$14,973
1 1/2"	Disc	5.0	$5,989	$29,945
2"	Disc/Turbine	8.0	$5,989	$47,912
3"	Compound	22.5	$5,989	$134,753
4"	Compound	25.0	$5,989	$149,725
6"	Compound	50.0	$5,989	$299,450
8"	Compound	80.0	$5,989	$479,120
3"	Turbine	17.5	$5,989	$104,808
4"	Turbine	30.0	$5,989	$179,670
6"	Turbine	62.5	$5,989	$374,313
8"	Turbine	90.0	$5,989	$539,010

Source: Single-family EDUs per unit is by definition one; multi-family EDUs per unit from Table 90; nonresidential EDUs per meter from Table 70; net cost per EDU is the lowest cost per EDU from Table 100.

The updated wastewater fees are compared to current fees in Table 102 below. The updated fees are 49% higher than current fees for most new customers. The fee for the 3" compound meter increases more because the capacity of this water meter size has been reevaluated and increased significantly as part of this update.

Table 102. Current and Updated Wastewater Fees

Housing/Meter Type		Current Fee	Updated Fee	Percent Change
Single-Family Unit		$4,024	$5,989	49%
Multi-Family Unit		$1,940	$2,539	31%
Nonresidential Meter:				
3/4"	Disc	$6,036	$8,984	49%
1"	Disc	$10,060	$14,973	49%
1 1/2"	Disc	$20,120	$29,945	49%
2"	Disc/Turbine	$32,192	$47,912	49%
3"	Compound	$64,384	$134,753	109%
4"	Compound	$100,600	$149,725	49%
6"	Compound	$201,200	$299,450	49%
8"	Compound	$321,920	$479,120	49%
3"	Turbine	$70,420	$104,808	49%
4"	Turbine	$120,720	$179,670	49%
6"	Turbine	$251,500	$374,313	49%
8"	Turbine	$362,160	$539,010	49%

Source: Current fees from Table 2; updated fees from Table 101.

Capital Plan

Assuming that growth occurs as projected in the land use assumptions, the City anticipates approximately $141 million in growth-related wastewater costs over the next ten years, as shown in Table 103.

Table 103. Wastewater Capital Plan, 2022-2032

Outstanding Pledged Debt/Interfund Loans	$140,924,609
Required System Development Fee Studies	$32,950
Required System Development Fee Biennial Audits	$10,000
Total Planned Expenditures	$140,967,559

Source: Debt/interfund loans from Table 122; study cost from Table 125; audit cost from Table 126.

With projected updated wastewater system development fee revenue, plus the current fund balance, the City would have about $88 million in system development fee funds available over the next ten years, as shown in Table 104 below. This is only 62% of planned 10-year expenditures. However, the timing of expenditures is flexible, as the City can defer repayment of interfund loans and debt until sufficient system development fees become available. Assuming the City continues to collect wastewater system development fees until it reaches buildout, future fees plus the current fund balance should be sufficient to cover all future costs.

Table 104. Projected Wastewater Fee Revenue, 2022-Buildout

	2022-2032	2022-Buildout
New Service Units (EDUs)	11,582	20,952
x Net Cost per Service Unit (EDU)	$5,989	$5,989
Projected Revenue	$69,364,598	$125,481,528
Current Fund Balance	$18,424,602	$18,424,602
Total System Development Fee Funds Available, 2022-2032	$87,789,200	$143,906,130
÷ Planned Expenditures	$140,967,559	$143,908,509
Percent of Costs Covered by Wastewater Fees	62%	100%

Source: New service units from Table 92; net cost per service unit is the lowest cost per EDU from Table 100; current fund balance and accounts receivable from Table 122 in Appendix C; 2022-2032 expenditures from Table 103; 2022-buildout expenditures from Table 99.

RECLAIMED WATER

This section updates the City's reclaimed water system development fees in compliance with the Arizona impact fee enabling act for municipalities. Reclaimed water is wastewater that is treated and purified to be safely used for irrigating golf courses, common areas, and roadside landscaping. Chandler's water reclamation facilities use a state-of-the-art treatment process that cleans and disinfects the wastewater before it is added to the reclaimed water distribution system. The reclaimed water system benefits all City water and wastewater utility customers by providing an efficient method of disposing of wastewater and conserving limited water resources. The ability to expand the City's wastewater treatment capacity is limited by the ability to reuse or recharge the effluent. Because the reclaimed water system is most closely linked to the wastewater system, reclaimed water system development fees are assessed based on wastewater demand.

Service Units

To calculate system development fees, the demand associated with different types of development must be expressed in a common unit of measurement, called a "service unit." The service unit for the reclaimed water fee is an "equivalent dwelling unit" (EDU). An EDU is a single-family dwelling unit or its equivalent in terms of reclaimed water demand. Because the reclaimed water system development fees are based on wastewater demand, the wastewater service unit multipliers and projections calculated in the previous wastewater section are appropriate for the reclaimed water fees as well.

Cost per Service Unit

As described earlier in the Methodology subsection of the Legal Framework section, the updated system development fees are based on the lowest of three costs per service unit: existing level of service, ten-year cost, and buildout cost.

Existing Level of Service

The existing level of service for the reclaimed water system development fees is quantified, in large part, by the capacity provided by existing reclaimed water facilities and the current cost to construct that capacity. Chandler's reclaimed water facilities include pump stations, recharge and recovery wells and reclaimed water transmission lines. The City's existing pump station capacities are summarized in Table 105.

Table 105. Existing Reclaimed Water Pump Stations

Reclaimed Water Pump Station	Capacity (mgd)
Effluent Pump Station at Ocotillo WRF	36.0
Intel Effluent Pump Station	2.0
Reclaimed Water Pump Station at Airport WRF	38.5
Total, Pump Stations	76.5

Source: City of Chandler Public Works & Utilities Department, August 6, 2022.

A key component of the reclaimed water system is the system of aquifer storage and recovery (ASR) wells. The City's existing reclaimed well capacities are summarized in Table 106.

Table 106. Existing Reclaimed Water Wells

Recharge Well	Recharge Capacity (mgd)
Tumbleweed Park ASR Well No. 1	1.7
Tumbleweed Park ASR Well No. 2	1.1
Tumbleweed Park ASR Well No. 3	1.1
Tumbleweed Park ASR Well No. 4	1.4
Tumbleweed Park ASR Well No. 5	1.7
Tumbleweed Park ASR Well No. 6	1.6
Tumbleweed Park ASR Well No. 7	1.2
Tumbleweed Park ASR Well No. 8	1.3
Tumbleweed Park ASR Well No. 9	1.0
Tumbleweed Park ASR Well No. 10	1.2
Total Capacity, Tumbleweed Park	13.3
Ocotillo ASR Well No. 1	1.6
Ocotillo ASR Well No. 2	1.5
Ocotillo ASR Well No. 3	1.6
Ocotillo ASR Well No. 4	1.5
Ocotillo ASR Well No. 5	1.5
Ocotillo ASR Well No. 6	1.4
Ocotillo ASR Well No. 7	1.0
Ocotillo ASR Well No. 8	1.0
Ocotillo ASR Well No. 9	0.9
Ocotillo ASR Well No. 10	0.9
Total Capacity, Ocotillo	12.9
Veterans Oasis Recharge Basin	6.0
Total System Capacity	32.2

Source: City of Chandler Public Works & Utilities Department, August 6, 2022.

Another component of a reclaimed water system is the network of transmission mains that distribute the reclaimed water to reclaimed water users. The existing major lines are summarized in Table 107.

Table 107. Existing Reclaimed Water System Lines

Pipe Size (in.)	Linear Feet
12	241,723
16	2,902
18	1,508
24	109,005
36	22,091

Source: City of Chandler Public Works & Utilities Department, August 6, 2022.

The total replacement cost of Chandler's existing reclaimed water system is estimated based on current capacities and the current unit costs to construct reclaimed water facilities. Outstanding debt/interfund loans in excess of the current reclaimed water system development fee fund balance are deducted to determine the net replacement cost that has been fully paid for by existing wastewater customers. The net replacement cost is divided by the number of existing wastewater service units to determine the existing cost per service unit of $2,091 per EDU, as shown in Table 108.

Table 108. Reclaimed Water Existing Level of Service

System Component	Unit	Existing Units	Unit Cost	Replacement Cost
Pump Station Capacity	gallons/day	76,500,000	$0.68	$52,020,000
ASR Well Capacity	gallons/day	32,200,000	$2.71	$87,262,000
12" Transmission Lines	linear feet	241,723	$244	$58,980,412
16" Transmission Lines	linear feet	2,902	$325	$943,150
18" Transmission Lines	linear feet	1,508	$366	$551,928
24" Transmission Lines	linear feet	109,005	$487	$53,085,435
36" Transmission Lines	linear feet	22,091	$731	$16,148,521
Total Existing System Replacement Cost				$268,991,446
– Debt/Interfund Loan Obligations				-$24,370,725
Fund Balance				$2,614,726
Net Existing System Replacement Cost				$247,235,447
÷ Existing Service Units (EDUs)				118,261
Existing Cost per Service Unit (EDU)				$2,091

Source: Pump station capacity from Table 105; well capacity from Table 106; transmission lines from Table 107; unit costs from City of Chandler Municipal Utilities Department, July 23, 2013 increased by a factor of 35.4% per Public Works & Utilities Department, August 6, 2022; outstanding debt/interfund loans and fund balance from Table 122; existing (2022) service units from Table 92.

Ten-Year Cost per Service Unit

The City does not plan to make any capacity improvements to the reclaimed water system over the next ten years. The City will need to repay debt/interfund loans on existing facilities with excess capacity, pay encumbrances on current projects, and pay for required SDF study updates and biennial audits that will be required over the next ten years. The results are shown in Table 109 and indicate a ten-year cost per service unit of $1,975 per EDU.

Table 109. Reclaimed Water Ten-Year Cost per Service Unit

Debt/Interfund Loan Obligations	$24,370,725
Encumbrances for Current Projects	$1,075,677
Required Fee Studies and Biennial Audits	$42,950
Total Planned Expenditures	$25,489,352
– Fund Balance	-$2,614,726
Total Revenue Needs	$22,874,626
÷ New Service Units (EDUs), 2022-2032	11,582
Ten-Year Cost per Service Unit (EDU)	$1,975

Source: Debt/interfund loans, encumbrances and fund balance from Table 122; study and audit costs from Table 125 and Table 126, respectively; new 2022-buildout service units from Table 92.

Buildout Cost per Service Unit

The City has not identified a need for any additional growth-related improvements beyond the next ten years. The total buildout cost includes future costs that will be incurred by the City to repay outstanding debt/interfund loans associated with existing capacity to serve new development, pay encumbrances for current projects, and pay for updated SDF studies and biennial audits. Dividing buildout costs by new service units to buildout results in a buildout cost per service unit of $1,094 per EDU, as shown in Table 110.

Table 110. Reclaimed Water Buildout Cost per Service Unit

Debt/Interfund Loan Obligations	$24,370,725
Encumbrances for Current Projects	$1,075,677
Required Fee Studies and Biennial Audits	$83,900
Total Planned Expenditures	$25,530,302
– Fund Balance	-$2,614,726
Total Revenue Needs	$22,915,576
÷ New Service Units (EDUs), 2022-Buildout	20,952
Buildout Cost per Service Unit (EDU)	$1,094

Source: Debt/interfund loans; encumbrances and fund balance from Table 122; study cost from Table 125; new service units from Table 92.

Cost per Service Unit Summary

The three costs per service unit calculated above are summarized in Table 111. The updated system development fees are based on the buildout cost per service unit, which is the lowest of the three.

Table 111. Reclaimed Water Cost per Service Unit

Existing Cost per Service Unit	$2,091
Ten-Year Cost per Service Unit	$1,975
Buildout Cost per Service Unit	$1,094
Lowest Cost per Service Unit	$1,094

Source: Existing from Table 108; ten-year from Table 109; buildout from Table 110.

Net Cost per Service Unit

As noted in the Legal Framework section of this report, impact fees should be reduced (or "offset") in order to account for other types of revenues that will be generated by new development and used to fund capacity-expanding improvements of the same type as those to be funded by the impact fees. Cases in which such an offset is warranted include funding of existing deficiencies, outstanding debt payments on existing facilities, and dedicated revenue sources to fund growth-related improvements.

The reclaimed water system development fees calculated in this report are based on the buildout cost per service unit, which is lower than the existing level of service, so there are no existing deficiencies. Outstanding debt and interfund loans on existing facilities have been excluded from the existing level of service calculation, and can reasonably be attributed to excess capacity available to serve future customers. Other than system development fees and utility rates, the City has no dedicated source of revenue to fund growth-related reclaimed water improvements. The City has not received any grant funding for reclaimed water improvements in recent years and does not anticipate any grants over the next ten years. Consequently, no additional offsets are warranted, and the net cost per service unit is the same as the cost per service unit calculated above.

Updated System Development Fees

The updated reclaimed water system development fees that may be adopted by the City based on this study are the products of the numbers of service units generated by a unit of development and the net cost per service unit calculated above. The resulting updated fee schedule is presented in Table 112.

Table 112. Reclaimed Water Net Cost Schedule

Housing/Meter Type	EDUs per Unit/Meter	Net Cost/ EDU	Net Cost per Unit/Meter
Single-Family Unit	1.000	$1,094	$1,094
Multi-Family Unit	0.424	$1,094	$464
Nonresidential Meter:			
3/4" Disc	1.5	$1,094	$1,641
1" Disc	2.5	$1,094	$2,735
1 1/2" Disc	5.0	$1,094	$5,470
2" Disc/Turbine	8.0	$1,094	$8,752
3" Compound	22.5	$1,094	$24,615
4" Compound	25.0	$1,094	$27,350
6" Compound	50.0	$1,094	$54,700
8" Compound	80.0	$1,094	$87,520
3" Turbine	17.5	$1,094	$19,145
4" Turbine	30.0	$1,094	$32,820
6" Turbine	62.5	$1,094	$68,375
8" Turbine	90.0	$1,094	$98,460

Source: EDUs per unit or meter are the same as for wastewater from Table 101; net cost per EDU is the lowest cost per EDU from Table 111.

The updated reclaimed water fees are compared to current fees in Table 113 below. The updated fees are 31% higher for most new customers. The fee for the 3" compound meter increases more because the capacity of this water meter size has been reevaluated and increased significantly as part of this update.

Table 113. Current and Updated Reclaimed Water Fees

Housing/Meter Type		Current Fee	Updated Fee	Percent Change
Single-Family Unit		$837	$1,094	31%
Multi-Family Unit		$403	$464	15%
Nonresidential Meter:				
3/4"	Disc	$1,256	$1,641	31%
1"	Disc	$2,093	$2,735	31%
1 1/2"	Disc	$4,185	$5,470	31%
2"	Disc/Turbine	$6,696	$8,752	31%
3"	Compound	$13,392	$24,615	84%
4"	Compound	$20,925	$27,350	31%
6"	Compound	$41,850	$54,700	31%
8"	Compound	$66,960	$87,520	31%
3"	Turbine	$14,648	$19,145	31%
4"	Turbine	$25,110	$32,820	31%
6"	Turbine	$52,313	$68,375	31%
8"	Turbine	$75,330	$98,460	31%

Source: Current fees from Table 2; updated fees from Table 112.

Capital Plan

Assuming that growth occurs as projected in the land use assumptions, the City anticipates approximately $25.5 million in growth-related reclaimed water costs over the next ten years, as summarized in Table 114.

Table 114. Reclaimed Water Capital Plan, 2022-2032

Encumbrances for Current Projects	$1,075,677
Debt/Interfund Loan Obligations	$24,370,725
Required System Development Fee Studies	$32,950
Required System Development Fee Biennial Audits	$10,000
Total Planned Expenditures	$25,489,352

Source: Encumbrances and debt/interfund loans from Table 122; study cost from Table 125; audit cost from Table 126.

With projected updated reclaimed water system development fee revenue, plus the current fund balance, the City would have about $15.3 million in system development fee funds available over the next ten years, as shown in Table 115. This is only 60% of planned 10-year expenditures. However, the timing of expenditures is flexible, as the City can defer repayment of interfund loans until sufficient system development fees become available. Assuming the City continues to collect reclaimed water system development fees until it reaches buildout, future fee revenues plus the current fund balance should be enough to cover all future costs.

Table 115. Projected Reclaimed Water Fee Revenue, 2022-Buildout

	2022-2032	2022-Buildout
New Service Units (EDUs)	11,582	20,952
x Net Cost per Service Unit (EDU)	$1,094	$1,094
Projected Revenue	$12,670,708	$22,921,488
Current Fund Balance	$2,614,726	$2,614,726
Total System Development Fee Funds Available	$15,285,434	$25,536,214
÷ Planned Expenditures	$25,489,352	$25,530,302
Percent of Costs Covered by Reclaimed Water Fees	60%	100%

Source: New service units from Table 92; net cost per service unit is the lowest cost per EDU from Table 111; current fund balance from Table 122 in Appendix C; planned expenditures from Table 109 (2022-2032) and Table 110 (2022-buildout).

APPENDIX A: ARTERIAL STREET INVENTORY

Table 116. Existing Arterial Street Inventory

Street	From	To	Miles	Lns	Lane-Miles	Pk Hr Count	Capa-city	VMT	VMC
McClintock Rd	Frye	Loop 202	0.50	4	2.00	680	2,700	340	1,350
Price	Loop 202	Germann	1.15	6	6.90	4,029	4,100	4,633	4,715
Price	Germann	Queen Creek	1.00	6	6.00	2,125	4,100	2,125	4,100
Price	Queen Creek	Dobson	0.50	6	3.00	2,694	4,100	1,347	2,050
Dobson	Frye	Pecos	0.50	6	3.00	2,278	4,100	1,139	2,050
Dobson	Pecos	Germann	1.06	6	6.36	4,692	4,100	4,974	4,346
Dobson	Germann	Queen Creek	1.10	6	6.60	1,692	4,100	1,861	4,510
Dobson	Queen Creek	Price	0.42	4	1.68	2,145	2,700	901	1,134
Dobson	Price	Ocotillo	1.00	4	4.00	1,573	2,700	1,573	2,700
Dobson	Ocotillo	End	0.80	4	3.20	2,170	2,700	1,736	2,160
Alma School	Frye	Pecos	0.50	4	2.00	2,567	2,700	1,284	1,350
Alma School	Pecos	Loop 202	0.30	4	1.20	2,950	2,700	885	810
Alma School	Loop 202	Willis	0.25	6	1.50	2,771	4,100	693	1,025
Alma School	Willis	Germann	0.50	4	2.00	2,771	2,700	1,386	1,350
Alma School	Germann	Queen Creek	0.98	4	3.92	2,508	2,700	2,458	2,646
Alma School	Queen Creek	Ocotillo	1.12	4	4.48	2,253	2,700	2,523	3,024
Alma School	Ocotillo	Chandler Heights	1.13	4	4.52	1,870	2,700	2,113	3,051
Arizona	Pecos	Loop 202	0.30	6	1.80	2,950	4,100	885	1,230
Arizona	Loop 202	Germann	0.73	6	4.38	3,655	4,100	2,668	2,993
Arizona	Germann	Queen Creek	1.00	6	6.00	3,179	4,100	3,179	4,100
Arizona	Queen Creek	Ocotillo	1.00	6	6.00	2,992	4,100	2,992	4,100
Arizona	Ocotillo	Chandler Heights	1.00	6	6.00	2,474	4,100	2,474	4,100
Arizona	Chandler Heights	Riggs	1.00	4	4.00	1,828	2,700	1,828	2,700
Arizona	Riggs	Hunt Highway	1.00	4	4.00	1,199	2,700	1,199	2,700
McQueen	Ray	Chandler	1.00	4	4.00	2,287	2,700	2,287	2,700
McQueen	Chandler	Pecos	1.00	4	4.00	4,641	2,700	4,641	2,700
McQueen	Pecos	Loop 202	0.62	6	3.72	2,950	4,100	1,829	2,542
McQueen	Loop 202	Germann	0.40	6	2.40	3,349	4,100	1,340	1,640
McQueen	Germann	Queen Creek	1.00	6	6.00	3,434	4,100	3,434	4,100
McQueen	Queen Creek	Ocotillo	1.00	6	6.00	2,814	4,100	2,814	4,100
McQueen	Ocotillo	Chandler Heights	1.00	4	4.00	2,227	2,700	2,227	2,700
McQueen	Chandler Heights	Riggs	1.00	4	4.00	1,777	2,700	1,777	2,700
McQueen	Riggs	City Limit	0.75	4	3.00	510	2,700	383	2,025
Cooper	Ray	Chandler	1.00	6	6.00	2,210	4,100	2,210	4,100
Cooper	Chandler	Pecos	0.98	6	5.88	2,049	4,100	2,008	4,018
Cooper	Pecos	Loop 202	0.62	6	3.72	1,811	4,100	1,123	2,542
Cooper	Loop 202	Germann	0.40	6	2.40	1,394	4,100	558	1,640
Cooper	Queen Creek	Ocotillo	1.00	2	2.00	833	1,300	833	1,300
Cooper	Ocotillo	Chandler Heights	1.00	2	2.00	689	1,300	689	1,300
Cooper	Chandler Heights	Riggs	1.00	2	2.00	451	1,300	451	1,300
Cooper	Riggs	Hunt Highway	1.00	4	4.00	230	2,700	230	2,700
Gilbert	Pecos	Loop 202	0.60	6	3.60	3,885	4,100	2,331	2,460
Gilbert	Loop 202	Germann	0.40	6	2.40	4,505	4,100	1,802	1,640

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Table 116. Existing Arterial Street Inventory (continued)

Street	From	To	Miles	Lns	Lane-Miles	Pk Hr Count	Capa-city	VMT	VMC
Gilbert	Germann	Queen Creek	1.00	6	6.00	4,446	4,100	4,446	4,100
Gilbert	Queen Creek	Ocotillo	1.00	6	6.00	3,417	4,100	3,417	4,100
Gilbert	Ocotillo	Chandler Heights	1.00	4	4.00	2,686	2,700	2,686	2,700
Gilbert	Chandler Heights	Riggs	1.00	4	4.00	2,091	2,700	2,091	2,700
Gilbert	Riggs	Hunt Highway	1.00	4	4.00	918	2,700	918	2,700
Lindsay	Ocotillo	Chandler Heights	1.00	2	2.00	1,428	1,300	1,428	1,300
Lindsay	Chandler Heights	Riggs	1.00	2	2.00	1,301	1,300	1,301	1,300
Lindsay	Riggs	Hunt Highway	1.00	2	2.00	400	1,300	400	1,300
Ray	McQueen	Cooper	1.00	4	4.00	2,040	2,700	2,040	2,700
Chandler	McQueen	Cooper	0.99	6	5.94	1,726	4,100	1,709	4,059
Chandler	Cooper	Gilbert	1.00	6	6.00	1,760	4,100	1,760	4,100
Pecos	Ellis	Dobson	0.50	2	1.00	833	1,300	417	650
Pecos	Dobson	Alma School	1.00	6	6.00	833	4,100	833	4,100
Pecos	Alma School	Arizona	1.00	6	6.00	1,165	4,100	1,165	4,100
Pecos	Arizona	McQueen	1.02	6	6.12	1,139	4,100	1,162	4,182
Pecos	McQueen	Cooper	1.00	6	6.00	1,148	4,100	1,148	4,100
Pecos	Cooper	Gilbert	1.00	6	6.00	1,003	4,100	1,003	4,100
Germann	City Limits	Price	0.25	2	0.50	50	1,300	13	325
Germann	Price	Dobson	0.75	4	3.00	680	2,700	510	2,025
Germann	Dobson	Alma School	1.00	6	6.00	1,088	4,100	1,088	4,100
Germann	Alma School	Arizona	1.00	6	6.00	1,292	4,100	1,292	4,100
Germann	Arizona	McQueen	1.00	4	4.00	961	2,700	961	2,700
Germann	McQueen	Cooper	1.00	4	4.00	1,165	2,700	1,165	2,700
Germann	Cooper	Gilbert	1.10	6	6.60	2,049	4,100	2,254	4,510
Queen Creek	City Limits	Price	0.27	6	1.62	2,587	4,100	698	1,107
Queen Creek	Price	Dobson	0.45	6	2.70	1,411	4,100	635	1,845
Queen Creek	Dobson	Alma School	1.30	6	7.80	1,522	4,100	1,979	5,330
Queen Creek	Alma School	Arizona	1.00	6	6.00	1,590	4,100	1,590	4,100
Queen Creek	Arizona	McQueen	1.00	6	6.00	1,335	4,100	1,335	4,100
Queen Creek	McQueen	Cooper	1.00	2	2.00	1,165	1,300	1,165	1,300
Queen Creek	Cooper	Gilbert	1.00	2	2.00	1,726	1,300	1,726	1,300
Queen Creek	Gilbert	Lindsay	1.00	6	6.00	2,117	4,100	2,117	4,100
Ocotillo	Dobson	Alma School	0.80	4	3.20	1,250	2,700	1,000	2,160
Ocotillo	Alma School	Arizona	1.40	4	5.60	1,224	2,700	1,714	3,780
Ocotillo	Arizona	McQueen	1.00	4	4.00	1,615	2,700	1,615	2,700
Ocotillo	McQueen	Cooper	1.00	4	4.00	1,360	2,700	1,360	2,700
Ocotillo	Cooper	Redwood	0.25	4	1.00	1,420	2,700	355	675
Ocotillo	Redwood	Gilbert	0.75	4	3.00	1,420	2,700	1,065	2,025
Ocotillo	Gilbert	Lindsay	1.00	2	2.00	1,165	1,300	1,165	1,300
Ocotillo	Lindsay	148th St.	0.50	2	1.00	2,171	1,300	1,086	650
Chandler Heights	Alma School	Arizona	1.00	4	4.00	952	2,700	952	2,700
Chandler Heights	Arizona	McQueen	1.00	2	2.00	944	1,300	944	1,300
Chandler Heights	McQueen	Cooper	1.00	2	2.00	774	1,300	774	1,300
Chandler Heights	Cooper	Gilbert	0.96	2	1.92	816	1,300	783	1,248
Chandler Heights	Gilbert	Lindsay	1.00	4	4.00	655	2,700	655	2,700
Chandler Heights	Lindsay	Val Vista	1.00	2	2.00	561	1,300	561	1,300

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Table 116. Existing Arterial Street Inventory (continued)

Street	From	To	Miles	Lns	Lane-Miles	Pk Hr Count	Capa-city	VMT	VMC
Riggs	Arizona	McQueen	1.00	6	6.00	2,219	4,100	2,219	4,100
Riggs	McQueen	Cooper	1.00	6	6.00	2,295	4,100	2,295	4,100
Riggs	Cooper	Gilbert	1.00	6	6.00	2,244	4,100	2,244	4,100
Riggs	Gilbert	Lindsay	1.00	6	6.00	2,754	4,100	2,754	4,100
Riggs	Lindsay	Val Vista	1.00	6	6.00	2,992	4,100	2,992	4,100
Total					376.66			153,148	255,472

Source: Street descriptions, miles, number of lanes and counts from City of Chandler Capital Projects Division, June 2, 2023; capacity is maximum hourly volumes at LOS D from Table 14; VMT is peak hour vehicle-miles of travel, which is product of segment miles and peak hour volume; VMC is vehicle-miles of capacity, which is product of miles and capacity.

Table 117. Buildout Arterial Street Inventory

Street	From	To	Miles	Lns	Lane-Miles	Pk Hr Count	Capa-city	VMT	VMC
McClintock Rd	Frye	Loop 202	0.50	4	2.00	884	2,700	442	1,350
Price	Loop 202	Germann	1.15	6	6.90	4,250	4,100	4,888	4,715
Price	Germann	Queen Creek	1.00	6	6.00	2,873	4,100	2,873	4,100
Price	Queen Creek	Dobson	0.50	6	3.00	1,624	4,100	812	2,050
Dobson	Frye	Pecos	0.50	6	3.00	4,330	4,100	2,165	2,050
Dobson	Pecos	Germann	1.06	6	6.36	3,043	4,100	3,226	4,346
Dobson	Germann	Queen Creek	1.10	6	6.60	2,253	4,100	2,478	4,510
Dobson	Queen Creek	Price	0.42	4	1.68	1,284	2,700	539	1,134
Dobson	Price	Ocotillo	1.00	4	4.00	2,100	2,700	2,100	2,700
Dobson	Ocotillo	End	0.80	4	3.20	935	2,700	748	2,160
Alma School	Frye	Pecos	0.50	6	3.00	4,781	4,100	2,391	2,050
Alma School	Pecos	Loop 202	0.30	6	1.80	4,950	4,100	1,485	1,230
Alma School	Loop 202	Willis	0.25	6	1.50	3,978	4,100	995	1,025
Alma School	Willis	Germann	0.50	6	3.00	3,978	4,100	1,989	2,050
Alma School	Germann	Queen Creek	0.98	6	5.88	3,698	4,100	3,624	4,018
Alma School	Queen Creek	Ocotillo	1.12	6	6.72	3,094	4,100	3,465	4,592
Alma School	Ocotillo	Chandler Heights	1.13	4	4.52	2,686	2,700	3,035	3,051
Arizona	Pecos	Loop 202	0.30	6	1.80	4,985	4,100	1,496	1,230
Arizona	Loop 202	Germann	0.73	6	4.38	4,318	4,100	3,152	2,993
Arizona	Germann	Queen Creek	1.00	6	6.00	4,080	4,100	4,080	4,100
Arizona	Queen Creek	Ocotillo	1.00	6	6.00	3,732	4,100	3,732	4,100
Arizona	Ocotillo	Chandler Heights	1.00	6	6.00	2,873	4,100	2,873	4,100
Arizona	Chandler Heights	Riggs	1.00	4	4.00	2,244	2,700	2,244	2,700
Arizona	Riggs	Hunt Highway	1.00	4	4.00	1,233	2,700	1,233	2,700
McQueen	Ray	Chandler	1.00	6	6.00	3,026	4,100	3,026	4,100
McQueen	Chandler	Pecos	1.00	6	6.00	2,941	4,100	2,941	4,100
McQueen	Pecos	Loop 202	0.62	6	3.72	3,239	4,100	2,008	2,542
McQueen	Loop 202	Germann	0.40	6	2.40	3,239	4,100	1,296	1,640
McQueen	Germann	Queen Creek	1.00	6	6.00	3,698	4,100	3,698	4,100
McQueen	Queen Creek	Ocotillo	1.00	6	6.00	3,868	4,100	3,868	4,100
McQueen	Ocotillo	Chandler Heights	1.00	4	4.00	1,981	2,700	1,981	2,700
McQueen	Chandler Heights	Riggs	1.00	4	4.00	1,386	2,700	1,386	2,700
McQueen	Riggs	City Limit	0.75	4	3.00	680	2,700	510	2,025
Cooper	Ray	Chandler	1.00	6	6.00	2,397	4,100	2,397	4,100
Cooper	Chandler	Pecos	0.98	6	5.88	2,210	4,100	2,166	4,018
Cooper	Pecos	Loop 202	0.62	6	3.72	2,074	4,100	1,286	2,542
Cooper	Loop 202	Germann	0.40	6	2.40	2,074	4,100	830	1,640
Cooper	Queen Creek	Ocotillo	1.00	4	4.00	2,040	2,700	2,040	2,700
Cooper	Ocotillo	Chandler Heights	1.00	4	4.00	1,683	2,700	1,683	2,700
Cooper	Chandler Heights	Riggs	1.00	4	4.00	1,360	2,700	1,360	2,700
Cooper	Riggs	Hunt Highway	1.00	4	4.00	315	2,700	315	2,700
Gilbert	Pecos	Loop 202	0.60	6	3.60	3,256	4,100	1,954	2,460
Gilbert	Loop 202	Germann	0.40	6	2.40	3,256	4,100	1,302	1,640

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Table 117. Buildout Arterial Street Inventory (continued)

Street	From	To	Miles	Lns	Lane-Miles	Pk Hr Count	Capa-city	VMT	VMC
Gilbert	Germann	Queen Creek	1.00	6	6.00	3,579	4,100	3,579	4,100
Gilbert	Queen Creek	Ocotillo	1.00	6	6.00	2,278	4,100	2,278	4,100
Gilbert	Ocotillo	Chandler Heights	1.00	4	4.00	2,448	2,700	2,448	2,700
Gilbert	Chandler Heights	Riggs	1.00	4	4.00	1,649	2,700	1,649	2,700
Gilbert	Riggs	Hunt Highway	1.00	4	4.00	731	2,700	731	2,700
Lindsay	Ocotillo	Chandler Heights	1.00	4	4.00	1,114	2,700	1,114	2,700
Lindsay	Chandler Heights	Riggs	1.00	4	4.00	1,063	2,700	1,063	2,700
Lindsay	Riggs	Hunt Highway	1.00	4	4.00	468	2,700	468	2,700
Ray	McQueen	Cooper	1.00	6	6.00	2,729	4,100	2,729	4,100
Chandler	McQueen	Cooper	0.99	6	5.94	2,253	4,100	2,230	4,059
Chandler	Cooper	Gilbert	1.00	6	6.00	1,768	4,100	1,768	4,100
Pecos	Ellis	Dobson	0.50	4	2.00	1,000	2,700	500	1,350
Pecos	Dobson	Alma School	1.00	6	6.00	1,539	4,100	1,539	4,100
Pecos	Alma School	Arizona	1.00	6	6.00	1,870	4,100	1,870	4,100
Pecos	Arizona	McQueen	1.02	6	6.12	1,777	4,100	1,813	4,182
Pecos	McQueen	Cooper	1.00	6	6.00	1,896	4,100	1,896	4,100
Pecos	Cooper	Gilbert	1.00	6	6.00	1,284	4,100	1,284	4,100
Germann	City Limits	Price	0.25	4	1.00	200	2,700	50	675
Germann	Price	Dobson	0.75	4	3.00	1,173	2,700	880	2,025
Germann	Dobson	Alma School	1.00	6	6.00	1,649	4,100	1,649	4,100
Germann	Alma School	Arizona	1.00	6	6.00	1,921	4,100	1,921	4,100
Germann	Arizona	McQueen	1.00	6	6.00	1,394	4,100	1,394	4,100
Germann	McQueen	Cooper	1.00	6	6.00	1,513	4,100	1,513	4,100
Germann	Cooper	Gilbert	1.10	6	6.60	2,125	4,100	2,338	4,510
Queen Creek	City Limits	Price	0.27	6	1.62	3,104	4,100	838	1,107
Queen Creek	Price	Dobson	0.45	6	2.70	1,768	4,100	796	1,845
Queen Creek	Dobson	Alma School	1.30	6	7.80	2,219	4,100	2,885	5,330
Queen Creek	Alma School	Arizona	1.00	6	6.00	2,202	4,100	2,202	4,100
Queen Creek	Arizona	McQueen	1.00	6	6.00	1,794	4,100	1,794	4,100
Queen Creek	McQueen	Cooper	1.00	6	6.00	1,726	4,100	1,726	4,100
Queen Creek	Cooper	Gilbert	1.00	6	6.00	1,488	4,100	1,488	4,100
Queen Creek	Gilbert	Lindsay	1.00	6	6.00	1,666	4,100	1,666	4,100
Ocotillo	Dobson	Alma School	0.80	4	3.20	1,717	2,700	1,374	2,160
Ocotillo	Alma School	Arizona	1.40	4	5.60	1,641	2,700	2,297	3,780
Ocotillo	Arizona	McQueen	1.00	4	4.00	2,134	2,700	2,134	2,700
Ocotillo	McQueen	Cooper	1.00	4	4.00	1,802	2,700	1,802	2,700
Ocotillo	Cooper	Redwood	0.25	4	1.00	1,734	2,700	434	675
Ocotillo	Redwood	Gilbert	0.75	4	3.00	1,734	2,700	1,301	2,025
Ocotillo	Gilbert	Lindsay	1.00	4	4.00	1,760	2,700	1,760	2,700
Ocotillo	Lindsay	148th St.	0.50	4	2.00	2,605	2,700	1,303	1,350
Chandler Heights	Alma School	Arizona	1.00	4	4.00	1,284	2,700	1,284	2,700
Chandler Heights	Arizona	McQueen	1.00	4	4.00	1,267	2,700	1,267	2,700
Chandler Heights	McQueen	Cooper	1.00	4	4.00	1,275	2,700	1,275	2,700
Chandler Heights	Cooper	Gilbert	0.96	4	3.84	1,394	2,700	1,338	2,592
Chandler Heights	Gilbert	Lindsay	1.00	4	4.00	1,394	2,700	1,394	2,700
Chandler Heights	Lindsay	Val Vista	1.00	4	4.00	1,173	2,700	1,173	2,700

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Table 117. Buildout Arterial Street Inventory (continued)

Street	From	To	Miles	Lns	Lane-Miles	Pk Hr Count	Capa-city	VMT	VMC
Riggs	Arizona	McQueen	1.00	6	6.00	2,499	4,100	2,499	4,100
Riggs	McQueen	Cooper	1.00	6	6.00	2,261	4,100	2,261	4,100
Riggs	Cooper	Gilbert	1.00	6	6.00	2,142	4,100	2,142	4,100
Riggs	Gilbert	Lindsay	1.00	6	6.00	2,125	4,100	2,125	4,100
Riggs	Lindsay	Val Vista	1.00	6	6.00	1,632	4,100	1,632	4,100
Total			81.90		425.88			175,006	289,926

Source: Street descriptions, miles, number of lanes and projected volumes from City of Chandler Capital Projects Division, June 2, 2023; capacity is maximum hourly volumes at LOS D from Table 14; VMT is vehicle-miles of travel, which is the product of segment miles and peak hour volume; VMC is vehicle-miles of capacity, which is the product of miles and capacity.

APPENDIX B: FUNCTIONAL POPULATION

The two most common methodologies used in calculating public safety service units and impact fees are the "calls-for-service" approach and the "functional population" approach. This update continues to use the "functional population" approach to calculate and assess the fire and police system development fees. This approach is a generally-accepted methodology for these impact fee types and is based on the observation that demand for public safety facilities tends to be proportional to the presence of people at a particular site.

Functional population is analogous to the concept of "full-time equivalent" employees. It represents the number of "full-time equivalent" people present at the site of a land use, and it is used for the purpose of determining the impact of a particular development on the need for facilities. For residential development, functional population is simply average household size times the percent of time people spend at home. For nonresidential development, functional population is based on a formula that factors in trip generation rates, average vehicle occupancy, employee density and average number of hours spent by employees and visitors at a land use.

Residential Functional Population

In 2018, the U.S. Bureau of Labor Statistics interviewed one person each from 9,600 randomly-selected households to determine how people spent their time during a recent day. Survey respondents were limited to persons aged 15 or older in the civilian population. The survey determined the average number of hours spent on various types of activities. While it did not itemize where the activities occurred, reasonable assumptions have been made about which activities were more likely to take place at the place of residence or away from home. The results are summarized in Table 118

Table 118. Time Usage Survey Data

Primary Activity	Hours per Day	At Home	Away
Sleeping (including naps, spells of sleeplessness)	8.82	8.82	–
Personal care activities (other than sleeping)	0.76	0.76	–
Eating and drinking*	1.19	0.89	0.30
Household activities	1.78	1.78	–
Purchasing goods and services	0.72	–	0.72
Caring for and helping household members	0.51	0.51	–
Caring for and helping non-household members	0.21	–	0.21
Working and work-related activities	3.57	–	3.57
Educational activities	0.46	–	0.46
Organizational, civic and religious activities	0.30	–	0.30
Watching television	2.84	2.84	–
Other leisure and sports	2.43	–	2.43
Telephone, mail and email	0.15	0.15	–
Other activities	0.26	0.26	–
Total Hours	24.00	16.01	7.99
Percent of Time	100%	67%	33%

* assumes 3/4 of meals eaten at home

Source: U.S. Dept. of Labor, Bureau of Labor Statistics, *American Time Use Survey - 2018 Results*, June 19, 2019 release, survey of U.S. civilians 15 years of age or older.

Determining residential functional population multipliers is considerably simpler than the nonresidential component. As shown in the table above, it is estimated that people spend an average of 16 hours, or 67 percent, of each 24-hour day at their place of residence and the other 33 percent away from home. The functional population per unit for residential uses is shown in Table 119.

Table 119. Functional Population per Unit for Residential Uses

Housing Type	Unit	Average HH Size	Occupancy Factor	Func. Pop. per Unit
Single-Family	Dwelling	2.82	0.67	1.89
Multi-Family	Dwelling	2.38	0.67	1.59

Source: Average household size from Table 8; occupancy factor from Table 118.

Nonresidential Functional Population

The functional population methodology for nonresidential land uses is based on trip generation data utilized in developing the transportation demand schedule prepared for the updated arterial street system development fees. Functional population per 1,000 square feet is derived by dividing the total number of hours spent by employees and visitors during a weekday by 24 hours. Employees are estimated to spend 8 hours per day at their place of employment, and visitors are estimated to spend one hour per visit. The formula used to derive the nonresidential functional population estimates is summarized in Figure 9 below.

Figure 9. Nonresidential Functional Population Formula

FUNCPOP/UNIT	=	(employee hours/1000 sf + visitor hours/1000 sf) ÷ 24 hours/day
Where:		
Employee hours/1000 sf	=	employees/1000 sf x 8 hours/day
Visitor hours/1000 sf	=	visitors/1000 sf x 1 hour/visit
Visitors/1000 sf	=	weekday ADT/1000 sf x avg. vehicle occupancy – employees/1000 sf
Weekday ADT/1000 sf	=	one-way avg. daily trips (total trip ends ÷ 2)

Using this formula and information on trip generation rates, vehicle occupancy rates from the National Household Travel Survey and other sources and assumptions, nonresidential functional population estimates per 1,000 square feet of gross floor area are calculated in Table 120 on the following page.

Table 120. Functional Population per Unit for Nonresidential Uses

Land Use	Unit	Trip Rate	Persons/ Trip	Employee/ Unit	Visitors/ Unit	Func. Pop./ Unit
Retail/Commercial	1,000 sq. ft.	18.50	1.90	1.78	33.37	1.98
Office	1,000 sq. ft.	5.42	1.81	2.18	7.63	1.04
Industrial/Warehouse	1,000 sq. ft.	1.27	1.30	1.38	0.27	0.47
Public/Institutional	1,000 sq. ft.	3.37	2.54	2.18	6.38	0.99

Source: Trip rates are one-half of daily trip ends on a weekday from Institute of Transportation Engineers, *Trip Generation Manual*, 11th edition, 2021 (retail/commercial based on shopping center, office based on general office, industrial/ warehouse based on average for industrial park and warehousing, public/institutional based on nursing home); persons/trip is average vehicle occupancy from Federal Highway Administration, *National Household Travel Survey*, 2017 by trip purpose (retail is shopping, office is medical/dental, industrial/warehouse is to-from work, public is school/church; employees/unit from Table 11; visitors/unit is trips times persons/trip minus employees/unit; functional population/unit calculated based on formula in Figure 9.

APPENDIX C: FINANCIAL DATA

This appendix provides financial data on the City's system development fees. SDF collections by fund over the last four fiscal years are summarized in Table 121. Revenues have tended to decline over this period, particularly in the last year.

Table 121. System Development Fee Revenue, FY 2019-2022

SDF Fund	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
Parks Northwest	$144,070	$64,505	$983	$0
Park Northeast	$1,277,898	$110,295	$84,435	$205,150
Park Southeast	$1,422,474	$1,860,397	$2,198,381	$1,214,291
Parks Subtotal	$2,844,442	$2,035,197	$2,283,799	$1,419,441
Arterial Streets	$4,819,431	$5,576,240	$4,882,337	$2,701,703
Library	$59,783	$81,111	$85,542	$83,172
Public Bldgs	$163,724	$237,020	$193,846	$196,851
Police	$463,376	$290,713	$224,665	$225,311
Fire	$672,922	$510,692	$394,103	$404,554
Total Non-Utility Fees	$9,023,678	$8,730,973	$8,064,292	$5,031,032
Water	$6,527,184	$5,410,398	$5,160,606	$4,239,339
Reclaimed Water	$990,677	$1,358,289	$1,272,946	$1,144,679
Wastewater	$6,451,071	$5,829,836	$5,873,312	$5,144,713
Total Utility Fees	$13,968,932	$12,598,523	$12,306,864	$10,528,731
All SDF Funds	$22,992,610	$21,329,496	$20,371,156	$15,559,763

Source: City of Chandler Management Services Department, February 6, 2023.

Table 122 below summarizes financial data as of June 30, 2022 for the system development fee accounts, including fund balances, outstanding obligations to repay debt/interfund loans, and encumbrances/carry-forward costs associated with construction projects that are underway.

Table 122. Summary of Fund Balances and Obligations

	Fund Balance*	Outstanding Debt	Encumb./ Carry-Fwd
NW Parks Fund 425	$2,825,224	$2,825,224	$0
NE Parks Fund 426	$6,424,043	$5,853,189	$2,078,184
SE Parks Fund 427	$21,984,807	$0	$715,925
Parks Subtotal	$31,234,074	$8,678,413	$2,794,109
Arterial Streets Fund 415	$61,725,679	$34,530,036	$23,417,040
Library Fund 431	$5,067	$13,000	$0
Public Building Fund 440	$153,003	$1,764,427	$0
Police Fund 465	$257,453	$2,008,425	$0
Fire Fund 475	$239,385	$3,588,007	$0
Water Fund 603	$12,088,518	$113,317,614	$3,081,634
Reclaimed Water Fund 610	$2,614,726	$24,370,725	$1,075,677
Wastewater Fund 614	$18,424,602	$140,924,609	$0
Total	$126,742,507	$329,195,256	$30,368,460

* SE fund balance includes the $2,866,162 fund balance for the pre-SB 1525 city-wide parks fund 424

Source: Fund balances from City of Chandler Management Services Department, *Annual System Development Fee Report for Fiscal Year Ending June 30, 2022*; outstanding obligations as of June 30, 2022 for interfund loans/bond debt from Table 123 and for encumbrances/carry-forwards from Table 124.

Interfund loans to the system development fee accounts represent money advanced by the general fund, general obligation bond funds, or the water or wastewater operating or bond funds to fund certain fee-eligible projects when sufficient system development fee funds had not been accumulated. These interfund loans need to be repaid with either current system development fee cash balances or future fee revenues. The cost to repay these loans is appropriately included in calculating the ten-year and buildout costs per service unit. Details on the original and outstanding debt/interfund loans are provided in Table 123.

The pledged park debt is a city-wide obligation made in 2007, when the City had a single city-wide park service area. In this update it has been allocated to be partially paid by the current fund balance in the Northwest park service area (that area has little residential development potential, and the fee is to be eliminated), with the remainder to become an obligation of the Northeast service area, which has the most remaining development of all the service areas but no need for additional parks.

Table 123. Outstanding Pledged Debt/Interfund Loans

Fund Recipient	Year(s) of Loan	Loan From	Orig. Loan	Outstanding
Arterial Streets SDF Fund 415	FY 2009	Gen. Fund-Bonds	$37,756,132	$34,530,036
Parks, Northwest Fund 425	n/a	Gen. Fund-Bonds	n/a	$2,825,224
Parks, Northeast Fund 426	n/a	Gen. Fund-Bonds	n/a	$5,853,189
Parks, Southeast Fund 427	n/a	Gen. Fund-Bonds	n/a	$0
Parks SDF Fund 424*	FY 2007	Gen. Fund-Bonds	$17,865,000	$8,678,413
Library SDF Fund 431	FY 2011	Gen. Fund-Bonds	$1,290,000	$13,000
Public Building SDF Fund 440	FY 2010	General Fund	$4,204,427	$1,764,427
Fire SDF Fund 475	FY 2006/10	General Fund	$3,588,007	$3,588,007
Police SDF Fund 465	FY 2006/07	General Fund	$6,158,425	$2,008,425
Water SDF Fund 603	FY 2008	Water Operating	$15,929,877	$15,929,877
Water SDF Fund 603	FY 2007/09/14/20	Water Bonds	$97,387,737	$97,387,737
Total, Water SDF Fund 603			$113,317,614	$113,317,614
Wastewater SDF Fund 614	FY 2009/14/16	Wastewater Bonds	$140,924,609	$140,924,609
Reclaimed Water SDF Fund 610	FY 2007	Wastewater SDF	$7,700,000	$7,700,000
Reclaimed Water SDF Fund 610	FY 2009	Wastewater Bonds	$16,670,725	$16,670,725
Total, Reclaimed Water SDF Fund			$24,370,725	$24,370,725
Grand Total			$349,474,940	$329,195,256

* pledged debt obligation incurred by the pre-SB 1525 city-wide parks fund allocated to NW park fund in an amount equal to the current fund balance, with remainder allocated to NE park fund

Source: City of Chandler Management Services Department, February 6, 2023 (outstanding as of June 30, 2022).

In addition to debt/interfund loans, another future cost to be paid from system development fees are the costs of encumbrances and capital carry-forward balances, which represents unpaid costs of improvements currently underway for fee-eligible improvements. These costs are appropriately included in calculating the ten-year and buildout costs per service. Table 124 on the following page provides details on current projects and associated encumbrances and carry-forward amounts.

Table 124. Encumbrances and Carry-Forwards

Improvement Project	Encumbrances	Carry-Forwards	Total
Cooper - Queen Creek to Riggs	$596,093	$472	$596,565
Alma School Rd - Pecos to Germman	$235,783	$296,973	$532,756
Lindsay Rd - Ocotillo to Hunt Hwy	$270,996	$1,751,085	$2,022,081
Chandler Hts - McQueen to Val Vista	$14,609,791	$1,273,570	$15,883,361
Ocotillo Rd -Cooper to 148th St	$4,087,077	$295,200	$4,382,277
Total, Arterial Streets	$19,799,740	$3,617,300	$23,417,040
Homestead North Park Site	$2,073,187	$4,997	$2,078,184
Total, Parks Northeast Service Area	$2,073,187	$4,997	$2,078,184
Lantana Ranch Park Site	$0	$7,697	$7,697
Lantana Ranch Park Site	$0	$708,228	$708,228
Total, Parks Southeast Service Area	$0	$715,925	$715,925
Well Construction	$1,309,708	$1,771,926	$3,081,634
Total, Water	$1,309,708	$1,771,926	$3,081,634
Effluent Reuse-Storage and Recovery Wells	$770,585	$63,262	$833,847
Effluent Reuse-Transmission Mains	$42,281	$199,549	$241,830
Total, Reclaimed Water	$812,866	$262,811	$1,075,677
Grand Total	$23,995,501	$6,372,959	$30,368,460

Source: City of Chandler Management Services Department, February 6, 2023 (outstanding as of June 30, 2022).

The cost of studies to update the fees every five years, as required by SB 1525, is a cost that is attributable entirely to new development. The future update costs are based on the actual cost of the current update. Given SB 1525's requirement that the fees be updated at least every five years, a minimum of two updates will be required over the next ten years. While the timing of buildout is uncertain, it is projected to be at about 97% of buildout population by 2040, indicating a need for four update studies by buildout. The update study costs by fee type are summarized in Table 125.

Table 125. Study Update Costs

Fee Type	Current Study Cost	Cost of 2 Studies, 2022-2032	Cost of 4 Studies, 2022-Buildout
Arterial Streets	$32,950	$65,900	$131,800
Parks	$16,475	$32,950	$65,900
Fire	$16,475	$32,950	$65,900
Police	$16,475	$32,950	$65,900
Water	$16,475	$32,950	$65,900
Wastewater	$16,475	$32,950	$65,900
Reclaimed Water	$16,475	$32,950	$65,900
Total	$131,800	$263,600	$527,200

Source: Current study cost is consultant cost for this update, allocated evenly among fee types; cost of the two studies required over the next ten years is twice the current study cost; cost of four studies needed 2022-buildout is four times study cost.

The biennial audits used by the City to meet the requirements of SB 1525 are a cost that is attributable entirely to new development. The future audit costs are based on the cost of the most recent audit. Given SB 1525's requirement that the audit take place every two years, five audits will be required over the next ten years. While the timing of buildout is uncertain, it is projected to be at about 97% of buildout population by 2040, indicating a need for four additional audits by buildout. The biennial audit costs by fee type are summarized in Table 126.

Table 126. Biennial Audit Costs

Fee Type	Biennial Audit Cost	Cost of 5 Audits, 2022-2032	Cost of 9 Audits, 2022-Buildout
Arterial Streets	$2,000	$10,000	$18,000
Parks	$2,000	$10,000	$18,000
Fire	$2,000	$10,000	$18,000
Police	$2,000	$10,000	$18,000
Water	$2,000	$10,000	$18,000
Wastewater	$2,000	$10,000	$18,000
Reclaimed Water	$2,000	$10,000	$18,000
Total	$14,000	$70,000	$126,000

Source: Most recent total biennial audit cost from City of Chandler, allocated evenly among fee types; cost of the five audits required over the next ten years is five times the current audit cost; cost of nine audits needed 2022-buildout is nine times study cost.

APPENDIX D: REVENUE FORECAST

SB 1525 requires that the infrastructure improvements plan include (A.R.S. Sec. 9-463.05.E.7):

> *A forecast of revenues generated by new service units other than development fees, which shall include estimated state-shared revenue, highway users revenue, federal revenue, ad valorem property taxes, construction contracting or similar excise taxes and the capital recovery portion of utility fees attributable to development based on the approved land use assumptions, and a plan to include these contributions in determining the extent of the burden imposed by the development as required in subsection B, paragraph 12 of this section.*

The maximum revenues from these sources that may be attributed to new development over the next ten years are summarized in Table 128 on the following page. In general, the forecasts are based on the total of new revenue projected to be received, some of which is growth-related and the remainder of which is due to inflation, increases from existing development or increases in cost recovery fees. However, with the City's practice of using ongoing revenues for ongoing expenditures, most of this revenue will be used for ongoing operations and maintenance purposes. None of the City's General Fund or Highway User Revenue Funds are used for growth-related capital improvements, other than as loans. Only revenue generated by new development that is dedicated to growth-related capital improvements needs to be considered in determining the extent of the burden imposed by new development. As discussed in greater detail in the Legal Framework section, offsets against impact fees are warranted in the following cases: (1) new development will be paying taxes or fees used to retire debt on existing facilities serving existing development; (2) new development will be paying taxes or fees used to fund an existing deficiency, or (3) new development will be paying taxes or fees that are dedicated to being used for growth-related improvements.

In this study, offsets against the fees have been accounted for in the following manner:

(1) **Outstanding debt**. Only "eligible" debt for past capacity-expanding improvements that are currently authorized to be funded with impact fees needs to be considered. For all the facility types, the eligible debt is attributable to existing excess capacity available for future development. Consequently, the amount of outstanding eligible debt principal has been excluded from the calculation of the existing level of service, and has been included in the calculation of ten-year and buildout costs per service unit.

(2) **Existing deficiencies**. Impact fees are typically calculated based on a system-wide analysis. Consequently, existing deficiencies from an impact fee perspective are different from those that might be identified using a facility-specific standard. For example, road impact fees are based on ratio of capacity to demand in the major road system as a whole, rather than on levels of congestion on individual road segments. As long as a road fee is not based on the cost to ensure that every road segment functions at a desired level of service, individual road segments can be currently deficient with respect to that standard without constituting existing deficiencies from an impact fee perspective. In this study, the existing level of service is calculated as the replacement cost per service unit of existing, fully-paid for facilities serving existing development. The updated fees are, in every case, based on a cost per service unit that is lower than the existing level of service. Consequently, the requirement of SB 1525 that fees be based on the existing level of service has been met, and there are no existing deficiencies that need to be addressed.

(3) **Dedicated future funding.** The only dedicated source of revenue for capital funding of growth-related capacity improvements that has been identified in this study is Federal/State and regional transportation funds that are programmed for capacity-expanding arterial street improvements in Chandler over the next ten years. This has been addressed by excluding that anticipated funding from the calculation of the cost per service unit on which the updated arterial street fees are based (see Arterial Streets section).

Table 127. Total Revenue Forecast

Description	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027
Construction Contracting TPT	$27,500,000	$22,000,000	$14,658,129	$15,100,000	$15,550,000
Other Transaction/Privilege Tax	$172,950,000	$172,950,000	$144,858,803	$149,210,000	$153,690,000
Franchise Fees	$3,630,000	$3,471,000	$3,506,500	$3,542,800	$3,579,800
State Shared Sales Tax	$39,000,000	$28,500,000	$29,925,000	$30,830,000	$31,760,000
Vehicle License Tax	$13,500,000	$10,800,000	$11,016,000	$11,236,400	$11,470,000
Urban Revenue Sharing	$52,000,000	$39,000,000	$41,340,000	$42,590,000	$43,870,000
Smart and Safe - Prop 207	$1,100,000	$1,100,000	$1,155,000	$1,212,800	$1,237,100
Primary Property Tax	$8,663,078	$8,681,611	$9,028,900	$9,400,000	$9,690,000
Total	$318,343,078	$286,502,611	$255,488,332	$263,122,000	$270,846,900

Description	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	Total
Construction Contracting TPT	$16,330,000	$16,330,000	$16,820,000	$17,330,000	$17,850,000	$179,468,129
Other Transaction/Privilege Tax	$161,380,000	$161,380,000	$161,380,000	$166,230,000	$171,220,000	$1,615,248,803
Franchise Fees	$3,617,600	$3,656,100	$3,695,400	$3,735,500	$3,776,400	$36,211,100
State Shared Sales Tax	$32,720,000	$33,710,000	$34,730,000	$35,780,000	$36,860,000	$333,815,000
Vehicle License Tax	$11,700,000	$11,940,000	$12,180,000	$12,430,000	$12,680,000	$118,952,400
Urban Revenue Sharing	$45,190,000	$46,550,000	$47,950,000	$49,390,000	$50,880,000	$458,760,000
Smart and Safe - Prop 207	$1,261,900	$1,287,200	$1,313,000	$1,339,300	$1,366,100	$12,372,400
Primary Property Tax	$9,890,000	$10,090,000	$10,300,000	$10,510,000	$10,730,000	$96,983,589
Total	$282,089,500	$284,943,300	$288,368,400	$296,744,800	$305,362,500	$2,851,811,421

Source: City of Chandler Management Services Department, July 7, 2023.

Table 128. Revenue Attributable to New Development

Description	Growth %	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027
Construction Contracting TPT	50.0%	$13,750,000	$11,000,000	$7,329,065	$7,550,000	$7,775,000
Other Transaction/Privilege Tax	1.0%	$1,729,500	$1,729,500	$1,448,588	$1,492,100	$1,536,900
Franchise Fees	1.0%	$36,300	$34,710	$35,065	$35,428	$35,798
State Shared Sales Tax	1.0%	$390,000	$285,000	$299,250	$308,300	$317,600
Vehicle License Tax	1.0%	$135,000	$108,000	$110,160	$112,364	$114,700
Urban Revenue Sharing	1.0%	$520,000	$390,000	$413,400	$425,900	$438,700
Smart and Safe - Prop 207	1.0%	$11,000	$11,000	$11,550	$12,128	$12,371
Primary Property Tax	1.0%	$86,631	$86,816	$90,289	$94,000	$96,900
Total		$16,658,431	$13,645,026	$9,737,367	$10,030,220	$10,327,969

Description	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	Total
Construction Contracting TPT	$8,165,000	$8,165,000	$8,410,000	$8,665,000	$8,925,000	$89,734,065
Other Transaction Privilege Tax	$1,613,800	$1,613,800	$1,613,800	$1,662,300	$1,712,200	$16,152,488
Franchise Fees	$36,176	$36,561	$36,954	$37,355	$37,764	$362,111
State Shared Sales Tax	$327,200	$337,100	$347,300	$357,800	$368,600	$3,338,150
Vehicle License Tax	$117,000	$119,400	$121,800	$124,300	$126,800	$1,189,524
Urban Revenue Sharing	$451,900	$465,500	$479,500	$493,900	$508,800	$4,587,600
Smart and Safe - Prop 207	$12,619	$12,872	$13,130	$13,393	$13,661	$123,724
Primary Property Tax	$98,900	$100,900	$103,000	$105,100	$107,300	$969,836
Total	$10,822,595	$10,851,133	$11,125,484	$11,459,148	$11,800,125	$116,457,498

Source: Total revenue from Table 127 times growth percent; 50% of construction contracting TPT attributed to new development (rest is remodeling) per City; all other revenues attributed to new development based on the average of compounded annual growth rates in population and nonresidential sq. ft. from 2022-2032 derived from Table 7 and Table 10 in the Land Use Assumptions section.